

# The Portal to Texas History: Building a Partnership Model for a Statewide Digital Library

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## **ABSTRACT**

*The Portal to Texas History serves as a gateway to Texas history materials. The Portal consists of collections hosted by the University of North Texas (UNT) Libraries in partnership and collaboration with over 280 Texas libraries, museums, archives, historical societies, genealogical societies, state agencies, corporations, and private family collections. With a continuously growing collection of over half a million digital resources, The Portal to Texas History stands as an example of a highly successful collaborative digital library which relies heavily on partnerships in order to function at the high level. The proposed book chapter will describe all aspects of establishing the collaborations to create the Portal including the background of the project, marketing the initiative to potential partners, partnership roles and agreements, preservation of all digital master files, technical infrastructure to support partnership models, promoting standards and good practice, funding issues and development, research studies to understand partner benefits and user groups, sustainability issues, and future research directions.*

Keywords: Digital, Libraries, Collaborative, Partner, History, Collections, Online, Access, Materials, Project, UNT

## **INTRODUCTION**

The Portal to Texas History<sup>SM</sup> serves as a gateway to Texas history materials in which users are able to discover anything from an ancestor's picture to a rare historical map. The Portal consists of collections hosted by the University of North Texas (UNT) Libraries in partnership and collaboration with over 280 Texas libraries, museums, archives, historical societies, genealogical societies, state agencies, corporations, and private family collections. With a continuously growing collection of over half a million digital resources, The Portal to Texas History stands as an example of a highly successful collaborative digital library which relies heavily on strong, extensive partnerships in order to function at a high level.

This chapter describes all of the aspects of establishing the broad collaborations fueling the Portal, including the background of the project, marketing the initiative to potential partners, partnership roles and agreements, preservation of all digital master files, technical infrastructure to support partnership

models, promoting standards and good practice, funding issues and development, research studies to understand partner benefits and user groups, and sustainability issues for a program of this scale.

## **BACKGROUND**

The Portal to Texas History [<http://texashistory.unt.edu>] began in 2002 with a mission of working with institutions in Texas who were interested in digitizing and providing access to their unique resources so users around the world could discover and use these materials for educational efforts, scholarship, personal research, genealogy, or lifelong learning. The original idea for the Portal arose from Cathy Nelson Hartman, a librarian at UNT, who envisioned a robust technological platform to enable collaborators to contribute to and benefit from access to Texas cultural and heritage materials online. Very little of the Texas historical record was available online, and the small number of materials digitized were difficult to locate and use. Hartman convened meetings with stakeholders in seven regional meetings across the state in 2001, visited many individual libraries and museums, and discussed the vision and needs of prospective participants. Face-to-face interactions helped build interest and trust that proved important for the future collaborations and with seeking initial funding. In 2002, Hartman received the Portal's first grant, which was awarded from the State of Texas Telecommunications Infrastructure Fund to create a technical infrastructure for The Portal to Texas History. The grant covered the cost of hardware and software to assist with discovery, preservation and file management for digital collections.

Initially, UNT reached out to potential partners through regional meetings and began conversations about collaboration that resulted in the project going online with two partners. UNT then moved forward in building partnerships by defining thematic grant proposals around either historical events, areas or people. Institutions that held content that fit the scope of the proposals were invited to participate. As the Portal's discoverability and reputation grew, partners often came unsolicited about participating. Selection criteria regarding whether content was worthy of inclusion were very simple: if museums or libraries wanted to make historical content accessible online that was important to their local community, the Portal would add their cultural heritage materials if funding could be identified.

By 2004, The Portal to Texas History was online with a small amount of content, just 191 digital objects. UNT contributed materials from their Special Collections that focused on nineteenth century laws of Texas and the controversy surrounding the annexation of Texas in 1845, and collections from the Portal's first collaborative partner: the Fort Bend Museum and its sister institution the George Ranch Historical Park. The two museums held existing digital images from early projects that they had once placed online. They soon discovered an array of overwhelming technological challenges that caused them to abandon the initiative and pull the images offline. The Portal offered a solution for repurposing these images to make them available to the public again. Other partners arose to join the collaboration, and the amount of content and variety of partners continued to grow. By the end of 2006, the Portal included 20,880 digital objects, and by the end of 2009, there were 77,766. (Statistics for The Portal to Texas History: Items Added, n.d.)

Attracting partners and forming collaborations was not without its challenges. While many institutions intrepidly dove into partnerships with the Portal, many that eventually came to fruition took years of interaction and outreach before projects took place. Issues arose for many reasons. Some institutions were concerned they would lose patrons or visitors if they placed materials online. Others worried about the impact the partnership might have on their staff and whether they would have the time and resources to add a collaborative digitization project to their existing work. Another concern were the historical materials, and apprehensions about their safety from damage during transport or the digitization process.

Several institutions wanted to digitize and host their own materials. Some have met this challenge with success, but many quickly realized that while scanning content is easy, providing access to it online in a way that is useful and discoverable was beyond their capabilities with existing resources. Portions of the

content in the Portal are in their second home, as the initial platform or collaboration where they started no longer exist.

## **Other Initiatives**

Hundreds of online collections representing state and local history now exist online, many of which are hosted by academic libraries or by consortia consisting of academic libraries, cultural heritage organizations, and state libraries. A number of statewide repositories have a similar model to The Portal to Texas History and offer a range services that include digitization, training, digital preservation, and hosting. Providing even a few basic services are great incentives for participation. As stated in a recent report published by The Institute of Museum and Library Services, “Another way to reduce barriers to participation is to offer services rather than tools. By providing services that work together in a cohesive way, including hosting, validation, authentication, and harvesting, smaller institutions can bypass many information technology requirements.” (Erway, 2015)

The Montana Memory Project [<http://montanamemory.org/>], hosted by Montana State Library and Montana Historical Society, offers grants up to \$1,500 per project to fund digitization projects and provides training, digital preservation and hosting. North Carolina Digital Heritage Center [<https://www.digitalnc.org/about/>], hosted by the University of North Carolina at Chapel Hill, currently offers digitization services to cultural heritage institutions throughout the state at no charge. The Connecticut Digital Archive [<http://ctdigitalarchive.org/>], hosted by the University of Connecticut Libraries and in partnership with the Connecticut State Library, provides a range of services as well, including long-term management, secure storage, preservation solutions. Its digital asset management system is built with open source technologies such as Islandora, Fedora, and Drupal. While each statewide repository may have different service models and infrastructure, their missions share a vision to provide free online access to historical materials.

## **The Portal Today**

Today the Portal hosts over 600,000 digital resources, from over 280 partnering organizations, encompassing over 300 unique collections on the site. The Portal is only possible because of the collaborative nature of a wide range of organizations throughout the state of Texas. The UNT Libraries staff has developed a number of models and workflows that can be used to assist partners with getting their resources digitized and available via the Portal.

The Portal partners include a diverse array of institutions, including:

- 83 Public Libraries
- 38 Academic Libraries
- 4 Historically Black Colleges & Universities
- 5 Medical Libraries
- 45 Museums
- 26 Historical Societies
- 6 Historical Commissions
- 28 Private Collectors
- 15 State or City governmental entities
- 8 Genealogical Societies
- 8 Churches
- 4 Corporations

- Dozens of other types of partners

Public libraries range in size from the Dallas and Houston Public Libraries to libraries serving small, rural populations such as Deaf Smith County Library and the Schulenburg Public Library. Academic libraries participating range from Rice University, University of Texas' Dolph Briscoe Center for American History, and much smaller colleges such as Lamar State College and St. Philip's College. Museum participants include the Dallas Museum of Art, the Mexic-Arte Museum, the Star of the Republic Museum, and the Sam Rayburn House Museum. Historical societies and historical commissions include partners such as the Kemah Historical Society and the Bee County Historical Commission. State or local governmental partners include examples such as the City of Dallas, the Texas Department of Transportation, the Texas Historical Commission, and the Texas General Land Office. Historically Black Colleges and Universities participate, including Wiley College, one the oldest HBCUs west of the Mississippi (and alma mater of the Great Debaters), and Texas Southern University, home of the Barbara Jordan papers.

The Portal deeply enriches the study and understanding of the humanities for a broad public audience, and supports teachers in K-16 and the research of many historians. The history of Texas documents many important facets of U.S. history. In the 16th century, Spain reigned as the most powerful and influential empire in the world, and for almost 300 years Texas existed as the Northern frontier of that empire in the Americas. From its base in Mexico City, the Spanish Empire in the new world spread outward, exerting its control over a large area of what is now the Southwestern United States. In the 1700s, Spain established several missions throughout Texas, primarily centered near present-day San Antonio, Goliad, and Nacogdoches. Neither Spain nor Mexico would make any serious effort at fully colonizing Texas, but in 1823, the Mexican government granted Stephen F. Austin empresario status, allowing him to bring Anglo settlers to the Brazos River area.

Topics documented in the Portal include a rich panorama of history such as:

- Colonial Exploration of the New World
- Native American Life
- The Battle of the Alamo
- The Annexation of Texas
- The Mexican-American War
- The Civil War
- Women's Suffrage and Temperance Movements
- The Galveston Hurricane of 1900
- The Spindletop Field near Beaumont and the petroleum age)
- Racial and Cultural Diversity of Texas
- Assassination of John F. Kennedy in Dallas

## **Collection Highlights**

Strong partnerships enable the creation of extensive collections that no one institution could create alone. By combining the collections of the more than 280 partners in one hosted site, researchers find important materials on their topics of interest that come from many institutions scattered across Texas. The Portal features over 300 collections that represent a wealth of humanities content that touches on every facet of history, from pre-colonial times to the present. The Portal contains historic materials from all 50 states,

and nearly 100 different countries, although Texas history is the primary focus. The diverse cultures of Texas are also well-represented in the Portal through collections such as Texas Cultures Online [<http://texashistory.unt.edu/explore/collections/TCO/browse/>] which features unique collections from eighteen different institutions depicting the diverse cultures of Texas during the nineteenth and twentieth centuries.

Some of the materials digitized for this program include over 3,000 African-American funeral programs from the San Antonio Public Library; historic images from the Danish Heritage Preservation Society; Texas-Mexican Presbytery records. Some of the languages represented throughout this collection include Spanish, Swedish, German, Danish, Dutch, French, Chinese, Japanese, and Hebrew. The Texas Folklife Festival Collection features photographs from the Festival, an annual event sponsored by UT San Antonio's Institute of Texan Cultures that celebrates the many ethnicities represented in the state of Texas. The Texas Folklore Society Collection [<http://texashistory.unt.edu/explore/collections/TFSP/browse/>] features sixty books published by the society that contain Texas and Mexican folklore, including stories about folk medicine and ranch remedies, folk songs, legends and more.

The Texas Digital Newspaper Program Collection

[<http://texashistory.unt.edu/explore/collections/TDNP/browse/>] coordinates with many partners, including public libraries, publishers, historical and genealogical societies, and universities, to represent and preserve Texas history through digitized newspapers. This collection contains over a million and a half searchable newspaper pages dating from 1829 to the present, and includes coverage of historically significant events in national history, as well as coverage of every major battle for nearly the last two centuries, including the attack on Pearl Harbor. In 2015, the Portal also uploaded the first complete run of an LGBT newspaper accessible online for free public access in the U.S., the *Dallas Voice* [<http://texashistory.unt.edu/explore/collections/DALVO/browse/>]. The historical newspapers collections are not only used in traditional research by scholars and lifelong learners, but also form the basis for an National Endowment for the Humanities (NEH) funded collaboration, Mapping Texts, between UNT and Stanford University in text mapping research (Mapping Texts, n.d.) that is exploring new methods for programmatically finding and analyzing meaningful patterns over large data sets.

The Civil War and its Aftermath: Diverse Perspectives

[<http://texashistory.unt.edu/explore/collections/CWADP/browse/>] consists of eight archival collections reflecting the experiences of women, men, military men, Texas cattlemen, entrepreneurs, farmers, and government officials from different parts of the country, with different political views and experiences before and after the Civil War. For example, the Hamilton K. Redway Papers, 1825-1916, document the army career of this union soldier. During the Civil War, he operated as a corporal in Company K, 24th Regiment of the New York Volunteers, as lieutenant and later captain of Company F, 1st New York Volunteer Veterans Cavalry, and his papers include detailed military orders that document the movements and day to day business of this unit, as well as his personal diaries that he kept for the entirety of the war. After the war, his letters reveal the daily lives of the Buffalo Soldiers, including information about enlistments, uniforms, and garrison equipage.

The José L. Castillo Photograph Collection [<http://texashistory.unt.edu/explore/collections/JCPC/browse/>] is a contemporary, born-digital collection from José L. Castillo, an award-winning journalist for the international EFE News Service. The images depict recent protests and political events in the Latino community, including the march protesting immigration bill HR 4437 in April 2006 in Dallas attended by more than 350,000 people. Other images focus on the Hispanic community and political leaders; festivals, Latino soccer leagues, and gatherings in the North Texas area.

An extremely popular collection with Portal users is the Clyde Barrow Gang Collection

[<http://texashistory.unt.edu/explore/collections/BCM/browse/>], which comes from a partnership with the Dallas Municipal Archives and includes historic Dallas Police Department photos of Bonnie Parker and

Clyde Barrow, along with numerous mug shots, fingerprint cards, wanted notices, and images of their bullet-ridden car.

The Portal also hosts entire runs of journals and magazines valuable to research, such as *Art Lies*, a journal that examines contemporary art production, practice and theory. Published twice annually, the journal contains essays, commentaries, and exhibition information concerning artwork and current issues. *The Southwestern Historical Quarterly*, continuously published since 1897 by the Texas State Historical Association, is the premier source of scholarly information about the history of Texas and the Southwest, and features issues from 1897-2004. Other examples of publications available in the Portal include *Heritage* magazine, *Legacies: a History Journal for Dallas and North Texas*, and *Stirpes*, the publication of the Texas State Genealogical Association. The *Texas Almanac* collection features the first edition of this journal issued by *The Galveston News* in January 1857, and includes all issues through 1989. Recently, the team completed a project to digitize the entire run of 100 years of *Scouting* magazine, the primary publication of the Boy Scouts of America, a collaborative project with the National Scouting Museum which is located in Irving, Texas.

Clearly the Portal's collections comprise a wide range of culturally important historical materials that are of interest and value to an international audience. Without the diverse institutions which chose to partner with UNT, the Portal would not host collections which represent such rich and nationally significant collections.

## **UNT Libraries support of the Portal**

The Portal team consists of staff mainly from the Digital Libraries Division and the External Relations Office, but their time and effort supports not just the Portal, but many other core library services. The Libraries contribute significant support to the Portal from the existing libraries' budget in the form of staff salaries, student wage funding, and equipment, with the remainder of support coming from external funding similar to the examples shown above. At any given time, the Portal team may be working concurrently on over twenty different projects from multiple institutions with external funding from a multitude of sources.

The UNT Libraries are dedicated to the development of digital collections as a core function and mission of services, research, and outreach. Distinguished for its exemplary leadership in creating the CyberCemetery and other government-related digital collections, UNT exists as one of only ten Affiliated Archives of the National Archives and Records Administration (NARA). The UNT partnership with NARA arose due to fact that very early on, UNT was capturing and harvesting critical websites from defunct federal agencies and commissions when no one else thought to do so. Born out of sense of urgency and civic responsibility, the CyberCemetery project captured extensive, unique federal data and information that now exists nowhere else in the world.

The UNT Libraries is committed to the digital preservation of the materials hosted in the Portal. UNT's participation in NDIIPP and DataRes, and leading role in the International Internet Preservation Consortium (IIPC), along with other digital preservation activities demonstrate UNT's commitment to following best practices for the preservation, access, and long-term sustainability of digital assets. UNT's broad-based national and international leadership in digital preservation research informs the continuing evolution of the digital library infrastructure, including support of humanities collections via The Portal to Texas History. In 2015, the Portal was named as a finalist for the Institute of Museum and Library Services National Medal for Museum and Library Services, which honors outstanding institutions that make significant and exceptional contributions to their communities.

## MARKETING THE INITIATIVE TO POTENTIAL PARTNERS

The Portal to Texas History staff launched the project in 2002 by traveling across the state to meet with potential partners, singly and in regional groups. Enough participants expressed early interest in working together on the project that the Portal team began the process of seeking funding for infrastructure development. Since that time, a variety of marketing methods attract potential partners to join the program, some more successful than others. Methods use include sponsoring mini grants to digitize small collections, demonstrating collection usage with readily available usage data, communicating through e-newsletters and social media, and continuing face-to-face visits with partners.

One highly successful model involves offering “mini-grants” to fund digitization of small, but important, collections, which often leads to more extensive projects. The grants, initially funded by the Summerlee Foundation and later by UNT, offer up to \$1,000 worth of digitization services that include scanning, metadata creation, digital preservation, and online hosting of their collections through The Portal to Texas History. For participants who are new to digitization or who do not have the infrastructure to support a full-scale digitization project, mini-grants are a low-risk way to embark on a project. Partners receive guidance on preparing their materials (Digital Projects: Steps to Complete Your Project, n.d.) for digitization and are able to observe each step of the process to ultimately have their digitized collection online with little investment at their end. As a result, the structured guidance and financial support from the mini-grants encourage hesitant partners to take the plunge and start to digitize their collections. After their first grant, many partners feel encouraged to continue and re-apply for another mini-grant, sponsor community fundraisers, or seek larger grants through foundations or federal or state funding agencies. From a marketing standpoint, the surprising benefit of offering mini-grants is the way participating partners take the initiative to promote their successfully completed mini grant project through their respective professional networks and encourage others to participate as well.

Demonstrating how partner contributions make an impact on users also garners interest from The Portal to Texas History partners, as well as from funders. Very few digital libraries make their usage and content growth statistics publically available, but UNT has realized benefits on several levels by sharing this information. From The Portal to Texas History’s homepage, partners, users and funders can see a blurb that states the total number of items in the Portal along with the number of uses each month: “Currently we have a total of 606,062 items, comprising 6.3 million files. Over the last 31 days, we’ve logged 476,449 uses of these items by people like you.” Clicking through to the statistics pages (Statistics for The Portal to Texas History: Item Usage, n.d.) reveals usage data dating back to 2009 that shares the usage in the system by month and year, and also has a graph demonstrating the number of items added by month back to 2004. Going further, the system enables the breakdown of usage data by collection, contributing partner, and even goes down to the individual item level. For instance, we know that the most viewed item in the Portal is a Bonnie and Clyde “wanted” poster that has been used over 72,000 times since it was placed online in 2010. [<http://texashistory.unt.edu/ark:/67531/metaph78881/stats/>]

A “use” in the system is defined as a digital circulation for an item. All interactions a user makes with any part of a digital item within a thirty minute window are grouped as one “use”. At the end of the day these uses are combined for each item to create the item’s uses for that day. Each partner can view usage statistics for their own collection as well as each item in a collection, giving partners tangible proof that their collections are being used, and providing statistics to include in their monthly or annual reports. Partners have noted that usage statistics are of particular value as they provide tangible and trackable results of an item’s or collection’s use in a digital platform for their staff to measure potential outreach to researchers in comparison to onsite use of the collection.

These usage figures have also proven very powerful in communicating outcomes to private foundations who have funded projects. Often, the Portal collaborates with a partner to place small pilot projects online to demonstrate usage and demand so that the team can then demonstrate a sampling of the content along with usage statistics that demonstrate its demand. One example of this was for a 2013 grant UNT received

to digitize the *Dallas Voice*. Six years of the newspaper had been online in the Portal since 2011, so a compelling case for digitizing the entire paper was made when usage figures demonstrated that across the entire historic newspaper collection, all newspaper issues on the Portal averaged 15.54 uses per single issue since coming online. During the same period, the *Dallas Voice* experienced an average use per issue of 58.22 uses per issue – nearly four times the level of usage as the general newspaper collection. This statistic strengthened our case for the significance of the collection.

## **E-Newsletters**

Marketing through e-newsletters (fifteen annually) to engage the community of users and partners provides an important communication avenue. The Portal to Texas History’s e-newsletter “Beyond the Bytes” highlights completed projects, announces newly funded projects, and includes a feature article on a particular partner or collection. Through the e-newsletter partners learn about new digitized collections, perhaps inviting healthy competition and potentially sparking ideas for collaboration. The newsletter also shares stories about how the Portal has made a difference in the lives of historians, genealogists, and other users in the Portal community. One featured story highlighted Jeff Kerr, a pediatric cardiologist who has a passion for Texas history. He noted, “I have written three books on the history of the city of Austin. It’s not a stretch to say that I couldn’t have accomplished this without access to The Portal to Texas History. Newspaper articles, photographs, books; it’s all there! I am grateful to the University of North Texas for providing this invaluable resource.”

## **Social Media**

Most importantly, in 2008 the Portal development team added a social media widget to every page on The Portal to Texas History, enabling users to share items or collections on the Portal through their choice of social media such as Facebook, Twitter, Pinterest, or other social media. Having this feature is significant for partners because it allows them to interact directly and personally with their community through the sharing feature on The Portal to Texas History. For example, on Pinterest, a search for the Portal’s url pulls up hundreds of pins that Pinterest (Pinterest, n.d.) users have placed on boards which reflect their wide and varied interests, such as “...become a better teacher,” “genealogy,” “Cherokee Nation,” “El Rancho: La Tierra,” “Denton Texas history,” “A vintage studio wedding,” “Austin, Texas,” “Burros, mulas y yo - Donkeys, mules & me,” “Texas Indians,” and “buffalo soldiers.” On Twitter, Portal users and partners alike use the social media tool (Twitter, n.d.) for highlighting collections, making social commentary about photo and newspapers stories from the past, and even pursuing a favorite Texas pastime - reliving historic football games (Truskett, 2015). Making partner content easily shareable via social media platforms benefits partners by enabling them to easily share news about their collections, as well as by making it possible for their communities to engage and interact directly with their content.

In some cases, the best way to engage potential partners is to meet them face-to-face, whether through presenting at local meetings and professional conferences or scheduling a visit to their site to discuss their needs and answer any questions. Partners appreciate the extended effort of a visit and personal attention, especially if they have questions specific to their collection that can only be addressed by looking through their materials and making an assessment. Through these means of outreach and marketing, the Portal team sends the message that each contributing partner is a vital part of an exciting collaborative initiative.

## **PARTNERSHIP ROLES AND AGREEMENTS**

The Portal to Texas History would not be able to function without putting a strong set of partner expectations and agreements in place. This is a first important step to a collaborative partnership for a digital project because it clearly defines the role and rights of each partner at the outset. The Portal has two documents (Digital Projects: Agreements for Partners of The Portal to Texas History, n.d.) that are used heavily in working with partners: the Portal Partnership Agreement, and the Memorandum of Agreement for Digital Rights. The Portal Partnership Agreement is signed by each participating partner



and describes the range of activities that a partner and the Portal will agree to as the project moves forward to host their digital resources. The Digital Rights Agreement is used when working directly with rights holders who are interested in hosting their content in the Portal. Both documents are used to establish an understanding between the organizations about the partnership and help to create a strong foundation for the program. These documents were modeled after existing forms shared with us by staff at Ohio Memory in 2005. Working with UNT General Counsel, the forms were updated to meet local needs and also to comply with Texas law and UNT's role as a state institution.

For example, the Portal Partnership Agreement explicitly states that contributing partners retain rights to their materials not in the public domain and grant the University of North Texas permission to create digital reproductions to host them online for public viewing in perpetuity. With this understanding in place, requests to use materials that do not fall under fair use guidelines are automatically forwarded to the owning partner allowing them to decide how to proceed with the request, rather than UNT Libraries. Another important aspect of this agreement is that the partner or rights holder asserts and warrants that they have (or have determined) the rights to place their materials online. This is particularly important as it would be nearly impossible for the Portal team to ascertain or know the provenance of another institution's collections.

In 2014, the Portal Partnership Agreement was amended to include a section stating that all descriptive metadata in the Portal to Texas History is in the public domain. This change was the result of The Portal to Texas History becoming a Digital Public Library of America Service Hub for Texas. Because large initiatives, such as the Digital Public Library of America and Europeana, advocate open access to descriptive metadata, organizations are including sections in their agreements explicitly stating their metadata is in the public domain.

## **PRESERVATION FOR ALL DIGITAL MASTER FILES**

The Portal to Texas History not only acts as a highly visible access point for these rich resources but manages the digital master files submitted by or created for partners. The Portal to Texas History is one of three digital library interfaces solely operated by the UNT Libraries. While the Portal has its own user interface, collections, and browse mechanism, it shares an underlying infrastructure with the UNT Digital Library [<http://digital.library.unt.edu/>] and the Gateway to Oklahoma History [<http://gateway.okhistory.org/>], the two other digital library interfaces operated by the UNT Libraries. Because these three systems share infrastructure, the Portal is able to leverage economies of scale when it comes to large-scale storage and infrastructure purchases that are shared between the three systems.

The Portal functions on two separate systems, a preservation (or archival) system, and a public access (or content delivery) system. Locally the preservation system is referred to as Coda and the access system is called Aubrey. These two systems work together to provide end-user access to the digital resources in the Portal as well as a framework for the long term preservation of the rich digital master files. Both of these locally developed systems are built using Django and the Python programming language. Aubrey provides public users the ability to search, browse, identify, retrieve and interact with a wide array of digital object types in the Portal. Designed to provide a single interface for users to interact with objects, the Portal enables the ability to view photographs, maps, newspapers, letters, books with accompanying Optical Character Recognition text, video and audio content. By providing a unified interface to all of these types of resources, the Portal is able to present a consistent user interface experience to users so they can become familiar and ultimately proficient with the system in order to complete their research.

The Coda system is used to house the rich digital master files that are added to the Portal. These files are either created as part of the digitization process or were created as born-digital resources. No matter the genesis of the files, they are handled in a consistent way that provides a standards-based environment for the storage, monitoring and long-term preservation of the digital resources as part of the Coda environment. Coda is responsible for the ingest, replication, and monitoring of the digital resources added

to the Portal and other digital library systems at the UNT Library. Coda helps the UNT Library verify each digital object with file-level fixity checking, thus ensuring that the exact digital resource added to the system is still present and in the same state as it was when originally ingested. The Coda system is responsible for the replication of digital objects from one location to another as it creates two copies of each resource. This replication allows a greater peace of mind in the long-term viability of the digital resources because each copy of the item is stored in two locations, one on the main UNT campus in Denton, and the other at UNT's Research Park campus five miles north of the main campus. Together these two copies of each system are monitored and verified on an ongoing basis with the result of these verifications being stored within the Coda system for later auditing and verification processes.

The Portal to Texas History and the digital library infrastructure is comprised of a number of existing standards and specifications commonly used in the digital library world. The underlying systems were built with the Open Archival Information System (OAIS) Reference Model in mind and on all levels the infrastructure complies with this model and functional areas. The Portal makes use of the Library of Congress's (2015) Metadata Encoding and Transmission Standard (METS) to serialize and document the files associated with each digital object. METS is used to encapsulate key characteristics of these files, and to hold preservation metadata using the Library of Congress' (2015) PREMIS Data Dictionary and the PREMIS XML scheme. A JHOVE (2009) stream is generated and stored for each digital file that makes up a digital object in the system as a way of capturing information about the makeup and conformance to various files to their appropriate file format. Together the METS file, files that comprise the digital object, and other generated metadata are packaged together using the BagIt File Packaging Format (Boyko, et al. 2011). The resulting BagIt bag is used by the Coda repository infrastructure as the Archival Information Package (AIP) defined in the OAIS Reference Model. The UNT Libraries have developed a low-cost scalable infrastructure that allows it to create Submission Information Packages (SIP), convert them into the Archival Information Package (AIP) mentioned above, and finally create a Dissemination Information Package (DIP) that is used by the Aubrey system to drive the end user interface online. Together these formats work to create a large, high quality digital library and repository system that can be operated at sufficient scale to meet the growing needs of the Portal and associated digital library interfaces.

The systems make use of standard relational databases in the form of MySQL and full-text indexers such as Solr to provide the search and retrieval functions of the system. Many library and Web standards are used throughout the system as it promotes a standards based infrastructure for access and long-term preservation of digital resources that it houses.

By leveraging the infrastructure present at the UNT Libraries, the Portal is able to meet its goals while serving partners, by providing access to the rich digital resources found in Texas in a way that is cost effective, sustainable, and easy to use. The sophistication of this infrastructure facilitates collaboration by making a partner's decision to share their collections via the Portal a simple process.

## **FOUR MODELS OF PORTAL PARTNERHSIPS**

Coordinating a wide variety of partner projects, ranging from small personal collections to large university collections consisting of thousands of items, certainly presents challenges. Over the years, UNT Libraries developed a system to help manage the diverse range of projects coming in to the Digital Projects Lab as well as added some staff positions to address the growing number of partnerships. In 2008, a Project Development Librarian position was created to serve as the primary contact for all partners, especially new partners who would need an initial assessment to determine specific needs for their project. For example, a partner may have little experience with digitization or creating descriptive records, which requires more time committed to training and guidance throughout the process. Other partners may be completely self-sufficient and have their own full-scale digitization lab, metadata team, and Web platform, but simply want to contribute their digital collections to the Portal. Still other partners may be somewhere in the middle, and while they may be digitizing their collections themselves, they

want to use the Portal as their digital asset management system. Based on a partner's particular situation, the Project Development Librarian recommends the best way to proceed to contribute its collections to the Portal.

The Portal team developed its Four Models of Partnership to help manage the variety of projects. Typically, partner organizations take one of four paths to get their resources online. By providing a choice of four pathways, partners have greater flexibility to choose a model that is best for them. Each of the four models provides a detailed description of every step of the process as well as outlines the respective responsibilities of the partner and the Portal team to establish clear expectations from the start. These pathways include:

**Model 1:** Partners submitting their physical resources directly to the Portal for digitization and metadata creation where UNT Libraries and the Portal team are responsible for the full digitization and metadata creation of the resources.

**Model 2:** The Portal digitizes the resource, loads it into the system and the partner creates the descriptive metadata for the resource.

**Model 3:** The opposite of option two, a partner digitizes the resources locally, submits the digitized resources to the Portal and UNT Libraries creates the descriptive metadata.

**Model 4:** The partner digitizes the items locally, sends these digitized resources to the Portal for hosting and once online the partner creates the descriptive metadata records for the resources.

Regardless of the pathway that a partner uses for getting resources into the Portal and initially described, they are always able to access the metadata editing environment remotely and improve the metadata as they have the time and resources to do so.

The Portal to Texas History's metadata editing environment is based on the UNT Libraries' Metadata Element Set called UNTL. This format is described as an XML schema, and is fully documented via the Digital Projects Unit website at UNT (Digital Projects: Metadata, n.d.). This metadata format was developed over the years as a way of providing rich metadata for digital resources in an environment and language that is easy for new users and metadata creators to understand. UNTL uses the Dublin Core metadata element set at its core and then locally qualifies many of the elements to allow for a finer grained description of the resource. For each, a title for a resource may be the Main Title, a Series Title, a Serial Title or one of the nine types of titles registered as accepted qualifiers for that field. In addition to the fifteen standard Dublin Core metadata elements, additional elements were added to support the wide array of resource types encountered with the Portal and its related digital library interfaces of the UNT Digital Library and the Gateway to Oklahoma History. Specifically these fields include: Collection, Partner, Primary Resource, Degree, Citation, Note, and finally information about the metadata record itself. Together these fields form a standardized metadata element set and vocabulary (Controlled Vocabularies: Home, N.D.) that is used throughout the system to provide a consistent description framework for all digital resources within the Portal.

As part of the Aubrey system, the Portal has a rich metadata editing experience that allows each of the partner institutions to access the Web-based editing system from their local environment. Once digital resources are loaded into the Portal, staff at the UNT Libraries provides training for partners so that they can access the metadata for their resources and provide either full descriptions of the items or help augment the metadata records created first by the Digital Projects Unit. This of course will depend on the partnership model chosen by the institution. Once a metadata record is selected for editing in the system, a Web based metadata entry form is presented that helps the metadata creator in a number of ways to create a high-quality metadata record. These guides include thorough metadata documentation, visual indicators for missing fields and qualifiers, validation of dates so that they conform to the Library of Congress' (2012) Extended Date Time Format (EDTF), and finally an indicator that displays if a record is

considered “complete”. This completeness metric is a way of defining a minimally viable record for the Portal that includes a title, description, language code, three subjects or keywords, a resource type and a format. Without these fields a record is considered “incomplete” and a visual indication is given to the metadata creator. Once metadata editing has been completed for an item, it is published back into the system where it is versioned with all previous versions of the metadata for that item. The updated metadata record is saved and immediately re-indexed by the system so that it is available to the end user.

Together, the features highlighted above provide a metadata entry system that supports the variety of partnership models existing with The Portal to Texas History. Because of the flexibility of the various partnership models, and UNT’s willingness to support each model, the Portal team maintains a robust infrastructure for partners throughout Texas, empowering them to describe and make their resources available for users around the world.

## **PROMOTING STANDARDS AND GOOD PRACTICE**

A great benefit of building a collaborative statewide digital repository is the opportunity to promote established standards for digitization at a large scale. After working with a wide range of partners, the Portal team discovered that a number of organizations and individuals were not aware of best practice standards for digitization. Some partners, for example, had been scanning their materials at such a low resolution they had to be rescanned, some were not aware of the difference between scanning negatives and print photographs, while others knew very little about metadata and did not have experience describing their collections at the item level. As a result, UNT Libraries developed a set of guidelines for participating partners that include best practice standards for digitization, metadata creation, and project management.

The first piece of documentation that a partner typically interacts with is the “Portal Partners” online guide (Digital Projects: For Our Partners, n.d.) that clearly outlines the four partnership models, discusses the partnership agreements or digital rights agreements that participating organizations or content owners sign before initiating a project, and outlines each stage of a digital project when partnering with the Portal. This guide gives partners an important overview, makes recommendation for preparing materials for digitization, and directs partners to UNT’s documentation on scanning standards and metadata.

Another important piece of documentation are the standards (Digital Projects: Standards, n.d.) that UNT uses for the internal digitization of items for the Portal. This documentation was developed early in the project and has been very helpful in establishing the minimum scanning standards that are used at UNT for the digitization of items that will go online, and also be included in the digital repository. These standards are available online for partners to use. In addition to these standards, the team created documentation (Digital Projects: Digital File Formats, n.d.) that generally applies to born digital items. Specifically these preferred formats allow partners who have born digital content to know the preferred formats used at UNT. While the team will still consider adding the non-preferred formats, the ability to work with them is more limited than those that are listed as preferred. Full documentation of these file formats and other information is available online for the benefit of the Portal partners.

Perhaps the most important piece of documentation that UNT provides for both the external partners as well as internal constituents is the metadata documentation for the UNTL Metadata Format, which gives an in-depth description of all of the fields that are used as well as examples of use within the metadata editing environment. This documentation is updated whenever there is a question brought up about the implementation of a field from the UNTL Metadata Format.

Finally, the Portal provides a Web-based metadata editing environment for the Portal partners to use no matter which of the four partnership models that they choose to implement. In the Portal, UNT always works with partners to empower them to interact with their digital collections both from the user side as well as on the administrative side with metadata creation and modification. This editing system is tightly

coupled with the digital library infrastructure so that once a record is created or edited, it is immediately re-indexed by the system and available to the end user. Another important feature of the editing system is the fact that for each edit in the system, a new version of the metadata record is created with the old versions of the record saved in the system. This is important because it allows partners to see what has changed over time for a given record as well as be able to understand how change in the Portal as a whole occurs over time.

The standards and documented workflows mentioned above are coupled with strict technical standards employed by the digital library infrastructure to provide a well-documented and standards-based way of thinking about digital projects and digital library activities. The documentation for partners of the Portal enhances collaboration as it both introduces new partners to the process and standards used as well as a refreshes knowledge for existing partners who might have forgotten the process between projects. Either way the documentation of practices help to inform, and remind partners and staff about the variety of ways that the Portal and partners can work together to make digital content available to end users.

## **FUNDING ISSUES AND DEVELOPMENT**

Collaborations with the Portal partners extend into fundraising, and involve identifying potential funders, co-writing grant proposals, and working together closely to successfully complete funded projects. We've worked with partners on funding proposals to both federal and state agencies that have resulted in many successfully completed initiatives, some of them multi-year projects. In working with partners to develop grant proposals, negotiations cover who will be the lead institution, and what responsibilities and roles each partner will assume. Private foundations have also supported project-based digitization, and some of these foundation relationships have deepened into substantial, on-going support. Other funding models have arisen from donations by Friends of the Library groups, or other local funders interested in investing in their community's history and culture. The following examples represent approaches that we've successfully pursued to fund dozens of similar projects.

### **Funding Model: A Partner Example - the University of Texas at Arlington**

The Portal's partnership with the University of Texas at Arlington (UTA) Libraries began with several small grant-funded initiatives, namely, a Humanities Texas grant to digitize materials from ten different institutions for a collection Lorenzo de Zavala Online: Empresario, Statesman and Texas Revolutionary which gathered materials from several diverse institutions, bringing them together in one virtual collection. Lorenzo de Zavala's remarkable accomplishments provide a tantalizing glimpse of this versatile individual--newspaperman, physician, public servant, empresario, diplomat, governor, statesman, and first interim Vice-President of the Republic of Texas. UTA's contributions included hand-written biographical notes regarding de Zavala, as well as many letters to and from his grand-daughter, Adina de Zavala. As the first collaborative grant pursued by UNT, this 2004 initiative pulled together ten diverse partners and included every published or archival record concerning de Zavala known in the state.

Subsequent collaborations with UTA included German Immigration to Texas, a project that featured materials used in the early 1900s to entice settlers from Germany to emigrate to Texas, as well as books that highlighted the accomplishments of Germans who made the perilous journey to a new life in a rough and rustic new environment. UTA next participated in a project funded by the Amon Carter Foundation and the Adeline and George McQueen Foundation, "Where the West Begins: Capturing Fort Worth's Historic Treasures," which pulled together materials from thirteen cultural heritage institutions to document the history of an iconic Texas city. With several successful collaborations completed between UTA and UNT, the partnership began discussing a very large, historically significant project, to focus on one of the gems of UTA's special collections - their cartographic collection.

The map collection at UTA documents the history of cartography and five centuries of exploration and mapping of the New World. The collections include over ten thousand maps, dating from 1493 to the present, and feature works of noted cartographers such as Martin Waldseemüller, Abraham Ortelius, Jodocus Hondius, Vincenzo Coronelli, Herman Moll, and Guillaume Delisle. While containing maps of all parts of the world, the collections particularly emphasize the region of the Gulf Coast and the Greater Southwest, and for this collaboration, the partnership determined to focus on the 5,000 rarest and most historically significant maps in UTA's collection. Before pursuing this large grant, the partners completed a pilot project with 200 maps to determine the feasibility and issues with transporting these rare maps across the DFW metroplex, along with issues regarding digital capture, metadata, and other technical issues.

For the project, "Mapping the Southwest," UTA and UNT pursued funding from the NEH Preservation and Access division, seeking a three year grant to digitize, describe, and provide access to this nationally significant map collection. UTA wrote the sections of the proposal concerning the significance of the collection, its conservation, and its use by scholars and researchers, while UNT wrote the sections regarding the methodology and standards, and a detailed workflow for the technical pieces of work. When the grant started, the flow of work was already determined, with well-defined roles regarding scanning, creating MARC records, and transport of the maps themselves. After the grant period ended (2010 - 2012), over 5,000 maps were made accessible online, and those maps have been used over 300,000 times since being uploaded. The partnership model established with UTA, starting with small or pilot projects, then pursuing major funding for large projects, has been replicated many times with other institutions.

### **Funding Model: Funder Example - Tocker Foundation**

The Tocker Foundation's mission is to support small, rural public libraries in Texas serving populations of 12,000 and under. They recognize the vital role these libraries play as "guardians of equal access, intellectual freedom, and objective stewardship of information" within their communities. [<http://www.tocker.org/>] Through previously funded digitization grants made directly to these small libraries, the foundation discovered that there were many challenges that these libraries faced in trying to complete these types of projects by themselves.

The foundation quickly realized the benefits of allying the public libraries they served with a strong technology partner such as UNT. Also, the Foundation often heard requests from these small public libraries about their desire to digitize and provide access to their local newspapers. Often, the most significant history of any town is documented in its local newspaper which captured the daily lives of its citizens for posterity. In 2008, the Tocker funded the Portal's first newspaper digitization project, the Ferris Wheel, in partnership with the Ferris Public Library. This transformative project would serve as the springboard that opened the possibilities of newspaper digitization for UNT, leading in some measure to successful NEH applications for UNT's inclusion in the National Digital Newspaper Program.

Since completing that first newspaper digitization project with Tocker funds, UNT has partnered with 45 public libraries to obtain funding to digitize their historic newspapers, resulting in the digitization of nearly a million pages of historic Texas newspapers. The Tocker Foundation sees this investment as a catalyst for building infrastructure and resources that facilitate current and future research activities.

The staff of the foundation also facilitated a partnership between UNT and Texas Southern University's (TSU) Robert J. Terry Library, which houses the Barbara Jordan archives. The first African American since Reconstruction to serve in the Texas State Senate (1966), Rep. Barbara Jordan was elected to the U.S. House of Representatives in 1972, becoming the first African American to represent Texas in the House, and the first black woman ever elected to Congress from a Southern state. UNT and TSU started with a small pilot project to digitize 400 photographs from this collection, then the Tocker Foundation

gave a grant to support digitizing Jordan's Texas Senate papers, which is currently in progress. UNT and TSU have now partnered to seek federal funding to digitize the entirety of Barbara Jordan's U.S. Congressional papers, encompassing approximately 71,200 items from Jordan's tenure as a U.S. Congresswoman.

### **Funding Model: Community Example - Genealogical Society Partnerships**

One third of all Portal users are genealogists (Murray & Belden, 2013), and many of the resources these groups approach us about digitizing are collections that support family history research. The Texas State Genealogical Society (TSGS) gave support for the Portal to provide access to their quarterly journal, *Stirpes*, from 1961 to 1990. *Stirpes* contains unpublished records and other transcribed materials to stimulate and support the research and teaching of genealogy and is a leading publication for genealogy research in Texas. With funding from either genealogical societies' or friends' groups, we've replicated this model to digitize other similar publications. The *Age Index* is a monthly publication containing information related to Chambers County, Texas, including current events historical and genealogical societies, reprinted newspaper articles about county events and citizens, and historical news and records. Johnson County Historical Association contributed its *Finders Keepers* quarterlies that are a compilation of genealogical and historical information pertaining to residents and locales of Johnson County as recorded in first-hand accounts and historical documents. Other publications available in the Portal were supported by local communities include *Las Sabinas*, *Texas Ellis County Genealogical Records*, *The Tracings*, *Collin Chronicles*, Dallas County Probate Records, *The Dallas Journal*, and *East Texas Family Records*. Genealogical societies have also funded projects for local newspapers and county probate records.

### **Funding Model: Corporate Examples - KXAS-NBC 5 News**

In 2012, UNT Libraries began discussions with NBC-5 (Fort Worth) about acquiring their news archive from the 1950 to 2012, and a key part of negotiations was NBC's strong desire to see their local news stories digitized and made accessible online. As the oldest television news station in Texas, NBC 5's archive contains historic broadcast footage, scripts, advertisements, still photography and research files. These are news stories that were shown live on air once and never seen again. A pilot project now provides digital access to a sampling of this historic collection.

[<http://texashistory.unt.edu/explore/collections/KXAS/browse/>] This small sample is representative of the rich, historical content found in the KXAS-NBC 5 Archives. Through this pioneering project, UNT intends to digitize the entire collection and when complete, it will be the largest known online news archive in existence. The entire project will require funding of \$2.7 million dollars to complete, and require 2.2 petabytes of storage.

Fundraising efforts for the digitization project began in the fall of 2014, and a strong collaborative approach to fundraising with NBC staff is proving successful. NBC 5 made a lead donation, and participates fully in engaging with potential donors. UNT is taking the lead in these efforts, but it's wonderful to have strong partners who can contribute their time, prestige, and subject matter expertise to assist with securing donations. In just a few months, the partnership has secured funding towards twenty percent of the final fundraising goal with many other potential gifts currently being pursued.

### **RESEARCH STUDIES TO UNDERSTAND PARTNER BENEFITS**

By building a digital library infrastructure that empowers the open sharing of cultural heritage materials, the Portal has also profoundly transformed the humanities capacity of its more than two hundred and eighty collaborative partners.

## Partner Studies

Partners are not only bringing quality humanities content to the diverse regions, cultures, and populations they serve, but they are also realizing outcomes that are changing their very practices and organizations. In 2013, Murray and Belden found that partners have realized three major benefits from their collaboration with the Portal, mainly in the cultural, economic, and political/strategic areas. Partners noted the inherent cultural value derived from preservation and dissemination of cultural heritage, as well as the ease of access for their patrons. Partner comments include that having their materials on the Portal has “enlarged our audience worldwide.” An archivist partner shared that the Portal collaboration enabled them to more easily attract attention the local news, local media outlets, and national news.

Economic impacts not only included reduced staff expenses in researching patron questions, but mitigation of risk of loss by having a digital copy of important materials preserved elsewhere. After digitizing their entire archival collection and making it accessible on the Portal, one museum partner realized significant savings in staff time when answering reference questions. This museum has a staff of only two full-time employees, and inquiries that used to take hours of research can now be answered within minutes, allowing their small staff to focus on other priorities.

Partners also found political benefits in that their online content raised their profile with stakeholders and patrons: Partners stated that increased awareness of their collections gained their archives positive PR within the larger institution, and another says that the collaboration has raised their library’s standing in the community. A museum partner shared that the governing body of their city was really excited about the partnership and having the collections accessible. An archivist partner shared, “The ease of access has allowed us to get things in local news, local media outlets, national news. When we made national news on the Bonnie and Clyde materials, that was something a producer in New York was able to look at virtually, without having to send someone over to look at the originals.” Economic impacts not only included reduced staff expenses in researching patron questions, but mitigation of risk of loss by having a digital copy of important materials preserved elsewhere.

## User Studies

The Portal team has also conducted extensive research with the users of the Portal that benefits the programs partners. Usage statistics revealed that people use the Portal and use it heavily, but in 2012, the Portal team examined closely not only who these users were, but also what value they derived from having access to these materials, and what impact these resources had on their lives, research, and learning interests.

Based on anecdotal evidence, the team believed that the audience the Portal serves included researchers, historians, genealogists, educators/teachers, students, lifelong learners, family history enthusiasts, and the general public, and the research findings validated this. In May of 2012, the Portal team launched a User Survey that gathered 573 responses from Portal users who identified themselves as Genealogists (36%), Lifelong Learners (19%), Historians (19%), “Other” (15%), Librarians (6%) and students (5%) (Murray & Belden, 2013). (No data was collected from students under 18, so those responses may be under reported.) Respondents also were asked how often they visit The Portal to Texas History (rarely, daily, weekly, monthly, other), and answered demographic questions about age, ethnicity, gender, and educational level.

The key question asked regarded the value respondents placed on the value of the Portal’s digital resources, and to explain their value choice: no value, 4%; little value 2.5%; moderate value, 10.4%; much value, 34.4%; huge value, 51.3%. Respondents were also asked to complete a text response regarding what difference the Portal’s resources made in their lives.

Survey results were analyzed within seven value domains: Research, Educational, Financial, Cultural, Social, Operational, and Environmental. (Murray & Belden, 2012). 85% of respondents overwhelmingly asserted that they found Portal resources to have “much” or “huge” value; and the three value domains



that were most significant to users encompassed Research, Educational and Finance value. For Research value, users expressed comments such as, “This is a vital resource for my family history research. It allows me to find out about people, not just birth and death dates.” Another researcher noted: “If there is another side of the story, this is where it will be found,” and another: “A Google search on any topic related to Texas history almost always leads me to the Portal. There is more content here than on any one or 10 libraries I might visit.”

The Educational value identified by users was the impact on teaching, lectures, curriculum development, and access to primary resources. One respondent stated: I “have recommended the lesson plans you created to go with digitized resources to future teachers in my university’s College of Education.” A teacher noted: “I am constantly surprising people with things that they can find on the Portal. I have been able to garner interest with ‘tweens’ using the historical photographs of our town, the railroads, etc.” Financial impacts included not only savings in time and travel expenses, but in actual savings for libraries in regard to the resources they are able to provide to their communities: “Even though we are a major research university in Texas, like everyone else, our materials budgets have taken some serious hits in recent years. The fact that The Portal to Texas History is free is such a blessing to us.”

The results of this research reveal the strong public humanities value that the Portal collections hold for a broad audience as well as the many benefits realized by collaborating partners who are sharing their content online. The results of the user study enables partners to understand the value users derive from the content, and may also serve to direct future selection of materials for digitization based on the ways in which visitors to the Portal use the content. The over half million uses of the site every month arise from Texas (53%), the rest of the U.S. (31%), and international locations (15%). (Google Analytics, 2015).

These two studies are being repeated currently as a replicative study with the same survey questions, and it will be interesting to compare the results over time. UNT is committed to both continuous assessment of collection use through internal data collection mechanisms, as well as to ongoing surveys and solicitation of feedback from the Portal users and collaborative partners.

## **SUSTAINABILITY**

The Portal to Texas History continues to grow in number of digital resources hosted, with over 600,000 items online, 280 collaborative partners, and users (+1,000,000 users per year) and item uses (23 million since 2009) making it one of the most widely used digital libraries in the country. The success of the Portal is only possible through strong partnerships and working in tight collaboration with organizations big and small throughout the state. Buy-in from the UNT community is gained by demonstrating the importance of the collections created for UNT students, faculty and researchers. Long-term sustainability is also supported by a growing endowment that will fund a variety of supporting activities for The Portal to Texas History to sustain vitality and relevance for the online interface and for collection growth, and to support summer stipends for researcher use of the content.

The Portal provides access to a significant public humanities resource that must be preserved and sustained for future access. The infrastructure and collections must continue to grow, as must the efforts in providing and supporting educational, scholarly, and research initiatives that interpret and bring relevance to these collections for students, educators, and the general public. There is a strong legacy nationally of building endowments for physical collections and the institutions that house them, and the need for these endowments is well understood.

As digital libraries move from project status to programs and become an integral part of the mission of libraries in the twenty-first century, serious consideration must be given to how they can be sustained in the long-term, well beyond the short-term grant funding that originally initiated projects. In 2012, UNT launched a Portal Texas History Endowment to create a legacy that supports the efforts of The Portal to Texas History forever. The endowment will catalyze the expansion of the Portal’s public humanities capacity, by dramatically enriching and enhancing the services, resources, and future innovations the

Portal hopes to offer to the many communities it serves. The Endowment will help UNT keep pace with rapid changes in technology and the increasingly diverse populations the Portal serves. The growth of the Portal endowment is led by Portal Staff, a UNT Advancement officer, as well as an Advisory Board whose members are charged with supporting, sustaining, and growing the fund.

The income from the Portal endowment is invested in technology development, in content and collection development, and in support of educational, scholarly and research initiatives, including stipends for researchers. The endowment income will not be replacing existing funds that are currently invested in the Portal, but will serve as a catalyst for augmenting and enhancing humanities initiatives that the Portal provides.

## **FUTURE RESEARCH DIRECTIONS**

There are a number of potential paths for future development and research related to the Portal. These center on partnerships, content, technology/infrastructure and finally sustainability. Each of these paths has a host of facets that can lead to additional research and development.

### **Partnerships**

From the beginning, the Portal focused on the rich history of the state of Texas, and strived to provide a method for institutions throughout the state to make their unique collections available to the world via the Web. As seen throughout the past decade of the Portal program, the scope of the collections held continues to expand outside of the original focus on Texas history and has broadened its focus to include any collections held by institutions that are located in Texas. This broadening of content has both allowed for greater inclusion of both partners and content but may have the ability to dilute the focus of the system as a whole. The Portal is committed to encouraging the broadest participation while balancing the perception and focus of the system going forward.

In 2013 the UNT Libraries began a new partnership with the Digital Public Library of America (DPLA) to serve as a Service Hub as part of the DPLA's Hub model for aggregating resources and metadata for its search portal [<http://dp.la/>]. This work has led to a further increase in the ability for the Portal to serve as core infrastructure for the state of Texas around digital libraries, and the Portal has consistently ranked among the top Service Hubs involved with the DPLA project in regard to the number of resources contributed. Partnerships like this amplify the activities completed in Texas to a national platform that highlights the unique contributions of the Portal's collaborative partners across the country.

### **Content**

Along the same lines in the expanding of the scope of partnerships within the Portal, the size, shape and kind of content is expected to grow well into the future. Some areas of content development are well understood such as digitized photographs, letters, books, maps and newspapers. It is expected that these content types will continue to grow at an increasing rate based on available funding for the digitization of these resources. An area that is less known is to what extent the Portal will continue to grow with the addition of born-digital material. There are now several channels of content coming to the Portal that consist either entirely of born-digital material, or that contain a large portion being of this class. An example of this includes born-digital PDF master files from newspaper publishers from around Texas who are working with the Portal to preserve and provide access to their modern newspaper collections in the same way that the Portal team works to provide access to historic issues of their newspaper titles. Another area that is expected to rapidly change in the next few years is the acquisition of born-digital photographic collections. Photographers have made the transition to digital photography and it is only logical that these collections will begin to make their way to archival collections at institutions around the state. When these collections are acquired there will be a sudden need for additional services to organize, describe, provide access to, and preserve these born-digital photographs. UNT hopes that the Portal will serve this need for both the existing partners as well as new partners in the future.

Born-digital newspapers and digital photography represent just two well-known formats that are expected to increase in numbers over the next few years. There are also other formats such as Web based resources, digital humanities projects, datasets from researchers in a variety of disciplines, and even a resurgence in the interest in the use of 3D imaging for cultural heritage materials. All of these present exciting new challenges and opportunities for the Portal and its mission of working with institutions around Texas who were interested in providing access to their unique resources.

## **Technology / Infrastructure**

The technology and infrastructure has always been an important enabling component for the Portal. While it is important not to let the technology and infrastructure pieces drive the development of the initiative, it has been important to recognize the importance they have in a successful implementation. By focusing on a standards-based model, the Portal has been able to adequately scale with the increase in interest, partners, and content over the past decade. It is expected that this growth will only increase as digitization of analog materials and the collection of born-digital items increases by partners of the Portal. This increase will mean that systematic review of the underlying technical infrastructure for the Portal is needed to ensure that needs are being met. As the Web and technology migrations demand a constant need for change related to the user interfaces and supported interactions by users with digital resources, new interfaces, technologies and paradigms will be explored in order to stay relevant on the Web and as an important resource in people's lives.

## **Sustainability Models**

As the Portal continues to grow and become an important component in people's lives, the need increases to have a long-term sustainability model in place. Sustainability can be examined as different yet important areas including technology sustainability, sustainability of the underlying models for description and metadata creation as the systems continue to grow. Often, financial sustainability is the first area thought about and it is often the most challenging to obtain. Current efforts by the UNT Library to build The Portal to Texas History Endowment and related activities are a large step in the direction of long-term financial sustainability for the Portal. Finally the area of sustainability of capacity and commitment from personnel and partners involved with the project is important. Sustainable partnerships must be nurtured to keep partners engaged and focused on collaborative projects. While a program can grow rapidly under the direction of a highly focused and committed staff, perhaps the biggest challenge to the sustainability of a project seems to be being able to sustain the commitment of the staff and those directly involved with the project as the original creators responsible for the project move to other initiatives or areas. This is an area that many large digital library initiatives including the Portal will struggle with as time brings new changes, challenges, and issues for individuals integral to these projects.

## **CONCLUSION**

The Portal to Texas History is a prime example of the saying "the whole is greater than the sum of its parts". The collaboration of numerous institutions around the state of Texas to digitize their cultural heritage collections, work together on a common goal of increasing access to the rich materials housed in local institutions, and sharing their materials in the broadest way possible shows the power of collaboration, technology and good old-fashioned hard work to produce a resource of lasting importance. The Portal to Texas History, with its collaborative partners, aspires to create a rich, lasting resource that will live on to serve citizens of the world well into the future. These collections are highly valuable to the millions of users who have interacted with the Portal over the years and the Portal team hopes that generations to come have the ability to discover their collective history within The Portal to Texas History.

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## **KEY TERMS AND DEFINITIONS**

**Creative Commons:** A free resource that provided legal language so that creators can define the intellectual property rights for their creative works, based on several different models.

**Digital Preservation:** Includes a host of activities centered on ensuring ongoing access to digital objects.

**Django:** Django is an open source web application framework that supports the creation of database intensive websites.

**Dublin Core:** A metadata system that incorporates fifteen highly flexible fields to describe objects.

**Endowment:** An income producing financial instrument that supports a specific function.

**Metadata:** A descriptive record for an item, either analog or digital, that facilitates retrieving or managing an item.

**Python:** A widely used object-oriented programming language.