The Library of Congress Preservation Directorate: Fiscal and Organizational Sustainability

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Abstract

This paper describes the preservation administration frameworks developed in the Library of Congress Preservation Directorate and case studies of how these business models were used to make changes in preservation strategy. These include evaluations of how to define preservation strategies and their intended benefits, how to evaluate their total cost and cost efficiency, and how to manage preservation activities across different timeframes. These combined efforts are intended to help preservation support the evolving requirements of the Library of Congress across strategic planning cycles while making progress on large-scale preservation needs and maintaining options for use of the collections over the long term.

1. Introduction

The Library of Congress is engaged in an effort to evaluate the health and sustainability of its physical collections preservation program. We need to ensure that the Preservation Directorate can serve as the bedrock for the Library of Congress' mission to, "engage, inspire, and inform Congress and the American people with a universal and enduring source of knowledge and creativity."[1,2,3] We derive this vision of preservation from the paired terms of "universal and enduring." These words signal that the measure of preservation has two factors. The collections must endure; this is the minimum outcome of successful preservation. The way we preserve them must is not evaluated against simple persistence, though. Preservation should be evaluated against a principle of universal access and use the perspective of the future to decide on the responsible version of access in the present, not to proscribe present-day access.

The 10th Anniversary Conference of the *Koordinierungsstelle für die Erhaltung des schriftlichen Kulturguts* (KEK), Preservation in Perspective, provided an opportunity to share the work to date, and the presentation given at that conference forms the basis for this paper.[4] This paper describes the Library's approach to developing sustainable management practices for preservation efforts and explores how this framework for preservation applies to a range of libraries. Our conclusions are pertinent to KEK and other consortia and colleting institutions aside from the Library of Congress in two notable ways. One, we are developing direct measures of how the mission of our institution is sustained by preservation activities. We are also finding scenarios here collective investment may overcome cost barriers that prevent individual libraries from utilizing the most effective preservation strategies.

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[1] All URLs cited in this paper were confirmed active on 8 May 2023.
[2] Library of Congress (2019).
[3] Information on the Preservation Directorate: <https://www.loc.gov/preservation/>.
[4] *Koordinierungsstelle für die Erhaltung des schriftlichen Kulturguts* (KEK), Preservation in Perspective: 10th Anniversary Conference: <https://www.kek-spk.de/international-conference>.

Holding over 175 million physical collection items assembled over more than 220 years, the Library of Congress provide ample opportunity to explore preservation strategies.[5] Despite having a central role in the organization's mission and regardless of the specialist skills its staff provide, the Preservation Directorate is only another department in an organization. It requires resources in order to operate and needs meaningful ways to measure the utilization of those resources. In order to be strategically valuable, preservation efforts should yield a collection that is more usable in the present. To be effective, preservation strategies should enable that access with little or no risk to the future usability of the collections. The most effective preservation strategies enable access in the present and also improve the likelihood that the collections will remain usable in the future.

2. Framing the problem: Eternity one year at a time

Libraries, archives, museums, and other collecting institutions are charged with keeping things available forever.[6] These institutions affirm preservation as a principal element of their mission and support preservation and conservation workgroups within their budget, organizational structure, and physical plant. Eternity is not a practical management planning horizon, however, so collecting institutions must grapple with the question of how to convert their mission into periods of time that are meaningful in organizational and administrative terms. Within those meaningful durations, preservation programs must undertake measurable actions in the present that promote the likelihood that materials will be usable in the future.

The Library of Congress, for example, was created by an Act of Congress on April 24, 1800. After 223 years of operations, we could make an assumption that a further 223 years is a meaningful planning horizon. That time-scale is still impractical for program management, however. A preservation budget that requires two centuries for its payoff is not a credible request. Nor, by extension to absurdity, is any governing body likely to fund a large preservation investment in the present on the argument that divided by an infinite stretch of time, the cost of any preservation investment is effectively zero.

To avoid these pitfalls, we have been developing a framework or structure for assessing several factors that help to situate preservation activities strategically in the organization. The first of these are boundaries and suitability of preservation activities, to help define preservation strategies in terms of how they specifically support the goals and mission of the Library. Based on those factors, we assess total cost and cost effectiveness of preservation activities. This helps justify resources and equally important, guides us on how to reduce the resources necessary to meet our goals, in order to make the preservation effort sustainable. An essential aspect of this is

[5] General information on the Library of Congress and its collections can be found at <https://www.loc.gov/about/general-information/>, and in its annual reports and budgets, available at <https://www.loc.gov/about/reports-and-budgets/>.

[6] The term "things" can be read technically in this instance as an allusion to Heidegger's *"Ding,"* meaning an object, an entity in general, or focus of human practices. This essay is grounded in preservation of material records or cultural heritage artifacts, but the principles apply to other preservation practices, including of digital content. (c.f. The Cambridge Heidegger Lexicon: <https://doi.org/10.1017/9780511843778.202>.)

developing sustainable organizational structures and staffing plans, to increase confidence that knowledge, skills, and abilities can be transmitted into the future.

These are not controversial goals. They are difficult to achieve because of the dilemmas that confronts preservation administration. The costs that are affordable in the near-term may not be the best preservation investment, while the best investment may pay off outside any realistic planning period. In light of this, we also factor in several timeframes or planning horizons to help bring the future into the present.

The long-term goals of preservation invite a temptation for its advocates to argue for resources on principle rather than on merit, and to account for preservation investments outside the fiscal and policy mechanisms that actually make the organization work. This creates a significant strategic risk to implementation of preservation strategies because, although preservation outcomes are ultimately measured over decades and centuries, libraries operate in annual funding cycles. In each annual scenario, it is easier to defer preservation expenses when the benefit of those expenditures comes at an ambiguous point in the future, and there is no real stakeholder for them in the present.[7] Sustainability requires us to develop activities that can continue into eternity, but will also show regular benefits in the present and mirror an organization's strategic planning period, normally a five-year cycle.

This framework also leads us to acknowledge that some preservation strategies that can solve long-term problems may have no relevance to mission in the present and may even detract from the goals of the institution. These are difficult conclusion to come to. Those strategies often represent major investments and can become articles of faith: microfilm lasts forever, deacidification is the answer, and the temperature cannot fluctuate. If preservation strategies are oppositional to mission, though, institutions are prone to choose their mission. For preservation at the Library of Congress, confronted with the need to reinvent and revisit our strategies, it is comforting to remember that the final words in our mission are "knowledge and creativity."

3. Developing a preservation administration framework

With these issues in mind, the Library of Congress (the Library) Preservation Directorate (PRES) has been revisiting the received wisdom and current practices of preservation and seeking out business models that measure and describe the benefits of those practices in a way that is meaningful to the staff and managers responsible for them. As an outcome of this process, we find effective and ineffective practices both, but that is not the motivation or most significant outcome. The foremost goal and most valuable part of this work is testing whether we have business models are useful for showing how preservation supports the overall mission and business of the agency.

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[7] The history of emergency preparedness and response in any sector is instructive here. Organizations of all kinds attest to the value of preventative measures and continuity of operations planning, and regularly fail in their investments in these same areas. Preservation "for future generations" is a similar goal–invest now in something that may not make any difference this year–that does not even have the implicit urgency of emergency planning.

In American English, there is a colloquial expression of a “bean counter,” who is excessively focused on reducing expenditure regardless of any other considerations or context. By contrast, we consider ourselves “bean enthusiasts” in PRES. We know that less is not always better, we want to maintain and increase the diversity of out proverbial bean patch, and the ultimate goal is the right amount for the right purposes. Recipes call for beans by a unit of weight or volume, not by a piece count, and there are beans that are better suited for one dish than another.

The ideal of this approach is to find a good match between mission and business model. This begins when the staff involved feel their work is accurately portrayed and measured in appropriate ways in the business model. In turn, their management needs to see that those measures are persuasive to senior leadership, and leadership needs confidence that investments in preservation yield results that matter to the institution’s stakeholders. In our work to date, we have identified four classes of assessments that are useful to this: boundaries, suitability, total cost, and cost effectiveness. We also situate those assessment within particular near-term, strategic, and long-term planning horizons.

3.1 Boundaries

One of the important things we have learned is that we have to draw boundaries around distinct preservation strategies. To so this, we often test several different assessment methods for any particular strategy to see if they return information that is useful for us for making decisions. If we consider activities such as library binding or the process of transferring and item to storage, it is possible to assess the cost and quantity of a very consistent work unit. In turn, it is meaningful to ask questions about doing more or improving quality for the same or lower cost. This is not true for other parts of our program that are central to our effectiveness and to the Library’s preservation mission.

In some instances, it is more important for us to think about the capabilities we offer or services that we make possible, than it the level of utilization of those capabilities. For example, the correct measure of conservation is not necessarily how many treatments are performed in a given period, but whether library activities that rely on conservation can occur without impediment. Exhibitions, consultation of the collections, and our ability to digitize materials are all made possible by the conservation program. It is more meaningful to measure the outcomes in this instance, rather than the outputs.

This outcome-focused approach changes the way we articulate the value of conservation, by shifting from counting the number of treatments per year, to saying that with this level of conservation investment, the Library has been able to sustain a certain level of service. On this basis, a preservation administrator might say with pride that, although the investment in conservation has been flat over the past several years, the Library has been able to increase its services levels in these program areas. This approach supports persuasive arguments, as well. To continue this example, measuring capabilities might lead to saying we cannot continue to support additional growth in library service levels given our current resources, or that we are decreasing our attention to long-term conservation goals to support these other expanding programs.

This approach helps us resolve some classic dilemmas in preservation administration. Some things are very simple to measure, a per page cost of digitization, and others are very complex and may seem to defy measurement. In addition to asking whether outputs or outcomes are the most important focus of measurement, we have also found value in having a decision-making framework. The *Cynefin* model developed by Kurtz and Snowden has been particularly informative for us, given the range and complexity of preservation issues, from applied chemistry to emergency response to Zebra barcode and label printers.[8] Other models may be effective, too. It is reasonable to suspect that some value is derived from having any consistent decision-making structure. There is also a pragmatic advantage to using a framework that is accepted within one's organizational context.

3.2 Suitability

Once we have drawn boundaries around preservation strategies and understood the proper way to assess them, we can start thinking about how they engage with a library's strategic goals. In short, we are asking if these strategies suitable for the goals of a library.

To give some examples, strategic plan of the Library includes a separate digital strategy, in part because of the emphasis on digitization of collections. As an outcome of this, the preservation directorate had to develop ways to do conservation assessment and treatment of materials at large scale so they would be ready for digitization. PRES also transitioned fully away from microfilm production to digital reformatting.

This helped to clearly link certain ongoing investment areas (e.g. conservation or reformatting) to major strategic goals. It also helped us establish more persuasive measures than simple item count, such as our transition rate from film to digital. This alignment helped us emphasize how a major research project—effectiveness of heat- and solvent-set tissues, an esoteric subject on its surface—was essential to high-volume digitization because it established a method for treatment that was safe and fast.[9]

The Strategic Plan also emphasizes the need to enhance the visitor experience to the Library. Over two million people per year come to the Library and that majority of that is not traffic in our reading rooms. Instead, it means attendance at programs and events, and viewing exhibitions. To support that we have hired our first objects conservator. We have also improved our processes for microfade testing of object and materials testing of exhibition casework. We count the number of tests and treatments as a matter of routine and responsible program management, but we measure and report on the value of those changes based on the scope and diversity of exhibitions we can support.

[8] Kurtz and Snowden (2003).
[9] Kelly, et. al. (2022): 24–54.

Youth and non-scholarly audiences are an important focus in the current plan, as well, and that has led us to launch a blog so we have an informal communications platform.[10] We developed workshops for kids and adapted heritage science concepts into classroom lesson plans.

All of those strategies are suited to the current goals of the Library, but they are also areas we have chosen because they help us build capacity and expand our options for engagement and outreach in the future. To support digitization at scale we have also had to develop new collection assessment methods, a protocol for creating care and handling instructions, capabilities that will be useful in future strategic plans even if the focus shifts from digitization. Hiring an objects conservator supports the visitor experience goals of the Library, but it also expands the core capabilities we have for conservation. Launching the blog helps us reach a non-scholarly generalist audience but it also means that we have a useful communications tool that will be able to repurpose in the future.

3.3 Total cost

As the boundaries around a preservation strategy and the means to assess that strategy's suitability come into focus, it is possible to think about costs in a useful way. In this area, there are many commercial business metrics (or near analogs to them) that we have found valuable, especially looking at both known and hidden costs of production and operation, minimum viable costs for operations or staffing. For example, whether a library has two conservators or twenty, they still need a lab to work in. It may be a larger or smaller facility depending on the anticipated staffing size, but there are some workspaces and pieces of equipment required for operations and regardless of staff size.

Another crucial aspect of total costs is understanding the opportunity costs of a strategy, the things that we are not doing or are unable to invest in because of the decisions we make. Related, it is important to understand the forced costs of certain decisions. Acquiring a collection means storing and cataloging that collection, a subject that has been investigated a number of times from Helen Shenton's work on lifecycle costs for collections to Chela Metzger's recent work on Total Cost of Stewardship.[11]

To date, PRES has concluded three separate engagements with Forrester's Total Economic Impact methods, supplemented by our own self-study.[12] As with decision-making frameworks, the use a method to guide assessment may be as significant as the particular method, and repurposing methods already in use and accepted may be the wise strategic decision. Business metrics from the commercial sector have been valuable to PRES in every engagement so far, but we emphasize that close attention has been required. Success has emerged from the dialogue between our expertise as librarians as conservators and curators and our consultant's knowledge of business concepts to make sure that we apply the right metric to the correct strategy.

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[10] Library of Congress Preservation Directorate. *Guardians of Memory.* <https://blogs.loc.gov/preservation>
[11] Shenton (2003) and Metzger (2021).
[12] Forrester Total Economic Impact: <https://www.forrester.com/policies/tei/>.

To return to the example of counting conservation treatments, even if we create an elaborate typology for different types of treatments and treatment workflows, we may end up doing the wrong assessment. The goal of measuring conservation activities is not simply to increase the number of conservation treatments per year. The real goal is to assess the health of the conservation program and make sure it is enabling the outcomes the library requires from conservation activities.

Evaluating total cost has helped us shift focus from counting up large numbers reflecting activity, and to make better use of those same numbers. In our developing framework, by having PRES senior managers focused more on the capabilities the Library needs and understanding the total costs of meeting those needs, we open up a few important management improvements. One of those is making sure we do not take actions that have a small direct cost in the annual budget, but set up a series of forced costs and indirect expenses that are not sustainable. Another is that traditional time and piece counts stats are restored to dignity and become useful tool for line managers to evaluate the health of their operations and determine the right resource levels for them. When PRES management does not ask “how many can you do” and “can you do more, maybe with less,” and instead asks questions like “can you provide the capability” and “are you doing it efficiently,” the dreaded “stats” can become a way to quantify their competency and let the numbers argue for the resources they require.

3.5 Cost effectiveness

This alignment of goals helps connect total costs to cost effectiveness and puts the consultants and their business metrics on the same team as the staff. Cost effectiveness here does not mean spending less money. It means making sure that when we expend or allocation resources, we understand how much we help the library advance its mission. Evaluating effectiveness of costs against mission and goals helps us avoid efforts to merely reduce spending, and focus instead on better utilization of resources, though reduced overhead and improved tools and techniques. Distinguishing between cost effectiveness and mere cost savings also creates measurable arguments for delegated authority to reduce overhead, investments in training, automation of rote process, or improved tools and systems. These are all positive improvements in the workplace, which helps keep everyone focused on finding and refining the purpose of their work by using measures as a way to keep score and mark progress but not letting them become the goal in and of themselves.

The total cost perspective is important in preservation because it is uncommon for preservation to entail direct like for like alternative options. Comparisons based on cost effectiveness often mean a decision about the preferred array of risks or opportunity costs between strategies. This is close kin to the way opportunity cost is used business strategy to evaluate different investment options, even if they are completely different industries.

Opportunity cost and other total economic costs are also important for evaluating preservation options because there are meaningful instances where a choice of a lower total cost strategy does not yield direct savings. Instead, the strategy with a better total cost may mean that we require fewer resources to achieve the necessary outcomes, or that we gain flexibility to move funds resources one area to another, the costs are net zero but the outcome are positive. More work might be performed as a result, but a change could be just as meaningful if it means a more diverse array of preservation options for the same total program cost.

An especially important aspect of this relates to sustainability and energy usage in cultural heritage. There can be a political issue to navigate in this as well, since many of the cost savings that preservation can enable are in facilities operations and environmental control. Preservation's technical guidance is necessary for a library to make intelligent adjustments that reduce consumption but do not imperil materials. Those savings may accrue to an external party, in our case the Architect of the Capital manages buildings and grounds the library occupies, but a similar arrangement may occur on university campuses or other governmental jurisdictions. In this instance, it is important to have that the right parties from both organizations along with sufficiently highly placed financial decision-makers so that all of the potential beneficiaries of the work can gain some benefit.

3.5 Planning horizons

Gathering the right stakeholders and potential beneficiaries is crucial to an aspect of preservation administration that sits at the heart of the mission of preservation: thinking about time. There is a glib remark about preservation budgets that any level of expenditure divided by forever is almost nothing. To date, I am not aware of any instance where this rationale has persuaded funders.

Less facetiously, we have an unofficial principle in PRES that we do not even justify budget requests on the basis of 100 years, despite having many items in the collections that are already well past that age and that we expect to keep available for centuries to come. Making requests on a very long planning horizon robs the requests of their urgency and at times even seems irresponsible because it shifts accountability the success of that program outside of our ability to measure or manage it.

When we plan preservation initiatives at the Library of Congress, we are careful to work in meaningful planning horizons. We have to spend money in the present tense which means we also need to show the value of that expenditure in the near term. This is an important shift from framing preservation in terms of keeping things "for the future generations," towards explaining how we will maintain or improve options for use of our collections within a meaningful amount of time. Or, more eloquently, how we make sure that people today can touch the artifacts of the past, begin to care about them, and wish to share them with their friends and pass them into the hands of their descendants. We can supply the technical expertise but that groundswell of care is essential to sustaining preservation.

Observation of how our work actually occurs has led us towards a few meaningful planning horizons. The most frequent is what we call the near term, which is about three years for us. That is not a law of nature, but a practical outgrowth of how work occurs: one or two budget cycles to think about what we need and make the case for those funds, the first year or two, and then apply them to a project, another year or two. Three years is meaningful because it is a duration of work that occurs within a strategic planning cycle (five-years at the Library of Congress) which makes it easier to address our goal of keeping work suitable. It also allows us to reevaluate and adapt our programs after the launch of each plan cycle, or, if there is a major exigency, a three-year arc can shift a year and still fall within that strategic planning window. A three-year window also works well for our staff in their individual performance and development plans, allowing sufficient time to do the work, as well as the time for training or research that may be needed.

We do also think about medium and long-term horizons. Often, we find this medium term or strategic planning horizon falls at about 11 years. That forecasts our efforts across two strategic planning cycles and sets up a prelude to "forever" that we can usefully aspire to. It is meaningful to ask whether choices we are making in the near-term mean that the Library will have all the options for use of its collections in the next strategic plan and into the one that follows. For us, that also means that PRES is implicitly saying that at the end of each 10-year term of the Librarian of Congress, there successor will have all the options available to them that their successor had.

This horizon of about 11 years is useful for career planning, as well. It takes us about a year to recruit an onboard a specialist professional staff member and we routinely see staff having a 10-year career in a particular role at the library. This planning horizon is helps us think constructively about the staff we need to recruit now, so that 10 years on we will still have the knowledge and capabilities the library requires.

At the longest, we also plan on a 40-year cycle, but for several reasons planning past this point has not been valuable. That 40 years is roughly the length of a person's entire career, from completing their education to retirement. We do have staff that spend entire careers at the Library and have been able to track the work individuals have accomplished across career scopes of several decades. It is a meaningful arc for us and enables us to think about goals that can be a major legacy. That type of legacy is a profound motivation, to think that the preservation staff to come will remember that you were there when a major milestone was achieved. Note that this is still about one generation to another, though. The necessity of a personal connection is something that has become a guide for us: if a strategy or plan can mean something to somebody, and it is technically possible, success is attainable.

More prosaically, 40 years is also the standard depreciation cycle for a capital investment like a preservation storage facility, so it is a time frame that is relevant to our practice and also aligns with the way governments and institutions account for their money. With this as background, we provide two short case studies of how we used these principles in practice to reorganize the Preservation Directorate and to reevaluate a major investment in preservation strategies.

4. Case study: Organization for preservation

The Library has been engaged in a variety of preservation activities since its inception in 1800. In 1900, the Library arranged with the Government Printing Office to establish an in-house bindery. In 1940, the Library establishes the position of Keeper of the Collections and, in 1963, renamed the Keeper's Office to the Office of Collections Maintenance and Preservation. In 1965 the Library worked with the Association of Research Libraries to jointly sponsor a national preservation planning conference, and we continue to host symposiums and share our knowledge in conferences, publications, and workshops. In 1967, the Library consolidates its preservation activities by establishing the Preservation Office (now the Preservation Directorate).

That core organizational structure held stable for over 50 years, although the Library developed additional preservation activities in the early 21st century at the National Audio-Visual Conservation Center and a growing body of activity in digital preservation. Our reevaluation of preservation activities began in 2017 as both the Library of Congress and PRES went through some significant changes. Carla Hayden was confirmed as the 14th Librarian of Congress in September 2016 and under her leadership the agency developed a new mission and strategic plan in 2017.[13] In that same year, PRES incorporated a newly formed Collections Management Division (CMD) so that end-to-end care of collections occurs within the Directorate, unifying collections storage and inventory control with other preservation activities.[14] This effectively doubled the size of the PRES to about 200 staff and was the first major restructuring of this unit since 1967. In this context, as I started work in July 2017, I was charged to make sure that the expanded scope and ongoing efforts of PRES were integral to the Library's emerging direction.

Our sustainability planning began with a survey to evaluate the satisfaction with and awareness of our services. This was directed to the various collecting divisions PRES supports. We asked questions to learn what they knew about us, what services they used, and what services they wanted that we did not offer. We also commissioned internal cross-divisional working groups to provide an opportunity for staff across PRES divisions. These were not primarily intended to create new processes, but to surface tacit information and help management understand how work really happened in practical terms rather than the abstract version of workflows presented in briefings and manuals.[15]

We then held a series of organizational planning workshops with division chiefs and key program staff to garner their input on PRES activities from a functional view, rather than describing them by the usual organizational lines. Said another way, we made sure to understand how work occurred among divisions inside and outside PRES (functional) alongside how staff were supervised and evaluated (organizational). The intent of these activities was to show that senior leadership would not be dictating a specific change, and that we did not have a specific organizational plan in mind. Instead, by inviting staff to participate in ways that they had not previously been asked, we placed value on their knowledge and expertise and used this process to reinforce our own goal for the leadership role to be decision-makers who need to be well-informed.

From these self-studies, we learned that divisions provided high quality ongoing services; however, budget practices, policy, and cultural factors led them to operate independently and with an assumption of fixed resources year to year. It was risky to reduce resource usage since

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[13] Library of Congress. (2016).
[14] Haspo (2021). Online.
[15] Consider for example "transport," a real box on many workflow diagrams, which in practice can mean navigating a tugger and train of book carts through tunnels, freight elevators, and public hallways. The cross-divisional teams help management understand that elevator maintenance is pertinent to their operations, or that the speed of transport is limited by public safety requirements rather than the speed of the materials handling equipment.

those resources might never return, and also difficult to obtain additional resources even when they were needed for only a short period or one-time investment. Opportunities were difficult to pursue and issues outside core operations could languish.

Rather than try to wholesale change this organizational culture, we implemented a reorganization in 2020 focused on a portfolio approach, arranging functions into clearer centers of authority and responsibility. Divisions could still operate with independence in most areas, while at the directorate level, attention could go to improving coordination and resource allocation across divisions. At present, PRES is structured into four Divisions reporting to the Directorate Office.

Collections Management (approx. 100 staff and 20 contractors): Inventory control & loans, storage management & space planning, collections logistics, assessment & collection improvement

Conservation (approx. 50 staff): Assessment & treatment, exhibition & digitization support, environmental control, supplies procurement, emergency response, research & technical development

Preservation Services (approx. 40 staff): Large-scale contract services, reformatting, information systems, assessment & project development

Research and Testing (approx. 20 staff): Research & analysis, quality assurance and standards

Those divisions complete between 6 and 9 million countable preservation actions in any given year. Those statistics are invaluable for individual program managers in their work. They do not, however, present a meaningful picture of the directorate's services. Important activities like conservation treatments (over 30,000 items per year), scientific analysis (over 20,000 per year), or emergency response (a crucial 24 hour-per-day service) vanish beneath several million pages of reformatted newspapers and legal gazettes.

Following the reorganization, we worked with the division chiefs to unpack how the divisions approached budget and staff planning. We developed a series of workshops geared towards enabling creative thinking within this portfolio approach, to empower chiefs to plan in three-to-five-year horizons. This helps budget planning stay relevant in the present without being compromised by the specific budget problems of any given year.

In these workshops, we asked the division chiefs pointed questions about forecasting work activities over three to five years in their divisions, such as do you anticipate expanded workloads or requirements in your current program areas? Will staff require different skills? We had some interesting outcomes including the way succession planning worked for different subsets of staff, and that optimizing workflows and administrative support across divisions could be extremely valuable.

In another workshop, we focused on the non-pay budget, which highlighted that the PRES budget is not flat year to year. We had annual budgets from that varied by around 30%, from USD$12 million to USD$16 million per year but within each division, budgets varied even more.

On average, that means about USD$14 million a year for core operations plus about USD$1 million in situational spending. That provided a basis for thinking about more flexibility for each division year-to-year, and held the promise that with better coordination across budget cycles, we could address a higher level of divisional need without expanding the overall budget. This is key to making sure PRES is a sustainable cost center from the institutional perspective.

One of the outcomes in the workshop was the impact of large non-recurring purchases, such as material handling equipment, lab equipment, and exhibit encasements. These are significant and essential expenses, but they are not always mission-critical in a specific year and might be deferable *or advanceable* into a different year when resources are more flexible. Now, part of our annual budget preparation is to plan two to three years into the future so that we can be intelligently opportunistic about these acquisitions.

In FY23, the PRES non-pay was set at USD$14 million and payroll was approximately $23.5 million. By adjusting our mix of services and timing of spending, we were able to rebalance funding across programs so that each division in effect received approximately USD$0.5 million to USD$1.2 million in spending opportunities without enlarging the overall PRES budget. In fact, our budget (both pay and non-pay, adjusted for inflation) has become several percentage points smaller since 2017, while also accommodating this year-to-year flexibility.

We were also able to fund an annual line item for a cost-study program focused on the cost efficacy of large-scale preservation methods over time, meaning the least expensive ways to increase usability of materials while maintaining or improving their longevity. Our goal was to develop a sustainable strategy by attempting to find benchmarks or common points of reference between these preservation approaches that may have different cost structures.

5. Case study: Total cost of two preservation strategies

It is useful to consider this example of a progression of costs as an example. These are presented anonymously to protect some vendor costs that contribute to the total cost of these activities and to focus on the patterns that bear on preservation management, rather than the specific technical methods at play. In this instance, the Library compared one approach (Strategy 1) that required a large one-time investment to add new capabilities but then lead to a single process that included preservation measures in its flow. The other strategy (Strategy 2), required preservation measures (Strategy 2b) to be taken separately from other processes that affected the collections (Strategy 2a).

PRES considered either approach viable for the purposes of sustaining access to the collections, but preferred Strategy 1, since we were more confident it could scale up to a wider range of collection needs. Strategy 1 faced obstacles in practice, though. It required a large start-up cost that was well outside the normal PRES budget allocation and, although it was not outside the range of resources the Library could request overall, this meant it needed a different level of attention and advocacy. This bears emphasis: for some libraries, the most cost-efficient solution on paper may be impossible in practice because it exceeds the type of investments that library can make. In this context, cooperatives like KEK deserve attention for the ways that collective investments can overcome this barrier.

In the initial years, Strategy 2 appears competitive with Strategy 1 and in year 1, positively better. The total cost is roughly half the amount of Strategy one in year 1 and, although the costs of Strategy 2b are higher than Strategy 1 in years 2 and three, there is still an advantage overall. (See Figure 1. Comparative costs over 3 years.)

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Figure 2. Comparative costs over 3 years

If this comparison extends through twenty years; however, there is a stark difference. By year 10, Strategy 2 has about twice the total cost of Strategy 1, and by year 20, that gap has grown to nearly three times the cost. (See Figure 2. Comparative cost over 20 years.) This should make for an easy decision: choose Strategy 1 and obtain the lowest total cost. In practice, this was a very difficult decision to make and implement. Against the mathematical solution, discussion included questions about the accuracy of forecasts over time and uncertainty of raising funds for the higher initial costs of implementing the more cost-effective strategy. In practice, the cost factors forced the discussion and shifted the question from whether we ought to invest in Strategy 1 to a discussion of what would prevent an investment in Strategy 1, an important change but not a complete decision. The key additional persuasive element of this decision turned out to be the ability to streamline from a two-part operation to a single-stream operation. That is, the parties involved perceived an immediate, present-tense benefit from the alternate strategy, and in turn, that enabled

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Figure 3. Comparative cost over 20 years

Our experience making this change in strategy at the Library, with its dozens of collecting divisions and multiple agency priorities, may also be an indicator for cooperatives like KEK that communication strategy must be considered alongside technical and cost effectiveness in successfully moving preferred preservation strategies into implementation. Even if this case, where Strategy 1 is the clear winner—more cost effective and endorsed by PRES—making the change required assent from dozens of different parties. These parties were internal to the Library, but we feel comfortable with the assumption that the number is a significant factor regardless of organization structure. The more parties that need to make a decision, the slower and more precarious that decision-making process will be.

The dynamics of decisions making was a key lesson for us in retrospect. Communications strategy is something the PRES director's office has started to focus on as an investment that can have significant impact on our ability to implement strategy. Once we have a strategy to pursue, telling the story the right way, to the right audiences, in the right order is crucial. Communications strategy may not prevent a good idea from being implemented, but it may slow or diminish its implementation. In formalized, procedural environments like government, that can mean additional years from idea to action.

6. Conclusion

Planning for sustainability over time is not a turnkey approach for any organization: there is not a correct preservation structure all organizations can implement, but there are effective practices all organization can use. Sustainability requires developing activities that can continue into eternity while regularly showing benefits in the present. We find substantial value in working with planning horizons like three to five years for a strategic plan; 11 years, or two strategic plans, for major preservation goals; or 40 years, a person's career or the depreciation cycle for a building, as meaningful factors to frame the sustainability of the preservation program. These cycles are meaningful to our collaborators, funders, and management. They help us emphasize the user experience of the collections and emphasize the value of our current or near-term future work, and create a scaffolding for thinking towards the future in a more concrete way.

As we evaluate our program, we have found several frameworks useful to guide our efforts. These can be framed as a series of questions:

a) How do we draw boundaries around preservation strategies?

b) Are the current preservation strategies suited to current needs of the Library?

c) What is the total cost of each preservation strategy?

d) Is there a more cost-effective way to address that strategic goal?

e) Does the staffing plan include the capabilities and diversity necessary to evolve with the needs of the Library?

This process of evaluation has also changed the way we make our case statements about preservation. Instead of formulas like "preservation ensures that future generations will have access to collections," we are making arguments about concrete value preservation delivers now and emphasize that our professional competency is the essential factor for making sure present-day decision still set the stage for better outcomes in the future. This is a crucial distinction. It emphasizes the value of staff knowledge and the work they do. It also avoids the weak argument on behalf of future generations, an appeal to an ambiguous mode of access by a stakeholder that does not exist that is can be easily deferred, year after year. No one knows what that user will want, or when they might want it. Instead, we can argue for more meaningful and sustainable goals along the lines of, "in the next strategic planning cycle, we will improve options for use of this resource, compared to the present." And when we need to take that argument out of a budget meeting and appeal to the higher purposes of preservation, we still keep our appeal in the present. Our goal is to make sure people today can encounter the collections we hold in trust, and our hope is that for that encounter, they will want to share them and care for them.

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