HOW DO THEY KNOW WHAT THEY DON'T KNOW?
CREATING A DIGITAL PRESERVATION TRAINING PROGRAM

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Abstract
An effective education and communication program is necessary to implement an organizational digital preservation program. Cooperation and coordination is needed when implementing a digital preservation program because it is more than just one person, and more than a single event. It is a series of managed activities. An educational program is needed to let the designation community know why digital preservation is important, as well as what is happening. The educational program should address the needs of different levels, such as the institution, departments within the institution, and individuals. This paper presents the program at one university, the materials they created, and how they implemented an educational and communication program they put in place to help promote their digital preservation processes.

Introduction
A number of years ago, Ralph, a co-worker, was managing an Australian office for our software company that was headquartered in the United States. Ralph was frustrated at being ‘out of touch’ with the events happening in the corporate head office. He was certain that important things were happening of which he had no knowledge. When asked what he thought he was missing, he replied, “I don’t know! How do I know what I don’t know?”

Ralph’s statement may at first appear humorous, but there is of course a serious side to it. How does anyone know what they don’t know? It is not necessarily a matter of self-education, because not only must a person first be aware of the topic before they can learn about it, but they must be aware of what others are doing that may impact their own work.

In response to Ralph’s frustrations, as the International Manager for the company, I started a newsletter to inform the employees about what was happening in the corporate head office. Several times each week, I would visit every company department and report on what they were planning, what they were working on, and any other significant activities. Before long, the remote employees knew more about what was happening throughout the company than those who were in the corporate office. Soon the newsletter was distributed company-wide as other employees realized the value of internal communication. Working in the same location was simply not the same as communicating.

It is apparent that how we approach the task of communicating can directly lead to the success or failure of a project. If, as in the example presented in this paper, our project is to establish a digital preservation program at our institution, then we must establish a program to communicate with and educate others about the program. An effectively communicated education program is a necessary part of implementing an organizational digital preservation program.
**Why an education program is needed**

Some organizations may only have one person who is responsible for digital preservation, so why is an education program needed? The answer to this question is apparent if we look at the definition of digital preservation. That is, “Digital preservation refers to the series of managed activities necessary to ensure continued access to and preservation of digital materials”.¹ Digital preservation is a series of activities and processes which must all happen, and must often happen in a specified sequence to produce the desired result. These processes will affect just about every part of an organization and they require coordination and cooperation.² Digital preservation involves not just one person and it is not just a one-time event. Rather, it is an ongoing, continuous obligation.³ The program that is established must be sufficiently robust to outlast the implementer.

Digital preservation requires a great amount of effort – no one is capable of doing it alone. An institution may often appoint one person to ‘do’ digital preservation; that person may be a digital preservation officer, a special collections curator, a systems programmer or similar. But the person in charge must broaden the scope of their efforts in order to succeed. The question then, is ‘how’ is this achieved?

**How to establish an education program**

The ‘how’ in this heading does not refer to the actual preservation of the digital materials, which is a topic discussed at length in other places, but rather, “How do I communicate and coordinate our program throughout our organization”?

With a new program, such as digital preservation, education and communication must go together. Telling others ‘what’ you are doing must be accompanied with the ‘how’, ‘when’ and ‘why’, each of which are essential components of an education program. In this context, to speak of either communication or education is, in effect, speak of both communication and education.

To develop an education program to fit your needs you should begin by considering the various levels of your institution. You should identify three levels to address:

1. institutional
2. departmental
3. individual

These levels are listed, not in terms of importance, but in terms of their scope. The institution is the largest and broadest level. It is the sponsoring organization, particularly in terms of funding, and you should begin by looking at this level. The institution will:

- provide the most far reaching level of support,
- gather the interest of others concerned with digital preservation,
- provide the budget to finance the digital preservation programs,
- produce the materials that are to be preserved,
- involve outside institutions in the process.

This type of endeavor should begin with a requirement for the institution to identify, as far as possible, the:

1. digital preservation needs of the organization,
2. departments or sub units within the organization that may be affected,
3. individuals within the organization with whom you should communicate.

While some of the digital preservation needs of the organization may be readily apparent, others will only be discovered as you move forward with the communication and education process.
Institutional level

At the institutional level, you will be dealing with the organization as a whole, with all departments and all individuals. The institutional level goes beyond the needs of the various units and individuals. In our case at Brigham Young University (BYU), this is the University, with the University President, Vice Presidents, and other administrators. The institution includes all departments and all employees. This level sets the overall tone of the organization and is guided by the university mission statement. In looking at this level at BYU we considered the following factors and whether or not they could be included in a digital preservation education program:

- the university web site,
- the monthly university newsletter,
- the annual university meetings and technology fair,
- the university technology workshops.

Departmental level

The departments, while a component of the larger institution, have separate or more specific needs. They are often guided by their own mission statements, which in turn reflect the general university mission statement. The differences must be understood as you prepare a program to meet their preservation needs and interests. As we planned for working with the departments we asked ourselves the following questions:

- which departments have audio or video materials?
- do faculty prepare or use digital materials in their instruction?
- are there copyright or legal concerns with university materials?
- is there a university risk management group?
- do the faculty deposit their materials in a repository?
- who manages the university servers and data repositories?
- what educational or training programs are currently in use by the University Archives and Records Management departments?
- what department meetings are being held?
- who is responsible for each of these areas?

These questions helped to determine the departments that may be interested in an education program, as well as what their needs would be and what mechanisms were already in place. The final question of who is responsible for the areas, led to the next level that we addressed, the individual level.

Individual level

The last, and probably the most important level to consider, is that of the individual. Education and training is most effective when presented on the individual level. In doing this it is necessary to be proactive. Any project that you undertake will be greatly enhanced by the relationships you create and the training you do for others before you begin. At BYU we carefully identified the individuals at each level and in each department that we should first contact. The next step was to visit each of these people. Each person was first contacted by phone, whereby we briefly introduced ourselves, and made an appointment to meet with him or her.

The first visit was an introductory visit, at which we explained who we were, why digital preservation was important, and what we were trying to achieve. This was an excellent opportunity to provide an overview of why effective digital preservation was increasingly vital to the University. In almost every case, the person we had contacted expressed some interest in digital preservation and a willingness to learn more. During this initial meeting we
also learned more about their preservation needs and determined if there were other individuals with whom we should also meet.

**Starting the digital preservation education program**

As described above, the preparation for the digital preservation education program started by communicating with three levels within the University, from the most general to the most specific. The implementation of the program was undertaken in ‘reverse’ order; that is, commencing with the individuals and then progressing to the departmental and institutional levels. The reason for this was to firstly educate those individuals who were most involved in digital preservation and would be able to help implement the preservation program at the University.

**Educational materials created**

For our education program we decided that we would create several types of materials to educate the employees. These included handouts, web documents, and PowerPoint presentations. Appendices A, B and C provide samples of the educational materials created.

Appendix A shows the main page of the Digital Preservation web site. The web site was created so that there was one single place where people could go to find out more about digital preservation at BYU. The web site was created with the input of many people throughout the organization, which further served as part of the educational process. The web site, which is updated frequently, includes sections on the latest digital preservation events, frequently asked questions, preservation materials and tools, web-related resources, and who to contact for additional information.

Appendix B contains a sample page of the weekly digital preservation literature summaries. Each week, the Digital Preservation Officer summarizes several articles, web sites, or books about digital preservation, and posts these summaries to the web page as well as distributing them to subscribers by email. The summaries contain the essence of the readings, but are short enough that they can be read in a few moments. This literature summary helps educate others about what is happening with digital preservation and likely future trends.

Appendix C provides an example of Preservation Matters, the digital preservation newsletter that is distributed quarterly throughout the University. This newsletter is designed to catch people’s attention and to increase the awareness of digital preservation at the University. It contains several short articles or diagrams on digital preservation topics.

**Concepts presented**

The education program was designed to inform and train university employees about the digital preservation program. As not everyone has the same level of training need, we designed a flexible program that could be modified depending on the needs and interests of each group and individuals. The basic concepts included:

- awareness of the need and individual responsibility for digital preservation,
- the proper creation, storage and handling of digital materials,
- the importance of including relevant metadata for materials.

These are the concepts that we have tried to address with those who produce materials, but do not necessarily need to administer those objects.

The more advanced topics of digital preservation included:

- institutional repositories,
- testing of optical media and migration,
- web archiving,
understanding the OAIS model and how it relates to our university model.

Above all, we have always tried to promote the concept that we provide a valuable service to staff and to the University.

**Individual level**

On the individual level, we began re-visiting those whom we had contacted initially. These included supervisors, the University Archivist, the University Records Manager, and others. We had prepared several PowerPoint presentations that we could present on the various concepts that they needed to learn. This type of instruction was done individually or in small groups. As we met with individuals, we tried to build confidence in our digital preservation program, to let them know that there are still many unanswered questions, and that we would be addressing all of the concerns. As one concerned faculty member said following a lengthy discussion, “After talking with you, I realize that there is more than I can get my arms around, but I am glad that you are here to do it”.

**Departmental level**

The department level became an important method for educating the university employees on digital preservation. With the assistance of some of the individuals in the areas, we were able to present education programs to many of the University’s departments and their administration. This included the Faculty Advisory Council, the Information Technology Department administrators, monthly administrative meetings, and faculty interest groups. To help make the process easier, we created a digital preservation interest group for any who wished to attend.

**Institutional level**

In some ways, the institutional level was difficult to address effectively, largely due to the size and complexity of the organization. For the most part, the efforts at the institutional level were aimed at providing general information and then for those who expressed an interested, to meet with them individually or with their departments. The main tools used for this institutional level were using the official university news publications, the Preservation Matters newsletter should in Appendix C, and the Digital Preservation web site in Appendix A. In addition, we were able to establish a University Records Committee, which included Assistant Vice Presidents for Education and Technology, as well as the University legal council, risk management and Copyright Office. This committee became valuable for coordination among departments, for supporting funding initiatives, and for addressing general university directions and policies.

**Training a digital preservation officer**

The Digital Preservation Officer (DPO) is a key person in implementing a digital preservation program. The DPO creates and directs the preservation program and provides leadership in this regard for the rest of the organization. Thus, it is important that the DPO be properly trained in order to ensure the success of the program.

There is no one right training program, but the following suggestions may be helpful when training a DPO. These suggestions fit into three areas:

1. understanding the basic elements,
2. keeping current with new ideas and events,
3. individual involvement.

Digital preservation encompasses many topics and areas. It includes hardware, software, archives, records management, project management, and familiarity with many
types of digital media. By understanding the basic elements of digital preservation, by reading and keeping current with new publications and events, and by becoming involved in preservation events and interacting with others in the preservation community, a DPO can become more effective in addressing the ongoing needs of the institution.

Understanding the basic elements of digital preservation

At the heart of digital preservation are several basic elements; the more important are as follows. Digital materials must be actively preserved. If they are not managed properly, these items will become unusable in a relatively short period of time; there is no passive preservation with digital materials as there is with paper. In addition to the preservation needs, digital materials need to be accessible to the users. And it is important that the access is according to the intellectual property rights. The materials must also be managed throughout their useful life. Not everything should be saved, but everything that is saved must be managed. The concept of life cycle management is important for digital materials.

Besides these elements, there are two foundation documents that must be understood. The first is the conceptual model upon which the current digital preservation practices are based. The model is found in a document entitled, Reference Model for an Open Archival Information System (OAIS). This model was developed to standardize the terms, concepts, and structure of archives that are concerned with long term preservation.

The second document is Trusted Digital Repositories: Attributes and Responsibilities. The document created by RLG and OCLC establishes the attributes of a digital repository for organizations that wish to provide reliable, long-term access to digital materials. This document builds upon the OAIS model.

There is an additional resource that will help teach the basic elements of digital preservation. Cornell University has developed an excellent tutorial, Moving Theory into Practice: Digital Imaging Tutorial. This should be the beginning point in any educational program for digital preservation.

Keeping current with new ideas and events

Digital preservation is an emerging field of study; new information is constantly being made available. Therefore it is important that a DPO be constantly reading and understanding what is happening in the field. Here are a few sources information that will be useful:

Listservs
Digital-Preservation [JISC]
http://www.jiscmail.ac.uk/lists/digital-preservation.html
Digital Libraries Research mailing list [IFLA]
http://infoserv.inist.fr/wwsympa.fcgi/subrequest/diglib
Management & Preservation of Electronic Records [ERECS]
Preservation/Conservation of documentary Heritage in Europe [EPIC]
http://listserv.surfnet.nl/scripts/wa.exe?A0=epic-lst

Reading Materials
CLIR Reports http://www.clir.org/pubs/reports/index.html
D-Lib Magazine http://www.dlib.org/
Preserving Access to Digital Information [PADI]
In addition to monitoring these websites, each week I post a summary of several articles that pertain to digital preservation. These notes, This Week’s Reading Notes and Source Information are available to any interested party. They can be read either online or through email at http://www.lib.byu.edu/departs/dp/readings/current.html

**Individual involvement**

One of the best ways to learn about what is currently happening in the digital preservation field is to become involved on an individual basis. There are conferences and workshops in many parts of the world that address preservation issues. Even if you are unable to attend these, the reports are often posted in the Internet for all to read. Many organizations distribute information on their activities and initiatives for the use by organizations facing similar issues. The ECURE conference (http://www.asu.edu/ecure/) deals specifically with preservation of and access to electronic records. Two web sites that provide updated information about international events and resources are:

- DPC/PADI What's new in digital preservation
  http://www.dpconline.org/graphics/whatsnew/

**Conclusion**

Digital preservation is important. It is vital to preserving and safeguarding our cultural heritage. In the past, we have had printed books and materials, and the preservation mechanisms that were developed to transfer those items into the future. The methods of how to do that have been well understood. However, digital materials are completely different in format, in longevity, and in requirements for handling and preservation. If librarians are to competently preserve the digital files, we need to make people aware of the need, and teach them how to preserve them.

Our ability to implement digital preservation programs is directly related to how well we are able to educate and communicate with others. This education process, which is key to our future libraries and archives, cannot be left to chance; it must be carefully created and directed, in order to accomplish our preservation goals. If we intend to establish an effective digital preservation program, we must cooperate and coordinate.

This paper has presented an overview of the digital preservation education program established at Brigham Young University. While some of the elements may be unique to BYU, it is also likely that these concepts will be of value to others. Paraphrasing the poet Robert Frost, we still have miles to go, but we are on the road and moving to our goal of an effective digital preservation program.

**References**

Appendix A  Digital Preservation

This digital preservation web site, administered through the Harold B. Lee Library, is an important part of our university digital preservation program. The web site, which is updated regularly, is located at http://www.lib.byu.edu/departs/dp/.
These reading notes are available through the web site or an email list. These summaries provide the recent information on what is happening within the digital preservation field.
This is a sample of the quarterly newsletter distributed throughout the university. The intent is to make university employees more aware of the need for digital preservation, and that there is assistance available within the University.