

It's Complicated: Barriers to EAD Implementation

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Although Encoded Archival Description (EAD) has gained a great deal of credibility as an international descriptive standard for archives since its release in 1996, there is still a range of reaction to it among archivists. Some archives whole-heartedly embrace EAD. They hold training sessions, host large-scale implementation projects, publish in archival literature about their experiences and in general spread the gospel of the positive good that EAD implementation has done their repository. Many of the seventy-eight institutions listed on the Society of American Archivists EAD Implementor Web site fit into this category.¹ Other archives reject EAD altogether voicing concerns about the standard itself or the applicability to their institution's needs. In between are those institutions who have decided to implement EAD but have found obstacles. I will focus on this last-named group in this paper.

What prevents archives from implementing EAD? The answer nine years ago was that the technology simply was not there. Tatem found that the lack of affordable editing software and the lack of browsers capable of EAD display made it difficult to use EAD or to convince institutions to use EAD². This software gap is now filled. Inexpensive EAD authoring software such as Note Tab Pro makes the creation of EAD code relatively straightforward. Web browsers now can render EAD's version of XML. Another issue

¹ EAD (Encoded Archival Description) Help Pages-- Implementor Listing, 2007, <http://www.archivists.org/saagroups/ead/implementors.html> (accessed: February 18, 2007).

² Jill Tatem, "EAD: Obstacles to Implementation, Opportunities for Understanding," *Archival Issues* 23 (1998): 155-169.

discussed in early literature is the difficulty of learning EAD in isolation³. This problem also has largely been solved. Training workshops are readily available throughout the country. Tools such as Michael J. Fox's *EAD Cookbook* have also made it much easier to learn and implement EAD.⁴

Today the answer to the question appears to be more complex. My initial discussions with archivists and librarians at the Wisconsin Historical Society and University of Wisconsin-Madison suggested that there are two main barriers to implementing EAD – a lack of expertise in the server technology necessary to publish EAD on the Web and the desire on the part of archivists to rewrite legacy finding aids before encoding them. I attempted to verify or refute this assessment through a survey I conducted of archives who fit into the middle group of institutions who wanted to use EAD but encountered obstacles.

It is beyond the scope of one semester of research to determine what obstacles have actually prevented institutions wanting to implement EAD from doing so. What I investigate here are archivists' perceptions of obstacles and the objective characteristics of these institutions. Similarly, this paper is intended to probe the respondents' perceptions of what might remove these barriers and not provide data on what has been proven to remove such obstacles.

³ Elizabeth H. Dow, "EAD and the Small Repository," *The American Archivist* 60 (Fall 1997): 446-455.

⁴ Michael J. Fox, "The EAD Cookbook 2002," *EAD Help Pages*, March 2004 <http://www.archivists.org/saagroups/ead/cookbookhelp.html> (accessed: April 30, 2007).

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Yakel and Kim looked at similar issues when they examined patterns of EAD adoption. Looking at 399 people who took EAD classes from Research Library Group (RLG) or Society of American Archivists (SAA) from 1993-2002, they tried to isolate what characteristics described adopters and non-adopters. While their survey was descriptive, they do speculate as to causal factors for some issues.⁵

The division of adopter or non-adopter in their survey was strictly based on self-identification rather than validation data such as date of adoption, existence of an EAD web site or number of finding aids encoded. It is possible that if two different institutions had encoded one finding aid each and stalled, one might have identified themselves as a non-adopter and one as an adopter. Likewise, the people who responded to my survey could be described as EAD adopters or non-adopters.

The group who answered my survey decided to implement EAD. It is a multi-step path to implement this standard fully. It involves establishing a workflow, establishing coding standards, encoding finding aids, developing CSS and XSLT style sheets to translate EAD's XML, setting up an EAD server and finally publishing the encoded EAD finding aids to the Web. Somewhere along that path, the implementers I surveyed hit bumps. The purpose of this paper is to describe those "bumps" and in so doing to help archivists to plan more knowledgeably their course of action for implementation and funding of EAD projects.

⁵ Elizabeth Yakel and Jihyun Kim, "Adoption and Diffusion of Encoded Archival Description," *Journal of the American Society for Information Science and Technology* 56 (November 2005): 1427 – 1437.

Barriers Past and Present

In trying to understand the problems that archivists implementing EAD today might encounter, it is helpful to look at the challenges of early implementors. Doing so will allow us to put current problems in perspective – to see which barriers are longstanding and how some have been overcome in the past.

Working in isolation was one of the first problems identified by those implementing EAD. Dow said that her biggest problem in implementing EAD at the University of Vermont in 1996 was her insistence on working alone. It was not until she involved her IT staff that her project progressed.⁶ Marshall, who surveyed early implementors, said that EAD implementation case studies show that "it is especially important for archivists working with EAD to be able to articulate their goals and requirements to non-archivists, particularly administrative and systems personnel."⁷ Similarly, Roth found that convincing administrators of the value of EAD was a problem.⁸

The obvious antidote to isolation was collaboration. Yet as Tatem said in the earliest EAD implementation study, a serious barrier to implementation was that archivists lack a culture of collaboration. "Archivists do not have broad or deep habits of collaboration. Traditional archival dependence on 'do-it-yourself' solutions created from the ground up, repository by repository, works against the kind of cooperative approach

⁶ Dow, 452.

⁷ Jennifer A. Marshall, "The Impact of EAD Adoption Early Implementors," *Journal of Archival Organization* 1 (2002):39.

⁸ James M. Roth, "Serving Up EAD: An Exploratory Study on the Deployment and Utilization of Encoded Archival Description Finding Aids," *The American Archivist* 64 (2001):229.

that seems, in these early days, to make financial and technical sense for EAD implementation.”⁹ Collaboration with other institutions was crucial if an individual repository lacks in-house resources, according to Marshall.¹⁰

In addition to isolation and collaboration, problems of workflow within archives were identified by Marshall and Roth.¹¹ One of the greatest challenges Roth found in his 2001 survey was that it was difficult for archivists to find the time to develop encoding routines and incorporate them into an institution’s workflow.¹²

After determining how encoding would work within an organization, archivists had to decide what finding aid content to encode. Concern about the quality or completeness of finding aids often caused archivists to plan to rewrite legacy finding aids before EAD encoding. Marshall found that "poor quality" of finding aids was a barrier to EAD implementation at some institutions.¹³ Durham University Library described a common situation: “Durham's handlists tend to be highly detailed item level listings, done without any authority system or house style, only the most recent of which had been word processed.”¹⁴ This desire to rewrite finding aids was partially fueled by Meissner who has suggested that any institution contemplating adopting EAD first

⁹ Tatem, 160.

¹⁰ Marshall, 47.

¹¹ Marshall, 47.

¹² Roth, 229.

¹³ Marshall, 47.

¹⁴ “Durham University Library,” *EAD (Encoded Archival Description) Help Pages-- Implementor Listing*, n.d., <http://www.archivists.org/saagroups/ead/implementors/DurhamUniversityLibrary.html> (accessed: February 18, 2007).

reengineer its finding aid.¹⁵ However, he admitted, “The reengineered finding aid model described above carries some significant overhead.”¹⁶ Although he went on to discuss how to ameliorate that overhead with automated templates and macros, the fact remains that rewriting an institution’s stock of finding aids to bring them up to modern standards prior to EAD encoding can be a daunting task. Said Farris Wahbeh, “... converting past finding aids to EAD might be a huge institutional barrier as opposed to creating them from scratch for new collections.”¹⁷ Yakel and Kim postulate, “... the EAD adoption decision may be contingent on the decision to invest in the conversion of outmoded access tools to modern finding aids or updating analog finding aids into digital documents.”¹⁸ Other archivists such as Michele Tourney saw not the existence of old finding aids but the lack of any to be the obstacle. “... when I started I had more than fifty collections (that were scattered throughout the library) and only TWO finding aids in any format (and these weren't even complete!). Not exactly the most ideal conditions under which to embark on an EAD project.”¹⁹

In addition to issues related to institutions and finding aids, several authors found the complexity of EAD itself to be a deterrent to implementation. Linke and

¹⁵ Dennis E. Meissner, “First Things First: Reengineering Finding Aids For Implementation Of EAD,” *The American Archivist* 60 (Fall 1997):372-87.

¹⁶ Meissner, 386.

¹⁷ Farris Wahbeh, *The Archives & Archivists List*, February 8, 2007.

¹⁸ Yakel and Kim, 1435.

¹⁹ Michele Tourney, *The Archives & Archivists List* 62 week 3, May 2004.

others raised concerns that EAD made searches more complicated for users.²⁰ Tatem's main finding was that EAD was seen as too complex to be practical to use due to a lack of inexpensive or easy to use encoding and viewing software. Web browsers at that time could not be used to view EAD encoded finding aids without converting them to HTML.²¹ Another problem frequently cited in early literature is the complexity of middleware, defined as "Software that mediates the exchange of information between two applications or between an application and a network."²² Dow says that even with the support of her system staff, server file management was time consuming.²³ Roth found that locating technically competent staff and the technical aspects of launching finding aids on the Web were major challenges to archivists trying to implement EAD. Fox suggests that unfamiliarity with SGML will make it harder to find contract staff to configure web servers. Because of this, he suggests repositories participate in cooperative ventures for planning, procurement and technical support.²⁴

One tool that helped archivists solve some of the early technical problems was the *EAD Cookbook* first developed by Michael J. Fox in 1999. It includes a reference manual, style sheets and a suggested step-by-step implementation plan. In 2000, Christopher Prom evaluated the tool to determine how people were using the

²⁰ This is explored by Daniel Linke in his presentation, "Is EAD dEAD?" Society of American Archivists meeting, Washington, D.C., in the "To EAD or Not To EAD—Is That Really the Question?" session (Friday, August 31, 2001).

²¹ Tatem, 158.

²² Richard Pearce-Moses, *A Glossary of Archival and Records Terminology* (Chicago: The Society of American Archivists, 2005), 65.

²³ Dow, 452.

Cookbook.²⁵ He found that learning the software necessary to publish EAD on the Web, such as XSLT, has been a major obstacle to implementation. Adding a search engine to an EAD web site is "a challenge."²⁶ Fifty-six percent of his respondents had encoded finding aids but never published them on the Internet. Yakel and Kim found that 25% of their respondents encoded finding aids, but did not publish the EAD versions.

Current EAD Implementor Trends

In addition to reviewing published EAD implementation research to identify past problems, I thought it would be useful to review recently written material about current implementation issues. To do this I read the Society of American Archivists EAD Implementor Web site, which contains links to narrative descriptions of how seventy-eight archives have or are planning to implement EAD. Because of the anecdotal success story nature of these sites, there is little discussion of what problems were encountered while implementing EAD.²⁷ Nonetheless, two trends are discernable in these Web site descriptions.

First, implementors use complicated software work streams. Multiple software applications are being used to mark up texts at many institutions. The process used by

²⁴ Michael J. Fox, "Implementing Encoded Archival Description: An Overview of Administrative and Technical Considerations," *The American Archivist* 60 (Summer 1997): 332.

²⁵ Christopher J. Prom, "The EAD Cookbook: A Survey and Usability Study," *The American Archivist* 65 (2002): 257-275.

²⁶ Prom, *The EAD Cookbook: A Survey and Usability Study*, 265.

²⁷ EAD (Encoded Archival Description) Help Pages-- Implementor Listing, 2007, <http://www.archivists.org/saagroups/ead/implementors.html> (accessed: February 18, 2007).

the Modern Manuscripts History of Medicine Division National Library of Medicine is typical:

“I use Notetab with Daniel Pitti's markup scripts, modified for local use. We use James Clark's parsers and XT for HTML conversion (provided by Pitti at Rare Books School). I use a modified XSL stylesheet taken from the EAD Cookbook (eadcbs2) for creating the HTML. Conversion of legacy data is being performed by Electronic Scriptorium (Leesburg, Va.) using our Notetab system. We have not explored converting the print finding aids, yet. New finding aids will probably be created using a hybrid Notetab/XMetal process, and Alvin Pollock's MS Access report process for doing container lists.”²⁸

Yakel and Kim found that “EAD adopters had difficulty in selecting appropriate types of software and using them.”²⁹ Some archives/ special collections in their survey were using as many as six encoding software applications.

Secondly, implementors had server technology and delivery system problems. Even archives with the resources to create their own sophisticated encoding computer programs struggled with publishing issues. University of Chicago Library, Department of Special Collections, for example, initially published their EAD finding aids in

²⁸ “National Library of Medicine, History of Medicine Division,” *EAD (Encoded Archival Description) Help Pages-- Implementor Listing*, May 2004, <http://www.archivists.org/saagroups/ead/implementors/NationalLibraryofMedicineHistoryofMedicineDivision.html> (accessed: February 18, 2007).

²⁹ Yakel and Kim, 1434.

proprietary software that was only available on site.³⁰ In a discussion on the Archives and Archivists listserv initiated by my request for survey participants, Michele Combs described the publishing quandary:

“... What does one do with all these nice EAD files? They have to be delivered somehow, which raises an entire vista of questions such as, Will they be searchable? How? To what degree? Do we provide an alpha list? How do we automate that? Do we provide a subject listing? How do we automate that? Do we need to spend a lot of money buying some XML-aware database? Do we need to provide a printer-friendly format? If so, what -- PDF, stripped-down Word, etc? Etc etc etc. While the cost in time and money of converting paper finding aids is substantial, the question of delivery can be intimidating, particularly to small institutions and/or those without in-house technical expertise.”³¹

A review of the EAD Implementors Listings reveals a pattern of characteristics that might shed light on solutions for non-implementors. The most pervasive pattern among the implementors was the use of outside resources. Outside consultants were used at a number of different institutions including the Newberry Library, which used

³⁰ “University of Chicago Library, Department of Special Collections,” *EAD (Encoded Archival Description) Help Pages-- Implementor Listing*, n.d., <http://www.archivists.org/saagroups/ead/implementors/UniversityofChicagoLibraryDepartmentofSpecialCollections.html> (accessed: February 18, 2007).

³¹ Michele R. Combs, *The Archives & Archivists List*, February 8, 2007.

consultants to set up specialized macros for encoding.³² At the Utah State Historical Society:

“Using grant funds, we hired two consultants experienced in EAD theory and practice. They advised us about how to implement EAD and suggested work processes. We then developed processes that fit our requirements. A computer-literate project archival technician, with little training, carried out these steps.”³³

Other institutions such as Syracuse University Special Collections Research Center are planning to outsource parts of the EAD encoding process. “At present, all work is done in-house. To date we have converted or generated some 140 finding aids ranging in size from 6k to 670k. To speed things up, we are exploring contracting out a large data set to a local company, Amcon Research, for OCR and tagging to our specs.”³⁴

Many of the Implementors’ institutions are members of regional or subject based EAD consortia that pool resources such as style sheets, best practices, workflow decisions, and standards. Several consortia provide training and server space. Even those outside a consortium draw on its expertise. Old Dominion University, for instance

³² “The Newberry Library,” *EAD (Encoded Archival Description) Help Pages-- Implementor Listing*, n.d., <http://www.archivists.org/saagroups/ead/implementors/TheNewberryLibrary.html> (accessed: February 18, 2007).

³³ “Utah State Historical Society,” *EAD (Encoded Archival Description) Help Pages-- Implementor Listing*, n.d., <http://www.archivists.org/saagroups/ead/implementors/UtahStateHistoricalSociety.html> (accessed: February 18, 2007).

³⁴ “Syracuse University Special Collections Research Center,” *EAD (Encoded Archival Description) Help Pages-- Implementor Listing*, n.d., <http://www.archivists.org/saagroups/ead/implementors/SyracuseUniversitySpecialCollectionsResearchCenter.html> (accessed: February 18, 2007).

adapted the EAD template created at Duke University, a member of the North Carolina Encoded Archival Description (NCEAD) consortium.³⁵

Many of the implementors on this list are large institutions. Size of institution is frequently cited as a predictor of whether an institution will be more likely to adopt innovation.³⁶ It might follow that consortium membership would give an archives the same benefits as a large institution would have, that is, having a large pool of resources to draw on. However, Yakel and Kim found that belonging to a consortium did not make it more likely that small archives would adopt EAD. They found that the threshold number of archivists for adopting EAD was four, whether or not an institution belonged to a consortium.³⁷

Methodology

The issues raised in literature and in discussions with archivists form the basis for the questions in the survey I conducted. The survey was divided into questions on background, problems, costs, expertise, workflow and solutions. The subjects covered include perception of EAD complexity and cost, workflow details, degree of institutional support, familiarity with authoring software and availability of technical resources (see Appendix A).

³⁵ “Old Dominion University,” *EAD (Encoded Archival Description) Help Pages-- Implementor Listing*, n.d., <http://www.archivists.org/saagroups/ead/implementors/OldDominionUniversity.html> (accessed: February 18, 2007).

³⁶ A. M. Kennedy, “The adoption and diffusion of new industrial products,” *European Journal of Marketing* 17 (1983):31–88.

³⁷ Yakel and Kim, 1435.

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To increase the chances that respondents would answer the survey in a timely manner, the survey was primarily composed of closed questions. Two questions had “Other (please describe)” options. The final question in the survey was an open-ended comment on barriers to EAD implementation. I pre-tested the survey on an archivist and a librarian and made minor modifications based on their comments.

In February of 2007, I sent members of the Archives and Archivists Listserv of the Society for American Archivists and the Encoded Archival Description Forum a message requesting participation in a study about barriers to EAD implementation. In March, Solveig DeSutter, the SAA Director of Education, contacted people who had taken the SAA EAD workshop in 2005 and 2006 and were not listed on the EAD Implementors Web site to ask for their participation in this study.

The final survey sample consisted of sixteen archivists and librarians. Thirteen surveys were completed electronically and three were completed in a telephone interview. The sample is composed of staff at institutions that wanted to implement EAD but were experiencing problems with doing so. Several institutions found the obstacles severe enough that they abandoned their plans after encoding one finding aid. Others were slowly implementing EAD despite barriers.

Findings

The respondents represented institutions that are historical societies, universities and hospitals in western, mid-western, southern and eastern regions of the United States. Twelve of the institutions I survey had less than two full time professional

archivists in their institution. The other institutions had staffs that ranged from three to six archivists.

The majority of the respondents have made some progress in planning for or implementing EAD. All respondents had a web site for their archives. Three respondents reported that their institution had an EAD Web site set up. Another three used a consortium's EAD Web site to publish their finding aids. Seven indicated that their institutions had implemented EAD. The year of the implementation ranged from 1998 to 2006. All three of the institutions with more than four archivists had begun implementing EAD, echoing Yakel and Kim's findings.³⁸ Eleven respondents had put their finding aids online in another format. Those that specified a format said their finding aids were in HTML, Microsoft Word, PDF or on line catalogs. Eleven had less than 1% of their finding aids encoded. The percentage of finding aids encoded in EAD was low due to the nature of this survey.

Despite the progress made, all but one respondent had encountered barriers while implementing EAD in areas ranging from staffing to workflow. The barrier most frequently selected by respondents was "lack of staff" (twelve respondents). One respondent's answer summarized the majority of responses— she put three 'x's by this option, indicating that lack of staff were her three top barriers. Several respondents linked this to "lack of a Plan," which was cited by five respondents. One put this succinctly, noting that a top barrier was, "[along] with lack of staff – lack of time; existing staff has many other demands and it is difficult to find enough focused time to

³⁸ Yakel and Kim, 1435.

devote to either implementing ourselves or coming up with a plan for alternative ways to implement” (Survey 1).

Technology issues were also cited as significant obstacles to implementation. Eight respondents identified, “lack of infrastructure/ IT support” as a top barrier. One commented, “The server environment is probably our biggest barrier since our institution as a whole is short staffed in terms of ITS web support and non-ITS staff have limited access to servers and things beyond basic content editing” (Survey 1). A general lack of IT savvy within the archival community makes EAD hard for staff to grasp according to another (Survey 7). Few respondents agreed that the complexity of EAD was a problem. Only three selected “perceived complexity of EAD for archivists to learn” as a top barrier to implementation. No one indicated that users' inability to understand EAD was a barrier. Roth’s findings that users do not know that they are viewing an EAD encoded finding aid on a website may explain this.³⁹ The technical skills needed to encode a finding aid and publish it to a web site where a user can view it have been treated as joined skills. However, this is not necessarily accurate. Although six respondents indicated that their staff lacked encoding expertise and seven indicated that their staff lacked server expertise, these were not the same set of respondents. Yakel and Kim point out, “Encoding and publishing finding aids are two separate operations requiring different skills and expertise.”⁴⁰ One respondent concurred, “I can encode; I don’t know how to deliver to the web” (Survey 3). Half, or eight, respondents said their

³⁹ Roth, 231.

⁴⁰ Yakel and Kim, 1434.

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staff had the technical skill to do EAD encoding. Two others said that although their staff had been trained, additional training or practice would be necessary to understand EAD well enough to implement it (Surveys 1 and 4). Although three said that appropriate EAD training was not available, ten said training was or probably was available. Server expertise, the ability to set up the components such as style sheets, SGML/XML/XLS/HTML parsers and converters necessary for publishing EAD on the Web, was present at only seven institutions. Eight respondents indicated that lack of this server technology expertise was a barrier to EAD implementation.

In addition to technology issues, another key barrier was “Lack of institutional support,” cited by five respondents. The importance of institutional support was underlined by one who said that she was unable to implement EAD because although she had an implementation strategy, staff that had been trained in EAD, staff with server technology training, a server set up, and membership in an EAD consortium, she had no support from her institution’s administration (Survey 7). Similarly, another respondent noted that at her institution, libraries were viewed merely as an expense, without any value (Survey 6). She cited Maslow's hierarchy of needs saying if libraries were at the bottom of the pyramid, EAD was towards the top. Her day-to-day struggle was just to have her administrators support her library as a whole. Larger issues of technology also played a role in lack of institutional support for several respondents. Institutional support is important to facilitate the inter-departmental cooperation needed to publish EAD. This is difficult to obtain when the IT department does not appear to understand the library's mission (Survey 6), when other staff do not

understand the value of EAD (Survey 10) or administrators “view the Internet as a toy” (Survey 7).

Given the concern of administrators and colleagues about the value and expense of EAD, it is not surprising that about a third, or six respondents, selected expense as a top barrier to implementation, although only three indicated that EAD was viewed as too costly for their archives to implement. One commented that it was too expensive, “only in terms of staff time” (Survey 9). Only five respondents had applied for a grant for EAD (either individually or as part of a consortium), although another had plans to do so. All of those who applied for a grant received one. Only two institutions had done encoding after the granting period was over, one of them commenting that they had done only a small amount of encoding since then. It may be that EAD is too costly to do without a grant.

The explanation of why implementation might be expensive and time consuming is found in the workflow plans of respondents. Ten respondents with existing finding aids planned to augment, update or rewrite existing finding aids before EAD encoding, although three of those indicated that they were doing minimal updating. As for personnel to do the encoding, four plan to use student workers, guided by archivists. Seven plan to use archivists and paraprofessional staff to encode. Two plan to use archivists and classified staff in addition to student workers or outsourced staff. One plans to outsource all encoding. Two plan to have only archivists do the encoding. This contrasts with Yakel and Kim’s finding that most adopters were having archivists do the encoding, which they postulated might be the reason the process was going slowly for

many institutions.⁴¹ Although respondents appear to be cautious in their encoding plans, they are aware of current EAD software. Thirteen indicated that they were familiar with free EAD/XML authoring software such as Archivist's Toolbox or Archon. Several noted that they felt they should investigate these software packages further.⁴²

The problems identified by respondents included lack of staffing, lack of support, technology, cost and workflow. The solutions identified by respondents as helpful to their institution in implementing EAD are consistent with these problems. Three solutions were given equal weight by respondents: "having consultants assist you in developing an implementation strategy"; "having consultants or a consortium set up the server" and "having consultants handle all aspects of the implementation (grant writing; developing an implementation strategy and workflow; developing EAD standards; developing hiring, outsourcing or training staff; setting up the server environment)." Slightly fewer respondents said that their implementation could be helped by "having staff receive EAD training," including two who indicated that appropriate training for their staff was available. Another respondent noted that appropriate training was available but that it was too expensive. Perhaps this is what is preventing institutions from sending their staff to training as well. In-house training would seem to be the obvious answer. Many institutions have now migrated their MARC training from external classes to internal one-on-one training. However, training methodology for

⁴¹ Yakel and Kim, 1430.

⁴² Although I listed two examples of free EAD authoring software in my survey, there are many more available to archivists. A discussion of other software can be found in Katherine M. Wisser's article "EAD Tools Survey" published at: www.archivists.org/saagroups/ead/EADToolsSurvey.pdf (August 2005).

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EAD has never made that leap.⁴³ One respondent who tried to set up an internal EAD training program found that her institution's staff did not understand cataloging standards and technology well enough to understand EAD. This may explain why the lowest ranked option was, "having staff receive server technology training" (two respondents). A more popular option that could provide technical and institutional support as well as to reduce cost was "working with an EAD consortium," chosen by four respondents as helpful to their institution in implementing EAD. However, Yakel and Kim, comparing EAD adopters versus non-adopters, found that consortium membership did not help small archives implement EAD.⁴⁴ It could be that consortium membership did not determine whether someone would or would not adopt EAD, but it still might be helpful to institutions trying to implement EAD. This is plausible in light of the comment made by the only respondent who noted no barriers to implementation at her institution saying, "The consortium worked very well" (Survey 16).

To address problems of technology and coding, respondents suggested having a comprehensive metadata strategy across all collections; having more archival positions and being convinced that EAD would add value for researchers. Additional comments included a respondent who explained that she had not implemented EAD because, "The perfect is the enemy of the good." She could either publish her finding aids in EAD (the perfect) or publish them in other formats (the good) and still have time to do her other job duties (Survey 2).

⁴³ Yakel and Kim, 1430.

Discussion

Three major barriers and ways to remove those barriers were identified in the survey. The primary barrier identified by practitioners is lack of staff. EAD is a time-consuming process. The initial planning, designing a workflow, choosing software for encoding, rewriting or updating of finding aids, setting up an EAD server, and then encoding and publishing finding aids all require vast expenditures of staff time. Respondents said that these tasks might be possible if they could reserve a block of time, but their other duties precluded this. As one respondent said, “It is not just finding the time to do the encoding, it is finding the uninterrupted time to think out how to do the encoding.”⁴⁵

Given the concern with staffing levels displayed by respondents, it is not surprising that use of outside consultants was cited by respondents as the single most helpful factor that would help them implement EAD. Eleven respondents identified as helpful the use of consultants either in the implementation phase, in setting up the server environment, or in handling all aspects of EAD implementation. What is surprising is that so few respondents had applied for EAD grants, which could fund project staff. This may reflect a lack of awareness of EAD grant opportunities.

The second barrier identified in the survey is the middleware gap. Archivists appear to know how to mark up finding aids in EAD, but do not know how to deliver that content to a web site. Yakel and Kim found that EAD non-adopters were just as

⁴⁴ Yakel and Kim, 1432.

⁴⁵ This is a paraphrasing of a telephone interview (Survey 6).

likely to have server/ middleware technical support as adopters were.⁴⁶ While this may not be what keeps people from adopting EAD, it may be what keeps them from implementing it once they have decided to adopt it.

There are several possible solutions to closing the middleware gap. One would be to improve staff knowledge of server technologies by expanding standard EAD training to teach the server technology needed to publish EAD encoded finding aids on the Web. An example of such a course is Daniel Pitti's class, "Publishing EAD Finding Aids" taught at University of Virginia's Rare Book School. However since "having staff receive server technology training" was the solution ranked lowest in my survey, only a small number of archives may be interested in this.

A solution that would require less server knowledge from archivists is the use of software that reduces or eliminates server customization required to host EAD. One such software is a promising new version of Archon, recently released by Christopher Prom and his colleagues. This all-in-one software can be used to encode finding aids; output them in several file formats such as html, XML and php; and provide a server friendly relational database and search engine.⁴⁷ Testing will be necessary to determine the effect of the new version of Archon on institutions' ability to implement EAD successfully. While Archon is designed to minimize the expertise required to mount EAD encoded finding aids online, research is needed to see whether archivists have the

⁴⁶ Yakel and Kim, 1432.

⁴⁷ Christopher Prom, Christopher A. Rishel, Scott W. Schwartz, and Kyle J. Fox. *A Unified Platform for Archival Description and Access*. Vancouver, BC, Canada ed. New York, NY, USA: ACM Press, 2007.

necessary skills to utilize it. Archon's acceptance by the non-archives staff who control archives servers needs to be studied also.

Another solution in line with responses to this survey is the use of outside consultants to set up server environments. Fox points out this may be the best use of consultants – dealing with technology issues.⁴⁸ Consultants may recommend that existing server software be utilized for EAD hosting or may suggest that Archon software be used instead.

The third and final barrier to implementation identified in this survey is the plan of many archives to rewrite their finding aids before implementing EAD. The drive to get finding aids up to DACS or current archival standards may make it impossible to get finding aids encoded at all. An alternate plan would be to encode and publish finding aids in two rounds. The first round would be to encode finding aids up to the basic EAD record guidelines as defined by the Library of Congress's "Minimum Recommended Finding Aid Elements."⁴⁹ Only finding aids that do not contain these basic elements would need to be updated. A second round of encoding could add other levels of description to these basic EAD records and update all elements to the repository's current standards, as needed. This is the procedure adopted by the Special Collections Research Center, Earl Gregg Swem Library, at the College of William and Mary following my recommendations as their consultant.

⁴⁸ Fox, *Implementing Encoded Archival Description*, 334.

Conclusion

As an archival standard, EAD holds the significant promise of improving quality of archival description. If enough archives adopt EAD, finding aids will improve and users' access to archival material will increase. However, a standard that no one is able to adopt is of limited value, so it is vital that the professional community explore and understand the factors that makes implementation of EAD difficult. Some of these factors can be identified and measured objectively, such as the larger staff size of institutions of EAD adopters versus non-adopters. Other equally important factors are subjective, such as the perception of half of the archivists in this survey that EAD implementation at their institutions has been significantly impeded by lack of infrastructure support.

Several archivists and librarians at the Wisconsin Historical Society and University of Wisconsin-Madison suggested to me before I began this survey that the two main barriers to implementing EAD are institutions' lack of expertise in the server technology and the desire on the part of archivists to rewrite legacy finding aids before encoding them. Their opinion is supported by the results of this survey and ties into the primary lesson of this survey – that is unrealistic to implement EAD with existing staffing levels. With staff workloads already pushed to the limit, it is especially impractical for an institution to expect to implement EAD if that institution requires every encoded finding aid to be fully compliant with Describing Archives: A Content Standard (DACS). This is particularly true at smaller archival repositories.

⁴⁹ "Appendix A: Minimum Recommended Finding Aid Elements," *The EAD Application Guidelines for Version 1.0*, 1999, <http://www.loc.gov/ead/ag/agappa.html> (accessed: April 18, 2007).

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However, increased staffing alone will not insure successful implementation, because EAD is a technology dependent standard. There is still a significant gap between the technological expertise needed to implement EAD, and the computer skills of many archivists. What resources archivists use to bridge these gaps will decide the future of our profession. Either we can do this by expanding our internal resources through increased staffing, increased technical training, and the use of less complicated EAD software or we can solve them by using outside resources such as consortia and consultants. While the survey reveals that many archivists feel the best solution is to use consultants for most aspects of EAD implementation, archivists cannot afford to let their professional abilities stagnate while the world of archival description continues to evolve at an ever-quickenening rate. Archives should use consultants as part of a proactive plan to incorporate Encoded Archival Description into the core work of archivists.

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Appendix A

Barriers to EAD Implementation Survey

1. Background
 - a. Approximately how many archivists are on your staff?
 - b. Does your archives have a Web site?
 - c. If your institution has implemented EAD, when did that occur?
 - d. If you institution has not implemented EAD, have you put your finding aids online in another format?
 - e. Approximately what percentage, if any, of your repository's finding aids are encoded in EAD?
2. What are the top three barriers to your institution implementing EAD?
(mark three of the following)
 - ☐ lack of staff
 - ☐ expense
 - ☐ lack of implementation plan (where do we start?)
 - ☐ lack of infrastructure/ IT support
 - ☐ lack of institutional support
 - ☐ perceived complexity of EAD for archivists to learn
 - ☐ perceived complexity of EAD for patrons to use
 - ☐ other (please describe)

3. Costs
 - a. Is EAD viewed as too costly for your archives to implement?
 - b. Has your institution ever applied for a grant for EAD implementation?
 - c. Did your institution ever receive a grant for EAD implementation?
 - 1.If so, did you encode any finding aids in EAD before the grants?
 2. After the granting period was over?
4. Resources
 - a. Does your staff lack of the technical expertise to have encode finding aids in EAD?
 - b. If so, is appropriate training available?
 - c. Does your institution have staff that can set up the components necessary for publishing EAD on the Web (style sheets, SGML/XML/XLS/HTML parsers and converters)?
 - d. If not, is lack of this server technology expertise a barrier to EAD implementation?
5. Workflow

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- a. Do you plan to augment, update or re-write existing finding aids before you encode them in EAD?
 - b. When you implement EAD, who do you plan to have encode your finding aids?
 - ☐ only archivists
 - ☐ archivists and classified (paraprofessional) staff
 - ☐ student workers, guided by archivists
 - ☐ an outside agency
 - c. Are you familiar with free software such as Archivist's Toolbox or Archon?
 - d. Does your institution have an EAD finding aids website set up?
6. What would help your institution implement EAD?
(mark all that apply)
- ☐ having consultants assist you in developing an implementation strategy
- ☐ having staff receive EAD training
- ☐ having staff receive server technology training
- ☐ having consultants or a consortium set up the server environment necessary for publishing EAD
- ☐ working with an EAD consortium
- ☐ having consultants handle all aspects of the implementation – grant-writing; developing an implementation strategy and workflow; developing EAD standards; developing hiring, outsourcing or training staff; setting up the server environment
- ☐ other (please describe)
- _____
7. Additional comments on barriers to EAD implementation:
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