

Final Project Report
“Imaging Pittsburgh:
Creating a Shared Gateway to Digital Image Collections of the Pittsburgh Region”

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Executive Summary

The Imaging Pittsburgh project team succeeded in creating a single online Web gateway for the public to access 7,450 visual images of Pittsburgh from twenty-seven different collections held by three cultural heritage institutions: Carnegie Museum of Art, Library & Archives of the Historical Society of Western Pennsylvania at the Heinz History Center, and University of Pittsburgh's Archives Service Center. The University of Pittsburgh's Digital Research Library, who hosts the image collections on its Historic Pittsburgh Image Collections Web site (<http://images.library.pitt.edu/pghphotos>), created innovative avenues for exploring the images by themes, location, and time period. This library and museum collaborative project was completed in thirty months time.

Since the Web site's release on 13 September 2004, it is apparent from analyzing server logs that an extremely high percentage of images are being viewed. In fact, on average 89% of the total images available for viewing on the site are viewed each month. In addition, survey responses support the fact that the majority of users (74%) find the images on the site to be an important source of information for meeting their needs; moreover, the Web site has positively influenced the way people think about Pittsburgh and the institutions involved in the project. In fact, the site has helped expand use and understanding of the collections housed at the content partner institutions.

Although support from IMLS ended at the end of April 2005, the University of Pittsburgh's Library System has made an ongoing commitment to add images to their collections represented on the Historic Pittsburgh Image Collections Web site. The Archives Service Center and Digital Research Library will continue their partnership to ensure the Web site continues to grow with image content. The Digital Research Library welcomes continuing participation by the other grant partners to enhance access to their image collections via the Web gateway.

*As a displaced native Pittsburgher, this website is fantastic.
Thank you for archiving these tremendous shots.
It is an amazing visual history of America's most interesting city.
– Jim Haney*

*You are building a truly excellent resource. Please keep up the good work.
– John McGrady*

*It is a fantastic family history resource – no other city I know of has such a great amount
and easy access to everything online.
– Anonymous Survey Respondent*

Accomplishment of Project Goals

The project team proposed to create a single Web gateway for the public to access approximately 7,000 visual images from the collections of three cultural heritage institutions (i.e., content partners) in Pittsburgh centrally managed by the University of Pittsburgh's Digital Research Library.¹ The content partners consisted of librarians, archivists and curators from the Carnegie Museum of Art, Library & Archives of the Historical Society of Western Pennsylvania at the Heinz History Center, and University of Pittsburgh's Archives Service Center.

The project team created general selection criteria to aid in the selection of the images, but each institution was free to select collections upon which to draw from.² According to standards defined by the project team, each content partner cataloged their selected images in institutionally-designed and managed electronic databases, digitized the selected images, and delivered the images and metadata to the Digital Research Library for indexing and mounting on a central server. The Digital Research Library created the Web gateway with the functionality of browsing and cross-searching the multiple image collections.

The following will restate each of the four goals and briefly discuss their objectives and related outcomes.

Goal One

To provide content partners with the tools and skills necessary to better manage, control and administer collections of visual images.

Each content partner gained significant control and management of its image collections through item-level cataloging of selected photographs, although it happened differently at each institution. Ideally it would have been easier for the Digital Research Library to require that the content partners use the same data management system to streamline submissions and troubleshoot problems, but this was simply not an



option. Rather, the content partners were free to create (or continue to use an existing) data management system. This was a fundamental aspect of the grant to allow the content partners to manage their data in the best possible method for them.

Nonetheless, each content partner experienced challenges along the way. The Archives Service Center faced the challenge of reconciling three overlapping yet separate databases developed over a ten-year period to gain control of its data. They received support from the University Library System (ULS) Information System's department to merge and cleanup the disparate databases into one master database. Although this merger enabled the Archives to better manage its photographic metadata, they still experienced day-to-day data entry challenges, such as reconciling image descriptions. The Historical Society improved and expanded an exceptional MS Access program developed locally. The program included built-in checks and balances designed to minimize and prevent data entry errors. It is an excellent product of this grant and could be widely used in similar environments. The Carnegie Museum of Art recently subscribed to a commercial

¹ See Appendix A for a list of project team members and their institutional affiliation.

² See http://images.library.pitt.edu/i/impls/docs/guidelines/Selection_criteria.pdf.

software solution developed for museums and their art objects. While it took museum staff time to learn how to best use the system's functionality and export method as this grant required, the system served the museum extremely well.

Working together, the project team developed and promulgated guidelines for the creation of standardized metadata.³ We looked to the Dublin Core metadata scheme as our initial guide and agreed to submit data for eight of the fifteen unqualified fields (title, date, creator, description, subject, rights, filename and identifier). All three content partners succeeded in submitting metadata to the Digital Research Library for all images in all of the required fields. Each content partner was free to add fields in addition to the required ones. This allowed the content partners to fulfill local management needs while adhering to project specifications.

Not surprisingly, the subject field was the most difficult field to consistently implement by the content partners, even though we agreed to use Library of Congress Subject Headings as our common authority. The team as a whole had limited (or in some cases no) experience creating controlled-vocabulary headings; plus we also soon found that the syntax of the subject terms were being inconsistently applied. Fortunately, a team member (and cataloger) from the History Center, Art Louderbeck, took ownership of these challenges and provided significant assistance by teaching the other content partners how to construct proper subject headings.⁴ He also authored a list of local neighborhood names used by the team when applying geographic name authorities to the images.



An important outcome of this project will be the ongoing use of the metadata scheme and database design implemented at each institution. All content partners stated at our closing project meeting that they plan on continuing to use the databases they developed for this project for the indefinite future. In particular, the museum reported that learning how to collect metadata for images in the Teenie Harris collection will have an impact on how they continue to describe and digitize images from the collection after the end of the grant period.

Lessons Learned

Descriptive Text

We did not consider at the outset that the description field (free-text) would be populated differently purposes by the content partners. What slowly emerged as images and metadata was delivered to the Digital Research Library and mounted online was the wide-ranging use of the description field. It is interesting to note how and why this particular field gained its text.

The Archives Service Center chose to enter brief information usually included on the front, beneath or back of the images; they did not have the luxury of time and resources (i.e., volunteer staff) to research the images for more related information. On the other hand, the Historical Society had the advantage of using its host of volunteers to research the images and supply detailed information. Not only did their descriptions describe the image in great detail, but often the descriptions would provide interpretative or informative text, such as the brief history of a neighborhood in which a specific building was located or would describe buildings previously, or soon to be, situated on that location. The Carnegie Museum of

³ See <http://images.library.pitt.edu/i/impls/docs/guidelines/ImageMetadata.pdf>.

⁴ See http://images.library.pitt.edu/i/impls/docs/guidelines/LC_cataloging_hints.pdf.

Art was in a most peculiar position in that they knew very little about the content of the images in the Teenie Harris collection in particular. They sought and relied upon outside community knowledge to gather information about the people, events, and time period that comprised the photographs.

Geographic Names

We did not realize the importance of including geographic (neighborhood) names in the metadata at the beginning of the project. After we decided to include an Explore by Location feature, content partners retrospectively added geographic names to previously submitted image metadata. Luckily we thought of this before too many images were described and delivered to the Digital Research Library. It would have been unfeasible to review and add geographic names to thousands of images after the fact.

*I greatly appreciate this site. I've looked at every photograph.
They are beautiful and so very welcome in my memory. – Mary Patterson*

This is a fantastic collection of images that is easy to access and browse. It contains many interesting and surprising images of Pittsburgh's past and gives us an intimate look into the everyday lives of our Pittsburgh ancestors. – Joe Fetsko

Goal Two

To increase public access to significant collections of visual images of the Pittsburgh region located in diverse repositories in the city.

The project team created high quality digital files of selected photographs and designed a Web gateway that facilitates the search and retrieval of images from across the collections.



Each institution was equipped with identical scanning equipment, two workstations and monitors, uninterruptible power supply conditioners, and associated supplies.⁵ The project team agreed to deliver to the Digital Research Library images that exhibited minimum level image characteristics.⁶ However, each content partner was free to create images that exceeded the minimum requirements. The content partners were encouraged to think beyond the primary goal of this project, namely online access, and develop a workflow that would capture images that could be repurposed in many different ways in the future, such as printing, exhibits, publications, etc.

Each content partner was required to develop and submit to the project team a plan for its workflow.⁷ The workflow encompassed all of the major elements for which they were responsible, namely, selection,

⁵ See http://images.library.pitt.edu/i/impls/docs/impls_equipment.pdf.

⁶ See http://images.library.pitt.edu/i/impls/docs/guidelines/Image_Quality.pdf.

⁷ See http://images.library.pitt.edu/i/impls/docs/workflow/Archives_Service_Center_Workflow.pdf;
http://images.library.pitt.edu/i/impls/docs/workflow/Carnegie_Museum_of_Art_Workflow.pdf;
http://images.library.pitt.edu/i/impls/docs/workflow/Historical_Society_Workflow.pdf.

research, metadata entry, scanning, image processing, quality control, and refile. Sharing each institution’s workflow plans early in the project period forced each institution to critically evaluate its workflow and consider making appropriate changes. As a result of this collaborative process, the final workflows developed and worked out in practice caused each content partner to benefit from the larger whole, a critical and fundamental result of this collaborative project.

The project team exceeded its goal of digitizing 7,000 images by an additional 450 images. In doing so, each content partner exceeded their original estimate of images to be contributed, although both the Archives Service Center (ASC) and Carnegie Museum of Art (CMA) required an additional six months to complete their work. The Historical Society of Western Pennsylvania (HSWP) completed their digitization within the original grant period and did not require a six-month extension. By the end of the project, the Digital Research Library mounted images from twenty-seven different collections.⁸

Institution	Image Estimate	Image Actual
ASC	3,000	3,127
CMA	1,000	1,294
HSWP	3,000	3,029
TOTAL		7,450

As the content partners digitized thousands of images, the Digital Research Library subsequently prepared the images and metadata for online access by the public. This involved ingesting each collection’s images and metadata on a regular basis and processing them according to middleware instructions. The Digital Research Library implemented the University of Michigan’s DLXS system, namely, its Image-class middleware, to support the search, indexing and retrieval of the image collections. Using this particular system was instrumental to supporting the underlying purpose of the grant: access to and across many different image collections. As a result, the Digital Research Library built twenty-seven distinct image collections, and created one virtual “group” (i.e., Historic Pittsburgh Image Collections) to which they all belong.

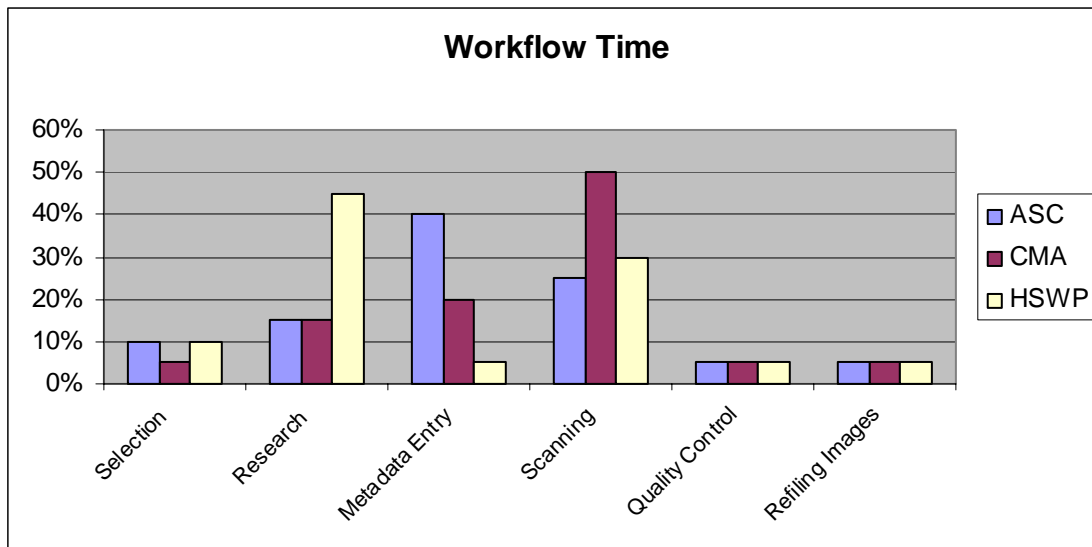
Lessons Learned

Although each content partner fulfilled its obligation to deliver a predetermined amount of images to the Digital Research Library, it was difficult to judge how each content partner’s time was being spent on the activities associated with selecting, digitizing, and describing images until near the end of the project. The Principal Investigator (PI) met periodically with individual teams and asked each team to keep track of the approximate amount of time spent on the major tasks.

It is interesting to note a few trends when one considers the percentage of time for some of the tasks as indicated on the chart on the following page. Note that the Historical Society (HSWP) spent a much larger percentage of its time researching the images. This is evident when one examines the descriptions of the images, but it also emphasizes the interpretive role it plays for teaching the general public about history. The Archives Service Center (ASC) spent a considerable amount of time on metadata entry (e.g., subject headings), which illustrates its role in an academic environment that emphasizes resource discovery. Finally, the Carnegie Museum of Art (CMA) spent a large portion of its time on scanning, which is reflected in the stunning quality of its images, reinforcing its role as presenting the images as artifacts to be enjoyed for their beauty in addition to informational value. Now knowing how each content partner would

⁸ See Appendix B for a complete list of collections, a brief description and number of respective images represented.

spend its time on the project, the PI may have been able to intervene to balance the respective time for the tasks in order to produce a higher quantity of images.



*I stumbled upon your site more than two hours ago and absolutely loved it.
I am a Pittsburgher, who though gone for 21 years, still misses Pittsburgh.
These photos really made me know that what Dorothy said is true, "there's no place like home."
– Teresa Cottrell*

*Our family grew-up in Pittsburgh; most have migrated elsewhere. But there's still a special 'piece' of Pittsburgh we all have kept with us, even these many years after leaving.
– Anonymous Survey Respondent*

Goal Three

To administer the integration of distributed visual image collections and provide tools for searching and analysis.

The Digital Research Library developed a system for the production and delivery of digital objects from the content partners, indexed and mounted the image collections on a central server, and prepared metadata for harvesting through the Open Archives Initiative protocol.⁹ The Digital Research Library also created an innovative way of browsing the images across collections based on input from the project team.

The project team agreed to adhere to a schedule that indicated when each content partner's batch of images was to be submitted to the Digital Research Library. Each content partner submitted a new batch of images and metadata on a six week basis starting in July 2003. The batches were scattered so that the Digital Research Library received a batch from one of the content partners every two weeks. For the most part, the content partners maintained this production schedule with small bumps in the road every so

⁹ See http://images.library.pitt.edu/i/impls/docs/guidelines/Preparing_Data_for_DRL.pdf.

often. When the schedule could not be met for whatever reason, the content partners requested a submission delay. In the end, each content partner met (and slightly exceeded) their respective submission goals.

The Digital Research Library worked with members from each institution to create graphically-enriched homepages for each image collection. As a result, the image collections have a similar “look and feel,” yet maintain their own institutional identity. Each institution was encouraged to create links from their institutional Web pages to not only the main Historic Pittsburgh Image Collections Web site, but to their individual image collections as well.

In February 2004, a beta version of the Web site was released for testing and comment. During the summer months, the ULS Web Services Librarian conducted an interface usability study of the site. The Digital Research Library subsequently made changes to the site based on the results of the test.¹⁰



An important outcome related to this goal was the creation and dissemination of metadata records via the Open Archives Initiative (OAI) for Metadata Harvesting Protocol. Participating in the OAI initiative provides increased access to the digital images generated by this project by global users who might not be aware of the Historic Pittsburgh Image Collections Web site. Moreover, it ensures that popular Internet search engines (like Yahoo!) index once “hidden” online resources. During the spring of 2005, the Digital Research Library became an OAI data provider when it systemically built twenty-seven OAI datasets, each one consisting of one of the image collections. The department subsequently registered the collections with OAI to enable harvesting of the records by third-party service providers.

Lessons Learned

As new batches rolled into the Digital Research Library every few weeks, department staff soon realized the immediate value of quickly importing the images and metadata into its system for online access. As the image collections grew in number and size on a regular basis, it enabled the Digital Research Library to test the delivery mechanism and cross-collection search and retrieval platform. Perhaps more importantly, it enabled the content partners to view and interact with the image collections as they were mounted to look for and correct mistakes. In addition, as the image collections were updated on a regular basis, it allowed the content partners to see (often for the first time) what images were being selected from each other’s collections. This in turn elicited discussion amongst the content partners and often influenced later selection.

It was a trip down memory lane. I grew up in East Liberty and Shadyside between 1942 to 1963. I left Pittsburgh in 1976. But, I still consider it home, and get up there every year or so, just to visit. I will pass this site on to others, and I will be back again for sure.
– Anonymous Survey Respondent

¹⁰ See http://images.library.pitt.edu/i/impls/docs/reports/HPIC_usability_study_results.pdf.

Goal Four

To promote the meaningful use of the Web gateway.

The completion of the first three goals enabled the project team to provide online access to 7,450 images from twenty-seven different collections belonging to three cultural heritage institutions in Pittsburgh managed by one central digital library program. Yet what steps and activities has the project team taken to promote the use of the collections?

Publicity

The Historic Pittsburgh Image Collections Web site was officially released on September 13, 2004 (<http://images.library.pitt.edu/pghphotos>). A press release was shared with project partners for comment before distribution by the University of Pittsburgh to local news media.¹¹ As a result, news of the Web site was mentioned in the *Pittsburgh Post-Gazette* and *Pittsburgh Tribune-Review*. The press release was also distributed electronically to numerous library- and archival-related listservs, including both DigLib and ImageLib; the online *D-Lib Magazine* published the press release in its October 2004 issue. A brochure and bookmarks highlighting the Web site were created and distributed to all partner institutions for dissemination to their patrons.



Shortly after the Web site release, articles about the project appeared in two media sources connected with the University of Pittsburgh. The *University Times*, a bi-monthly publication for faculty, wrote about how dozens of images of the construction of campus buildings can be found within the collections. The *Pitt Chronicle*, a newsletter targeted towards donors and University trustees, featured an article about the project. *Pitt Magazine*, the quarterly alumni magazine, has interviewed the PI in conjunction with an article scheduled to be included in the summer 2005 issue.

The Carnegie Museum of Art publicized the release of the Web site in several of their publications, including *Carnegie Magazine* and the member newsletter. Similarly, the Historical Society of Western Pennsylvania included a brief announcement of the Web site in their spring 2005 “Making History” newsletter.

While all of the above media avenues contributed to “spreading the word” about the Historic Pittsburgh Image Collections, the most significant piece that caused the greatest usage impact was a feature article in the *Post-Gazette* on December 21, 2004. Published in print and electronic format, this article by Patricia Lowry, “Picturing Pittsburgh: Two-year collaboration makes century of images available online,” was potentially read by as many as 622,000 daily subscribers.¹²

As a result, the usage statistics on that day skyrocketed. The Web logs had indicated that less than 400 visits were made to the Web site the day before; however, on December 21 the visitor traffic increased to over 3,600 visits. Further, the site continued to receive a high rate of usage for the remainder of the month. Since then, the Web site has never experienced the same usage rate, but it has sustained a higher average usage rate compared to the few months before the article was published. This speaks volumes

¹¹ See <http://www.unc.pitt.edu:591/m/FMPro?-db=ma&-lay=a&-format=d.html&id=1794&-Find>

¹² See <http://www.post-gazette.com/pg/04356/429888.stm>.

about the critical importance of garnering media attention, especially in a publication as widely circulated as the *Post-Gazette*.

Conferences

Project team members have had professional opportunities to speak about the project throughout the grant period. Most recently, Miriam Meislik and Louise Lippincott gave presentations at two separate sessions at the fall 2004 MARAC conference in Pittsburgh (Sept. 30-Oct. 1, 2004). Other venues included the IMLS-sponsored Web Wise 2004 meeting in Chicago, IL, and the 2003 Pennsylvania Library Association meeting in Pittsburgh.

The project PI attended the National Council for History Education national conference in Pittsburgh (April 21-22, 2005) and created an exhibit featuring the Historic Pittsburgh Web site, with special attention focused on the image collections. The PI met dozens of K-12 schoolteachers and academic faculty and told them about the Web site and its usefulness for instruction and teaching. One outcome of this participation was the development of suggested classroom applications for using Historic Pittsburgh by teachers.

The Heinz History Center recently hosted several events that provided significant opportunities to promote the project and encourage use of the Web site, including the Association for the Study of African American Life and the Pennsylvania Council for Social Studies. In the coming years, the History Center will promote the Web site during meetings it will host on behalf of the American Association for State and Local History, the National Trust for Historic Preservation, and the National Council on Public History.

Community Outreach

The Carnegie Museum of Art mounted an exhibit of Teenie Harris prints and invited members within the local African-American communities to help identify people and locations in the photographs. One member of the museum staff invited community members into his home to examine copies of the photographs in the hopes of making further identification.



The PI has made preliminary contact with the Pittsburgh Public School system to determine strategies for communicating with teachers about the Historic Pittsburgh Image Collections Web site. Since public schools are expected to meet state history requirements, it may be possible to encourage use of the Web site in the K-12 environment. Through another project, members of the project team have made contacts with implementers of the explorepahistory.com Web site and hope to incorporate our work in that online resource geared towards educators.

Several of the image collections featured on Historic Pittsburgh represent the activities of local organizations and companies that remain in existence, such as the Kingsley Association, Urban League of Pittsburgh, H.J. Heinz Company, Allegheny Observatory, Pittsburgh City Photographer department, Pittsburgh Public Schools, and the Allegheny Conference on Community Development. Years ago, these entities donated their archival collections to the Archives Service Center and the Historical Society. The PI contacted these entities to inform them of their “digital” presence on the Web.

Lessons Learned

Although a concerted effort was made by the project team to publicize the Web site, frankly the *Post-Gazette* article made the biggest impact and reached the broadest audience. This underscores the importance of working with local and national media to get your message out. Moreover, media often are looking for a particular angle to publicize or call attention to, rather than repeating the facts covered in a press release. It is important for the PI (or other designated communications personnel) to personally contact potential authors and tell them why it is important for their readers to know about such a project.

I enjoy this site so much. I found out about it in the Sunday paper about a month ago, and have been having so much enjoyment looking at the pictures of our hometown. – Mary Engel

*An excellent collection of photographs, and relatively well indexed and easy to search.
– Anonymous Survey Respondent*

Evaluation of Web Site Usage

Is the Web site being visited on a regular basis? Are the images helpful to those who visit? Are the images being viewed by a wide audience? What difference has it made to users of the Web site now that they have easy access to thousands of images?

To try to answer these types of questions, a variety of data have been collected to document usage, including two surveys, Web site server reports, analysis of email questions, and reproduction requests. Used together, these results can depict a fairly accurate picture of usage of this site. We hope that what follows illustrates that users of the Web gateway have further advanced their knowledge of the visual history of Pittsburgh and the surrounding region and have benefited from the aggregated gateway.

Web Site Usage Statistics

One way to quantify usage of the Web site is by gathering and analyzing Web server data. The Digital Research Library has captured monthly usage data since the Web site's release in September 2004 and has implemented a software program to aid in its analysis. The PI routinely extracts portions of the data for monthly comparison and shares it with project team members.¹³

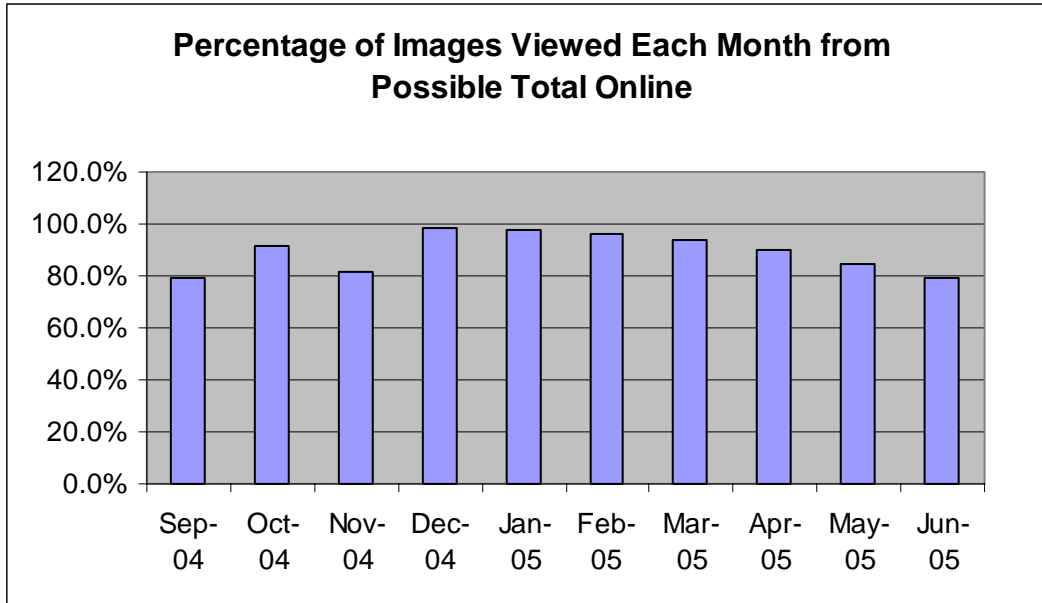
While the Web logs document all kinds of activity on a site, the PI was most interested in extracting information about full image views since this comes the closest to representing "use" of the images. Therefore, a full image view serves as the criteria for what is considered a "visit" by a "visitor."

In summary, visitors to the Web site have viewed approximately **89%** of the total number of images available for viewing on an average monthly basis. This is an astounding statistic that demonstrates that an extraordinarily high percentage of images are viewed every month by visitors to the site. This statistic attests to the success of the project and its goal of making thousands of images available to users.

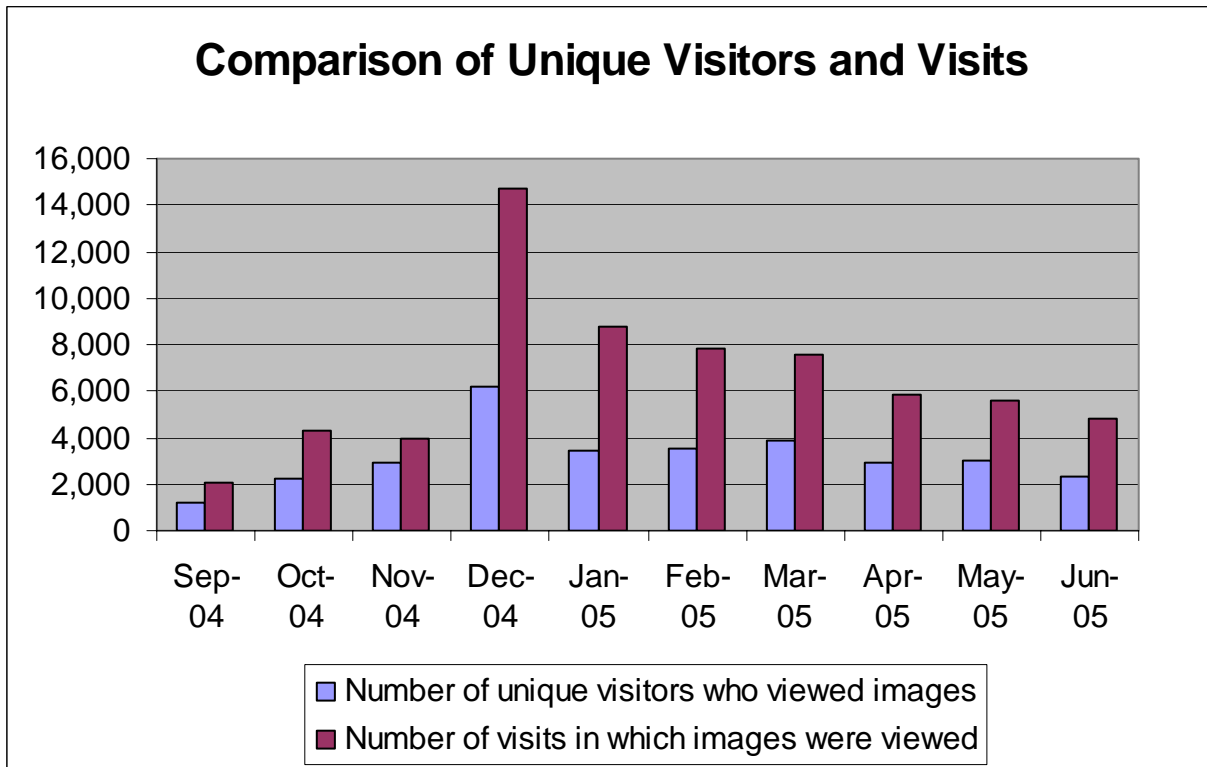
The following chart further illustrates this usage statistic. For example, when the Web site was released in September 2004, it comprised 5,800 images for viewing. During that month, 4,600 (or 80%) of the

¹³ See Appendix C for Web usage statistics.

images were viewed according to the Web server logs. By December, the site contained 6,300 images, 6,200 of them (98%) viewed by visitors.



Since its release, the Web site has been visited (on average) by 3,168 unique visitors per month who view images. On average, these visitors have viewed images 6,545 times every month. The following chart shows a comparison of unique visitors and visits.



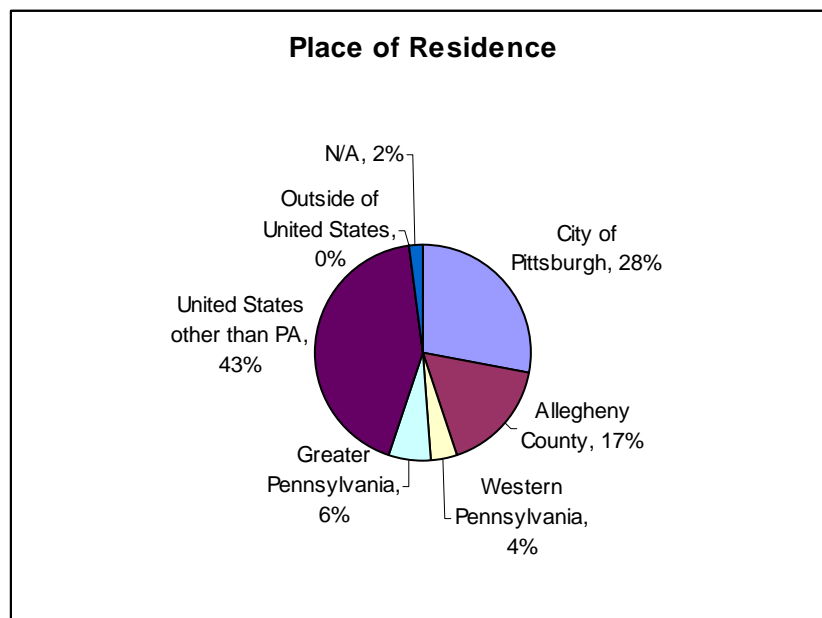
Surveys

Although the server logs demonstrate usage of the collections, they fail to uncover the reasons why the images are being used, by whom, and for what purpose. As an attempt to answer these types of questions, the PI worked with the ULS Special Project Librarian to develop and mount an optional sixteen question survey on the Web site.

The purpose of the survey was to demonstrate that the Image Collections Web site had made a noticeable difference for those who have used it. In general, survey respondents indicated that viewing the Web site made a difference to them and that the images met their research needs. A brief announcement and link to the survey was placed on the Historic Pittsburgh Image Collections homepage in the hope that visitors interested in completing the survey would do so. The responses, therefore, only reflect a small percentage of visitors who decided to complete the survey. Fifty people provided responses the first time the survey was administered and forty-seven the second time.¹⁴

This report, however, will only describe the outcome of the second survey. Since the first survey was administered almost immediately after the release of the Web site (20 September – 15 November 2004), the responses may not reflect the typical user of the site. In fact, an overwhelming majority of respondents of the first survey identified themselves as librarians. This is most certainly due to the fact that librarians saw the Web site announcement in library-related listservs and online publications. While we appreciate our colleagues taking part in the survey, nevertheless, the results were skewed since they do not reflect responses from our target audience. Since we preferred to obtain responses that were not tied to publicity campaigns, we readministered the survey a second time from 1 March – 30 April 2005.

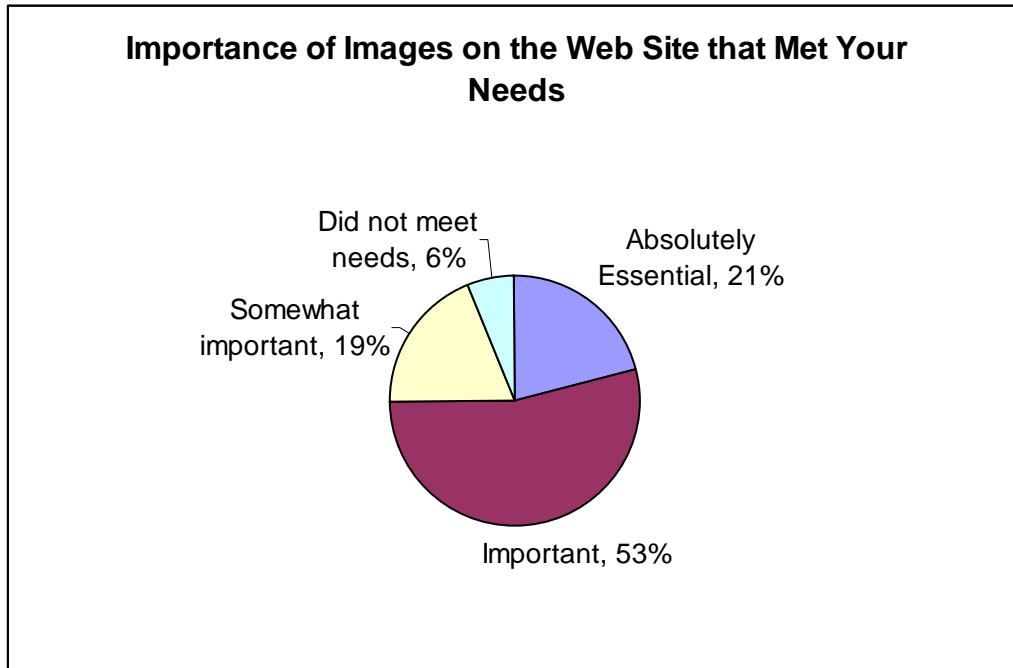
The majority of survey respondents identified themselves as genealogists, teachers, students, information technologists, and health care workers. Respondents viewed the images from their homes, offices and schools, and more males than females answered the survey. Forty-three percent of respondents were between the ages of 45-54. The majority of respondents lived somewhere in the state of Pennsylvania (55%), but users from other parts of the U.S. were also represented (43%).



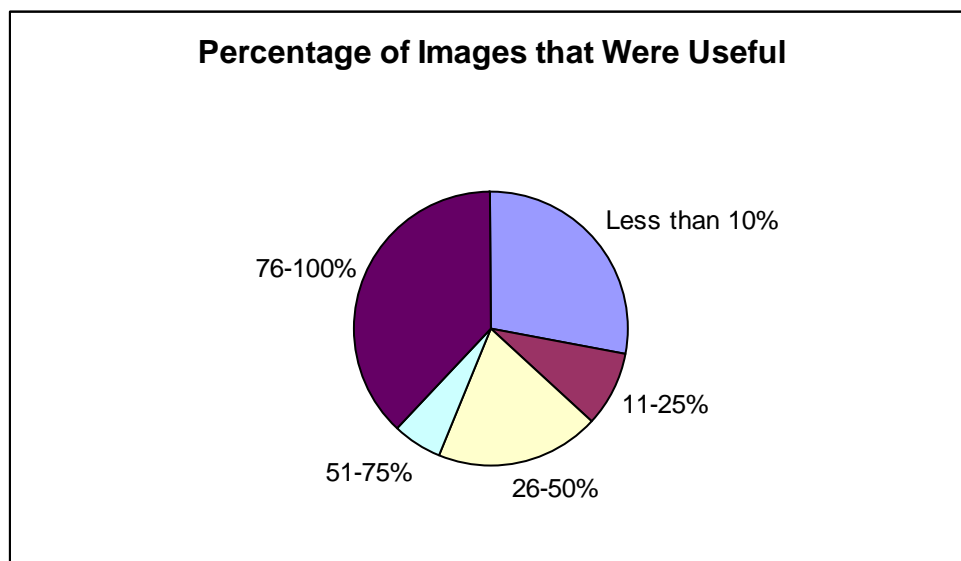
¹⁴ See Appendix D for the survey analysis from 2005.

Respondents listed browsing/entertainment (38%), genealogy research (23%), and local history research (22%) as the three main reasons why they visited the Web site. They expressed high levels of satisfaction when using it; in fact, 66% of the respondents said that they were very satisfied.

Respondents indicated that the images on the site were an important source of information for meeting their needs. About 74% of the respondents indicated that the information provided by the Web site was important or absolutely essential to their needs on that day as the following chart illustrates.



In addition, the majority of respondents (38%) reported that between 76-100% of the images they viewed that day were useful to them as the following chart depicts.



According to the survey, 26% of survey respondents said that viewing images in the collections helped them to think differently about Pittsburgh's past. Others (22%) said that the site helped them locate various types of family heritage information. Eleven percent of survey respondents said that the site improved their research or schoolwork.

In terms of furthering the goals of the institutions that provided the images, it seems like the Web site is helping to expand use and understanding of the collections. Twenty-seven percent of respondents said that they learned more about the collections maintained by the three sponsoring institutions. About two-thirds of respondents agreed that they would likely pay a visit to one of the institutions that contributed images to the project.

Seventy-two percent of the people who responded to this survey said that they will definitely return to the Image Collections Web site. Respondents also suggested that they had found images and information that will be used in upcoming publications.

Respondents were encouraged to supply comments describing the impact of the site to them. A few are listed below:

- “This is a valuable resource for genealogy research.”
- “It is quite interesting to see what Pittsburgh was once like and how it has evolved over the past century or more.”
- “I will let others know that it exists.”
- [It is a] “good source for historical images of labor as well as the Rust Belt.”
- [The site contains] “many great images, [is] well documented,[and is] easy to navigate.”
- “Incredible collection of images. A must-see for anyone interested in Pittsburgh's past.”
- “It's a great resource for both personal and educational purposes.”
- “Fantastic experience! Please expand!”



The survey responses provided a sense of how people learned about the image collections. Many mentioned seeing reference to the site in a newspaper article while others were referred to the site from other Web sites, including genealogy sites, those of the partner institutions, and other Historic Pittsburgh Web pages. Finally, promotion of the site to knowledge workers, such as historians and librarians, is an important way to continue high levels of Internet traffic.

Image Reproduction Requests

Each content partner was hoping that participation in this project would result in an increase in reproduction requests for their respective images. To determine this, each partner asked patrons who requested image reproductions how they learned about the existence of the particular image(s) before and after the official release of the Web site. Overall, each content partner witnessed an increase in fulfilling image reproduction requests as a result of making their images accessible online.

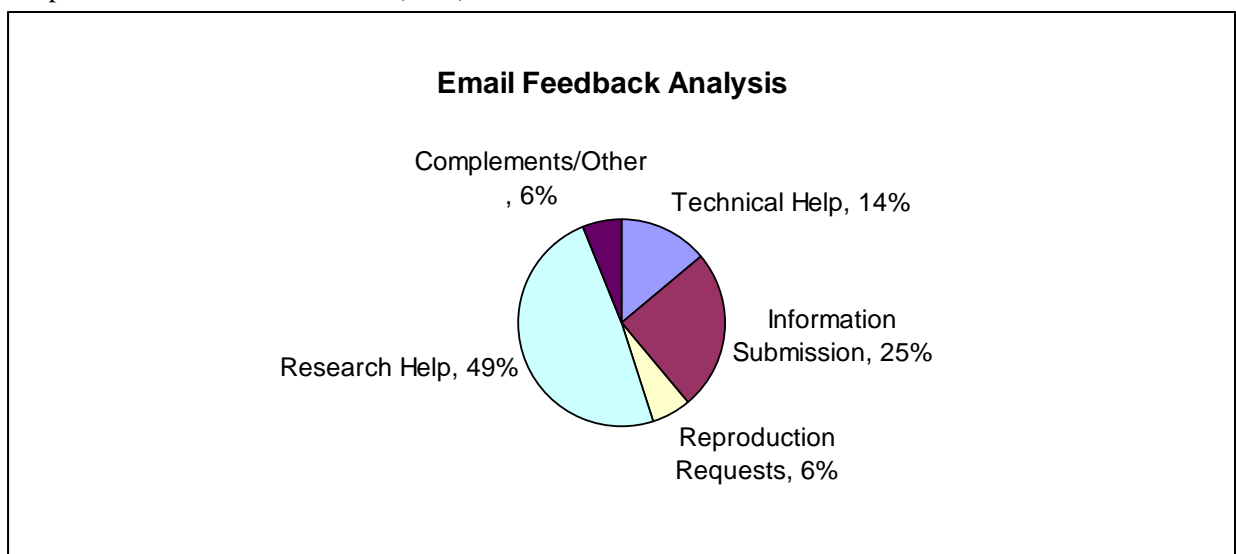
The Archives Service Center reported an increase of 18% in fulfilling image reproduction requests by researchers since the site was released. A forthcoming book on the history of the Oakland neighborhood of Pittsburgh will include thirty-six images from collections held by the Archives that are available online. Moreover, based on recent inquiries from patrons, the Archives believe that research and publication of their images will continue to grow. The Carnegie Museum of Art reported a 25% increase in image reproduction requests, most notably from the Teenie Harris Collection. Historical Society data suggests that exposing their photographic collections via the Historic Pittsburgh Image Collections site has been the single most important factor for increasing their image reproduction sales.

Email Feedback

Visitors to the Historic Pittsburgh Image Collections Web site between September 2004 and May 2005 sent in eighty emails received by designated content partners via a distribution list.¹⁵ The ULS Special Project Librarian examined each email and categorized it into one of the five following areas:

- Technical help
- Reproduction request
- Research help (e.g., finding images on a particular topic)
- Information submission (e.g., noting corrections to the descriptive information for an image)
- Other (e.g., complements)

As the following chart illustrates, the majority of email to the site came from users seeking help in locating relevant images (49%) and those who pointed out possible inaccuracies of the image descriptions and provided correct information (25%).



¹⁵ See Appendix E for the email feedback analysis.

As these statistics demonstrate, visitors are not reluctant to state their information need and assume that the Historic Pittsburgh Image Collections Web site can help answer their research needs. Further, the data suggests that the general public is playing an important role helping to identify (or correct) people, places and subjects in the image collections. Content partners who answer email provide a vital link between the site and their physical collections.

*I like the old sports and personality photos especially.
– Randy Wilson*

Great resource for those looking into many aspects of Pittsburgh's past. It can be a link back to those who grew up there or a means for new arrivals to learn what made Pittsburgh. – Suzanne Cross

Project Highlights

Collaborative Image Selection

Early in the project, the team developed and documented its selection criteria, but in practice each institution largely selected images of its own choosing from collections it wanted to highlight to the public. Certainly they cannot be at fault for adopting this method despite the selection criteria in place. However, while it was no surprise that the Archives Service Center and Historical Society closely overlap in their collection development activities, they discovered they both wanted to include images from



several closely related collections housed at the two institutions. This potential selection problem actually encouraged a new type of selection practice we had not anticipated, namely, a collaborative selection endeavor where possible.

Collaborative selection played out in the case of the Irene Kauffmann collections housed at both institutions and the Pittsburgh City Photographer and Allegheny Conference on Community Development collections. Team members from the Archives and the Historical Society met informally to exchange photocopies of potential images they had in mind to select from their respective collections. A genuine attempt was made on

their part to learn more about each institution's collections and how together they could best represent the images from those collections. This in turn has enabled the project team to better serve their primary audience by having a broader and greater appreciation for the scope of images at each institution.

Usage of Subject Headings to Aid Selection

We could not have anticipated at the beginning of the project (or even during its original planning) how we would benefit from the use of the subject headings in two important ways beyond the typical resource discovery function. The subject headings played a critical role in the ongoing selection of images during the grant period. As more and more images became indexed and available online, the Digital Research Library created a script that retrieved all subject headings from the metadata from each collection,

alphabetized them, noted the number of times each subject heading was used, and listed the collections the subject headings described. This list became an invaluable tool for subject heading analysis.

This list clearly (and often glaringly) reflected subjects related to Pittsburgh history that we were beginning to over document, such as pollution, steel making, and the coal and coke industries. We gained an enormous understanding of what each institution was selecting, but perhaps more importantly, what each institution was *not* selecting. This critical list was regularly updated and shared with the content partners to better inform selection decisions along the way. As a result, our selection (hopefully) ensured coverage of less well known topics, such as cultural activities, parks and recreation, and domestic life, to name a few.

Explore the Collections

The second important role the subject headings played was building the Explore the Collection component of the Web site. The original grant proposal assumed users of the image collections would be able to search and browse the images on their own without curated guidance. Simple search and retrieval methods would suit this purpose (or so we thought).

However, the project consultant challenged us to do better by creating innovative ways to “explore” the collections for two reasons. First, visitors to the Web site may not have the basic knowledge of Pittsburgh history or of the individual collections necessary to formulate searches relevant to their research needs or interest. Second, with search features as the only paths into the collections, there would be no opportunity for a visitor to have a general overview or sampling of the constituent images. To remedy this, the project consultant suggested mining the rich subject headings the project team was already diligently creating to identify a series of “stories” that could be developed. Thus, the Explore the Collections feature provided the team with a creative and historically illustrative venue to showcase the rich subject metadata that was cataloged by each partner institution.



The team members chose six broad categories to represent:

- Pittsburgh at Work
- Pittsburgh at Play
- Pittsburgh at Home
- Personalities in Pittsburgh
- Pittsburgh through Time
- Pittsburgh by Location

A Web page was constructed for each of the six categories that would allow users to retrieve representative images through “canned” Boolean queries of the subject headings.¹⁶ These queries are presented to the user as linked keywords in brief narratives for each category, or as terms ordered in a drop down menu box. In addition to a narrative and menu, the explore pages are illustrated with images

¹⁶ These canned searches are not exact searches. For instance, “planetarium” will retrieve “Buhl Planetarium and Institute of Popular Science (Pittsburgh, Pa.)”; and “parties” will retrieve “Birthday parties—Pennsylvania”, “Dinner parties--Pennsylvania—Pittsburgh”, and “Children's parties--Pennsylvania—Pittsburgh”. Wildcard characters were used to account for different conventions in subject analysis among the institutions. For instance, stadium* will incorporate use of broad subject heading “Stadiums” and narrow headings such as “Three Rivers Stadium.” Canned searches were based solely upon subject headings submitted to the Digital Research Library.

that also act as links into the collections. Canned queries and narratives for the explore pages were constructed only after the project was half way to completion. At that point, over 3,500 subject headings were cataloged by the partners and provided a solid representation of image description for the remainder of the project.

Anna Mihalega, Digital Production Librarian, used the list of subject terms to construct the queries that would become links in the explore page narratives and menu boxes. She weeded the subject headings into the major explore categories of Work, Play, Home, and Personalities. From the categories, she constructed Boolean queries that would generate at least ten resulting images from multiple collections. For example, queries for the Pittsburgh at Work page, returned images representing Pittsburghers at work in the arts, government, steel industry, education, medical professions, etc.

Only after queries were constructed did she write the narrative to reflect the subject headings, with the goal of showcasing the largest and most diverse number of linked queries as possible. Relevancy of the retrieved images from canned queries or the selected illustrative images was not intended to be always direct. For instance, a link for the phrase “Hell with the lid taken off” returned images with subject headings of smog and smoke prevention. This (hopefully) will encourage the user to read the metadata descriptions and subject headings in order to execute additional searches on other subject headings and keywords found in the metadata on their own, and to further explore a single collection after seeing a sample of its images.

The Digital Production Librarian was an ideal team member to construct the queries and narratives. One of her duties for the project was to process all metadata and images through the DLXS middleware. She was, therefore, familiar with content of all constituent collections. She had also assisted early on in drafting the selection criteria for the project, and she offered an outsider’s perspective not clouded by unique missions of the individual partner institutions. Nevertheless, input was still provided by all team members who could quickly determine if appropriate subject headings that they recorded were overlooked for any of the explore categories.

At the end of the project, the team concurred that developing this component to the site was an extremely important result of the collaborative grant. It showcases how this project broke down barriers to each institution’s collections, and instead brokers democratic access to the collection of images.¹⁷

*Thanks for putting this collection together.
I find it helpful as do many other people to whom I have referred this site.
– Robert Munhall*

*I am a native of Pittsburgh. I just love reviewing the old photos and imagining what things looked like.
Thank you. – Claire Munshaw*

*Thanks so much. The website is great and my research would be impossible without it.
Keep up the great work and please add more pictures of the McKeesport area.
– William Stine*

¹⁷ See forthcoming article in *OCLC Systems and Services* titled, “Storytelling in an Automated Environment: Using Metadata Analysis to Develop Curated Guides to a Digital Image Collection,” by Aaron Brenner and Anna Maria Mihalega for a more detailed description of this effort.

Project Sustainability

Now that the grant is over, the Digital Research Library believes the project has created a sustainable resource that can support future additions as well as draw new local or regional participants. The three content partners own the necessary equipment, have developed idiosyncratic workflows, and have cause to maintain and expand their data management system. If appropriate staffing can be secured at each institution, or portions of the workflow assigned to existing staff, the Digital Research Library is hopeful that each content partner can continue expanding digital access to the photographic collections via the Historic Pittsburgh Image Collections Web site. The Digital Research Library stands ready to host image collections on their behalf.



The Digital Research Library is pleased to report that it has established a method to continue adding images to the Web site from the Archives Service Center. The Digital Research Library is committed to scanning photographs selected and described appropriately by the curator of the photograph collections. In fact, the two departments worked collaboratively during the spring 2005 semester with undergraduate interns from the History department at the University of Pittsburgh. Five students received hands-on experience selecting and describing images from archival collections. This internship experience resulted in the addition of 500 images to the Web site throughout the semester. Moreover, the coordinator of the interns has asked that a similar internship be established in the fall 2005 term.

Similarly, the Digital Research Library hosted an internship during the spring 2005 semester. This graduate student in the University of Pittsburgh's School of Information Science was responsible for digitizing images selected by one of the history undergraduate students mentioned above, completing selected metadata fields, and creating the image collection homepage. As a result, the Pittsburgh Railways Company, containing 111 images, was added to the Web site in May 2005.

The Digital Research Library is currently working with librarians at Chatham College in Pittsburgh to help them mount images related to the history of their institution. This collection will eventually be incorporated into the wider Historic Pittsburgh Image Collections Web site. One of the reasons this new collaboration has been relatively straightforward is the wealth of experience and documentation we can share with new partners as produced by this grant project.

One of the challenges that will be continually faced by the Digital Research Library in particular is sustaining the Explore the Collections component of the Web site and incorporating new themes or subject headings from new or updated collections. The Digital Research Library recognizes that while this feature of the Web site offers creative paths through the thousands of images and relates them to multiple collections, it must sustain the hand-built queries. The queries may or may not "break" when the department migrates to future versions of the middleware. As new collections are added to the Web site, the Digital Research Library must be cognizant to incorporate the "stories" these new images may tell or supplement existing ones.

Project Consultant

This final report would be remiss if it did not mention the invaluable services rendered by the project consultant, Dr. Paul Conway.¹⁸ During the course of the grant, he paid three visits to Pittsburgh to meet with the project team. During his first visit, he challenged the team to embrace the collaborative nature of the grant and try new methods of working together. One result of this was the collaborative image selection achieved by the Archives Service Center and Historical Society. Further, the consultant positively impacted the workflow scenarios implemented at each institution when he visited each content partner's "shop." His critical eye and advice resulted in modifying the workflow at each institution based on his professional experience and ability to intervene with an expert voice. And frankly, Conway brought with him an infectious desire to spur creativity and collaboration on our part. His visits and frequent communications with the PI provided a neutral voice of encouragement that elicited productive working relationships among the team. He helped keep momentum and excitement going on the project and reminded us time and again about the value of the product we were creating.

Perhaps the most significant impact the consultant made on the project team and end result was the development and implementation of the Explore the Collections component of the Web site. This innovative and fun way of browsing the images would never have occurred to the project team if not for Conway. He suggested mining the rich controlled vocabulary terms the content partners were so painstakingly creating to tell "stories" about Pittsburgh. Rather than create a "digital attic," that is another online collection of rather static historic images, why not push the envelope and provide greater access to the images in a collaborative framework that cuts across institutional collections? The project team deserves credit for embracing this idea and its willingness to make changes to its workflow to support the Explore feature. As a result, the Explore the Collections component reflects the collaborative nature of the grant and demonstrates the value of "gateway" access to multiple collections.

Budget Summary

IMLS contributed **\$242,157** towards the cost of supporting the grant. The following chart summarizes how the IMLS grant funds were spent:

Category	Funds Originally Allocated	Funds Actually Spent	Percentage
Personnel	\$158,319.00	\$161,618.01	67%
Consultant	\$8,250.00	\$6,750.00	3%
Travel	\$14,250.00	\$7,559.62	3%
Equipment & Supplies	\$42,150.00	\$40,762.90	17%
Services	\$1,250.00	\$7,528.47	3%
Indirect Costs	\$17,938.00	\$17,938.00	7%
TOTAL	\$242,157.00	\$242,157.00	100%

As budgeted, the personnel hired to perform the majority of tasks associated with grant activities consumed the largest portion of the budget (67%). In fact, the project required more funds for this category than originally budgeted. Fortunately, the PI was able to move funds from a few of the underspent categories, such as Travel, to compensate for the Personnel shortfall. The Services category reflects the greatest difference in projected versus actual budget funds. While the PI underestimated the

¹⁸ See Appendix F for final report from the project consultant.

costs of creating promotional items, such as bookmarks and brochures, and needed additional funds to support these necessary costs, he overestimated the costs needed to provide sufficient consulting services.

Conclusion

The University of Pittsburgh, Carnegie Museum of Art, and the Library & Archives at the Heinz History Center are grateful to the Institute of Museum & Library Services for supporting this project. Together, we have provided access to thousands of images from our collections and created a mechanism for continuing to add image content to the Web site. We have learned more about each other's institutions and how to better serve our patrons. We hope to further this collaboration into the future.

The Image Collections site is easy to navigate and gives access to an incredible amount of photographs of Pittsburgh's history. It is a great tool and a big time saver for research!
– Lillian Johnston

*Keep up the great work, and thank you so much. There are so many of us that left unwillingly for work in the late 60s & early 70s that I'm sure would greatly appreciate these collections.
You can leave Pittsburgh, but Pittsburgh never leaves you.
Thanks Again – Anonymous Survey Respondent*

*Please keep expanding this site! This is one of the best resources I have come across for those who can not literally travel to Pittsburgh due to cost and distance; yet, you provide actual images of documents and photographs that I can use in my research! If only there were resources like this available in other cities, my research would be significantly more simple and I would get far more done. I also think this site is an excellent service to the community – most other sites that are similar require you to pay for access to what they have, defeating the purpose of promoting the great history of their cities and their people.
Thanks Again!! – Anonymous Survey Respondent*

Appendices

Appendix A. Project Team Members

Appendix B. Collections Represented by Each Institution

Appendix C. Web Usage Statistics

Appendix D. Analysis of Users and Usage of the Historic Pittsburgh Image Collections Web Site

Appendix E. Email Feedback Analysis

Appendix F. Consultant Report

Appendix A – Project Team Members

Digital Research Library, University of Pittsburgh

- Edward Galloway, Department Head and Principal Investigator
- Aaron Brenner, Digital Projects Librarian
- Anna Mihalega, Digital Production Librarian
- Jennifer Mercerillo, Student Assistant

Archives Service Center, University of Pittsburgh

- Michael Dabrishus, Department Head
- Miriam Meislik, Archivist and Photograph Curator
- Melissa Puryear, Scanning Technician
- Deirdre Scaggs, Photographic Collections Assistant

Carnegie Museum of Art

- Louise Lippincott, Curator of Fine Arts
- William Real, Director of Technology Initiatives
- Caitlain Ramsey, Scanning Technician

Library & Archives, Historical Society of Western Pennsylvania, Heinz History Center

- Stephen Doell, Director of Archives
- Sharon Watson-Mauro, Director of Library Services
- Art Louderback, Cataloger
- John Komminos, Scanning Technician
- Precious Langhorn-Cox, Staff Assistant

Appendix B – Collections Represented by Each Institution

Archives Service Center, University of Pittsburgh			
Name of Collection	Images Online	Date Range	Brief Description of Contents
Aerial Photographs of Pittsburgh	21	1923-1932	Views of the city of Pittsburgh, including Downtown, Mount Washington, North Side, Point State Park, Oakland, and Homestead.
Allegheny Observatory	64	1895-1935	Observatory instruments, exterior and interior views of the original and second Allegheny Observatory, former directors, and prominent visitors.
Irene Kaufmann Settlement	144	1912-1941	Programs and activities of the Irene Kaufmann Settlement in the Hill District and the Emma Farm Camp.
James R. Cox Collection	20	1930	Images of Father Cox, the Great Depression, and Jobless party activities.
John Gates Collection	58	1900-1914	Downtown and Highland Park, including landscape, industrial, and family scenes.
Kingsley Association	72	1900-1955	Programs and activities of the association, including views of the Hill District, East Liberty, Lillian Home, and Kingsley House.
Pittsburgh and Lake Erie Railroad	324	1886-1971	Travels of the railroad through Western Pennsylvania, West Virginia, and Ohio as seen from branch lines, railroad cars, stations, and urban and rural areas through which it passed.
Pittsburgh City Photographer	1,437	1901-1969	City infrastructure and construction, as well as athletic and mayoral events, hospitals, street scenes, and daily life.
Pittsburgh Railways Company	111	1872-1970	Development and operation of railway cars, stations, and inclines owned by the Pittsburgh Railways Company.
Spencer Family Collection	51	1897-1911	Prominent middle-class family's daily life and activities in Shadyside.
<i>UE News</i>	93	1940-1959	Activities, officers, and members of the United Electrical, Radio and Machine Workers of America (UE).
University of Pittsburgh Archives	182	1884-1999	History of the University of Pittsburgh, its buildings, student life, activities, and educators.
Urban League of Pittsburgh	63	1923-1958	Programs and activities, including conventions and youth conferences, housing and work conditions of African Americans, and Camp Weldon Johnson.
William J. Gaughan Collection	487	1886-1970	Industrial images of Homestead Steel Mill, including equipment, workers, strikes, safety and accident concerns, social activities, World War II production, and women in the workforce.

Carnegie Museum of Art			
Name of Collection	Images Online	Date Range	Brief Description of Contents
Carnegie Museum of Art Collection of Photographs	752	1874-1958	Artistic images of mills, factories, street scenes, and portraits, as well as aerial shots of Downtown.
Teenie Harris Collection	542	1920-1970	Daily life of black communities, including weddings, funerals, family portraits, church events, street scenes, businessmen, and mill workers.

Historical Society of Western Pennsylvania, Heinz History Center			
Name of Collection	Images Online	Date Range	Brief Description of Contents
Allegheny Conference on Community Development	1,123	1875-1981	Demolition and construction of buildings and infrastructure in the Pittsburgh metropolitan area.
F. Theodore Wagner Collection	128	1903-1931	Family, friends, neighbors, and everyday life in several Pittsburgh neighborhoods.
Frederick T. Gretton Collection	35	1881-1908	Scenes of metropolitan Pittsburgh communities and steel mill facilities.
H. J. Heinz Company	236	1870-1972	Product images, factory floor views, plant interiors, and female workers.
Irene Kaufmann Settlement Photograph Collection	38	1916-1944	Images illustrating the activities, programs, and physical environment of the settlement.
James Benney III Collection	59	1888-1889	Urban and residential street scenes such as homes, churches, and commercial buildings.
Jones & Laughlin Steel Corporation	362	1853-1954	Industrial facilities, products, transportation, mills, coal mines, and warehouses.
Lyon, Shorb & Company	72	1860-1867	Male iron workers in work and formal attire.
Mesta Machine Company	164	1906-1920	Manufacturing steel mill equipment and machinery, the construction of facilities.
Pittsburgh Public Schools	686	1911-1978	School buildings, events, students, teachers, parents, and board members.
Trimble Company	126	1924-1951	Building construction projects.

Appendix C – Web Usage Statistics

The following contains data collected by NetTracker, a software tool employed by the ULS Digital Research Library to analyze its server logs. There are two parts to this appendix. The first documents how each field is defined; the second consists of monthly statistics reported for the Historic Pittsburgh Image Collections (HPIC) as a whole, followed by monthly statistics for each individual image collection (27).

Definitions

For the purposes of collecting and analyzing the Web logs:

A “visit” is defined as a user (i.e., IP address) who enters the HPIC Web site *and* remains active on it for at least **30 minutes**. While visiting the site, if a user’s activity on the site lapses for over 30 minutes and then he/she continues again, a *second visit* is logged rather than continuing the first visit.

A “visitor” is defined as a user who actually viewed *full* images (i.e., not thumbnails). This means that additional “visitors” could have “visited” the site, but **never** actually viewed a full image; instead they may have only browsed the thumbnails or searched the descriptions or looked at a static Web page.

Therefore, a *full image view* serves as the criteria for what is considered a “visit” by a “visitor.” The statistics are generated and reported on a month-by-month basis. A month starts on the first day of the month at midnight and ends on the last day of the month one second before midnight.

For HPIC (overall) and individual image collections:

- **# of images online:** the number of images in the online collection available for viewing.
- **# of unique images viewed:** the number of *unique* images viewed. If an image was viewed by two different IP addresses (i.e., people) during that month, it would be counted as *one* unique image view.
- **% of unique images viewed:** the number of unique images viewed divided by the total number of images available online for possible viewing. As images are added to each collection, the total number of available images will increase accordingly.
- **# of unique visitors who actually viewed images:** the *number of unique “visitors”* (according to IP address) who clicked on a thumbnail to view the full image. An actual full images was viewed.
- **# of visits in which images were viewed:** the number of times a “visitor” *visited* the site **and** actually viewed at least one full image.
- **# of full image views performed:** the *number of times* the logs recorded visitors *asking to see* a full image view. This is **not** unique images viewed **nor** the number of unique visitors; rather it is every time a command was issued to view a full image (any or only part of that image). If a visitor views the full image, then zooms in on a portion of the image, the log counts that as *two* full image views performed.

Additional information was collected in the logs, such as most popular image viewed and number of times visited, but this information is not included in this report.

Historic Pittsburgh Image Collections (Overall)

<http://images.library.pitt.edu/pghphotos>

*metrics indicate full image views

Month	# of images online	# of unique images viewed	% of unique images viewed	# of unique visitors who actually viewed images	# of visits in which images were viewed	# of full image views performed
Sep-04	5,800	4,603	79%	1,209	2,076	18,268
Oct-04	5,800	5,309	92%	2,248	4,333	39,507
Nov-04	6,300	5,160	82%	2,929	3,964	32,858
Dec-04	6,300	6,208	99%	6,172	14,724	110,772
Jan-05	6,300	6,176	98%	3,478	8,813	79,249
Feb-05	6,860	6,597	96%	3,496	7,797	66,552
Mar-05	6,860	6,418	94%	3,835	7,543	58,867
Apr-05	7,100	6,397	90%	2,967	5,810	45,186
May-05	7,450	6,330	85%	3,031	5,579	46,503
Jun-05	7,450	5,961	80%	2,319	4,858	37,423
avg/mo		5,916	89%	3,168	6,550	53,518

Aerial Photographs of Pittsburgh (ASC)

<http://images.library.pitt.edu/a/aerial>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	21	21	100%	723	120
Oct-04	21	21	100%	1,522	217
Nov-04	21	21	100%	913	124
Dec-04	21	21	100%	3,286	580
Jan-05	21	21	100%	2,041	300
Feb-05	21	21	100%	1,655	262
Mar-05	21	21	100%	1,125	227
Apr-05	21	21	100%	915	186
May-05	21	21	100%	1,141	184
Jun-05	21	21	100%	846	152
avg/mo		21	100%	1,417	235

Allegheny Conference on Community Development (HWP)

<http://images.library.pitt.edu/a/accd>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	1,123	759	68%	2,855	294
Oct-04	1,123	784	70%	5,761	624
Nov-04	1,123	1,031	92%	7,441	709
Dec-04	1,123	1,123	100%	23,346	2,715
Jan-05	1,123	1,123	100%	15,907	1,641
Feb-05	1,123	1,070	95%	12,453	1,236
Mar-05	1,123	1,029	92%	9,399	1,210
Apr-05	1,123	1,078	96%	7,870	906
May-05	1,123	1,022	91%	8,007	863
Jun-05	1,123	1,044	93%	6,469	795
avg/mo		1,006	90%	9,951	1,099

Allegheny Observatory (ASC)

<http://images.library.pitt.edu/a/allegob>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	64	51	80%	723	120
Oct-04	64	33	52%	1,522	217
Nov-04	64	64	100%	913	124
Dec-04	64	55	86%	3,286	580
Jan-05	64	52	81%	286	79
Feb-05	64	64	100%	340	80
Mar-05	64	54	84%	285	69
Apr-05	64	41	64%	182	41
May-05	64	51	80%	210	61
Jun-05	64	39	61%	136	43
avg/mo		50	79%	788	141

Carnegie Museum of Art Collection of Photographs (CMA)

<http://images.library.pitt.edu/c/cma>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	201	153	76%	736	123
Oct-04	201	198	99%	1,833	247
Nov-04	201	201	100%	1,172	207
Dec-04	201	201	100%	3,808	767
Jan-05	201	201	100%	3,014	482
Feb-05	451	415	92%	3,405	478
Mar-05	451	436	97%	6,195	665
Apr-05	628	587	93%	5,774	722
May-05	752	632	84%	5,075	627
Jun-05	752	557	74%	3,506	600
avg/mo		358	91%	3,452	492

F. Theodore Wagner Collection (HSWP)

<http://images.library.pitt.edu/f/fwag>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	128	55	43%	177	54
Oct-04	128	122	95%	901	116
Nov-04	128	96	75%	285	81
Dec-04	128	128	100%	2,524	425
Jan-05	128	128	100%	1,447	206
Feb-05	128	123	96%	945	178
Mar-05	128	128	100%	832	144
Apr-05	128	86	67%	374	128
May-05	128	98	77%	498	108
Jun-05	128	96	75%	462	90
avg/mo		106	83%	845	153

Father Cox Collection (ASC)

<http://images.library.pitt.edu/f/cox>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	20	16	80%	40	14
Oct-04	20	20	100%	149	35
Nov-04	20	20	100%	154	33
Dec-04	20	20	100%	456	115
Jan-05	20	20	100%	255	60
Feb-05	20	20	100%	253	52
Mar-05	20	20	100%	164	45
Apr-05	20	20	100%	194	44
May-05	20	20	100%	194	46
Jun-05	20	20	100%	218	42
avg/mo		20	98%	208	49

Frederick T. Gretton Collection (HSWP)

<http://images.library.pitt.edu/g/gret>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	35	35	100%	225	32
Oct-04	35	35	100%	480	87
Nov-04	35	31	89%	295	72
Dec-04	35	35	100%	906	278
Jan-05	35	35	100%	791	146
Feb-05	35	35	100%	546	132
Mar-05	35	35	100%	534	126
Apr-05	35	32	91%	255	83
May-05	35	33	94%	312	91
Jun-05	35	35	100%	264	68
avg/mo		34	97%	461	112

H. J. Heinz Company Collection (HSWP)

<http://images.library.pitt.edu/h/hjhz>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	236	149	63%	362	71
Oct-04	236	186	79%	841	159
Nov-04	236	178	75%	725	147
Dec-04	236	221	94%	2,219	470
Jan-05	236	236	100%	2,462	291
Feb-05	236	236	100%	2,317	280
Mar-05	236	215	91%	1,069	179
Apr-05	236	212	90%	1,077	179
May-05	236	182	77%	775	156
Jun-05	236	149	63%	694	135
avg/mo		196	83%	1,254	207

Irene Kaufmann Settlement (ASC)

<http://images.library.pitt.edu/i/iks>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	118	98	83.1%	272	29
Oct-04	118	85	72.0%	410	77
Nov-04	118	83	70.3%	365	66
Dec-04	118	118	100.0%	1,672	233
Jan-05	118	118	100.0%	852	112
Feb-05	118	99	83.9%	577	99
Mar-05	118	104	88.1%	664	210
Apr-05	144	136	94.4%	701	213
May-05	144	98	68.1%	526	176
Jun-05	144	123	85.4%	408	109
avg/mo		106	85%	645	132

Irene Kaufmann Settlement Photograph Collection (HSWP)

<http://images.library.pitt.edu/k/kauf>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Oct-04	38	38	100%	139	8
Nov-04	38	38	100%	176	26
Dec-04	38	38	100%	361	82
Jan-05	38	38	100%	223	42
Feb-05	38	35	92%	327	126
Mar-05	38	38	100%	213	49
Apr-05	38	26	68%	98	31
May-05	38	25	66%	50	23
Jun-05	38	38	100%	131	28
avg/mo		35	92%	191	46

James Benney III Collection (HSWP)

<http://images.library.pitt.edu/j/jben>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	59	38	64%	106	35
Oct-04	59	56	95%	464	99
Nov-04	59	57	97%	324	78
Dec-04	59	59	100%	1,405	245
Jan-05	59	59	100%	779	141
Feb-05	59	58	98%	460	111
Mar-05	59	59	100%	564	100
Apr-05	59	55	93%	208	72
May-05	59	58	98%	338	81
Jun-05	59	56	95%	264	61
avg/mo		56	94%	491	102

John Gates Collection (ASC)

<http://images.library.pitt.edu/g/gt>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	28	28	100%	228	36
Oct-04	28	28	100%	314	81
Nov-04	28	28	100%	199	60
Dec-04	28	28	100%	1,091	223
Jan-05	28	28	100%	731	126
Feb-05	28	28	100%	372	105
Mar-05	28	28	100%	439	79
Apr-05	58	58	100%	593	148
May-05	58	58	100%	426	83
Jun-05	58	39	67%	159	58
avg/mo		35	97%	455	100

Jones & Laughlin Steel Collection (HSWP)

<http://images.library.pitt.edu/j/jal>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	362	286	79%	786	89
Oct-04	362	239	66%	1,271	188
Nov-04	362	226	62%	1,264	209
Dec-04	362	327	90%	3,300	659
Jan-05	362	321	89%	2,527	405
Feb-05	362	351	97%	2,106	321
Mar-05	362	340	94%	1,934	323
Apr-05	362	254	70%	1,071	235
May-05	362	310	86%	1,374	223
Jun-05	362	225	62%	834	167
avg/mo		288	80%	1,647	282

Kingsley Association (ASC)

<http://images.library.pitt.edu/k/ka>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	72	33	46%	82	23
Oct-04	72	68	94%	423	79
Nov-04	72	46	64%	183	57
Dec-04	72	72	100%	1,247	217
Jan-05	72	72	100%	820	155
Feb-05	72	72	100%	400	102
Mar-05	72	72	100%	1,003	207
Apr-05	72	49	68%	422	147
May-05	72	72	100%	819	194
Jun-05	72	59	82%	485	115
avg/mo		62	85%	588	130

Pittsburgh Public Schools Collection (HSWP)

<http://images.library.pitt.edu/p/pps>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	686	368	54%	986	181
Oct-04	686	681	99%	2,937	337
Nov-04	686	421	61%	1,882	291
Dec-04	686	627	91%	6,125	1,129
Jan-05	686	680	99%	5,064	752
Feb-05	686	668	97%	3,829	564
Mar-05	686	504	73%	2,447	458
Apr-05	686	652	95%	3,690	376
May-05	686	493	72%	2,412	421
Jun-05	686	447	65%	1,696	343
avg/mo		554	81%	3,107	485

Pittsburgh Railways Company (ASC)

<http://images.library.pitt.edu/p/pghrail>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
May-05	111	111	100%	5,227	444
Jun-05	111	111	100%	2,899	287
avg/mo		111	100%	4,063	366

Spencer Family Collection (ASC)

<http://images.library.pitt.edu/s/spencer>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	51	51	100%	228	32
Oct-04	51	51	100%	315	56
Nov-04	51	48	94%	206	42
Dec-04	51	51	100%	1,160	219
Jan-05	51	51	100%	971	116
Feb-05	51	51	100%	413	89
Mar-05	51	51	100%	449	75
Apr-05	51	51	100%	197	50
May-05	51	51	100%	402	69
Jun-05	51	50	98%	192	44
avg/mo		51	99%	453	79

Teenie Harris Collection (CMA)

<http://images.library.pitt.edu/c/cmaharris>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	440	440	100%	1,381	110
Oct-04	440	358	81%	1,606	228
Nov-04	440	257	58%	871	210
Dec-04	440	438	100%	4,058	785
Jan-05	440	401	91%	1,942	384
Feb-05	542	525	97%	2,430	356
Mar-05	542	542	100%	2,980	356
Apr-05	542	425	78%	1,936	316
May-05	542	541	100%	2,294	257
Jun-05	542	374	69%	1,208	229
avg/mo		430	87%	2,071	323

Trimble Company Collection (HSWP)

<http://images.library.pitt.edu/t/trim>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	126	65	52%	132	37
Oct-04	126	93	74%	361	89
Nov-04	126	126	100%	424	93
Dec-04	126	126	100%	1,481	304
Jan-05	126	123	98%	673	172
Feb-05	126	126	100%	818	163
Mar-05	126	115	91%	582	134
Apr-05	126	91	72%	305	88
May-05	126	82	65%	263	95
Jun-05	126	78	62%	276	95
avg/mo		103	81%	532	127

UE News Collection (ASC)

<http://images.library.pitt.edu/u/ue>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	93	41	44%	87	20
Oct-04	93	63	68%	201	38
Nov-04	93	53	57%	139	38
Dec-04	93	84	90%	845	149
Jan-05	93	93	100%	604	102
Feb-05	93	75	81%	295	72
Mar-05	93	93	100%	302	83
Apr-05	93	76	82%	255	50
May-05	93	76	82%	271	45
Jun-05	93	62	67%	129	30
avg/mo		72	77%	313	63

University of Pittsburgh Archives (ASC)

<http://images.library.pitt.edu/u/uapitt>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	172	136	79%	676	68
Oct-04	172	153	89%	915	123
Nov-04	172	166	97%	799	127
Dec-04	172	164	95%	1,884	305
Jan-05	172	172	100%	1,316	237
Feb-05	174	155	89%	1,008	210
Mar-05	174	174	100%	2,470	622
Apr-05	182	133	73%	745	149
May-05	182	182	100%	1,012	151
Jun-05	182	154	85%	865	104
avg/mo		159	91%	1,169	210

Urban League of Pittsburgh (ASC)

<http://images.library.pitt.edu/u/urban>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	63	29	46.0%	71	25
Oct-04	63	52	82.5%	204	51
Nov-04	63	52	82.5%	123	32
Dec-04	63	63	100.0%	492	126
Jan-05	63	63	100.0%	326	89
Feb-05	63	63	100.0%	318	65
Mar-05	63	54	85.7%	244	56
Apr-05	63	50	79.4%	195	58
May-05	63	36	57.1%	83	35
Jun-05	63	34	54.0%	93	38
avg/mo		50	79%	215	58

William J. Gaughan Collection (ASC)

<http://images.library.pitt.edu/g/gn>

Month	# of images online	# of unique images viewed	% of unique images viewed	# of full image views performed	# of visits in which images were viewed
Sep-04	419	214	51%	654	88
Oct-04	419	278	66%	1,290	146
Nov-04	419	334	80%	1,552	168
Dec-04	419	416	99%	5,381	685
Jan-05	419	410	98%	3,806	427
Feb-05	487	487	100%	3,140	397
Mar-05	487	474	97%	4,322	367
Apr-05	487	487	100%	2,932	289
May-05	487	381	78%	1,780	216
Jun-05	487	320	66%	1,122	155
avg/mo		380	84%	2,598	294

Appendix D – Analysis of Users and Usage of the Historic Pittsburgh Image Collections

By Sarah Aerni (ULS Special Projects Librarian) and Ed Galloway (Principal Investigator)
June 2005

Introduction

The University of Pittsburgh received a 2002 National Leadership Grant in the Museum & Library Collaboration category from the Institute of Museums and Library Service (IMLS) to build a Web gateway to access thousands of photographic images held by several cultural heritage organizations in Pittsburgh. The Historic Pittsburgh Image Collections Web site (<http://images.library.pitt.edu/pghphotos>) was officially released on 13 September 2004 with access to over 6,300 images from 27 collections. It has since grown to include more than 7,450 images.

Evaluating usage and outcomes of people using the Historic Pittsburgh Image Collections site is an important part of the process of creating and maintaining it. This report details various ways in which personnel at the University of Pittsburgh (and to a lesser extent at the partner institutions) have been able to determine how people use the Image Collections.

Methodology

For a period of two months (1 March – 30 April 2005), an optional survey accompanied the Web site to help the project team learn more about the users and their experience visiting the Historic Pittsburgh Image Collections site. The survey comprised 16 questions developed by the Principal Investigator of the project and the Special Projects Librarian within the University Library System with help from Dr. Don King. It was written under the assumption that the respondent had previously searched, explored or viewed images from the site on that particular day.

The goal of the survey was to demonstrate that the Image Collections Web site had made a noticeable difference for those who have used it. There is evidence of that in these results. People responded by telling us how viewing the images on the Web site influenced them and their actions afterward. We asked about the usefulness of the images and tried to gauge satisfaction levels. About 45% of all images viewed by participants were labeled “useful to the intended purpose of coming to this Web site.” Many respondents listed high levels of satisfaction with the site. Comments added to the questionnaire suggested that many of these users would recommend the site to others. Another important question was whether the respondents were likely to visit one of the cultural heritage organizations that contributed images to this project. Again, the results were very positive, as outlined below.

Responses

Forty-seven people responded to the survey during the two-month time period. It is unknown how many times the survey was viewed over this time period, so we are unable to provide an accurate response rate. The results of the survey are analyzed below in sequential fashion as they appeared on the survey. The actual question asked is written above the analysis.

Analysis

1. Why did you use the Image Collections site today?

This question attempted to establish the primary and secondary purposes for which people were using the Image Collections Web site. Local history research, browsing/entertainment and genealogy research were the top three choices of survey respondents. These three greatly outnumbered any other use of the Web site, with browsing/entertainment being the top choice. Other uses include publication/writing, a teaching resource, work or school research, and architectural research.

2. How many times have you visited this site in the past month?

Respondents said that they visited the site an average of 2.5 times in the past month.

3. Approximately how many images did you view today?

Approximately how many images did you view today?	Responses
Fewer than 10	19%
More than 10, but fewer than 50	28%
More than 50, but fewer than 100	13%
More than 100	40%

Based on the answers to Questions 2 and 3, we calculate a minimum for the number of images viewed in the past month of **7,290**. This includes only what people told us who filled out this survey. Over the course of a year, these data indicate that at least **87,480** images from the collections would be viewed.

Comparing this number taken from the survey to an amount obtained from the Web server software, we find that on average **5,906** unique images were viewed monthly by image collections users, or **70,872** per year. Thus, it appears that either people tend to overestimate their actual usage of the site or that the respondents to the survey use the site much more than the average visitor.

4. What percentage of the images that you viewed today were useful to your intended purpose (see Question 1) for visiting the Image Collections site?

What percentage of the images that you viewed today were useful to your intended purpose for visiting the Image Collections site?	Response
Less than 10%	28%
11-25%	9%
26-50%	19%
51-75%	6%
76-100%	38%

Combining the answers to Questions 2, 3 and 4, we calculate that **3,272** images that were viewed by users were deemed “useful” to their purpose for using the Image collections site. This is approximately 45% of all images that were viewed by these users.

If we extrapolate these numbers over the course of a year, approximately **39,269 useful images** will reach users. Again, this is a conservative estimate based only on the survey responses.

5. How important was the information provided by this site in meeting your needs?

Importance of Information on Site for meeting needs	Percent Response
Absolutely Essential	21%
Important	53%
Somewhat important	19%
Did not meet needs	6%

Respondents indicated that the Image Collections site was an important source for meeting their information needs. When we consider this in light of the information from Question 1 about the primary purpose of visiting the site, it seems that this site is an important source for information browsing, local history research and genealogy research. About **74%** suggested that the images provided in the collection were important for meeting these needs.

6. What are some of the consequences of your use of the Image Collections site today?

According to this survey, the Image Collections Web site is providing an opportunity for many people to look at the city of Pittsburgh, the institutions involved in the project, and themselves in a new light. Twenty-six percent of survey respondents said that viewing pictures in the collections helped them to think differently about Pittsburgh’s past. Others (22%) said that the site helped them find various types of heritage information. Eleven percent of survey respondents said that the site improved their research or schoolwork.

In terms of furthering the goals of the institutions that provided the photographs, it seems like the Web site is helping to expand use and understanding of the collections. Twenty-seven percent of respondents said that they learned more about the collections maintained by the three sponsoring institutions. People also suggested that they had found images and information that will be used in upcoming publications.

7. What would you tell others about the Image Collections site?

In general, the comments gave people a chance to describe the impact of the site on them in their own words. Some are listed below:

- “This is a valuable resource for genealogy research.”
- “It is quite interesting to see what Pittsburgh was once like and how it has evolved over the past century or more.”
- “A must see.”

- “I would let others know that it exists.”
- [It is a] “good source for historical images of labor as well as the Rust Belt.”
- [The site contains] “many great images, [is] well documented,[and is] easy to navigate.”
- “It is a big time saver for research!”
- “Incredible collection of images. A must-see for anyone interested in Pittsburgh’s past.”
- “It’s a great resource for both personal and educational purposes.”
- “Fantastic experience! Please expand!”
- “Great resources for those looking into many aspects of Pittsburgh’s past. It can be a link back to those who grew up there or a means for new arrivals to learn what made Pittsburgh.”

8. How would you rate your overall satisfaction using the Image Collections site?

Satisfaction levels were surprisingly high. Sixty-six percent of the respondents said that they were very satisfied with it, and 21% of the survey participants said that they were pretty satisfied with it. One each said that they were either ambivalent about the site, moderately dissatisfied or very dissatisfied.

As this was an online survey, we were not able to ask follow up questions to the respondents. Further testing may address questions of user interface and content issues to get a better sense of satisfaction with particular areas of the site.

9. How did you learn about this site?

Responses to this question were varied. It is clear that publicity helps raise awareness of the site and channels users to the pages. Many people had read an article in the *Pittsburgh Post-Gazette* about the site and searched it out afterward. Other Web sites were frequently cited as links leading to the Historic Pittsburgh Image Collections, including genealogy sites, partner institution Web sites, the main Historic Pittsburgh Web site¹⁹ and others.

Web searching and browsing are popular method of discovery for this site. This suggests that good metadata and prominent labeling are important for helping people to arrive at the photographs. Finally, other people were often mentioned as a source of information about the site. Promoting the site to educators and librarians is one way to increase traffic to the Image Collections Web site.

10. Based on your visit today, do you think you will return again to use the Image Collections site?

Seventy-two percent of the people who responded to this survey said that they will definitely return to the Image Collections Web site. Fifteen percent said that they would “probably return” to the pages at some later time and 9% said that they didn’t know if they would return. No one responded that they would not return.

People who were using the site and responded to the survey were positive about the Web site and the images that are available. Some additional testing may be needed to determine what non-users think.

¹⁹ The Historic Pittsburgh website is located at: <http://digital.library.pitt.edu/pittsburgh>.

11. After visiting the Image Collections site, do you think you will likely visit one of the institutions that contributed photographs to the site?

The answers to this question were mixed. Thirty-six percent responded that they would definitely visit one of the institutions that contributed photographs. An additional 32% suggested that they would likely make a trip to one of the institutions. Approximately one-third of the respondents (28%) said that they would not visit an institution. Some of this may be based on geographic considerations, as 51% of them said that their primary residence was outside of the immediate geographic area of western Pennsylvania (see results of Question 14).

The results to this question suggest that the site is helping to attract further interest in the collections of the institutions that contributed images to the site.

12. From where did you access this site? (Where is the computer located on which you are working right now?)

The final section gathered demographic information, including occupation, age and gender. The resulting answers to these questions begin here.

Place of Access to Web site	Percent Response
My Home	72%
My Office	17%
My School	4%
A Library	0%
Elsewhere	2%
N/A	4%

As the table shows, the respondents did most of their Web searching from their office and their homes. This finding is similar to results from other studies. In addition, the percentage of people who accessed the site from a library is similar to results of other studies, and it has been found that this often represents a segment of the population that does not have Internet access from any other location.²⁰

13. What is your occupation?

A diverse group of users appear to have responded to our survey, based on their responses to the question about their occupation. Genealogists, teachers and students were mentioned the most frequently, with information technology and health care workers mentioned slightly less frequently. Others include: an engineer, environmental public health researcher, liquor store clerk, police detective, real estate professional, legal clerk, architect, scientist and volunteer at the historical society, among others.

²⁰ Taxpayer Return on Investment in Florida Public Libraries: Detailed Results and Study Methods. By Jose-Marie Griffiths, Don King, Christinger Tomer, Matt Herbison, Scott Beach and Janet Schlarb. September 2004. Report for the State Library of Florida.

The publicity that had been done about the Historic Pittsburgh Image Collections site surely contributed to the wide range of people who had heard about the site, and were therefore given the opportunity to respond to the survey.

14. Where is your primary residence?

Place of Residence	Percentage of respondents
City of Pittsburgh	28%
Allegheny County	17%
Western Pennsylvania	4%
Greater Pennsylvania	6%
United States other than PA	43%
Outside of United States	0%
N/A	2%

A little over one-half of all survey respondents said that they lived somewhere in the state of Pennsylvania. The survey asked more specifically where the participants lived, and these results can be seen above. However, the impact of the Image Collections has also been felt outside of the state of Pennsylvania. Users from elsewhere in the United States consist of a large percentage of site visitors.

15. What is your age range?

Age Range	Percentage
Less than 12	0%
13-17	2%
18-29	6%
30-44	21%
45-54	43%
55-65	17%
66 and older	9%
N/A	2%

The largest group of respondents fell into the 45-54 year range (43%). More than one-quarter of all respondents stated that they were 55 or older. According to the survey results, the site does not appear to attract many users under the age of 30.

16. What is your gender?

Of the survey respondents, 64% were male, 32% were female and 4% did not identify themselves.

Conclusion

This survey measured outcomes resulting from use of the Historic Pittsburgh Image Collections Web site hosted by the Digital Research Library at the University of Pittsburgh. In general, survey respondents indicated that viewing the Web site made a difference to them. They expressed high levels of satisfaction after using it. In addition, they suggested that almost one-half of the images were “useful” to their main purpose of visiting the site and that the images were important for their information needs. Users listed browsing/entertainment, local history research and genealogy research as the three main reasons why they came to the site, although other purposes were given by a smaller percentage of the respondents. About two-thirds of respondents agreed that they would likely pay a visit to one of the institutions that contributed photographs to the project.

People viewed the images from their homes, offices and schools. More males than females answered the survey. Many respondents lived somewhere in the state of Pennsylvania, but users from other parts of the U.S. and from other countries are also represented. The survey responses helped give a sense of how people learned about the Image Collections. Many mentioned seeing reference to the site in a newspaper article. Others were referred by other Web sites, including genealogy sites, those of the partner institutions, other Historic Pittsburgh Web pages and others. Finally, promotion of the site to knowledge workers such as historians and librarians is an important way to continue high levels of Internet traffic.

Appendix E – Email Feedback Analysis

By Sarah Aerni (ULS Special Projects Librarian) and Ed Galloway (Principal Investigator)
June 2005

Any question sent as feedback to the Images website from September 2004 to May 2005 were monitored and analyzed. Each question/email was examined and categorized into one of five areas: technical help, reproduction requests, requests for help finding materials on a particular topic, corrections to our captions and an “other” category. Most of the feedback came in the form of reference questions or suggestions for changes in the captions and content of the site.

More men than women sent in email feedback. In addition, almost 9% of the feedback emails that were analyzed contained references to the publicity articles and write-ups that have been done about the Historic Pittsburgh Image Collections. This suggests the importance of continued publicity to maintain the visibility of this project.

Type of Question	Percentage	Example of this type
Requested Technical Help	14%	“As a regular user and admirer of Historic Pittsburgh, I have been disconcerted recently because of two problems with the images collection.”
Reproduction Request	6%	“Hello, I am trying to locate a print of the Point in downtown Pittsburgh back in the 30’s and 40’s when it was a smoky city.”
Content Research Assistance	49%	“I am looking for pictures of when Ohio River Blvd. was extended in the late 60’s/early 70’s to Pennsylvania Avenue in Manchester, but cannot find any.”
Additional Content Provided	25%	“Photo 131 shows Dr. Chester Harris (seated front left) who was a physician with his office in New Kensington and home in Lower Burrell, PA.”
Complements and Other	6%	“As a displaced native Pittsburgher, this website is fantastic. Thank you for archiving these tremendous shots. It is an amazing visual history of America’s most interesting city”.

Respondent Gender	Percentage
Female	29%
Male	66%
Unknown	5%

Appendix F – Project Consultant Report

Evaluation Discussion

This document summarizes the discussion and conclusions of the participant-partners in the IMLS project, “Imaging Pittsburgh.” The discussion was facilitated by Paul Conway, who served during the grant period as technical consultant to the project. The structure of the discussion followed an outline of the goals and objectives presented in the IMLS grant narrative along with an additional number of objectives established during the grant period by the project partners.

Goals and Objectives

(objectives in bold are listed specifically in the grant)

1. Provide content partners with the tools and skills necessary to better manage, control and administer collections of visual images.

a. **Metadata standards, creation, and management**

The project team developed and promulgated guidelines for metadata creation. The recommended fields are based on the Dublin Core metadata schema. Of the fifteen recommended fields, the project team agreed to require the submission of data for five fields. All three of the project partners succeeded in submitting metadata for all images in all five of the required fields.

The “subject” field turned out to be the most difficult to implement consistently by the project partners. Art Louderback of the Historical Society of Pennsylvania provided significant assistance in establishing standard subject headings based on the Library of Congress Subject Heading system and provided training to project partners in constructing local subject headings based on LCSH standards.

The “date” field also proved challenging, but in terms of agreeing to standard date coding conventions and the time and energy required to date images with sufficient precision to aid search and retrieval via timelines and other end-user tools.

Each of the three partner institutions added metadata to each image to support local management and/or display requirements. The History Center used added metadata for internal purposes, drawing on a previously successful grant project for guidance. The History Center also drew on previously existing metadata and was therefore not particularly driven by the project guidelines. The Carnegie Museum found the collective metadata guidelines to be very important. The museum added information on “medium” to the metadata schema. The University of Pittsburgh added some required to the local schema, including the name of the collection and a link to a policy regarding reproductions

b. **Impact on local repository processes beyond project core**

The group explored the impact of the grant project on the local institution beyond the requirement to fulfill the obligations of the grant itself. The History Center definitely will continue to use the metadata schema and the local guidelines as a basis for creating metadata for image collections created in the future and possibly for other media collections. The Carnegie Museum found that the IMLS project has had a very big impact on planning for digitizing the entire Teeny Harris collection – particularly thinking through subject access, dating, etc. Need to decide whether subject heading process (LCSH) will apply to other museum collections that would be digitized. What would be lost if the museum did not carry on the LCSH pre-coordinated approach to subject access, given the challenge and cost of creating such subject

access in a museum setting. The single hardest part of the project was subject access. At the Carnegie, metadata research was a significant effort and was very time consuming. The History Center, on the other hand, put significant energy into creating narrative descriptions of each image and getting that information right. The resulting narratives facilitated the assignment of controlled subject headings. The History Center's experience also influenced the work of the Carnegie in processing the Teeny Harris collection.

Pittsburgh took much information from the back of the photos themselves. But under the influence of the History Center narrative model, Pittsburgh put more energy into descriptive narrative. Supports end user searching and satisfaction, even if the effort to construct meaningful narratives is prodigious.

2. Increase public access to significant collections of visual images of the Pittsburgh region located in diverse repositories in the city.
 - a. Selection of significant materials (7,000 items)

The group fully met its requirements to create digital images of 7,000 photographs. Earlier in the project, there was some expectation imposed by the consultant to exceed the minimum requirements, but in the end the group was satisfied to meet the minimum requirement.

Collaborative selection was also a subsidiary goal placed on the project after the start. Collaboration started happening when subject headings were posted online for review. History Center was able to select the first 2,300 images required from predetermined collections. Making the final push to complete the quota turned to looking at what the University of Pittsburgh and Carnegie selected. Archives selected preliminarily and sent selections to the History Center for comment. The best examples of collaborative selection played out in documenting the – Irene Kauffman settlement in the Hill district across two collections and the work on the City photographer and the Allegheny Conference collection. Lots of collaboration in these areas with counterintuitive and pleasing results.

Carnegie Museum pretty much chose their pieces from Teeny Harris collection and was not particularly influenced by collaborative selection strategies.

Searches routinely yield images from all three collections, demonstrating both the success of overt collaborative selection and the success of added subject access based on shared lists of subject terms.

b. Scanning quality (archival master) and procedures

All three partners met the baseline of scanning quality established at the start of the project.

The Carnegie Museum did not realize that a significant portion of the Teeny Harris collection would not fit on an A4 scanner. In retrospect, would have selected a larger scanner – had to improvise more than expected.

History Center and the University of Pittsburgh had no problem with size of original.

Pittsburgh had a lot of negatives to work with.

c. Workflow development and training

The partners worked on workflow issues throughout the project and did not establish a standard workflow at the beginning of the project.

Pittsburgh Archives -- “Our workflow could change on a weekly basis, based on people’s schedules, availability of staff, and the demands of the materials.” Pittsburgh Archives also used live storage to raw images – supported research and metadata creation.

History Center – “We had the advantage of having volunteers to do research on the images.” Workflow was very consistent once established; based on a successful previous grant from LSTA. Scan – Research – Metadata – Quality Control, in that order. History center – had no server space for raw images.—stored on CDs.

Carnegie Museum – In general, workflow issues were not problematical. When the group decided that the CDs would adhere to a particular ISO format, changed file naming conventions. Need to decide which convention to use. Pickup and drop off schedule worked fine. Edited image posted to drive without metadata. Research proceeded from raw images using internet research.

d. Gateway design (search and retrieval)

The overall design of the internet gateway to the collection was not a significant issue for this project because the assembled collections were delivered through the University of Pittsburgh’s digital library gateway, which runs on the University of Michigan’s DLXS software. Aaron Brenner suggested that the project was innovative in the way that it treats a group of images as a single object in the DLXS software in a unique way.

3. Administer the integration of distributed visual image collections and provide tools for searching and analysis.

a. Ingest

History Center used batch processing methods based on a locally developed MS Access program. The program has built in checks and balances designed to minimize keying errors on key fields.

Pittsburgh Archives hand designed all aspects of the local database and local processing routines. At times the whole system felt like a Frankenstein Monster.

Carnegie – the local museum database was not intended to support a project of this character – export mechanism was complex – took a long time to iron out the glitches. The Pittsburgh Digital Research Library was super patient in tolerating the delays.

Sustainability of the project across multiple partners would require significant attention to data management and transfer issues.

b. Indexing and online collection building

This discussion item elicited much conversation about the challenges and opportunities of sustaining digital collection growth both at the local organization and in a collaborative framework.

History Center – The infrastructure is now in place at the Center for seamless additions to the local database. Technically, the IMLS project validated the processes, procedures and standards required to build high-quality digital collections. Internal support for staffing is an ongoing issue that has no easy resolution in the current economic environment. In some ways it was a luxury to have people focused on this project

Carnegie Museum – the project taught us a lot about the metadata and the workflow – the experience of “Imaging Pittsburgh” will influence how we process and make available the remaining portions of the Teeny Harris Collection.

Pittsburgh Archives – In some ways, the issue of sustainability of the digitization effort depends on staffing levels. The project created expectations for doing more of this kind of work, either as individual institutions or collaboratively.

c. Preparation for OAI harvesting

Aaron Brenner briefed the group on expectations to assemble and publish data that complies with the Open Archives Initiative standard. The OAI data has been gathered for two collections – not public yet – will be met by the end of the project.

d. Explore the collections

The “Imaging Pittsburgh” posited the idea that end users would be able to “explore the collections” created digitally, but no plan for such exploration was developed in the project narrative. In some ways, the assumption was present that simple search and retrieval methodologies resulting in lists of images based on user criteria would permit such exploration. The project consultant suggested, however, that the project provided an opportunity to push the envelop on the idea of “explore.” Near the end of year one of the project, the consultant presented a set of ideas for mining the subject headings assigned to the individual images to identify a series of “stories” that could be developed and presented via scripted searches invoked by the end user.

In the discussion of this aspect of the project, the project consultant praised the project partners for their willingness to expand the scope of the project and complemented the group for its success in implementing a basic mechanism.

Aaron Brenner suggested that the analysis of assigned subject headings was new and innovative and should be described in detail and emphasized in the final project report. The “explore the collections” component presented a number of challenges in implementation and may present additional challenges for sustainability. The analysis of assigned subject terms involved looking closely at frequency of subject terms assigned across all three partner institutions. Searches were built around the terms or clusters of terms that based on frequency. A form of relevance ranking within a discreet collection.

Challenge of maintaining institutional memory presents itself after the project is complete, namely the complexity of maintaining the intention of the subject analysis – how well is it documented; how well can it be replicated by other staff who may or may not understand the technical structure of the queries. Each query is hand-built – lots of inconsistencies – chance for the system to break down but also the chance for it to evolve – highly personalized – could provide opportunities for automating the scripting process based on rules about frequency of subject headings.

Several project partners thought the “explore the collections” remains the “neatest part of the whole grant.”

History Center – It would be nice to evaluate the relative value of “explore” versus basic searching from the perspective of the user. A point of departure might be some form of transaction log analysis of user queries.

e. Communication and collaboration among partners

The project consultant moderated a discussion on the level of collaboration among the partners (what worked) and what could have been done to improve collaboration.

Monthly meetings of the project team were necessary and useful; much better than email and other online exchanges. Early on - online discussion helped with establishing standards – once the details were worked out, then face to face meetings helped keep everyone on track.

The partner members learned a lot about differences among the various institutions – ranging from specific stuff, such as the way dates and naming conventions were handled to broad stuff such as importance of differences in organizational culture, administrative structure and even professional values.

This project was unusual in the level of deep collaboration and communication required by professionals who have no institutional or professional track record in sharing. Communication across historical society, art museum, and archives – all mediated by a collective mandate to create a digital resource that will be “owned” and “managed” by a digital library program.

It was good that each organization could use its own local software and local procedures yet collaborate effectively around a centralized software tool. The availability of the DLXS software significantly improved the collaborative environment, even when the individual partner members recognized the limitations of this common software system.

Ability of project to retain the identity and certain idiosyncrasies of the individual organizations, while accomplishing a common goal was quite remarkable.

The process of trying to work out a common scanning specifications or develop shared metadata standards was a great crucible to work out issues that the local institution would have to do anyway. Local institutions matured more rapidly in their handling of all aspect of digital collection development.

Carnegie Museum: There remain a number of questions relating to the museum environment – licensing might be precluded by giving images to a common fund. May need some formal agreement (renewable) among the partners about re-use of images.

f. New partners identified

The grant project suggested that one outcome would be one or more new partners that could join the collaborative effort after the grant was complete.

Ed Galloway reported that Chatham College and University of Pittsburgh Greensburg campus have expressed strong interest in contributing images to the common pool based on standards developed for the IMLS project.

4. Promote the meaningful use of the digital collections

a. Community outreach

History Center is hosting a number of events in the next couple of years that will provide significant opportunities to promote the project and encourage use, including the American Association for State and Local History, which meets next year in Pittsburgh.

The group agree that a PowerPoint presentation on the project, developed collaboratively, would benefit all the partner members.

Carnegie Magazine will have a feature article on the project. Community outreach for Carnegie means outreach to the local neighborhoods. Question of how to get the word out to communities of people who are not technologically sophisticated.

The group suggested that working through the network of Pittsburgh public libraries could prove fruitful. The Pittsburgh public school system has mechanisms in place to communicate with teachers about interesting projects. Since public schools are expected to meet state requirements on state history, it may be possible to encourage use in the K-12 environment by working through existing channels. See: <http://www.explorepahistory.com>

b. Publicity

September 13, 2004 was the public release date for “Imaging History.” Brochures and bookmarks have been produced and distributed widely. Two different news sources at Pittsburgh publicized the project – Pitt Chronicle and Pitt University Times. The project is featured on the websites of the university library, the University of Pittsburgh, and the Digital Research Library. Ed Galloway and others from the project made a presentation on “Imaging Pittsburgh” at the WebWise Conference in Chicago in May 2004 and at the Fall 2004 MARAC Conference in late September, 2004.

c. Impact on local repository

Log analysis of the web site is underway and will be completed by the end of the grant period. The analysis will seek to understand the extent to which end users are identifying resources and retrieving result sets that cross institutional boundaries.

The group agreed that a thorough assessment of use could be of potential value to potential donors to the project.

Other Assessment Elements in Grant

1. Adaptability (by other organizations and collaborative groups)

The project website thoroughly documents the project and includes metadata and imaging guidelines, reports, and the actual products of the project. The openness of the project encourages adaptability. Publicity about the project will emphasize in part the adaptability of the project for groups of organizations that wish to create a shared digital resource.

2. Use of the gateway

The web server log analysis will document the access obtained by end users to the shared resource.

3. Cataloging effectiveness

The project steering committee undertook significant assessment of cataloging activities. The focus of the assessment has been on subject access and the many challenges across diverse institutions of facilitating subject access to the image collections.

4. Online survey

An online survey is presently ongoing. Twenty-one responses received to date. Don King, of King Research, helped craft the survey questions; a graduate student from the University of Pittsburgh School of Information and Library Science will analyze the results. Assessment and conclusions derived from the online survey will be reported in the final report of the project.

5. Project consultant

The group discussed the value of having an outside consultant advise the steering committee on the project. The group concluded that the consultant added value in three areas.

a. Procedural changes

The consultant suggested that the project could provide greater access to the image collection through the “explore the collections” gateway by mining the systematic application of LCSH subject headings to individual images. He suggested that the steering committee approach the “explore” function as an opportunity to tell stories derived from patterns of subjects imbedded in the image collections. To the credit of the steering committee, which at the time the consultant offered the suggestion was nearly overwhelmed with work to do on the project, embraced the idea and worked through the many technical and intellectual issues involved in implementing the suggestion.

The consultant urged the steering committee to enhance its selection methodology by attempting to select individual items in a collaborative framework. The basic idea involved letting selection decisions be informed by the content of items selected for digitization earlier in the project. The concept of “iterative selection” was attempted with some success, especially in selection decisions between the University of Pittsburgh Archives and History Center.

The consultant facilitated cross-institutional exchanges of workflow information that resulted in modification of the local workflow. It is doubtful that such exchanges or modifications would have resulted without the “intervention” of the consultant.

b. Policy changes

The consultant provided concrete advice on the value of subject access and the complexities of assigning adequate subject terms to facilitate flexible delivery of subject-based collection information. The consultant drew upon his experience working with the Library of Congress American Memory collections and similar subject-rich digital collections. The consultant also emphasized the value of combining Library of Congress subject headings with local subject terms that conform to LCSH conventions.

c. Approach to collaboration

The consultant also brought a certain level of enthusiasm to the very idea of collaboration that proved infectious within the steering committee. In his periodic onsite visits and frequent communication with the Principal Investigator, the consultant provided a neutral voice of encouragement that elicited closer collaboration among the partner members. The consultant's authority and experience, combined with a relatively non-threatening approach to the project participants helped to smooth relationships among the partner members.

At certain critical junctures, the consultant helped keep momentum going on the project by advising the Principal Investigator on techniques for motivating the members of the steering committee and by "raising the bar" on the possibilities represented by the project narrative.

Finally, the consultant provided praise and encouragement to the individual partner members that helped overcome uncertainties about the relative value to place on this project vis a vis other competing priorities.

Respectfully submitted,
Paul Conway
Duke University Libraries
29 November 2004