

# The Rationale for a Digital Repository in the Cloud

A library and a digital repository are concepts that, despite existing in two fundamentally different places, provide many of the same services and functions. If a repository is “a place, building, or receptacle where things are or may be stored,”<sup>1</sup> a digital repository serves the same purpose for digital things (or digital objects). Libraries and other institutions, such as archives, historical centers, and museums, contain collections of documents, art, and other materials and objects that are considered to have some significance. A digital repository may contain collections of the same significant objects, accessed on the internet and displayed as digital formats.

## Building a Digital Repository

A digital repository can serve as a virtual space for gathering and sharing objects of interest and importance, where they can be searched, studied, and enjoyed at any place with access to the internet. The need for such spaces has become much more obvious as the world grapples with the repercussions of the COVID-19 pandemic; the restrictions, closures, and other lockdown measures implemented to keep people healthy made it difficult or impossible to experience many places and cultural events. Travel was restricted. Institutions such as libraries and museums were closed. Community gatherings, religious ceremonies, and other celebrations were moved online or cancelled outright. What’s more, schools and other educational organizations were unable to meet in person as frequently or at all. All of this has made sharing and learning about the values of other cultures an unusual and sometimes difficult process.

Not only was access to culture more difficult due to the pandemic, the ability to work at libraries was drastically affected as well. The need for distance

between people has forced the staff of many libraries to adopt distributed work practices and require staff to work partially or totally from home. As a result of fewer staff being on site to operate facilities and equipment, launching a digital repository by using traditional, on-premises hardware may be impractical or even impossible. The simple fact that some libraries have fewer open hours or are closed to the public entirely means that staff may be furloughed or eliminated from their positions, reducing the number of workers available to contribute to a repository project.

While the effects of the pandemic may be decreasing in parts of the world, there may be other occasions in the future where a library may have to pivot to adopt remote work practices. To address the twin needs of hosting cultural resource collections and working in remote and distributed environments, a library can consider creating a digital repository using cloud services and resources.

## The Need for Cultural Collections

For institutions that have not already decided to build a digital repository, it may be helpful to consider the value in doing so. It can be a large and difficult undertaking, but the completed result can create an accessible and lasting gateway to a wealth of important resources that can benefit not only scholarship, but also personal health and well-being. Culture itself is a wide-reaching concept that encompasses many aspects of every group and society worldwide. Many of its numerous definitions include the beliefs, practices, and other features common among a group of people.<sup>2</sup> These aspects of culture are seen as meaningful to the societies in which they develop and likely have measurable benefits as well. A paper prepared for the Ministry of Tourism, “Culture and Sport of the

Province of Ontario,” discussed the practical benefits of engaging the various aspects of culture: “Culture enhances our quality of life and increases overall well-being for both individuals and communities.”<sup>3</sup>

By capturing the physical representations of culture as digital objects, an institution is offering a way of preserving and connecting to cultures in the same way that libraries, archives, and museums have done for centuries. Ancient and isolated cultures can be studied and shared to prevent them from being forgotten and can be viewed in context next to related research and resources available from educational and cultural institutions around the world. Additionally, the cultures of disadvantaged, suppressed, or ancient and extinct peoples can be made visible and shared, with the intent of bringing to light their many contributions that have been stolen, changed, or ignored. By using photography, rare-book scanning equipment, and other specialized digitization techniques, digital objects can be created of fragile and rare artifacts without destroying them or removing them from their rightful owners. And unlike its physical counterparts, a digital collection can potentially be accessed from any location and can be made discoverable through searching and browsing techniques that are otherwise impossible.

## Building a Repository with Cloud Infrastructure

Digital repositories (or cultural repositories, digital archives, etc.) extend data preservation and discovery out from the physical world and into its virtual counterpart. This can be an exciting prospect for many collections; the depth and variety of material housed in cultural heritage projects can lend itself to a wide variety of media formats, interactive applications, and interconnected discovery tools, not to mention the near limitless scale to which these collections can grow. Such a possibility can present a library with an exciting creative opportunity but also a potentially daunting project. Yet the recent proliferation of what is being called “cloud technology” offers libraries the tools to best demonstrate the importance of their cultural and scholastic collections. Cloud technology can provide an institution access to existing software to quickly deploy and easily operate a digital repository, and it can allow another institution to create a bespoke platform to craft a custom-made repository to meet precise needs and specifications. It is a powerful, flexible set of resources with which any library, university, cultural center, or other institution can find the best solution for sharing a cultural heritage collection.

## The Need for Cloud Technology

The rapid adoption of cloud architecture in recent years speaks to its utility, but the jargon used to describe it may be confusing. Simply put, cloud technology is a collection of remotely hosted computer resources (i.e., resources in the cloud) available anywhere with internet access. In most cases, this means that large buildings called data centers contain all of the servers, storage space, and other hardware required to provide vast numbers of users with the means to do almost any computing task that was once possible only by having the necessary equipment on site. By using web browsers and specific software applications, users are provided with the ability to create servers and databases, manage network traffic, run custom code, and recreate the functionality of most common computer hardware in a virtual environment. Moreover, this technology provides users with pre-built, production-ready solutions to many common (and in many cases specific) IT challenges, including those presented by creating a digital repository.

Projects of every size can be completed using these tools, and there are solutions targeted toward customers with every level of IT literacy, from professional system administrators and programmers to librarians with great ideas for collections but little to no technical savvy. The scope of what is offered by the companies that manage these services (cloud service providers) is vast, perhaps to some even overwhelming. But it is because of this broad selection that an institution can develop its own digital repository, crafted to suit the needs of any collection. For all practical implementations of a digital repository, there is nothing that cannot be achieved with the tools offered by cloud technology providers.

## The Value of Reduced Physical Spaces

It is the remote nature of cloud architecture that enables its far-reaching availability; a library no longer needs a server room to host websites or storage space, and cloud-based projects can be administered by a distanced, distributed workforce. This can be beneficial for several reasons, not the least of which is that by using cloud services, a project like a repository can be constructed under circumstances that require remote work or prolonged social distancing. This can allow for continuity of a repository project when staff cannot enter a library or office; even IT professionals no longer need to be present on site to make sure a server is successfully running the repository software, as this can all be managed remotely. The benefits

continue during times of full office capacity as well, as the cloud's remote capabilities inherently provide the flexibility to house staff in distributed locations for any number of reasons, be it limited space or network bandwidth on site, limited access to locally available workforce or specific expertise, or an institutional push for work/life balance by providing work-from-home options to employees. Using cloud resources can potentially require significantly less power usage on site to run large computer equipment, and it can offer stability for those institutions where continuous power to run computers is not always possible. Whatever the reason or wherever the location, a repository can be developed, deployed, and maintained with complete access to the necessary tools and resources.

## Notes

1. *OED Online*, s.v. “repository,” accessed October 27, 2020.
2. *OED Online*, s.v. “culture,” accessed October 27, 2020; *Merriam-Webster.com Dictionary*, s.v. “culture,” <https://www.merriam-webster.com/dictionary/culture>.
3. American Sociological Association, “Culture,” accessed October 27, 2020, <https://www.asanet.org/topics/culture>; Government of Ontario, “The Importance of Culture,” in “Environmental Scan of the Culture Sector: Ontario Culture Strategy Background Document,” April 2016, para. 2, <https://www.ontario.ca/document/environmental-scan-culture-sector-ontario-culture-strategy-background-document/importance-culture>.