

Planning for Digital Accessibility in Research Libraries

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1. Introduction

In a recent NBC News story, Carey Jaros, CEO of GOJO Industries (better known as the maker of Purell), stated that while they were caught off guard by the increased customer demand during the COVID-19 pandemic, “we are [now] committed to being surge-ready.”¹ How many research libraries are surge-ready when it comes to planning for increased demand for digital accessibility? This is not just a philosophical or a theoretical question. Planning for digital accessibility in a research library takes time. It’s not something that can occur on the fly. Many organizations, including libraries, were caught off guard by the switch to strictly virtual services during the pandemic. In-house accessibility operations couldn’t be scaled up, and external professional accessibility services experienced a mismatch between greatly increased demand and an insufficient supply during the pandemic. Unfortunately, this made live captioners in high demand and they were rarely available, just as hard to find and acquire as hand sanitizers like Purell. Even though the COVID-19 pandemic may (hopefully) be waning due to vaccines, booster shots, and new treatments such as pills, we can expect future dramatic changes due to climate change, political instability, disease, or other events. It is therefore expected that there may again be unplanned surges in demand for accessible and remote library services. This paper will describe some of the challenges and lessons learned from the COVID-19 pandemic related to digital accessibility. In addition to strengthening the infrastructure and surge capability related to digital accessibility, it is equally important for research libraries to look ahead to future developments in the area of digital accessibility.

2. The Basics: Plan Ahead and Avoid After-the-Fact Remediations

Digital accessibility means providing an equal user experience for people with disabilities, and it never happens by accident. It is important to plan ahead for digital accessibility and include accessibility requirements in planning for building or acquiring any new digital technologies or content. Planning for digital accessibility is like planning for accessibility in building a new house. When you build the house from scratch and you have included accessibility in the design specs, the accessibility costs are minimal. However, if you have built a house in an inaccessible manner, or if you purchased an existing inaccessible house, the costs of making that house accessible can become enormous. You may need to re-grade, to add ramps, to make the doorframes wider, and you may need to move the plumbing because there isn't enough space in the bathroom for the turnaround radius. Similarly, when you build a technology from scratch with accessibility as a key design goal, the costs are minimal.² Yet if you build a technology in an inaccessible way, and then want to retrofit it after-the-fact, the amount of code required, and the costs, increase exponentially.³ To be clear, accessibility by itself is not expensive. Choosing to add accessibility later on, as a retrofit, is when the costs of accessibility increase. But that increased cost is due to poor design decisions, not inherent to accessibility itself.

It is important to plan for accessibility in a website design or redesign, for digitizing existing paper materials, for acquiring a license for digital library materials, or for materials specifically for a university course. At this point, many research libraries have processes in place, staff who are familiar with accessibility, and policies to encourage or force digital accessibility. That's the good news. In many research libraries, the infrastructure of human expertise for digital accessibility already exists. The bad news is that the massive shift to virtual operations, and the increase in demand for professional accessibility services due to the pandemic, hit research libraries just as hard as other organizations. No one had planned for a shift to strictly virtual operations. In many ways,

the infrastructure related to policy, process, and capacity, was insufficient.

While there are many legal requirements specifically addressing digital accessibility for people with disabilities, it is important to note that digital accessibility benefits the broader population, not only people with disabilities. First of all, by following technical standards that ensure accessibility, the content also becomes more portable across platforms, browsers, and operating systems. Making digital content or interfaces accessible basically means making them flexible, and everyone benefits from flexible interfaces, as they allow content to be correctly rendered across a broader range of devices and platforms.⁴ Second, many people who might not consider themselves people with disabilities, are likely to benefit from using accessibility features. A large survey done by Microsoft estimates that 57% of computer users are likely or very likely to benefit from the use of accessibility features.⁵ Third, there is evidence in the research that making web content accessible makes that content easier for everyone to use.⁶ So ensuring that digital content, websites, and software are accessible benefits the entire population of users. Due to the pervasive use of captioning on videos by a large percentage of the population (including people in places that are quiet or noisy, people learning English, people who want to search video, etc.), professionally captioned video is already perceived to have wide benefits for the broader population beyond people who are deaf or hard of hearing. But those benefits don't only occur in the area of captioning, and while there are differences in the definitions of accessibility and universal design, accessibility does have universal benefits.⁷

3. Planning for Pivoting to Fully Virtual Operations

As of late 2021, the COVID-19 pandemic seems to be entering another resurgence wave due to the Omicron variant. It is unknown whether there will be new variants or new increases in infection rates, or how often lockdowns will need to take place again in the future. For students with disabilities, the impacts of remote learning, often

inaccessible remote learning, were massive. Data from surveys and social media studies reported high levels of concern and stress among students with disabilities related to whether online learning would be accessible,⁸ and a broad population of university students (not only those with disabilities) experienced increased stress and anxiety during the COVID-19 pandemic.⁹ However, even without a future pandemic, there is likely to be increased demand for accessing library resources without physically coming to the library, and instead delivering that content in digital format, even for people without disabilities. How can you plan for virtual access to library collections? How can you plan for surges in accessibility demand?

In a recent study of university directors of digital accessibility during the COVID-19 pandemic, there had been no “surge” plans or policies in place for how to address increased demands for accessibility.¹⁰ Even when accessibility services are generally done within the university (“in-house”), contacts should be made, and perhaps retainer contracts should be put in place with outside vendors, so that when increased needs occur for services such as captioning video, remediating documents, or American Sign Language (ASL) interpretation for online events, the surge capacity is already in place. Even by the end of 2020, none of the directors of digital accessibility interviewed in the study had created any new policies for managing the shift to virtual operations, or for triaging and prioritizing the various accessibility needs in a situation where all of the needs could not be met.¹¹

The results of that study demonstrate good approaches and bad approaches that were used during the pandemic. Some universities had success with offering training courses on digital accessibility to faculty and staff during semester breaks when the enrollment and interest was much higher.¹² In addition, small (but competitive) grants were made to faculty who proposed ways to rework their classes for a strictly virtual format, and most of those proposals included accessibility components. In the area of procurement, however, there were many failures during the pandemic. Most research libraries are familiar by now with how

procurement processes can be used as a lever for ensuring digital accessibility. When digital materials are procured, or when a license is being negotiated for access to an outside digital library, it is important to only procure accessible materials, include accessibility requirements in the procurement contract, and use that purchasing power to pressure vendors on accessibility. However, during the COVID-19 pandemic, multiple university officials responsible for digital accessibility reported that their procurement controls were being bypassed using “emergency” or “fast-track” procurement authority, and much inaccessible software and digital content was procured.¹³ One accessibility director noted, “we are going to be reaping the rotten effects of those contracts signed without accessibility, for years to come.”¹⁴

4. Formats for Accessible Content

Research libraries tend to be known for the quality and extensiveness of their collections. While public libraries may lend out devices (such as e-readers), typically, the focus of a research library is on the content, the resources, the collections that they can provide, whether it is for research purposes or for classroom use. It is therefore important to have an understanding of the three core formats for ensuring the accessibility of digital content: HTML, EPUB, and PDF, and their corresponding accessibility guidelines: WCAG, Accessible EPUB3, and PDF U/A.

HTML format is best known as the markup language used for web pages. The corresponding guidelines for accessible web pages are the Web Content Accessibility Guidelines (WCAG). WCAG is the international standard for creating accessible web-based content. WCAG started as the Trace Center Unified Web Accessibility Guidelines in the mid-1990s, and WCAG version 1.0 was issued by the World Wide Web Consortium (W3C) Web Accessibility Initiative in 1999. WCAG 2.0 was issued in 2008 and WCAG 2.1, the current standard, was issued in 2018.¹⁵ In later sections, I will talk about the next steps for the WCAG.

EPUB3 is now the predominant format for e-books. Originally developed as a project of the International Digital Publishing Forum in 2010, it is now a standard run out of the Web Accessibility Initiative. EPUB3 allows for multiple resources in a single file, using a specified reading order or another reading order. The current version is EPUB 3.2, which was approved and published by W3C as a Final Community Group Specification (slightly different from a standard) in 2019,¹⁶ however, earlier versions of EPUB were adopted as international technical standards by the International Organization for Standardization (ISO). EPUB3 was designed to be easy to make accessible, and over the past few years, there has been a major shift from publishers putting textbooks in PDF format, to instead publishing their books in EPUB3 format.

Of the three formats for digital content described here, PDF format is considered to be the hardest format to make accessible. While HTML and EPUB3 were built with accessibility in mind from the start, the guidelines for creating accessible PDF content (known as PDF U/A, PDF Universal Access, or sometimes as the Matterhorn Protocol) were created long after the creation of the PDF format.¹⁷ While most web content development and management tools have some features built in to encourage accessibility, there are very limited tools available for making PDF files accessible, and they are often hard to use. The limitations in the existing tools have even caused some universities to try and limit or eliminate the PDF format from their campus (affectionately named the “Great PDF Purge” by North Carolina State University).¹⁸ This seems to be a valid concern, as some campus leaders were concerned that during the COVID-19 pandemic, their level of PDF accessibility on campus actually decreased, as paper forms were quickly scanned as graphical PDF files without considering accessibility.¹⁹ Until better tools and solutions are in place to assist with creating and remediating PDF files for accessibility, this will continue to be the hardest format to make accessible.

5. Captioning

All videos, livestreaming, and other multimedia on web pages or provided in other ways (such as teleconferencing via Zoom, Skype, or Microsoft Teams) must be captioned. Captioning, as a technical concept, is not hard, and captioning of video and television shows has been done for nearly 50 years. Recent legal cases against universities have brought attention to captioning. What changed during the pandemic is the greatly increased demand for captioning at universities and libraries, which had a greatly increased demand for captioning videos, course materials, and livestreaming events, but often faced two challenges, related to budget and capacity. Due to an overall increase in expenses, many academic units at many different universities reportedly pushed back on human captioning, and instead wanted to use automated (AI-based) captioning, because it's less expensive (and in many cases, free).²⁰ However, the quality of automated captioning is much lower than professional, human captioning. And even when there was the desire and the budget to professionally caption a video, there was often an inability to get a video captioned within a reasonable timeframe. Hiring someone to do live (real-time captioning) seemed to be the most challenging, with universities reporting that their usual vendors were unable to provide live human captioning. Finding ASL interpreters available for real-time work was equally challenging. One university described how when they started using automated captioning, they found that it was insufficient for their needs and had to switch to human captioning midway through courses.²¹ Whenever possible, human captioning is always preferable to automated captioning, especially in content where technical or complex terminology is present, where automated captioning is even less effective.

6. Creating a Stronger Infrastructure for Digital Accessibility

As we approach two years since the pandemic started, universities and research libraries have often not created new policies and processes to address the situations that may arise. For instance, if there are

three library events that need to be live captioned, and only one human captioner is available during that time, who gets the human captioner? Is it based on attendance? Or is it based on whether the event is a “public event” vs. a “private event” (behind a password wall for employees)? Or is it based on whether someone with a disability specifically requests an accommodation? If video captioning now takes two weeks for turnaround time instead of three days, have policies changed to note that? Can the standard promises of how quickly library materials will be scanned and emailed still remain? When new print collections are received, are they immediately scanned in an accessible manner, so that they are available when needed, not requiring a wait when a patron request is made? Does the library need additional scanners or new software tools to assist with, for example, PDF remediation? Have new collaborations with outside vendors been formed? For captioning of videos, is there a plan in place to add outside capacity when in-house, in-university services are already being utilized at full capacity? Are vendors keeping their promises about fixing accessibility barriers as promised in existing procurement agreements and settlement agreements?

Overall, the question is, “have libraries created an infrastructure for digital accessibility, to deal with the current challenges and future surges in demand?” There need to be policies created, resources allocated, and plans implemented, for describing how digital accessibility will be addressed in the future. As it stands right now, some states will require that everyone on a university campus be vaccinated (with exceptions for religious or health-related reasons), and other states will not require vaccination (or are preempted from requiring vaccination by state law).²² Regardless of what the political and public health situation is for a research library related to vaccination, it is likely that some people will not yet feel comfortable coming to campus and instead will request that all materials be delivered virtually. Research libraries need to plan for those surges in requests, and the associated accessibility needs.

7. Looking towards the Future

It is important to stay aware of new developments in the area of digital accessibility. Right now, there are major changes underway with the WCAG. While the current version of WCAG is version 2.1, the Web Accessibility Initiative (WAI) is already working on the development of WCAG versions 2.2 and 3.0. WCAG 2.2 is a minor extension of WCAG 2.1, using the same structure and format, with a focus on additional success criteria to meet the needs of “users with cognitive or learning disabilities, users with low vision, and users with disabilities on mobile devices.”²³ To do so, WCAG 2.2 includes nine new success criteria, related to Accessible Authentication (level A), Dragging Movements (level AA), Consistent Help (level A), Page Break Navigation (level A), Focus Appearance (Minimum) (level AA), Focus Appearance (Enhanced) (level AAA), Visible Controls (level AA), Target Size (Minimum) (level AA), and Redundant Entry (level AA). In addition, Focus Visible, a success criteria already in WCAG 2.1, has moved from level AA to level A.²⁴

Beyond WCAG 2.2, there’s another effort underway: WCAG 3. Note that as people have been using WCAG to understand accessibility beyond just web content, WAI is currently planning to rename WCAG to mean “W3C Accessibility Guidelines” instead of the “Web Content Accessibility Guidelines.” While the WCAG 3.0 document is currently in draft format, and is still subject to change, the current draft of WCAG 3.0 describes “additional tests and different scoring mechanisms.”²⁵ Future guidelines may also enhance accessibility for people with cognitive, language, and learning disabilities.

It’s also important to note that W3C recently published a working draft of EPUB 3.3.²⁶ And in PDF accessibility, the long-neglected format is finally garnering attention in the area of accessibility. Two parallel efforts may provide future benefits in making it much easier to remediate PDF documents for accessibility. The Trace Research and Development Center at the University of Maryland (the nation’s oldest research center on technology and disability) is collaborating with

Adobe to improve Adobe's tools to make it much easier for content creators to remediate PDF documents for accessibility. And researchers at the Allen Institute for AI are working on AI-based approaches for remediation.²⁷ Both of these efforts work on the current problems related to remediation, but future tools may offer functionality where content creators can ensure accessibility when the PDF file is created, rather than an after-the-fact remediation (which, as already discussed, is not the most efficient way to do it).

Aside from technical developments, it's also important to be aware of legal and policy developments.²⁸ Many in the digital accessibility realm have been watching the two ongoing legal cases related to web accessibility and public accommodations, *Robles v. Domino's Pizza* (in the Ninth Circuit) and *Gil v. Winn-Dixie* (in the Eleventh Circuit). Both of these cases, involving blind individuals challenging inaccessible websites and apps, are primarily about web accessibility for public accommodations under Title III of the Americans with Disabilities Act, and both deal with issues of the nexus between a physical location and a website. Both of these cases have had major court decisions during 2021, yet do not directly impact the existing accessibility requirements for research libraries, which, as recipients of federal funding, are also covered under Section 504 of the Rehabilitation Act, as well as potentially other statutes, regulations, and agency interpretations relating to education. It is important to note that after a four-year absence (since Maria Town last served in this role in 2016), the White House again has a lead policy person on disability policy, Kimberly Knackstedt. While the Biden-Harris administration has already signaled stronger support for disability-related issues, it is not known at this time whether that will result in any administrative actions related to digital accessibility.

8. Summary

The first two years of the COVID-19 pandemic were challenging for all organizations, including research libraries. Yet the surges in demand for accessibility services are likely to occur again in the next

few years. Research libraries need to more fully integrate accessibility requirements into technology development and procurement, and plan ahead for how to address the increasing requirements for accessibility and the surges in demand.

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