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# Kicking the Habit (of Resistance to Digital Preservation)

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## Kicking the Habit (of Resistance to Digital Preservation)

By Meg Miner, Illinois Wesleyan University

In 2001 I decided (for the fourth time) to get serious about quitting smoking. By then I realized the myth of the magic pill I'd been waiting for. All of us who try to rid ourselves of a long-held habit eventually admit it will take deliberate thought and time to develop confidence in the life changes that follow—and a lot of deep breathing. This process is much smoother if you have external support from people you trust and who care about your success.

This article makes the case that starting a digital preservation (DP) program is a lot like kicking bad habits. We all know we need to do it, but our lack of confidence and fear of the unknown hold us back. We want someone to deliver a quick and easy solution—a magic pill, even—to take our troubles away. By 2008, after completing initial digital preservation steps (collection inventory and securing a better storage environment), it still seemed impossible to proceed on my own. And then I accepted an opportunity to work with people outside my university who were experiencing the same difficulties.

By fall 2011, my institution was one of five participating in a National Leadership Grant from the Institute of Museum and Library Services (IMLS). Together we became the Digital POWRR (Preserving digital Objects With Restricted Resources) Project. We all lacked funding for anything “extra,” and we were all uncertain of how to make DP work in our environments.

Our goal was to investigate scalable and practical solutions that would make access to digital preservation processes a reality for smaller or underresourced institutions. We all needed to move beyond understanding the need for digital preservation and toward effective stewardship of digital collections.

### Our Process

The IMLS requested we form a Board of Advisors with expertise in digital curation and preservation. We used our advisors' knowledge of DP on larger scales to understand how to reduce the variety and complexity of solutions without compromising core DP principles.

Six public and private sector professionals<sup>1</sup> met with us by phone and in person over the next two years. We arrived at a case study approach that involved a gap analysis of our institutions and compared where we were to our desired paths of progress. This exercise provided insights we used as we explored technologies to meet our needs.

We generated a list of almost 100 preservation tools and then narrowed it to over 60 that we evaluated at a surface level, meaning we did not download and install these products. We simulated what many people would do in exploring these possibilities: we looked at product web pages and attempted to contact someone when necessary. We examined product support (fee or community based), information currency, pricing, relative “openness,” and what each product claimed it could do. We mapped out our evaluations on a colorful grid<sup>2</sup> that represents the intersection of the Digital Curation Centre's Curation Lifecycle Model<sup>3</sup> and the OAIS Reference Model.<sup>4</sup>

We chose six tools—Archivematica, Curator's Workbench, DuraCloud, Internet Archive, MetaArchive, and Preservica—to examine in depth for workflow impact and their compatibility with our existing resources, such as:

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	Copy	File Check	Viras Scan	File Delete	Auto Unique ID	Auto Metadata Creation	Auto Metadata Harvest	Manual Metadata	Rights Management	Package Metadata	Auto SIP Creation	Public Interface	Auto DP Creation	Auto AP Creation	Reliable Long-term Bit Preservation	Redundancy	Geographically Dispersed Data Storage Model	Exit Strategy	Migration	Monitoring	Auto Recovery	
	Ingest			Processing					Access		Storage				Maintenance							
Archivematica	X	X	X		X	X	X	X	X	X	X	X	X	X						X		
Curator's Workbench	X	X			X	X		X	X		X	X										
MetaArchive	X	X		X	X			X		X	X				X	X	X	X	X		X	X
DuraCloud	X	X		X	X	X	X	X	X		X				X	X	X	X	X		X	X
Internet Archive	X	X			X	X	X	X	X		X	X	X	X	X	X	X	X				
Preservica	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DukeDataAccessioner	X	X			X	X	X	X	X	X	X											

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- outdated technical infrastructure,
- little to no budget (e.g., for licensing fees, additional equipment),
- little or no access to staff with technical skills (e.g., server administrators, programmers, metadata librarians),
- limited personal technical skills, or
- “lone arranger” staffing environments.

With the exception of Preservica, the fully examined tools are not complete products; they could not be used for end-to-end object preparation and storage. We looked at a full spectrum of options because we understood that scalability, or at least flexibility in approaches, might be best for some institutions. Only one other end-to-end product was available at that time, and we could not secure a limited license for testing it.

As our case studies show, each partner institution had a different experience evaluating these tools. Readers can review these reports on our wiki and compare their situations with ours to determine how best to proceed.

What became clear toward the end of this project was that most storage systems for bit-level preservation still need technical information that human processors may not have the time or depth of knowledge to create. There is no pill we can take to become metadata experts, and many of us won't be able to hire professionals who are.

Since the metadata creation tools we tested were not easy to set up and use, our project adopted an open source metadata creator: Duke DataAccessioner (DA).<sup>5</sup> This tool creates accession checksums and a technical metadata record stored as an XML file that we recommend storing with the *master* copy of the digital object. An *access* copy can be stored elsewhere, but good stewardship is achievable by protecting the master and the XML files in the best way we can manage in our current institutional settings.

It is possible to use the XML file for project management by collecting information like file types, quantities, and cumulative sizes per type. Currently a separate tool is needed for aggregation,<sup>6</sup> but integration into DA is planned. If we add this information to our existing accessioning documentation, we can track our rate of collection growth and use the information to build support for acquiring tools that will normalize files in stable formats (formats that are likely to persist over time and be reliably migrated to new formats) and store them with bit-level monitoring.

Digital preservation programs involve more than just tools. They involve technology, organizational support, and resources,<sup>7</sup> so we devoted a portion of our project to creating simple messages about the need for DP. We created “communication one-pagers,” templates for handouts that convey the need for DP to different stakeholders to build capacity for funding. We also explored workflows in a collaborative MetaArchive model and created a multi-institution legal agreement for cooperative LOCKSS arrangements.

### **Kicking the Habit in Your Shop**

Unless an institution can commit to ongoing costs associated with a full-service digital preservation platform or to the technical knowledge and support needed for robust, open source tools, many archivists will need to develop a DP program gradually. If you are facing the forces of fear and inertia in getting a DP program going in your institution, take advantage of our work and kick the habit with the steps that follow.

### **Thoughtful Planning**

Start your own DP journey with the complete documentation and fuller explanations of our processes on our website and wiki. Our white paper<sup>8</sup> summarizes this work and provides recommendations based on institutional types and resources compared to the tools, services, and collaborative solutions that we examined in depth.

### **Confidence in Increments**

Minimally, track your rate of digital object growth to demonstrate these needs to your community and gather the recommended metadata in XML so it can be reused. We don't have to understand every line of the code, just keep it! DataAccessioner, or tools with similar functionality, offers a low-tech, no-cost, approach to technical metadata you can use in conjunction with your regular accession workflows.

### **Breathe Deeply**

You will likely face people who don't believe digital preservation is an issue worth paying attention to. By now we've all experienced format obsolescence or storage media failures. Use this information to develop a list of horror stories from real people in your work world. Nurture these people as allies! And when everyone agrees “this is important but...” (fill in the blank: there's no time, no money, no staff, etc.), take a breath, document your efforts, and look for opportunities to secure your collections just a little more than in the past with a resource like NDSA's Levels of Digital Preservation tool.<sup>9</sup>

### Find Friends

Never think that everyone has figured this all out except you. The options available today are drastically different from when we started just three years ago. Everyone is a learner in this environment, and current emphasis in the cultural heritage community is on collaborating to make the most of our strengths across institutions.

This last point holds true for everyone on the Digital POWRR project. We are all willing to talk through any details of our work that need clarification and to serve as a sounding board as you work toward a digital preservation program in your world.

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### Notes

1. Digital POWRR website, accessed November 1, 2014, [digitalpowrr.niu.edu](http://digitalpowrr.niu.edu) and [powrr-wiki.lib.niu.edu/index.php/Main\\_Page](http://powrr-wiki.lib.niu.edu/index.php/Main_Page).
2. DigitalPOWRR Tool Grid, accessed November 1, 2014, [digitalpowrr.niu.edu/tool-grid](http://digitalpowrr.niu.edu/tool-grid).
3. Digital Curation Center Lifecycle Model, accessed November 1, 2014, [www.dcc.ac.uk/resources/curation-lifecycle-model](http://www.dcc.ac.uk/resources/curation-lifecycle-model).
4. Open Archival Information Systems Reference Model, accessed November 1, 2014, [public.ccsds.org/publications/archive/650x0m2.pdf](http://public.ccsds.org/publications/archive/650x0m2.pdf).
5. Duke DataAccessioner, accessed November 1, 2014, [dataaccessioner.org](http://dataaccessioner.org).
6. DA-MT (for DataAccessioner-Metadata Transformer), accessed November 1, 2014, [dataaccessioner.org/downloads/da-mt/da-mt.zip](http://dataaccessioner.org/downloads/da-mt/da-mt.zip).
7. Digital Preservation Management: Implementing Short-term Strategies for Long-term Problems, accessed November 1, 2014, [dpworkshop.org/dpm-eng/conclusion.html](http://dpworkshop.org/dpm-eng/conclusion.html).
8. Jaime Schumacher et al., “From Theory to Action: ‘Good Enough’ Digital Preservation Solutions for Under-Resourced Cultural Heritage Institutions” (August 27, 2014), accessed November 1, 2014, [commons.lib.niu.edu/handle/10843/13610](http://commons.lib.niu.edu/handle/10843/13610).
9. NSDA Levels of Digital Preservation, accessed 1 November 2014, [www.digitalpreservation.gov/ndsda/activities/levels.html](http://www.digitalpreservation.gov/ndsda/activities/levels.html).

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