



WPI

Building and Maintaining Digital Worcester

An Interactive Qualifying Project

By:

Derek Murphy - dmurphy2@wpi.edu

Joseph Silva - jasilva@wpi.edu

Andrew Bauer - acbauer@wpi.edu

Submitted To:

Professor Joseph Cullon - Project Advisor

Sponsoring Organization:

The Worcester Historical Museum, as represented by William Wallace

ABSTRACT

This Interactive Qualifying Project created a consistent framework for the Worcester Historical Museum to display, modify, and encode city directories for a wide variety of users and to direct users to historical materials digitized by third-parties. The design focuses on conforming to the needs of individual users, utilizing a streamlined appearance and format while also keeping advanced options available in the information storage sections, including optical character recognition searching for each digitized city directory.

ACKNOWLEDGEMENTS

We would like to pay homage to the parties of the involved organizations that made this project possible. We appreciate Bill Wallace and Robyn Conroy of the Worcester Historical Museum for providing goals for our team to pursue in outlining the project and their valuable input on the website prototype presented to them. Also, we appreciate Michael Kemezis of the WPI Archives for permission, instruction, and assistance on the usage of the cradle and feed scanners for our digital document quality control correction. Finally, a big thank you to our project advisor Joseph Cullon for taking the time to form our team, acting as a bridge between our group and the Worcester Historical Museum, taking countless hours to perform quality control on all the digital documents provided, and for providing constructive criticisms to achieve the best final product possible.

EXECUTIVE SUMMARY

The partnered Worcester Historical Museum and Worcester Polytechnic Institute are working toward creating a digital archive for the city's historical assets. This long-term project began in 2014, when an earlier IQP team established best practices for scanning historical city directories and initiated an investigation into the means to make them broadly accessible and searchable. In 2015-2016, another IQP team expanded city directory digitization project but fell short of creating a functioning OMEKA platform to publicly access and search the directories.

Achievements

This IQP has focused its efforts on bringing the larger project to fruition. In particular,, it worked to create a “digital reading room” with the capacity to house digitized city directories as well as other collections digitized through such programs as Google Books, HathiTrust, and Internet Archive.

Although earlier efforts to make the city directories accessible utilized OMEKA as a platform, this IQP team turned to Drupal as a means to manage content, make it accessible, and provide in-text search functionality. Using a Drupal 7 framework, this group's achievements included:

1. Building a custom framework and design for the DigitalWorcester website;
2. Making a large searchable PDF viewer for accessing digitized documents operational;
3. Using a CyberDuck file transfer protocol to move large files onto the website at the demand of the user;
4. Providing quality control for scanned city directories and then uploading them onto DigitalWorcester;

5. Establishing metadata standards for the display of city directories;
6. Identifying appropriate third-party digital assets for inclusion on DigitalWorcester such as City Documents, Worcester Magazine, and Collections of the Worcester Society for Antiquity;
7. Creating links to external resources such as those described above; and
8. Creating appropriate materials (e.g. user guides) to promote public use of digital assets.

At the conclusion of this project, the partnered Worcester Historical Museum and Worcester Polytechnic Institute are a short step away from launching a cooperatively managed website called DigitalWorcester.

Recommendations

As DigitalWorcester nears its official launch, this IQP recommends that Worcester Historical Museum pursue the following points to establish effective partnerships, reach the largest possible audience, and expand search capabilities of the platform.

1. Establish a policy for other contributing partners to join WHM and WPI in DigitalWorcester. These organizations might include neighbourhood groups, churches, or voluntary associations who have valuable historical assets deserving wider dissemination. Such a policy should address questions of copyright and usage as well as the costs and standards associated with digitization.
2. Articulate a clear social media policy that takes advantage of a wide range of social media tools such as a blog, Facebook, Instagram, Twitter and other appropriate venues.

The policy should establish protocols to maintain a consistent editorial voice with thematic coherence, accessibility, and etiquette.

3. Provide opportunities for users to contribute, comment, and share within the site. Digital tools like Disqus and AddThis should be integrated into the site so users can comment on particular digital assets so they can share their discoveries through their own social media accounts.
4. Set up Google Analytics to track traffic and monitor engagement with website contents, as this data will be necessary to establish relevance and appeal when seeking outside support to expand and maintain the platform.
5. Work more closely with WHM's Library and established Past Perfect system to improve the integration of the Library's digital photo and archive collection.
6. Establish relationships with the Digital Commonwealth in Massachusetts and the Digital Public Library of America as digitized content expands.
7. Seek out opportunity to raise money through public and private channels to support the eventual migration of the system to ContentDM, a commercial content management system that would allow for more efficient searching across entire collections and volumes in the digital archive.

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CHAPTER 1: INTRODUCTION

Goal

The goal of this endeavor is to create a website that houses digitized editions of Worcester historical materials, including those created by the Worcester Historical Museum and others available through Google Books, HathiTrust and Internet Archive. The primary focus, however, has been to create a website for the Worcester city directories that have been scanned by previous IQP Teams (Connelly, et al., 2015 and Blouin and Titus, 2016). The website should be easy to navigate and useful for gaining information for any non-commercial reason, such as education, scholarly, or curiosity with appropriate metadata. It should engage and support the interactions of those who come to the website seeking the information available through built-in functionality. As an extension of the Worcester Historical Museum, it should follow a similar visual style and provide links to other appropriate Worcester historical resources. The programming should be simple to modify for new administrators or for the addition of new materials once this team has moved on from the IQP. These content should be focused on for the endgame of this project, which is to engage a variety of audiences more deeply in Worcester's history.

Objectives

In terms of the information stored on the website, said information should be readily available and plainly featured for each entry which should be listed as to lower any difficulty in finding a specific city directory. A city directory entry must contain clear and necessary metadata, keeping out miscellaneous and unnecessary details that apply to the text. Alongside the metadata, the digitized version of the text should be able to be read with an electronic viewer

page by page that utilizes the searchable database provided by optical character recognition. Relevant policies such as copyrights, usage, and privacy must be displayed to the user as they view to information as to not violate them when lifting the information for their purposes. The compliance of the data with the website framework should be smooth to fit an uncluttered appearance.

In terms of the website framework, the appearance and functionality should go hand in hand. As Worcester Historical Museum is the main institution associated with the website, the style must follow the colors and style of the museum. The website should include helpful notes for the users present such as an ‘about’ and ‘help’ page. Keeping with modern trends, opening the way to social media integration and other forms of engagement of the user is an important objective. Tracking and sharing the way others utilize the data on the website through social media or even an official blog would be something to strive for. Many of the objectives given are limited by some website frameworks, so finding a framework that surpasses those limits and meets the needs above is crucial.

Problem Outline

As previously highlighted in the last section, finding the right framework for creating a website is one of the main obstacles to meeting the objectives of this project. The framework must be malleable enough to feature modern design and add-on integration such as with social media and in-browser file viewers while still being stable and organized for the metadata and academia-related purposes the website’s intended purpose.

From there, discovering the best course of action to viewing online documents in-browser that is still compatible with whichever framework is selected is the next hurdle. One of the

objectives is to have the viewer not only display the digitized city directories, but also allowing the user to utilize the optical character recognition that has been applied to them. After uploading and display of the city directories is successful, visual organization comes next for navigation purposes. Once all of the obstacles pertaining to the city directories are out of the way, focus should then be directed to whatever functionality is left and filling out the tabs for the various other tabs on the website specified as objectives, but the majority of the difficulty should be surpassed at this point.

CHAPTER 2: ENVIRONMENT REVIEW

Omeka

The original website framework that was under review previous IQP teams was Omeka (Connelly, et al., 2015 and Blouin and Titus, 2016). Omeka is open-source and is commonly utilized as a platform for content-management by scholarly institutions such as libraries, museums, and archives. Core functionality focuses on and incorporates metadata, information for every uploaded file that is digitally stored in the database, using the existing Dublin Core Metadata Initiative process. This allows for the access of the previously mentioned information across a large collection of uploaded files at the convenience of the user. Any websites built on this framework have access to the associated Omeka organization's servers for publishing, storage, and management provided through a paid subscription.

Unfortunately, Omeka has its drawbacks. Despite being a framework built for scholarly purposes that suit the digital storage and display goals of this project, anything beyond that is less than malleable, especially with large PDFs. Omeka was primarily designed with images and short documents in mind, so it is less successful at handling the display and search of large city directory files. While plugins, additional processes that can be built into a website's existing functionality, exist for Omeka, the general consensus is that they exist to augment what is currently available. The previous IQP teams attempted many work arounds to utilize Omeka for Worcester's city directories but the results of various implementations and configurations did not meet the core objectives of the WHM (Connelly, et al., 2015 and Blouin and Titus, 2016). Anything outside the scope of Omeka's general outlined usage becomes much more difficult to achieve even with the additional functionality. Perpetual modernization and flexibility, goals that

are also present for this project, do not completely align with this framework. While that is true for almost all website frameworks to some degree with varying issues, the obstacles that must be navigated here are much more problematic.

Drupal

In terms of alternatives, after research into web development of similar frameworks, a new, more upgradeable platform was discovered. Drupal is also open-source like Omeka, but its common usage is much more wide-ranging. It does not specifically target scholars for website development. Instead, it reaches out to the public in general for the purposes of creating websites. Drupal achieves this by being much more skeletal and stripped down in comparison to Omeka, which has a good portion of functionality already built in. With experience, a user can construct a variety of online experiences through the framework as the user base is still fresh and growing with a constant development of plugins for new processes and website interaction. This allows for plenty of visual customization as well.

But, because of its more unshackled nature from a focus on databases and metadata, it can be seen as unwieldy for the strict guidelines of historical digitization. The research conducted on this framework displayed examples of museums and libraries utilizing Drupal, but to get to that point those websites had to be built from the ground up. Complications may arise given the difficulty of not having the theoretical cushion of Omeka's prebuilt structure for the original creator and for the editing administrators that follow. However, the experience with web development of this current project team is sufficient enough to make building a website from the ground up while maintaining a database a reality.

Peer Institutions

In terms of identifying correct examples that shared the scope and size of this project, several institutions have illuminated paths to achieving a library of digitized documents with steps taken to go beyond the functionality of that purpose. This includes social media integration, keyword searching, easy-to-access metadata, and more. Some of the best structures that surfaced from this research were the websites maintained by the Pasadena Digital History Collaboration, the North Carolina Digital Heritage Center, and Digital Maryland.

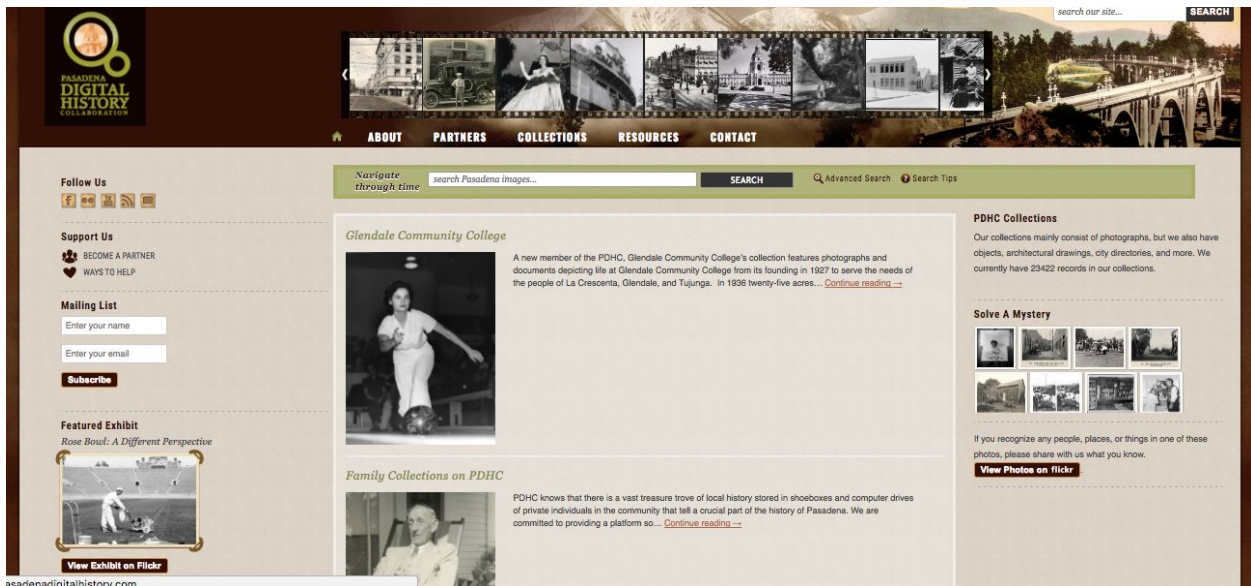


Image One. The Homepage for Pasadena Digital History, which houses digital materials from a range of community libraries and organizations

These websites present collections of digital historical documents without possible complications so that users with differing experience in utilizing online resources can navigate and and employ the functionality present while maintaining modern features in an aesthetically

pleasing environment. These examples are of great help in visualizing the look and feel of the online resource that should be built throughout this IQP.

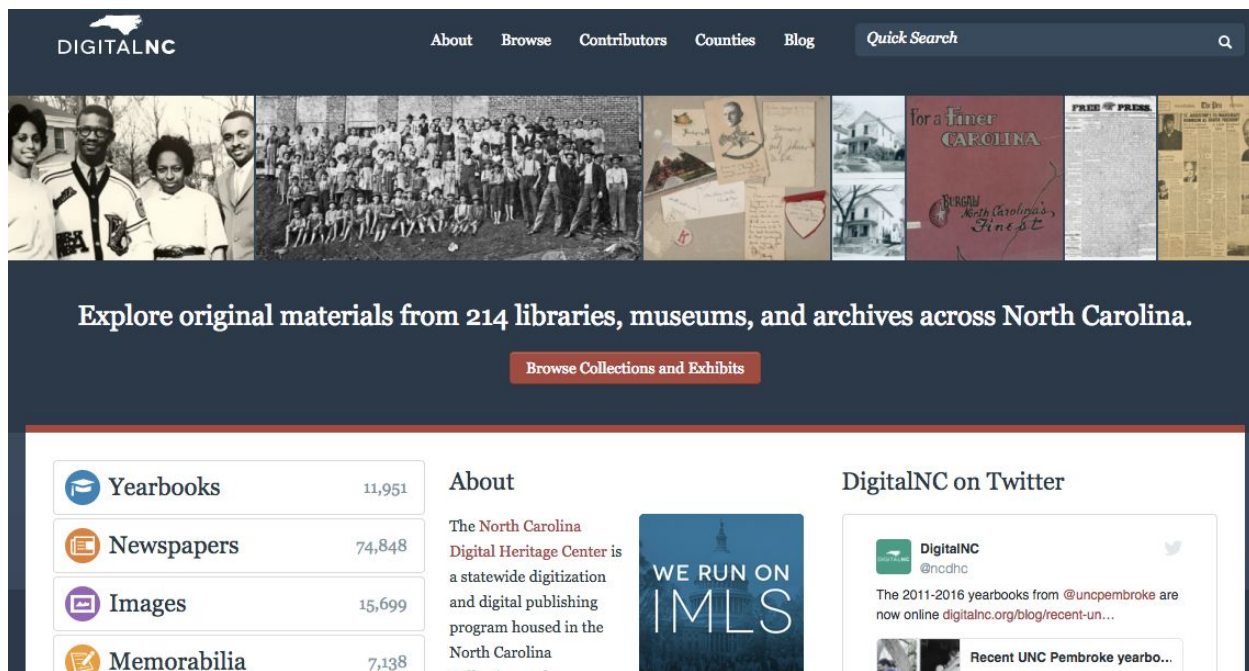


Image Two. The Homepage for Digital North Carolina, which houses a statewide collection of city directories

The main takeaway from these websites is that they use CONTENTdm. This is a content management system for files and metadata which can be applied to most websites as it is not tied to any specific framework. The problem is that it is a paid service with an extremely high cost, meaning this system cannot be used as the newly built website is to raise money before professional high cost services are applied. This goes for all high cost services as they cannot be directly provided by WPI or the project advisor. However, this limitation should change in the future when the requirements have been met.



home
collections
about
partnership
links





Streetcar at the corner of Wolfe Street and Eastern Avenue in Baltimore, 1952
[click HERE to see more](#)

Digital Maryland

is a statewide digitization program headquartered at the Maryland State Library Resource Center / Enoch Pratt Free Library. [Learn More...](#)

Genealogy & Oral History Workshop

Please register for a [Genealogy & Oral History Workshop](#) on Friday, June 23 at the Carroll County Community Media Center.

Maryland Newspaper Conference

Registration for the [Maryland Newspaper Conference](#) taking place at Goucher College on June 14.

Bethlehem Steel Co. Maryland - Enoch Pratt Free Library



[This collection](#) from the Maryland Department's photograph collection consists of 117 photographs taken between 1891 and 1962 of the Bethlehem Steel Company in Maryland. It shows images of both the shipbuilding division at its Baltimore Yard on Key Highway in Baltimore City and its full complex of operations at its Sparrows Point Yard in Baltimore County.

Orlando Wootten Photograph Collection



[This collection](#) from the Edward H. Nabb Research Center for Delmarva History and Culture at Salisbury University documents the people of Maryland's Eastern Shore during the mid-20th century by photographer Orlando V.

Featured Collections







Search the collections:

Tip: searching for farm will find farm, farmer, farming, farmland, etc.*

Image Three. The Homepage for Digital Maryland, which is operated by the Enoch Pratt Free Library, Baltimore, Maryland

CHAPTER 3: METHODS AND ANALYSIS

Website Building & Drupal Implementation

The first steps to building the website were understanding where the drupal website would be hosted. After talking with Professor Cullon about valid options on where the environment would be hosted we decided we would build the development version of the website on Professor Cullon's personal web server which would be hosted through Reclaim Hosting (<https://reclaimhosting.com/>). Once we decided where the sites and all its core files would live we moved onto the further steps to implement Drupal.

To begin Drupal implementation we had to make a decision on which Drupal core version we were going to use. Two of the more common core versions are Drupal 8, which is newer but lacks support due to its recent age, or Drupal 7 which had great Drupal documentation, client forums and developed modules to make the site more interactive and produce quicker ways to more functionality. After weighing the options and the familiarity with Drupal 7 we decided the core version of Drupal 7 would be the best option. With this decision made we could work on looking at Drupal 7's installation documentation (<https://www.drupal.org/docs/7/install>).

To begin installation we needed to download the most recent version of Drupal 7's core files from (<https://www.drupal.org/project/drupal>) in a zip files where we extracted and uploaded the files to the file server under Professor Cullon's reclaim hosting. Once the files were up on the server we needed to make a database to host the Drupal information. As part of the service Professor Cullon pays for through Reclaim Hosting we had mySQL access to create the database 'jcollon_iqp'. Once the database was created we had manipulated one of the Drupal's core files

to route to the database we created and ran the installation script to create the website. Once the drupal core was set up we could worry about design and theming the site.

To theme the site we used the ‘Bootstrap’ theme for Drupal due to its responsive nature and wide variety of support throughout the web. With this particular theme we were also able to make a custom theme that would be perfect for maintaining the site. This is because our theme would have all the fundamental building blocks of the ‘Bootstrap’ theme but our changes would not be adjusted when the core files were updated.

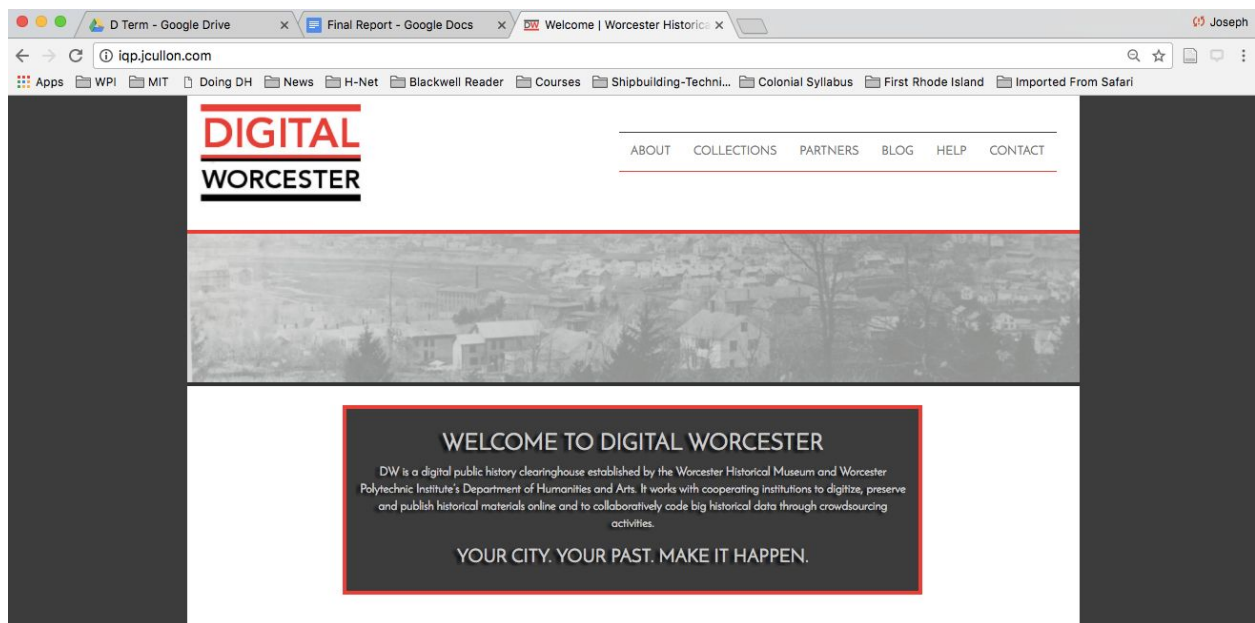


Image Four. The Homepage for Digital Worcester with ‘Bootstrap’ Drupal & Custom Design

Upload Procedure

After a physical document has been fully-scanned, checked for drops in quality, and processed with Optical Character Recognition using Adobe Acrobat, it is uploaded to the website in the form of a PDF. All essential metadata should be recorded at this point in order to fill the data entry that will be created from this file. First of all, an image is taken from the cover of the physical text for proper visuals on the website as a PNG file. Then, the file is added to CyberDuck, a free file transfer protocol service for websites, in the correct section.

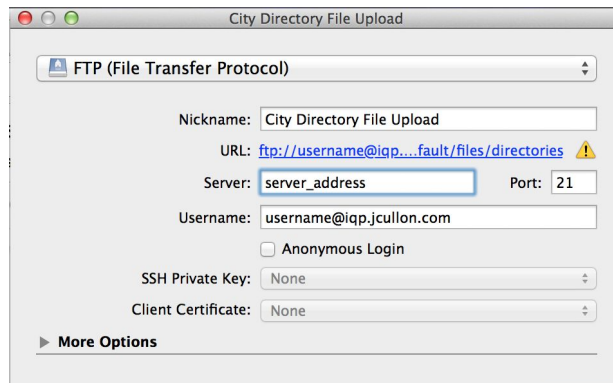


Image Five. Dialogue Box from CyberDuck File Transfer Protocol for Uploading Documents

To connect to the correct place to upload a new directory, the Cyberduck setup should look like the above image (the full url, which is cut off there, should be `username@iqp.jcullon.com@ftp.jcullon.com/sites/default/files/directories`). After saving that as a bookmark, all you have to do is drag and drop a file into it.

This allows for the website to access the file for displaying, viewing, and searching. After that, the administrator uploading this file should login and add content, selecting the needed file

format, whether it be for a directory, an image, or another document. Once that is done, the metadata fields should be filled in with what was recorded with the exact file name as it is stated in CyberDuck in the space provided. After the file is submitted it should be displayed with the cover image and a title in the appropriate collection. Clicking on that entry should provide all the metadata details in a defined space with the actual digitized document below it.

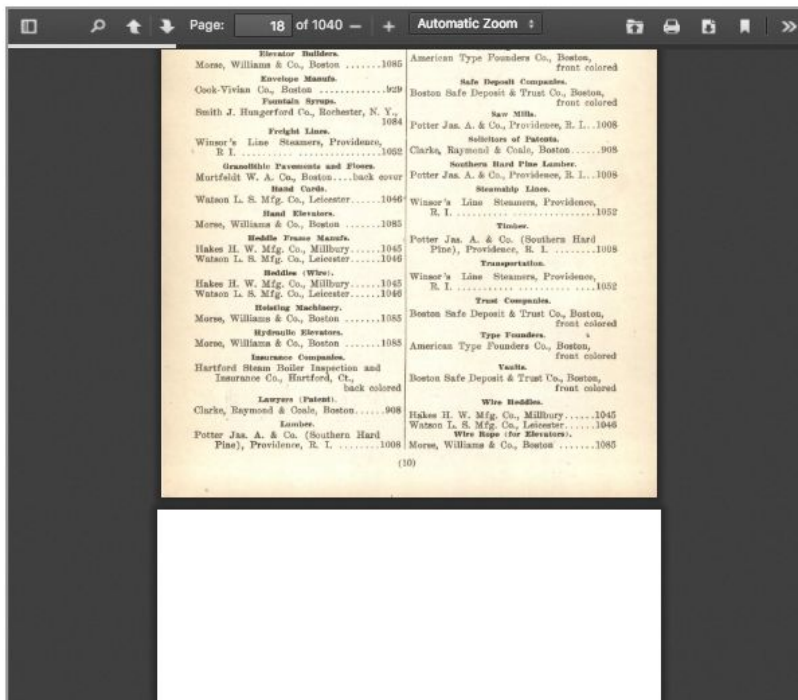
Metadata Fields

In order to identify precise metadata fields necessary for each data entry, well-established websites that accomplished a similar goal for digitized documents were explored and metadata fields listed were cross-referenced to discover the metadata fields with the highest and lowest priority (Blouin and Titus, 2016). For the fields that were included with each data entry, eight metadata fields were selected to provide the user with the significance of the details of each file, incorporating attributes of the text and the physical state of the original media. The title, author, publisher, and date are considered to be the most important fields of each digitized city directory as the title provides a summary of what is to be expected in each directory, whether it is a directory alone or including a complimentary almanac and business advertisement section. The date establishes the setting of those features and works as an organizational tool in the website. While illuminating the creation of the document, author and publisher can be argued as to be combined into one field as most of the city directories' author and publisher are the same organization, but for a handful of directories they differ which is more than enough reason to include both fields as long as both examples exist.

Pertaining to the structure of the document itself, the next two fields involving the physical width and height gives the user a mental image of the physical media as to not restrict

the digitization process to the digital world, as it is important to recall that these online copies are based on physical media, truly originating from their respective time periods.

Finally, the last two fields are related less to the text and more to using it as a resource, labeled as the contributors and the rights statement. However, they are no less significant as the main reason of uploading these scanned directories is so that they may be utilized properly. The user must take into account the copyrights and rules set by the owners of the originals when citing these resources and whether or not the user's purposes are in violation of proper conduct.



Book title: Worcester Directory 1905.

Author: C. W. Clafin & Company

Publisher: The Drew Allis Company

Published Date:

Date: 1905

Contributors: Worcester Historical Museum

Width (inches): 5.60

Height (inches): 8.60

Rights Statement: Users of materials from Digital Worcester are asked to respect copyright and other legal rights held by Digital Worcester, Worcester Historical Museum, cooperating partners, and other parties that may affect their subsequent use.

Thumbnail Image

Image Six. The PDF File Viewer with Appropriate Metadata to the Right on Digital Worcester.

Website Policies

The policies that apply to the website have been constructed to directly address the copyrights, proper usage conduct, digitization guidelines, disclosure of user privacy, and social media integration of the site's faculties. The copyright policy was created to highlight the mission of the website by listing acceptable usage of website resources and educates the user on respecting the legalities associated with licensing and right holders of the documents present. It also takes a moment to detail the public domain characteristic of third-party resources linked from the website.

COPYRIGHT

The central mission of Digital Worcester is to make local historical collections available to support education, research, and scholarship. In pursuit of this mission, Digital Worcester provides access to its digital collections and online exhibitions for purposes that include: highlighting Worcester's historical assets, providing access, and encouraging broader discovery.

Where Digital Worcester shares digitized images of printed materials - like city directories, municipal publications, and city magazines - it has worked to ascertain the copyright status of printed historical materials and to convey that status in clear terms. Presently, Digital Worcester has only scanned and provided digital editions of works that are out of copyright, like the city directories. In addition, when Digital Worcester provides external links to resources in Google Books, Hathi Trust, or Internet Archive, the material is out of copyright and in the public domain. Many of the core digital collections (e.g. the city directories or the city documents) are not protected by copyright and are made available without restrictions for education, scholarly, and research purposes.

Some images, especially in the online exhibitions, may include materials - like manuscript items, historic photographs, and digital images of historical artifacts - that may be protected by copyright or subject to license or other rights. You may have to seek permission from the rights holder to reproduce and otherwise use these materials. In these instances, each item record includes a rights statement and/or a usage statement to help users understand how they can make use of these materials, without infringing on the rights of cooperating institutions. It is your responsibility to investigate and, if needed, clear rights to use these materials.

Users of materials from Digital Worcester are asked to respect copyright and other legal rights held by Digital Worcester, Worcester Historical Museum, cooperating partners, and other parties that may affect their subsequent use.

Image Seven. Screenshot of Digital Worcester's Copyright Policy

In order to further detail appropriation of website resources, the usage policy was built as a companion piece. It illustrates the restrictions placed on research paths not sanctioned by the website, like commercial gain or public exhibition, and the proper procedure for gaining permission to use a digital copy from the website's collection from the respective rights holder or partnered institution. The digitization guidelines provide a brief overview for users and partners

alike as to how each historical work was digitized into the previously mentioned online resources.

USAGE POLICY

The historical resources on Digital Worcester are intended for personal use, scholarly research, and education. Digital Worcester makes no assertions as to ownership of any original copyrights to digitized images. The images are intended for educational as well as scholarly and personal research only. There are no limitations on downloads for personal or research use.

Any other kind of use, including, but not limited to, commercial or scholarly publication in any medium or format, public exhibition, or use online or in a website, may be subject to additional restrictions including, but not limited to, the copyrights held by parties other than the owning institution. USERS ARE SOLELY RESPONSIBLE for determining the existence of such rights and for obtaining any permissions and/or paying associated fees necessary for the proposed use. Individual item records in Digital Worcester include specific rights statements and usage statements to help users. Further information and assistance on usage is available is always available by contacting Digital Worcester, Worcester Historical Museum, or Digital Worcester's contributing partners.

If you wish to publish, use, or obtain a copy of an item from the collection, please contact the institution that owns the item as noted in the metadata field, as fees and use policies vary by institution. Contact information for each institution is available on the contacts page. You can determine who owns the item by clicking on the image and checking under "Repository Name." You can generally expect to hear from the institution within five business days.

You are welcome to link to our online exhibitions or digital collections for educational and research purposes.

Image Eight. Screenshot of Digital Worcester's Usage Policy

Speaking more to the features of the site and not the resources present, privacy and social media policies had to be detailed. It was important to note that the website does not retain the private information of each individual that accessed its resources, but that third-party links provided as resources are connected to institutions that may have their own views and usage statements of private information that differ. Going along with third-party institutions, since it seemed reasonable to include social media integration to follow suit with other "modern" websites, a small description of why this website has connected itself with certain social media tools has been provided so that the user may receive a better understanding of what is available and how they can utilize those tools in order to attract others to the prospect of the website.

Website Maintenance

As far as website maintenance it was mainly creating the subtheme of the ‘Bootstrap’ drupal theme that we installed when the site had been built. This made it possible to update the ‘Bootstrap’ core files without wiping out any PHP, HTML, CSS or JavaScript changes that differed from the core files of the template. If we were to update the template with the original ‘Bootstrap’ activated opposed to the sub theme we developed, the core files would be over written and be close to the original version of the site. Aside from this step there was not much we could do to make maintenance easier other than regular updates to the modules, themes and core files.

Navigation and Use

Digital Worcester is optimized for ease of use for even the most novice user. On the top of every page, there are six tabs as shown below.



Image Nine. Screenshot of Digital Worcester’s Navigation Bar

The ABOUT section describes the Digital Worcester Project and mission. Under ABOUT, there are subheaders for WHO and POLICIES. The WHO subsection lists all the people who have contributed to the project. As described in the Copyright section, “Digital Worcester provides access to its digital collections and online exhibitions for purposes that include: highlighting Worcester’s historical assets, providing access, and encouraging broader

discovery.” As such, the POLICIES section details guidelines related to Copyright, Usage Policy, Privacy, Social Media, and Digitization Guidelines. Digitization Guidelines details methods for scanning and uploading historical documents to the website.

The COLLECTIONS section forms the heart of the website. All the documents, both onsite and offsite, are searchable. The types of information currently available are:

City Directories – Worcester City Directories are currently accessible in five year increments from 1845 through 1910, except for 1870 and 1895. To learn what’s included in a city directory, you can check out the HELP section.

City Documents – Primarily annual reports spanning 1848 through 1887, each with a link to the document hosted on archive.org.

Worcester Magazine Collection – The magazine collections spans various years in the early 20th century.

Worcester Society of Antiquity Collection – The Worcester Society of Antiquity’s collections have various volumes from the late 19th century and early 20th century.

Worcester Photo Collection – A set of random images taken from Worcester Historical Museum’s Past Perfect site. You can see more details of an image by clicking on it, such as metadata and catalog record. There are also options to get a new set of random images

or go directly to the Past Perfect site where all the images are hosted and a search feature is available.

The PARTNERS sections lists information for those interested in contributing documents.

The BLOG section is currently under construction and a policy for its implementation will be developed in consultation with the Worcester Historical Museum before the website formally launches.

The HELP section describes what you can expect to find in a city directory. Under HELP, there is a subheader for FAQ. The FAQ subsections contains answers to questions expected to come up most frequently.

The CONTACT section has a form to send an email to someone working on Digital Worcester, so that any further questions may be answered and issues may be addressed.



Image Ten. Screenshot of Digital Worcester’s Admin Log In Navigation Bar

As far as from the admin side is concerned, the top of each page should look like the image above. The home icon takes you to the home page of the site. Dashboard shows the most recent content and users. Content (which Find content also takes you to) is probably the most important part of the admin side. It shows you all of the content ever published (though it goes onto more than one page), and looks like the image below. In edit, it shows all the fields

displayed for a particular page or content piece, such as metadata, what file or url is being used, display options, and even upload information.

<input type="checkbox"/>	TITLE	TYPE	AUTHOR	STATUS	UPDATED	OPERATIONS
<input type="checkbox"/>	About Digital Worcester	Basic page	derekmurphy	published	05/20/2017 - 12:54	edit delete
<input type="checkbox"/>	Vol. 9	Worcester Magazine	jasilva	published	05/20/2017 - 12:31	edit delete
<input type="checkbox"/>	Partners	Basic page	derekmurphy	published	04/28/2017 - 15:31	edit delete
<input type="checkbox"/>	Blog	Basic page	derekmurphy	published	04/28/2017 - 15:00	edit delete
<input type="checkbox"/>	FAQ	Basic page	derekmurphy	published	04/28/2017 - 14:45	edit delete
<input type="checkbox"/>	Help	Basic page	derekmurphy	published	04/28/2017 - 14:40	edit delete
<input type="checkbox"/>	Directories new	Basic page	derekmurphy	published	04/28/2017 - 14:21	edit delete
<input type="checkbox"/>	Vol. 15	Worcester Magazine	jasilva	published	04/19/2017 - 21:14	edit delete
<input type="checkbox"/>	Worcester Society of Antiquity Collections	Basic page	derekmurphy	published	04/19/2017 - 21:12	edit delete
<input type="checkbox"/>	Policies	Basic page	derekmurphy	published	04/19/2017 - 21:02	edit delete
<input type="checkbox"/>	City Document 42	City Document	acbauer	published	04/19/2017 - 19:08	edit delete
<input type="checkbox"/>	City Document 41	City Document	acbauer	published	04/19/2017 - 19:08	edit delete
<input type="checkbox"/>	City Document 40	City Document	acbauer	published	04/19/2017 - 19:06	edit delete
<input type="checkbox"/>	City Document 39	City Document	acbauer	published	04/19/2017 - 19:05	edit delete
<input type="checkbox"/>	City Document 38	City Document	acbauer	published	04/19/2017 - 19:04	edit delete
<input type="checkbox"/>	City Document 37	City Document	acbauer	published	04/19/2017 - 19:04	edit delete

Image Eleven. Screenshot of Digital Worcester Admin Content File, which lists all the files published through the website

Add content is where you can add more pages or files/links to files as their own entity. It gives options for each content type, such as Basic page, City Directory, City Document, Worcester Magazine, or Worcester Society Antiquities. Structure lets you edit the types of content themselves, as well as options for how things are displayed overall. Appearances offers a variety of options for site themes. People lets you edit registered users. Modules shows all the modules available and allows you to enable or disable them. Blocks lets you configure, delete, or rearrange the various blocks that make up several of the pages.

CHAPTER FOUR: CONCLUSION

Achievements

Our Digital Worcester project focused on the first part of the two-fold mission “to use digital technologies to make internet-accessible historical materials that illuminate Worcester’s rich past.” In order to achieve that mission, many pieces had to coalesce to produce a workable, elegant and useful website.

As such, a framework was successfully chosen resulting in a website that is stunningly designed for visual appeal and functionality. It is easy to navigate with helpful notes available to users making historical documents easily accessible and searchable. Each historical document has passed quality control standards prior to uploading. Individual directories are easy to locate and peruse. All documents are searchable with the ability to copy desired portions subject to the stated policies. Clear and appropriate metadata is included for each document. Related historical documents maintained by third parties are listed on the site with direct links provided for each. Historical photos are available via a page capture of and link to the Worcester Historical Museum Visual Image Collection. Additional historical documents can be readily added to the website using the detailed instructions provided.

Importantly, the framework and the website has been chosen and designed with an eye on the future. It includes provisions for a blog and integration with social media, as well as expansion capability into a content management system.

Content Management

The way the digitized documents have been uploaded and organized led to our approach of sectioning off certain files to certain areas. This is a clean and straightforward way for users to find the types of documents they are looking for since we have directories, images, and more in terms of content available. Each section has been tailored to the types of files that are contained. For city directories, we are allowed to upload and host directly on the website so each directory has its own page with a PDF viewer displaying the text directly on that page alongside an extensive log of significant metadata for the user to peruse. For city documents, which are stored in a third-party site, the entries have been stored in a list format alongside base metadata for each individual entry in order to implement a defined order on the list with the link to the actual text having been placed beside those entries. It continues in this fashion for Worcester magazines, the Worcester Society of Antiquities, and so on. The one problem with this method as it stands is that searching across all the files present on the website at a given time is not possible in this current state. When the resources are available, switching to a professional content management system like ContentDM would be ideal.

Social Media Integration

Mastering social media promised to promote and direct traffic to DigitalWorcester.

The objectives of a social policy include:

1. Connecting with users and partners to maintain open lines of communication;
2. Sharing information about digital content;
3. Expanding the audience for Worcester digital archives; and
4. Promote the projects that third parties create through the website.

It is recommended that once DigitalWorcester launches that it use the following social media tools in combination to build a virtual community of active users and a wide audience for Worcester history:

1. Digital Worcester Blog – this would include announcements of new collections, the addition of new partners, and reports on the stories being uncovered through digitized documents.
2. Digital Worcester Facebook Page – this would be a vehicle through which to share blog posts, advertise DigitalWorcester events, and to connect with partner institutions.
3. Digital Worcester Instagram – this would provide a space to share electronic images from the collections to spark curiosity and encourage reposting.
4. Digital Worcester Twitter – like Facebook and Instagram to would be an additional avenue to spread awareness of Digital Worcester and encourage the sharing of its assesses to expand the community of active users.

These tools should be used with proper moderation so not to overwhelm subscribers, should strictly adhere to relevant topics, and should deploy proper etiquette so not to alienate our diverse community.

Recommended Additions

While we believe we have met our goals with this website prototype, there are several additions that would make the website even more consistent, advanced, modern, and complete. As the Drupal structure this website is built on is meant to be expendable, we have the means to make those additions as smooth as possible.

For full social media integration, adding Disqus, a framework for online chat room-type engagement between community members built for use on any website, and AddThis, a smart tool for adding quick link buttons to various social media platforms like Facebook and Twitter, would be great for building and interacting with our users. Going along with these additions, fleshing out a policy on blogs and other social media would be necessary.

Including Google Analytics in the new structure would be of great help in finding the best way to interacting with these users by seeing which pages are more or less used, what the maximum amount of users is at a given time, and so on.

Speaking of building our audience, adding another policy on contributing partners would be of great benefit as well. Plans for establishing a relationship with institutions like the Digital Commonwealth and the Digital Public Library of America should be in place to enhance the capabilities and resources of the website. On the topic of resources, creating a process for donations and volunteer support is necessary if the site is going to connect with all these different groups and expand off of them while maintaining itself. Once these streams of resources are successfully secured, we believe should include the removal of Past Perfect, a content management system used with our photography collection, as a method of storing files, as it conflicts with the website's main system and complicates the consistency and streamlining that is currently present for the user's benefit. That should cover most if not all of the recommended additions.

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