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Successful Management of an Outsourced Large-scale Digitization Newspaper Project

Tips for effective collaboration, increased productivity and outstanding deliverables

SHORTENED TITLE

Managing Outsourced Large-scale Newspaper Digitization

ABSTRACT

This article uses the case study of the Nevada Digital Newspaper Project (<https://nvdpn.wordpress.com/>), an extension of the National Digital Newspaper Program (<https://www.loc.gov/ndnp/>), to introduce proven strategies on how to successfully manage a large-scale digitization project. It provides tips on how to stay within the timeline and deliver products with outstanding quality, leveraging limited human resources, and engaging an external digitization vendor. It discusses practical project management techniques and tools, strategies for establishing collaborative vendor partnerships, and strategies for efficient communication with stakeholders.

KEYWORDS

Vendor relationship; Vendor management; Large-scale digitization; Outsourced digitization; Newspaper digitization; Project management

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1. INTRODUCTION

Newspapers are the first draft of history and often the only source of information in some areas of research. Historic newspapers are papers of record with high research value, broad geographic representation and they are reputable sources for historic facts, social events, and official announcements. They deserve a special place in the large-scale digitization effort, but they often remain overlooked or purposefully neglected due to their unique qualities - they are fragile, come in different formats (paper and microfilm), or lack bibliographic completeness of their titles, which leads to time-consuming tracking and stitching together of a full run from multiple scattered issues.

Multiple grants target large-scale digitization of rare, fragile, and historically significant materials and newspapers fall into this scope. Digitization not only makes them widely accessible online with full text search functionality that immensely facilitates research, but it also addresses long overdue preservation challenges of these valuable fragile materials before they completely deteriorate. The preservation issue affects older and newer newspapers – anything from the 1700s up to the last decades of the 1900s, because the newsprint is a cheap medium.

The National Digital Newspaper Program is a nationwide initiative to preserve and provide access to historic newspapers in the largest U.S. newspaper repository, Chronicling America (<https://chroniclingamerica.loc.gov/>). It is a partnership between the Library of Congress and the 46 state participants in this large-scale digitization effort. The program is generously funded by the National Endowment for the Humanities with infrastructure provided by the Library of Congress. The scale of the project is immense – each state contributes 100,000 digitized pages per grant cycle!

Often academic institutions with no prior large-scale newspaper digitization experience are awarded grant monies and they need to quickly figure out a plan and lay out workflows, to establish vendor relationships with duplication and digitization partners, to observe the project timeline and deliver quality products on time.

2. SCOPE

This case study is aimed at archivists, digital librarians, and project managers who are seeking ways to enrich their toolbox with practical project and vendor management skills that promote the successful completion of outsourced large-scale digitization projects.

This article will describe a specific tool set of strategies and techniques used in the Nevada Digital Newspaper Project. They are tested, proven to work, and highly customizable so they can fit the peculiar needs of any small-, mid-, and large-scale project.

- Strategies for effective collaboration with vendors
- Sample high-efficiency workflows involving digitization vendors
- Segmentation of large-scale digitization workflows
- Techniques for risk analysis and prioritization; and
- Development of a response plan for risks identified.

3. LITERATURE REVIEW

Outsourcing is a well-established practice in the corporate world, especially in the IT sector, and archives, historical societies, special collections and libraries are adopting similar model for digitization projects in an effort to overcome the lack of resources and get the work done.

Patel, Desai, and Shepley define outsourcing as a widely regarded way to reduce operating costs.ⁱ They highlight that, in addition to cutting expenses, it also contributes to workflow optimization. The focus of their article is highly business oriented, and yet they outline outsourcing challenges similar to the digitization issues libraries and archives experience with vendors. The authors discuss additional unexpected costs not negotiated in the contract and lack of flexibility for last minute requests for change. They suggest ways to develop a strategy for successful outsourcing projects by investing “in a robust technology framework for both the processing side and the governance side of an outsourcing initiative.”

Sharma, Apoorva, Madireddy, and Jain conducted a survey with 40 participants and outlined a set of 13 potential IT outsourcing risks.ⁱⁱ They also performed a comprehensive analysis of best practices for outsourcing in information and communication technologies (ICT) businesses. The authors dissected the challenges that could affect outsourcing success and discuss ways for eliminating risks and avoiding pitfalls. Obviously, ICT businesses face different challenges than cultural-heritage institutions and archives; however, the article provides a good overview of tactics and recommended channels for effective communication between clients and vendors.

St. John, Guynes and Vedder examined the client and vendor relations through the lens of the Social Exchange Theory (SET) from the client’s perspective.ⁱⁱⁱ At the organizational level, SET is used to explain the exchange of activities between companies for successful client-vendor relations. The study concludes that the foundations for building a strong partnership and offshoring success lie on communication, trust and shared values. Although, this article does not relate to libraries and archives, the components for a successful outsourcing model are similar to the ones needed in outsourced digitization.

Nowadays, academic institutions often utilize outsourcing of workflow components as one method to handle large-scale digitization projects as it has proven to bring good outcomes and accomplish more tasks with fewer resources. One of the earlier articles dedicated to outsourcing in archives and libraries outlines general issues in outsourced digitization. Tennant briefly discusses why institutions could benefit from outsourcing, especially if they lack resources, expertise and time.^{iv} This reading provides a quick glance at issues related to outsourcing digitization of reflective materials, but excludes other formats such as microfilms.

A recent study outlines the modern perspective --Lampert makes several good points on using outsourcing vendors and temporary staff as a way to embrace large-scale digitization with small-scale resources.^v She emphasizes that “outsourcing can provide a foundation for scaling up production of digital objects” and later adds some discussion related to documentation of workflows, communication, and creating a strategy for outsourcing. The article is an informative reading for all types of digitization projects and can serve as a beginner’s guide. Similarl to others, it lacks specific discussion on establishing relationship with vendors and strategies for effective partnership.

Outsourcing newspaper digitization became more popular in the mid-2000s when the National Digital Newspaper Program (NDNP) was officially launched. The program offered the funds, the technical specifications, and the infrastructure and was a great opportunity for institutions to make historic newspaper content available online. It required statewide collaboration and detailed work plans that usually include vendor partnerships. The program greatly expanded the collective experience with large-scale and standards-based newspaper digitization. Numerous NDNP articles are available; however, most of them do not focus on establishing outsourcing workflows and building relationship with vendors.

Over the past two decades, the NDNP state awardees are a good example of successful collaboration with digitization vendors and with microfilm duplication vendors. Some of these institutions outsource the same two components as the University of Nevada – Las Vegas (microfilm duplication and microfilm digitization) and follow similar practices. As a side note, the state of Nevada collaborates with the same digitization vendors trusted by other NDNP institutions.

Some of the awarded institutions established vendor relations back in the early or mid 2000s – University of Utah, Marriott Libraries (2002), Library of Virginia (2005), The New York Public Library (2005), and University of California, Riverside (2005). The states that joined the program later followed the well-established practices of outsourced digitization – University of North Carolina, Chapel Hill (2012), Mississippi Department of Archives and History (2013), Idaho State Historical Society (2013), University of Nevada, Las Vegas (2014), University of Delaware (2015).

It's worth mentioning that the NDNP awardees have adopted and have been successfully utilizing both outsourcing models – the offshoring model (with international vendors) and the regular outsourcing model (with domestic vendors). Regardless, the fact that many archives, academic libraries and historical societies have been involved in outsourced digitization over the last two decades, the literature does not reflect strategies and challenges in establishing successful client-vendor relations. Many articles dedicated to newspaper digitization go deeply into technical details or workflow issues and just briefly touch upon outsourcing or not mention it at all.

Grabe and Sturges outline the Creighton University perspective on digitization projects and briefly mention their outsourced experience with newspaper digitization.^{vi} They do not go into many details, nor discuss client-vendor relations.

McMurdo and MacLennan wrote an interesting case study and thoroughly described the Vermont newspaper digitization experience.^{vii} The Vermont scenario has two separate outsourcing partners. Similar to the University of Nevada – Las Vegas case, they outsource the duplication of the microfilms and the digitization of these reels. Their case study has a heavy technical focus and although the Vermont Digital Newspaper Project outsources two workflow components, they do not discuss any challenges, strategies or benchmarks related to partnership with vendors.

Robinson debriefs the Washington State Library newspaper digitization experience.^{viii} They have tested both types of newspaper digitization – in-house and outsourced. The article is an interesting reading describing workflow and technology issues of both processes. The outsourcing part goes deeply into technical details related to digitization, optical character recognition and metadata encoding, but does not discuss client-vendor relations at all.

The outsourcing practices of newspapers digitization happen all over the globe, not just in the United States. Nilsson debriefs three Swedish newspaper digitization projects.^{ix} All three are outsourced to digitization vendors. The scope of the projects is different and some segments of their workflow varies. His article discusses issues such as copyright, cost reduction, optical character recognition, article segmentation, and digitization technologies. It is an interesting reading that provides the Swedish perspective and allows the reader to learn how a foreign institution handles newspaper digitization. Unfortunately, the author does not provide any details regarding the partnership with the vendor, their relations and collaboration challenges in general.

It is interesting to mention that some NDNP awarded institutions are on the flip side and have developed cost effective workflows to avoid outsourcing to vendors. For example, the University of Texas (UNT) has established internal microfilm digitization station as a way “to

lower the cost for partners and control more of the workflow.”^x The Texas model is different from the Nevada State scenario - UNT serves as a digitization and preservation hub that collaborates with archives across the state who hold the original microfilms.

Literature specifically about outsourced digitization of newspapers is readily available, but not comprehensive in nature. On one hand, it puts strong emphasis on technology-related issues in microfilm digitization, and on the other, on workflow, procedures, and staffing. In addition, studies on client-vendor relationships and outsourcing success are available, but they give the corporate perspective, rather than the culture-heritage institution point of view.

This case study is unique in nature as it is focused exclusively on strategies and best practices in establishing client-vendor relationships from the perspective of an academic institution. Although it discusses and provides examples from a microfilm outsourcing project, the strategies for successful relationship and productive partnership can be applied to other digitization projects regardless of their scope or size.

4. THE PROJECT

The Nevada Digital Newspaper Project (NvDNP) (<https://nvdnp.wordpress.com/>) is an extension of the National Digital Newspaper Program (NDNP) (<https://www.loc.gov/ndnp/>),- a partnership between the National Endowment for the Humanities (NEH) and the Library of Congress (LC). This grant funds large-scale digitization projects that run on 2-year renewable grant cycles. The scope of Nevada’s largest newspaper digitization project entails selecting, creating provisional metadata, digitizing and making publicly accessible 100,000 pages of historic newspapers from Nevada per round of funding. As per program specifications, the digital objects must be derivatives from second-generation (2N) duplicate silver negative microfilm. To meet the

program requirement for delivering 100,000 digitized historic newspaper pages per grant cycle, the NvDNP needs roughly 135 microfilm reels. The program technical specifications request (with some exceptions) that all digital surrogates to be derived from microfilms, and the microfilms must be deposited at the Library of Congress at the end of the project.

NvDNP outsources two major components: duplication of microfilm reels and digitization of these reels, as the latter includes the process of metadata encoding (creation of the associated METS/ALTO metadata).

The duplication of reels is the process of making high quality copies of the archival master reels. Later, these surrogates are captured as separate microfilm frames (one frame = one newspaper page) and this process is known as digitization of microfilms. Metadata encoding follows the digitization process and this segment is outsourced to the digitization vendor. It is preceded by in-house collation – a workflow segment in which the project technicians review and describe the newspaper issues on a page level and compile important metadata in a spreadsheet form. Each microfilm reel has a separate metadata sheet for all issues filmed on that reel. This reel level file is sent to the vendor who encodes the metadata. Metadata encoding is an important workflow step as it creates article coordinates and page/issue data from the provisional metadata provided. It facilitates the Chronicling America user to interact with the website in the following ways:

- Perform basic search, advanced search and full text keyword search
- Browse the database by categories, locations and dates/years that originate from the provisional metadata
- Use facets built on the provisional metadata for filtering precision

The project team establishes and works in close relationship with two vendors: digitization and duplication. The project manager coordinates the process and sets a segmented timeline that aligns with the major project milestones.

The NvDNP team consists of 3 principal investigators who play an important role in managing the grant budget and selecting vendors, 2 full-time project staff - one project manager who oversees the production and ensures high quality deliverables, one project technician who ensures smooth operations, and an 11-member statewide advisory board responsible for selecting titles for digitization.

5. OUTSOURCING

5.1 Why outsourcing?

Many institutions have mastered digitation of reflective and transmissive materials and have the equipment to set up a production line, as well as well-trained professionals engaged in full-time digitization. On the other hand, digitization of legacy formats such as microfilms, audio and video may be good candidates for project-based work aligned with grant or external funding as their digitization requires special equipment, specially trained staff, and the process is more labor-intensive. Often, it is easier and more cost-effective to outsource than to purchase technology and train staff to digitize in-house.

The specific requirements for the NvDNP newspaper project require all digitized surrogates to originate from second-generation (2N) duplicate silver negative microfilm. In addition to the special technology for image capturing, the metadata must be encoded in METS/ALTO schema, which adds an extra step that does not exist in the established in-house digitization workflows.

The NvDNP key stakeholders evaluated all project components such as cost, labor, time, and training, and the results showed that outsourced digitization is more sustainable; furthermore, investing in specialized equipment, technology, and staff training was not cost effective for this short-term grant-funded project.

5.2 Vendors' role

As mentioned earlier, two of the workflow components are outsourced to reputable vendors with significant and long-standing expertise.

The project cycle begins with duplication of microfilm reels that later get digitized. The duplication vendor starts with tracking all newspaper titles selected for digitization and attempts to organize them chronologically in full runs. Then, they make high quality copies of the archival master microfilms – each reel has a silver negative and a positive counterpart. The vendor also performs technical analysis (a.k.a. density readings) to ensure the image quality meets the high standards set by the Library of Congress, resulting in crisp digital images.

The positive microfilm copy is not a grant requirement – it is rather for efficiency as it maximizes the collation speed and accuracy. It allows the digitization vendor and the in-house team to work simultaneously on the same batch – the vendor captures digital images from the silver negative microfilms, while the project team does collation off the microfilm positives and populates spreadsheets with metadata of all reels that belong to a single batch. This concurrent work increases efficiency and allows the team to stay on the timeline.

The role of the digitization vendor is to capture all microfilm frames and produce digital surrogates for each newspaper page; then to apply OCR (optical character recognition) to enable

full text search and finally, to encode the in-house described metadata in METS/ALTO schema so it conforms to the standards of the National Digital Newspaper Program.

Vendors play an important role in the project – their contribution is essential for the successful completion of the project as it depends on the quality of their work, collaborative skills, flexibility and willingness to go the extra mile to customize their workflows so it better suits the needs of the client. Thus, archives and libraries that are considering outsourcing should proactively invest in establishing a collaborative, energetic partnership, built on trust and goodwill.

6. GETTING STARTED

It can be overwhelming to get started when there are so many things to consider – determining the different stakeholders and their roles in the project, forming a project team, selecting trustworthy and affordable vendors, and establishing workflows. The sequence of addressing these issues is critical as it plays an important role for a robust process and long-term smooth relations.

6.1 Stakeholders

Types and roles in the vendor selection process

Eric Verzuh defines stakeholders as “customers, decision-makers, vendors, and employees” and he continues “in a larger sense, anyone who contributes to the project or who is impacted by its result”.^{xi}

For the purposes of this case study, and to achieve more clarity and eliminate any confusion, we will further break down the stakeholders into different groups. The NvDNP has two main groups of stakeholders whose roles are significant in the project. Although in some cases the

scope of these groups slightly overlaps, they should be considered distinct groups with their own specific scope.

The NvDNP main stakeholders are divided as follows:

- **Core stakeholders** – these are the main partners of the project who extend financing, set project guidelines, provide technical specifications and support, host training, and provide feedback on the quality of the deliverables. The Library of Congress and the National Endowment for the Humanities fall in this category.
- **Key stakeholders** – these are key figures in the project as they administer the grant, manage the budget, address important issues, make decisions, and report progress to core stakeholders.

Additionally, according to Versuh’s definition, project team and vendors are also stakeholders. However, here this article is going to treat them as separate groups and refer to them as “project team” and “vendors”. Lastly, users (the end users who benefit from the project deliverables) are stakeholders as well, but since they do not play a role in the client-vendor relations, they are not subject of this study.

The core stakeholders (the Library of Congress in particular) play a significant role in the process of selecting vendors. As they set the National Digital Newspaper Program technical specifications and publish updated technical documentation every year,^{xiii} they determine the scope of the vendors and the services they need to offer. Businesses that want to be official vendors of the program must comply with the guidelines and the requirements to produce deliverables that meet the high standards of the Library of Congress. Additionally, the core stakeholders provide support in case of a disagreement during the project cycle. For example, if the project team requires

the vendor to capture the density readings in the metadata, but the vendor states this is an optional field and does not want to add an extra step in the workflow, then the core stakeholders can serve as the arbitrator and provide additional arguments to support the project team request.

In addition, the core stakeholder, the Library of Congress, maintains an internal Wiki website that is rich in information, best practices and guidelines for awardees. They also have a helpful table that lists all awardees and their duplication and digitization vendors. This facilitates information sharing about the vendor selection among the awardees in the program. Newer states can contact other participating states to get an objective perspective on their partnership with a particular vendor.

The key stakeholders include the principal investigators, as mentioned earlier, who form partnerships, create sample budgets and work plans, and write the grant application. After being awarded, they administer the grant, convene the teams responsible for various work, and report to the core stakeholders. Their participation in the vendor selection process is critical. In fact, this is the most important task they do in the beginning of the grant cycle. Project success heavily depends on the selection of appropriate, flexible, and highly collaborative vendors and the negotiation of favorable contract terms.

To complete each grant cycle successfully, the NvDNP needs two vendors (duplication and digitization) and initiates two separate processes for signing outsourcing contracts.

The situation of the State of Nevada is unique as the circumstances pre-determine the duplication vendor. The Nevada State Library and Archives (NSLA) holds the largest Nevada historic newspaper microfilm repository and these master reels never leave the premises. Fortunately, they have a well-established microfilming services department and the capability of

duplicating the master microfilms with the quality and the standard that satisfies the project requirements. Although the duplication vendor selection is pre-defined, the key stakeholders are actively engaged in negotiating the contract terms that are favorable to the project and will contribute to its successful and timely completion. These terms include deadlines, cost, quality, major workflow milestones, error resolution, official communication channels, communication frequency, shipping terms, and documentation for each completed batch.

Selecting a digitization vendor follows a different procedure. The process begins with researching digitization vendors that meet the requirements of the NDNP and can provide deliverables that conform to the standards set in “The National Digital Newspaper Program (NDNP) Technical Guidelines for Applicants.”^{xiii} Often vendors proactively reach out to libraries to offer their services, especially once a state institution becomes a successful awardee. A key step is creating a list of project requirements that will assist with sorting through potential vendors, including those quoting very low costs, to identify which vendors have viable services and meet the program requirements. The next step is contacting the vendors that stood out to obtain quotes that align with the NdDNP needs and expectations. These quotes are often subject to local review and governance, and must comply with institutional and legal guidelines. After reviewing the cost and the terms, the key stakeholders can conduct deeper research on the most promising vendors and in some cases edit the statement of work provided by the vendor. This is commonly done by PI’s in conjunction with local purchasing departments and legal counsel at the University. If multiple vendors have provided strong proposals, a decision can be made by checking references - formal calls to some of the clients that participate in the National Digital Newspaper Program. During those calls, the key stakeholders consistently look for answers of a pre-defined set of questions. This approach allows them to evaluate the vendors in several aspects:

- Reliability and trustworthiness
- Flexibility and willingness of correcting errors
- Error rates per 10,000 digital images (one batch)
- Ease of communication and communication channels
- Consistent and user-friendly documentation
- Willingness and readiness to meet the specific needs of the client.

After careful analysis of the responses and a thorough review of the quotes, the key stakeholders send a recommendation of the preferred vendor to the Dean of Libraries for approval and further processing.

6.2 Project team

Engagement in vendor selection

The team is the heart of every project. Nothing can be accomplished without having a team of professional, self-driven, highly motivated people. The workload of the NvDNP requires a team of two professionals specifically hired for this project as well as part-time engagement of the principal investigators for important decisions and updates. In the Nevada Digital Newspaper Project case, one grant-funded project technician is funded by the library as part of the in-kind budget for the project and one of the co-investigators is more engaged in decision-making as she works directly with the project manager, monitors the whole process, and gets frequent updates.

Forming a project team brings us one step closer to selecting the right vendor and negotiating workflow plans that suit the project scope. The process of vendor selection can be time consuming, and may involve multiple steps such as interviewing, quotes, revisions, checking references, getting familiar with vendor's workflows and technology tools, and communication specifics. Although vendor selection is solely the responsibility of key stakeholders, it is critical

to hear different opinions during this process. Therefore, engaging the project team brings fresh and more practical perspectives. Their viewpoint is very important as they are the ones on the front line who establish and nourish the relationship with the vendor throughout the project cycle.

As mentioned earlier, sometimes there is a lack of choice for partnership and only one option is available. Even so, the professional team brings practical perspective that can help to negotiate and lay down a contract tailored to the specific needs and preferences of the project, rather than signing the standard vendor contract. The expertise of the project manager can bring value in negotiating terms such as requiring a custom metadata application profile for capturing rich metadata, project timeline, workload, workflow segmentation, sequence of actions for each segment, and required documentation.

6.3 Vendors

Types, selection, error corrections

As mentioned earlier, due to special circumstances, the NvDNP duplication vendor is pre-determined - the Nevada State Library and Archives. They have been a long-term reliable partner and a vendor that delivers high quality products. Our relationship has proven to be very productive throughout the years. Yet, each grant cycle the key stakeholders and the project team have to initiate the process again to define the scope of the contract, the timeline, the cost and other terms that address some potential issues for each new grant cycle. Prior to contract negotiation is the perfect time to embrace iteration and do an internal analysis of what worked well in the past and what needs some improvement. Then, at the next vendor meeting, this analysis is used in the process of discussing and defining the contract terms. Defining important workflow aspects and clear expectations sets the groundwork for successful relationships built on trust and carefully

worded responsibilities. The more granular and specific the contract is, the more productive the partnership will be, as fewer challenges or arguments will occur along the way.

Choosing a digitization vendor has a different path, as there are multiple options available. This brings another set of actions during the negotiation process. Everything starts with reviewing possible options to determine which company offers high quality, affordable, reliable, and customizable service. We should not compromise any of those four core selection parameters, because each of them has a huge impact on the project, in terms of our daily relations with the vendor, the grant budget, the quality of deliverables, and the grant deadlines. This all must be done within the guidelines of the University's policy for contracts and it is very important to understand these as they may impact one of the parameters (for instance if the University will always select the lowest cost vendor, or has requirements for vendors of its own). The next step involves selecting several strong quotes that directly address the project needs and the team expectations. It is followed by contacting other National Digital Newspaper Program awardees which have established relationship with those vendors and are willing to provide insight and share specific examples of vendor interactions from their workflow. Gaining knowledge about the difficulties (or successes), they faced and the solutions they applied to existing problems, makes the choice easier and well-informed. In addition, often vendors would make bold statements about their flexibility and services tailored to satisfy the clients' needs and to facilitate the clients' workflow, but reality proves to be slightly different. Vendors aim for lower production cost and work efficiency, and sometimes they gently decline changes in the workflow as this may require more effort on their end and may result in lower revenue. Thus, reference calls with real clients can give a true perspective of how vendors handle requests for workflow changes, how they address error corrections, and whether they are truly flexible and accommodating. Sometimes, vendors will

honor a request for a change, but in other cases changes to established workflow may result in additional fees.

Moreover, error corrections that require batch rework is a common issue and deserves to be specifically negotiated and included in the contract terms. Most vendors charge additional fees for work resulting from client's errors. However, they completely cover corrections due to their own production inaccuracies. Occasionally, some vendors may generously waive the fee for smaller reworks in the name of good partnership. As no one is perfect, understanding the types of common errors and discussing how these will be handled is an important part of choosing a vendor. Most vendors will work diligently to ensure their customer's satisfaction, but it is easier to have a plan up front.

Lastly, we should always bear in mind that as clients and grant awardees we have the right to negotiate terms favorable for the project that significantly facilitate our workflows. During the work under the contract, there is always a possibility to make additional reasonable requests for improvement or changes, but those requests should be supported by strong arguments that prove they are necessary to streamline the workflow, to boost efficiency, and to deliver products with outstanding quality. An example might be the use of specific technology for quality review or communication/project management.

On the flip side, sometimes the vendor's capacity cannot accommodate reasonable demands. We should be open to negotiate something that works for both sides. Surprisingly, using different means to obtain the same result can be very helpful. Experienced vendors usually provide different perspective and give proper solutions and feasible alternatives. An example might be that a vendor simply cannot adjust cropping in individual images during a large-scale project, but a

generic approach to processing based on the bulk of the images may result in a satisfactory compromise.

Another important tip for vendor selection is to determine if they outsource as well. Sometimes, United States based companies outsource the digitization production to India, Cambodia, or other parts of the world. This brings a set of questions. Some are microfilm related, such as how microfilms are shipped to the production quarters, who is responsible for the transportation cost, and the customs paperwork. Other questions are related to the production team. They include communication channels and frequency, point person specifically assigned to the project, the office hours of the production headquarters, typical time for response, rework that requires physical shipping of external hard drives. Still others, relate to training – is training included in the beginning of the contract, especially if the vendor provides special technology for communication and uploading of production batch files.

U.S. based vendors who outsource to another country generally offer more competitive prices compared to vendors whose production facilities is in the U.S. That is logical considering the huge gap in the cost of labor. The NvDNP has experience with both a U.S. based vendor and with a U.S. vendor that outsources in India. We can say we have a very positive experience and strong long-lasting partnership with both and it is hard to rate them as the overall performance and quality of the deliverables is outstanding. Indeed, there are slight variations: the workflow, the technology used for delivering batch data, the software used for performing quality review, and the approach for corrections and rework.

The technology for uploading data provided by the vendor with U.S. based production was more sophisticated and it had some advantages, such as one interface that supports upload,

corrections, major rework, quality review, and feedback. It was one central place for everything, which is convenient for reference and facilitates access to documentation and data. However, the project team found the interface somehow clumsy and confusing, and occasionally it would have glitches. Despite these technological difficulties, we had a very positive experience and accomplished the project goals without major interruptions or frustration.

On the other hand, our experience with the vendor that outsources in India is quite different – the technology we use to upload batch metadata is the project management tool Basecamp that creates simple, separate threads for each upload. This causes minor disruptions for rapid access to past batches or workflow segments, as it requires searching. Additionally, the quality review process happens on a completely different platform – a local instance of Chronicling America developed and provided by the vendor. It simulates the environment of the real Chronicling America website. This way the batch metadata spreadsheets and the digitized data reside in separate systems. Besides the technology, we have highly positive experience with our digitization vendor and our collaboration in the past two years has yielded outstanding quality deliverables.

The point of sharing these examples is to emphasize there is no “one size fits all” approach. The vendor selection is strongly individual and requires consideration of project peculiarities, grant budget, and team preferences. Also, it is common that the needs of the project may evolve overtime and the project team may change over grant cycles. Even if vendor selection and partnerships are initiated in the best case scenario, it is still essential to remain flexible and adapt as the commercial landscape changes and evolves. The key to maintaining this flexibility is communication and trust. This is the only way to ensure high productivity, streamlined production, smooth communication, and less frustration.

7. COMMUNICATION

Communication is the main pillar of any collaborative project. It is key for a successful project and streamlined process and nurtures productive relationships across all the stakeholders, including vendors. Keeping a written record of everything results in a well-documented process and provides easy access for referencing past decisions and agreements.

Most of the communication between the NvDNP team and the vendor happens in writing. The only exception is a monthly conference call in which the team discusses challenges, addresses issues and concerns, and reports on project progress. Usually these calls start with a carefully prepared written agenda where updates, decisions, and major highlights are documented during the call. Later, this document is shared with the vendor.

Basecamp is a good example of a central cloud-based repository used for file uploading and chronologically arranged discussion threads. It supports full text search, and has features to add granularity to the project - to do lists, calendars, forming sub-teams, and assigning tasks with deadlines, just to name a few. What is exciting about it is that it supports large file uploads, shared Google Docs and allows further organization in categories based on color-coding and adding tags. Speaking of Google Docs, the NvDNP team frequently uses shared documents as a convenient collaborative tool for simultaneous participation of multiple people. It keeps everyone in the loop and has a version control that makes all changes easily trackable.

The project team has not adopted Google Sheets as a tool. All collation work happens in Excel and the files are uploaded in Basecamp as Excel spreadsheets. As Google Sheets lacks some of the functionality available in Excel, we are concerned that uploading Excel files with multiple active tabs, related tables and active formulas in Google Sheets may corrupt the file. For files holding 10,000+ records, finding an error or a glitch could take a long time.

It is interesting to mention that our communication with the digitization vendor completely excludes emails. All discussion threads happen in Basecamp with notification options available to the team to customize. Everyone actively engaged in the project (in-house team, vendor team, and key stakeholders) can follow along and participate or receive email (individual or digest) as they prefer. It is nice to keep all project related correspondence in a separate repository so it does not interfere with other email threads in the regular inbox. Basecamp also offers a huge advantage for new members that join the project - as soon as they log in Basecamp they get an access to all past discussion threads. This allows them to catch up quickly on past discussions and issues, as well as to make specific references if necessary. This promotes continuity, boosts productivity, keeps all collaborators informed, and helps new members feel connected and quickly get on track.

8. WORKFLOW

Why are workflows so important for outsourced projects? Why is it critical to have a streamlined process and clear expectations for the project team and the outsourcing vendors? What benefits does workflow segmentation bring?

Workflow segmentation is the backbone of each project. When outsourcing, its role is even more significant since it enables two groups, often geographically separated and in different time zones, to collaboratively work together and succeed.

NvDNP consists of milestones and deadlines set by the core stakeholders. The work structure and segmentation is a decision of the project manager, as long as all official deadlines are met and the quality of the deliverables meets the standards.

How do we achieve this? The key is workflow segmentation – it makes the progress measurable and trackable, quantifies the work, and helps the project manager to make decisions

on task delegation. The NvDNP project manager oversees all aspects of the project. Workflow segmentation enables her to stay current on parallel workflows with all parties involved (digitization vendor, duplication vendor, in-house team). It also allows her reporting on project progress, challenges, and issues to key stakeholders. Workflow segmentation brings another huge advantage – it empowers the in-house team and the vendors to work simultaneously on several batches. Thanks to it, if one batch stalls due to technical problems or other unforeseen circumstances, work still continues on other parts of the project. Segmentation is a powerful method that provides flexibility and allows frequent workflow adjustments as the project progresses. It also prevents project failure, as it is much easier to fix something on a smaller scale than on a global level.

Speaking of workflow segmentation, we will share two of our outsourced workflows (digitization and duplication) to provide more clarity and illustrate the case of the NvDNP. These examples illustrate why NvDNP has been so successful over the past four years. They also demonstrate the successful collaboration between the project team and the outsourcing vendors that yields 100,000 digitized newspaper pages per grant cycle. The digitization and the duplication workflows are very different, so we will discuss them separately.

8.1 Duplication workflow

This workflow is more straightforward. The role of the project team is to provide a list of titles selected for duplication and technical analysis arranged by priority. Each newspaper title is considered a workflow segment and the duplication vendor begins with the title of highest priority. The timeline of the whole project depends on the microfilm duplication – the microfilm reels are project staples. Usually the duplication process takes about seven months.

The project manager works with the duplication vendor to negotiate some interim deadlines for each segment (title) and during the process, she frequently checks for progress updates. Usually the weekly check-ins are by email, the monthly meetings are conducted by phone (the project team is geographically separated from the vendor), and the annual meeting is a visit at the vendor's premises.

In the past, the NvDNP experienced some duplication delays of particular segments due to incomplete runs of the newspaper title. As mentioned earlier, part of the vendor's job is to track and chronologically arrange all available issues and years of each particular title. Sometimes the duplication of older issues begins, but then the vendor discovers that some master reels have started deteriorating, are missing, or are misplaced (filmed on wrong master reels). This stalls the production and the vendor reports back to the project manager to make a decision on how to proceed. There are three possible ways to proceed:

(1) move to the next priority segment (title) • figure out the problem • complete the run at the end

(2) send the duplicated reels of the highest priority • figure out the problem • complete the run (if possible)

Meanwhile, duplicate titles from another segment

(3) figure out the problem • continue with the same segment (title)

This method is recommended only in cases when the problem is easy to fix and will not stall the project for weeks

The NvDNP team used all described scenarios and they all have advantages in different situations. Generally, we would recommend scenario (2) as it has proven to be more efficient, less disruptive, and brings less overall delay.

8.2 Digitization workflow

This workflow is more structured and much longer than the duplication one. Digitization of 100,000 pages is completed in roughly 16-18 months. It has exactly 10 segments as this conforms to the Library of Congress requirement for 10 data batches.

The NvDNP project manager decides what goes in each batch based on the title priorities and the availability of duplicated microfilms (digitization starts as soon as the first few titles are duplicated on microfilm reels). There is some prep work before a batch goes for digitization (reel processing, documentation update, and collation – the process of creating basic metadata). Each digitization segment has a deadline – the date by which the digitized batch has to be returned to the project team for quality review. Often the digitization vendor works simultaneously on several segments. Having a vendor with higher production capacity to work concurrently on multiple segments brings much benefit as it allows room for surviving unexpected delays without stalling the whole project.

NvDNP has first-hand experience with an unexpected technology breakdown on the vendor's end. During the second grant cycle, the vendor's operations stopped for an entire month. This could have stalled the whole project and potentially resulted in missing deadlines if the vendor had not been working simultaneously on three segments and delivering production ahead of the negotiated deadline.

Segmentation brings much advantage to large-scale projects as it breaks the whole project into smaller, equally sized, measurable and easily trackable pieces, that allow for better planning, more flexibility and fewer disruptions that can derail the project. Analysis of our experience with successfully completed workflow segments enables us to assess our performance and to embrace iteration. This leads to performance improvement and more efficiency in the next batch.

9. RISK ANALYSIS

Understanding the entire project workflow is key to risk analysis. Performing a comprehensive risk analysis is critical for the project success. The project manager needs to be well acquainted with the project team, their tasks and responsibilities. This allows for better delegating and planning the teamwork. On the other hand, it is also crucial to have a good grasp of the vendor structure, roles, technology, and internal workflows. Awareness of the vendor's job specifics leads to more effective communication and clear expectations within the project team. This is vital for risk analysis as it enables the project manager to identify and assess potential risks and to develop a response plan.

Experienced project managers know that major potential risks include vendor delays, reworks, technology failure, human resources turnover, staff sick leave, lack of communication, improperly structured work, and liberal interim deadlines on vendor's end. Some of these may seem easy to avoid, but unfortunately, the project manager does not have much control over the vendor internal workflows and internal deadlines. Communication is critical to stay on track but one has to resist micromanaging. Vendors are independent and the project manager should be demanding and yet respectful, because he and the vendor are equal partners, the vendor is not subordinate to the client.

Reworks were touched upon earlier and deserve a special place as a potential risk that must be addressed immediately. The project team is not aware of the quality of the digitized deliverables until the vendor sends the data for review. In large-scale projects, mistakes happen and this is a normal part of the workflow. The team should try to keep the error ratio low and fix batch problems immediately.

9.1 Developing a response plan

The response plan does not need to be formal. Assessing potential risks and having a backup plan to address challenges (if they appear) is enough to be successful. Sometimes, key stakeholders have more experience in the field and they can share clever solutions for challenges they had in the past. Developing a response plan can include them in the discussion to bring fresh suggestions and provide different perspectives.

A proven way to avoid certain risks is constant project monitoring – it displays any deviation from the expected curve. It should be addressed immediately by reprioritizing and rearranging activities, communicating with the vendors and working out a new plan to catch up.

Ideally, to avoid vendor delays that have negative impact on the project we suggest maintaining two separate timelines – one that is internal and the other one that goes to the vendor. This allows the project manager to build in some buffer time in each work segment. In other words, allow more time than projected for each batch and this will keep the project on track if unforeseen circumstances arise. For example, the internal timeline has 10/31/2019 as the very last date for completing a work segment. If we simply remove 10-15 days on the vendor timeline to make the deadline 10/15-10/20 we easily add buffer time. Should anything unforeseen happens, these 10-15 days buffer time are convenient and small delays should not have impact on the project at all.

Reprioritization and flexibility are also important. The project workflow should never be rigid; instead, each successful project must be dynamic and flexible. Successful projects feature constant reprioritization of tasks, segments and activities to keep it running. The project team should be open to re-assess the priority and to react quickly if the project gets stalled. It is important to remember the ultimate project goal, and all that matters is to get there. Flexibility and reprioritization can become overwhelming, and add more stress and workload to the project

manager, but it pays off in the end with a more streamlined workflow and successful project completion.

Revisions and reworks require more time at the quality review phase of the project. Embracing buffer times and concurrent work on multiple batches is essential to keep the project aligned with the timeline. Some revisions are simple, small in scope, and take no more than a day to fix, others may take a couple of weeks due to the complicated nature of the problem. The core stakeholder, Library of Congress has a review and validation process that data must pass to be accepted. If the data is not compliant, they can send batches back for rework. Our practice shows it is ideal to fix a small problem in house with the proper guidance of the vendor. This way the team has more agile control over the situation and the team avoids inefficient re-shipping of data. Unfortunately, major reworks require more time and may require consultation with the Library of Congress, and the vendor's expertise to resolve. For major reworks the team should allow enough time for correction and meanwhile resume work on another segment. This is exactly when the built-in buffer time complements workflow segmentation and ensures stress-free accomplishment.

10. STRATEGIES FOR EFFECTIVE COLLABORATION WITH VENDORS

This section outlines some of the main strategies discussed in the article. It is good to keep them in one place as a quick reminder that will help us succeed and establish good collaboration with our vendors.

So what are the main strategies for establishing good partnership and achieving effective collaboration?

- (1) Start with selecting a trustworthy reputable vendor and negotiating a contract tailored to the project specific needs (cost, timeline, reworks, workflow flexibility, communication channels and frequency, etc.).
- (2) Learn more about the vendor work specifics such as the production team assigned to the project, team roles, technologies they use, workflows, production capacities, procedures for reworks.
- (3) Demand and yet be respectful! It is normal to have requests and demand a certain level of standard and usually vendors respond to reasonable demands. Always bear in mind their production capacities, time, and technologies to determine if the demand is feasible or not.
- (4) Communicate – it is key for productivity, problem-solving and ultimate success! Keep a written record of all verbal communication (agendas, meeting minutes) to promote continuity and consistency.
- (5) Collaborate with your vendor. Treat them like a partner with whom you share a common goal. The vendor wants your success as much as you do! Build a relationship of trust, define the scope, set the timeline and do great things together!
- (6) Check your bills. We are all humans and double-checking never hurts. Follow up with vendor if there is a discrepancy.
- (7) Celebrate success! Congrats! We made it! Our vendors empower us to accomplish more with less.

11. CONCLUSION

Outsourcing is a way to embrace a large-scale digitization challenge with limited human resources and no special in-house equipment. Success depends on strong internal organization,

effective communication, carefully crafted strategies for efficient collaboration with vendors, and engagement of stakeholders and project team on every stage of the project. It is a great opportunity to accomplish more with less and to contribute to the nationwide preservation effort of digitizing thousands of archival materials and making them accessible online. Archivists and digital librarians frequently work together on shared projects. To foster a successful and productive collaboration they should have a comprehensive awareness of the archival collections in their institutions and when a funding opportunity comes up, they should grasp it even if they do not have all resources at that time. Having fundamental project management skills and knowing simple strategies for establishing successful collaboration with vendors inevitably turns every digitization initiative into an accomplished project.

Iteration is a key factor in constantly improving digitization workflows and producing deliverables of the highest quality. Embracing iteration enables vendors and team to ace their performance and to improve collaboration as they learn from past success and challenges of less perfect workflow segments.

Flexibility is also key for efficient collaboration. Big, dynamic projects come with many variables that constantly change and modify the project, so vendors and team should be flexible and adaptable to maximize efficiency.

12. BIBLIOGRAPHY

Ana Kraemer, “Digital Newspaper Preservation Through Collaboration,” *Digital Library Perspectives* 32, no. 2 (2016): 73-87, doi: 10.1108/DLP-09-2015-0015.

Cory Lampert, “Ramping up,” *Digital Library Perspectives* 34, no. 1 (2018): 45-59, doi: 10.1108/DLP-06-2017-0020.

Eric Verzuh, *The fast forward MBA in project management*, (Hoboken, NJ: John Wiley & Sons, 2015), 98.

Jeetu Patel, Gautam Desai, and Joe Shepley, "Successful Outsourcing," *Infonomics* 1942-5910, (2009): 31-35.

Jeremy St. John, Carl Stephen Guynes, and Richard Vedder, "The Client–Vendor Offshore Relationship: Success Factors," *Information Systems Management* 31, no. 2 (2014): 120-125, doi: 10.1080/10580530.2014.890429.

Laura Robinson, "The Evolution of Newspaper Digitization at the Washington State Library," *Microform & Imaging Review* 39, no. 1 (2010): 24-27, doi: 10.1515/mfir.2010.004.

Lauralee Grabe and Debra Sturges, "Positioning for Digitization Projects in a Medium-Sized Academic Library -- A Creighton University Perspective," *Nebraska Library Association Quarterly* 36, no. 4 (2005): 21-22.

Library of Congress, "The National Digital Newspaper Program (NDNP) Technical Guidelines for Applicants," last modified October 24, 2018, accessed January 17, 2019, https://www.loc.gov/ndnp/guidelines/NDNP_201921TechNotes.pdf

Par Nilsson, "Newspaper Digitization in Sweden," *Microform & Digitization Review* 41, no. 3-4 (2012): 126-128, doi: 10.1515/mir-2012-0020.

Ravi Sharma, Venkat Madireddy, Varun Jain, and S. R. Apoorva, "Best Practices for Communication between Client and Vendor in IT Outsourcing Projects," *Journal of*

Information, Information Technology, and Organizations 3 (2008): 61-93, doi: 10.28945/131.

Tom McMurdo and Birdie MacLennan, "The Vermont Digital Newspaper Project and the National Digital Newspaper Program," *Library Resources & Technical Services* 53, no. 3 (2013): 148-163.

Roy Tennant, "Outsourcing Digitization," *Library Journal* 124, no. 15 (1999): 34-35.\

NOTES

ⁱ Jeetu Patel, Gautam Desai, and Joe Shepley, "Successful Outsourcing," *Infonomics* 1942-5910, (2009): 31-35.

ⁱⁱ Ravi Sharma, Venkat Madireddy, Varun Jain, and S. R. Apoorva, "Best Practices for Communication between Client and Vendor in IT Outsourcing Projects," *Journal of Information, Information Technology, and Organizations* 3 (2008): 61-93, doi: 10.28945/131.

ⁱⁱⁱ Jeremy St. John, Carl Stephen Guynes, and Richard Vedder, "The Client–Vendor Offshore Relationship: Success Factors," *Information Systems Management* 31, no. 2 (2014): 120-125, doi: 10.1080/10580530.2014.890429.

^{iv} Roy Tennant, "Outsourcing Digitization," *Library Journal* 124, no. 15 (1999): 34-35.

^v Cory Lampert, "Ramping up," *Digital Library Perspectives* 34, no. 1 (2018): 45-59, doi: 10.1108/DLP-06-2017-0020.

^{vi} Lauralee Grabe and Debra Sturges, "Positioning for Digitization Projects in a Medium-Sized Academic Library -- A Creighton University Perspective," *Nebraska Library Association Quarterly* 36, no. 4 (2005): 21-22.

^{vii} Tom McMurdo and Birdie MacLennan, "The Vermont Digital Newspaper Project and the National Digital Newspaper Program," *Library Resources & Technical Services* 53, no. 3 (2013): 148-163.

^{viii} Laura Robinson, "The Evolution of Newspaper Digitization at the Washington State Library," *Microform & Imaging Review* 39, no. 1 (2010): 24-27, doi: 10.1515/mfir.2010.004.

^{ix} Par Nilsson, "Newspaper Digitization in Sweden," *Microform & Digitization Review* 41, no. 3-4 (2012): 126-128, doi: 10.1515/mir-2012-0020.

^x Ana Krahmer, "Digital Newspaper Preservation Through Collaboration," *Digital Library Perspectives* 32, no. 2 (2016): 73-87, doi: 10.1108/DLP-09-2015-0015.

^{xi} Eric Verzuh, *The fast forward MBA in project management*, (Hoboken, NJ: John Wiley & Sons, 2015), 98.

^{xii} Library of Congress, "The National Digital Newspaper Program (NDNP) Technical Guidelines for Applicants," last modified October 24, 2018, accessed January 17, 2019, https://www.loc.gov/ndnp/guidelines/NDNP_201921TechNotes.pdf

^{xiii} Library of Congress, "The National Digital Newspaper Program (NDNP) Technical Guidelines for Applicants," last modified October 24, 2018, accessed January 17, 2019, https://www.loc.gov/ndnp/guidelines/NDNP_201921TechNotes.pdf