



Tips from the Experts

Making it Better: A Project Management Framework for Creating a Research Data Services Program

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Abstract

When librarians at Oklahoma State University (OSU) began creating services to support data intensive research they found plenty of published guidance about doing surveys and outreach to get started. However, they also found that offering the prescribed workshops and consultations didn't assure that researchers would use them. A Sparks! grant from the Institute of Museum and Library Services (IMLS) allowed OSU to try two novel techniques, customer journey mapping and design thinking, to engage researchers and answer the question "What is the role and impact of the library in helping researchers manage their data along the entire project lifecycle?" One of the outcomes of the project was creation of a toolkit that provides a step-by-step project management plan to guide libraries, especially those with limited resources, to prioritize needs and create offerings with the assistance of their user communities. This column intends to discuss this project management framework, with an emphasis on how it was implemented to meet the goals of the IMLS project.

Recommended citation:

Bjornen, K. K., & Ippoliti, C. (2021). Making it better: A project management framework for creating a research data services program. *Issues in Science and Technology Librarianship*, 99. <https://doi.org/10.29173/istl2623>

Introduction

Initiating research faculty engagement with library initiatives and services is a well-known difficulty that we unfortunately encountered as we developed research data management services at the Oklahoma State University (OSU) Library. We were awarded an Institute of Museum and Library Services (IMLS) Sparks! grant to implement a project that used customer journey mapping and design thinking as a means to get direct input and engagement from a cohort of 27 faculty. Customer journey mapping is a process for participants to document their goals and practices throughout the research lifecycle. The results of this process were then used for design thinking sessions in order for us to develop workflows and services to meet identified data needs. The cohort was composed of faculty from both STEM fields and the social sciences, with guidance from an advisory board of consultants with data management expertise and backgrounds in institutional diversity.

The main research question we intended to answer is *What is the role and impact of the library in helping researchers manage their data along an entire project lifecycle?*

Additional questions which were a subset of our broader theme included:

- Do researchers have a clear set of goals regarding their data management practices?
- What are general perceptions regarding the role of the library as a facilitator of these goals?
- Are researchers aware of existing library services? If so, are they using them? Why or why not?
- What are the specific barriers preventing them from using library services?

The reason we chose these methodologies was to gain direct insight into researcher challenges, pain points, and priorities and to provide us with a way to identify needs that could not be explored through the use of surveys alone. Customer journey mapping allows us to capture their thoughts, feelings, and perceptions of researcher data management challenges by literally mapping their processes and decisions onto the course of the research lifecycle (data production, data analysis/interpretation, and data storage). The researcher documents steps taken at each phase of the project instead of simply talking about them, which helps them clarify their own thinking about each phase. Finally, the design thinking process assists us in distilling themes identified in the maps and collaboratively designing solutions to address issues, instead of collecting data in a vacuum and then design activities that might or might not be useful.

Developing a Project Management Framework

One of the biggest lessons we learned through this process is that our project was more about working with people and developing relationships than anything else. We felt that we had expertise we could share and the results indicated that researchers were much more willing to discuss how we could partner after they understood what we could offer. Libraries who wish to use a similar methodology can begin by considering what services are already in place that support research data services (RDS), both in the library and in other organizations on campus. Who has already created teams and what

have they accomplished? Can you collaborate to build on any existing pieces? The answers to these questions will help determine the focus of your project and may fast track facilitation and adoption. If the library has offered data management workshops, for instance, contact attendees to see if they are willing to participate as part of your team. This is a good starting point for helping to establish credibility in the library's data expertise. Other things to consider: Generally, do you have good communications with researchers? Are there other existing connections that can be called upon? What prior experience is available among librarians? Is there broader organizational support for these types of services? If you are starting from scratch, you may find yourself wondering how you can go about doing this work. The sections below comprise the main sections of our upcoming toolkit, and outline how you can develop a project management approach for your own research data services.

Project Management and Planning Basics

What is strategic project management? The premise of this type of project management is that projects should actually work to achieve the goals and objectives outlined in your data management strategy by ensuring that the activities can actually help support the goals of your research data program or initiative and that they are adequately resourced and prioritized. A research data program should have clearly delineated goals, and for each goal there should be at least one action item or project to support its progress or completion, along with clear performance measures to assess progress. If you can draw a clear line from your projects to the areas or initiatives it is intended to improve, that's a strong indicator of alignment. Next, every project must have the appropriate level of support – whether that translates into staffing, time, or funding. Each project needs a sponsor or owner who can ensure that the project is on track. Every research data program goal will have its own mix of projects so you will want to coordinate them in terms of timelines, staffing, and logistics to be sure that they are not competing for time and attention.

In addition, you will want to think about the logistics of how a project is created from start to finish. A Memorandum of Understanding (MOU; see [Essmiller, 2019](#) for a sample MOU) and a project charter are useful for outlining the project parameters. It is from an open resources project, but many of the elements are applicable in terms of roles and responsibilities, as well as deliverables. Typically, an MOU is designed to specify who does what in the project and to provide some direction for how the work is going to be accomplished, as well as what happens if any party cannot complete the work as initially planned. This approach provides accountability so that everyone is clear on what the expectations are going into the project and minimize surprises during the project itself. MOUs may also specify who pays for what part of the project, who owns data or information related to the project, what software or resources might be used, and similar logistical details.

A project charter will help you outline the project goals, timelines, milestones, and resources needed. This starts by defining a vision for the project which details what issues this project will address, team member roles and responsibilities, timelines and goalposts, and the actual activities that comprise the project. Every project should have an associated budget which may include things like hiring a specialist, offering

stipends, professional development, or other forms of compensation. Funding might also be needed for things like data storage and sharing, specific software or repository charges, and dataset inclusion in published articles that may or may not have an added fee to publish in an open access journal.

Any project should also include a transparent and accessible documentation and communication process. Where will documents be stored and accessed? How will version control be managed? Who provides feedback and how? This is also part of the overall communication strategy that should be discussed at the beginning of the project. If the partners are new and this is the first time a group is working together this may be especially important. Time will need to be dedicated to clarifying and understanding team dynamics which can make a big difference for project success, regardless of how well organized the other elements might be. If people are unclear about what is expected of them and there are disagreements about how things should work, the project will not get very far. Communication strategies will change over time as the project evolves. Conflict will most likely arise earlier in the project as workflows, roles, etc. are being defined and negotiated, so there will need to be time set aside for frank conversations about how the team is functioning overall as much as about the work itself. Consider doing some team building activities alongside the development in order to strengthen relationships and build trust. Roger Schwarz ([2013](#)) outlines how teams can communicate effectively.

This starts by stating views, reasoning, and intent, and focusing on problem-solving rather than blaming. All relevant information should be shared, especially if things are not going as planned and adjustments need to be made along the way. The team should agree on how to handle difficult topics and how to test assumptions, and should jointly develop a resolution or discuss and agree on next steps. A more formal decision-making model might need to be implemented depending on the complexity of the project in question and where there is a need to document what decisions were made, how they were made, and what the outcomes were ([Stein, n.d.](#)). Begin the discussion session on a positive note by talking about what went well about the project. This is also a good opportunity to think about what elements you might want to keep or revise if they have been successful. Feedback should be constructive in nature and should focus on problem-solving or finding solutions, even if retroactively, for things that could have gone better.

One way to handle this type of discussion is to follow the “I like, I wish, what if” model, which allows the reflection to center on issues rather than what specific people might or might not have done ([Roy, 2020](#)). The ‘What if’ section presents an opportunity for the team to consider additional ideas that can either move the project forward into the next phase or provide thoughts for a later time. This is a time to think creatively about what comes next or simply to say this project is completed, this is what we learned and we are ready to move on.

Finally, you will want to do some type of debrief and reflection at the end of the project, which for us, was a major driver of how we envisioned this toolkit and next steps in terms of further developing data services at OSU. This can take focus on both strategic as well as logistical aspects. Did the project meet the goals outlined in the charter? Why

or why not? What were the accomplishments and the challenges? What were the lessons learned? How will these datasets and accompanying materials be updated, preserved, and made accessible? What could have been handled differently? Debriefs tend to focus on the negative aspects, but using the “I like, I wish, What if” model allows for a free flow of ideas that can then set the stage for next steps, whether those entail ending the project altogether, moving into a new phase, or adding onto an existing program or service.

Creating a Project Team

A robust project team will not only bring a wide range of experience and expertise but will ensure that there are adequate personnel to close out the project. Our core team was composed of two librarians from the research and learning services team, a digital services librarian, and a graduate student hired to manage the project documentation and assist with the qualitative data analysis. When forming your project team, it may be helpful to consider not only librarians but others across campus who have worked to support research services. Research computing and IT, the graduate college, the campus research office, departmental research support, institutional repository, and digital or web services are all places that may have either established or considered creating research services. Enlisting team members from these organizations can help broaden engagement and provide other perspectives. Are there pieces of RDS in place? Can you collaborate to build on these pieces? What skills can each member bring to the team?

You may also want to establish an advisory board to provide guidance and oversight. What roles should be represented? Consider reaching out to institutions with a similar profile who have been successful in establishing RDS. Are there other roles that can help keep things on track? Consider in advance how much time commitment might be necessary, what recognition you can give, and how you plan to communicate. Will there be a regular meeting schedule? Set it up well in advance so that it's on everyone's calendar. Finally, be sure to communicate all expectations clearly.

Conducting a Needs Assessment

There are many approaches for identifying researcher and patron needs. We will highlight the two we used for this project. They are qualitative in nature, and entail a high degree of user interaction and involvement, which work well if you want to get an in-depth view of how researchers work with data and how the library can assist. The Nielsen Norman Group (NN/g) has a comprehensive website ([Gibbons, 2018](#)) with how-to information on the most popular types of user experience activities such as customer journey mapping. The NN/g website describes journey maps as a “visualization of the process that a person goes through to accomplish a goal.”

Customer Journey Mapping

Customer journey maps typically involve identifying the activity in question, then asking participants to fill out the steps they take to accomplish the activity, as well as the issues, thoughts, and emotions they encounter ([Hover, 2020](#)). We tailored our maps to the research data lifecycle as described above. One lesson from our project was that

the static templates we created could be improved by asking researchers to complete them as they were working, rather than asking them to recreate processes after the fact. For the purposes of our project, this is the first step in the design thinking process as described below. This is a much more direct method of collecting the actual experiences of researchers rather than hearing about them indirectly. Customer journey mapping entails the following broad steps:

- Understanding your “typical” user persona so that you can extrapolate from a few to the overall population
- Identifying the timeline (is it a one-time event or does it occur across a longer time span?)
- Identifying touchpoints, i.e., all of the things and people the user interacts with for a particular element or in this case, their data processes
- Asking open ended questions to help users fill in their own thoughts and feedback

Design Thinking

Design thinking is a creative process based on the generation and layering of ideas stemming from a concept that is often abstract and messy. There are five basic elements to design thinking adapted from the Institute of Design at Stanford, widely credited with being a leader in design thinking. An example of a design thinking process could have several stages: discovery, interpretation, ideation, experimentation, reflection, and evolution ([Dam, 2021](#)). The steps aren't linear. They can occur simultaneously and can be repeated. There is also a strong element of experimentation involved and “failure” is seen as an opportunity to learn rather than something to be avoided. Design research also emphasizes the need for interventions based on the identification of the problem and a subsequent evaluation of the success of these measures.

- **Discovery:** Define your target audience and your objective. Do you want to find information about a specific issue, collect opinions, or as in our case, determine researcher challenges in managing their data?
- **Interpretation:** Share the things you found most interesting once you have collected the desired information. Revisit the questions that you started out with. How do your findings relate to your challenge?
- **Ideation:** Invite a diverse group of people to help you brainstorm the solutions to the challenges you have identified in the previous step.
- **Experimentation:** Once you have a list of potential solutions, define what to test and how to test it.
- **Reflection:** Bring your team back together to begin analyzing the feedback you received – discuss the reactions you received to your prototype or pilot.
- **Evolution:** Think about how you want to measure the impact. Plan how to track these indicators and what they mean for measuring impact and success.

Equity-Centered Design

This type of approach is a variant on design thinking. Design thinking has been criticized as being one-size-fits-all with a tendency to gloss over complex issues.

Natasha Iskander mentions that “design thinking privileges the designer above the people she serves, and in doing so limits participation in the design process” (2018). She goes on to argue that addressing these challenges relegates design work to those in power with those individuals being the only ones who can offer solutions (Iskander 2018). Equity-centered design may help identify gaps and unconscious bias in your project plan. Are there types of research or scholarship that you didn’t include? Tools that are more popular among some communities and not well known in others? Language that is restrictive? One ongoing issue we encountered is that humanists often feel excluded by terminologies that are commonly used in the quantitative sciences.

The Stanford website provides additional activities you can utilize to help create a shared understanding of the challenges your users have that you can address as you go through each step and generate solutions, then implement them and gather additional feedback as you test out these ideas and build on what you are learning. This type of process focuses on the first step in the design process, discovery, which centers on building empathy for users by examining biases and power structures inherent in our approaches (Stanford d school, n.d.). They entail:

1. Building awareness of and about the impact of our beliefs and biases as they relate with/to our users and their context.
2. Who are we and who are our users and where does each come from (perspective)?
3. Making power dynamics explicit.
4. What are the equity challenges we/they are dealing with?
5. How can collaboration help address these challenges?

The ACRL Fostering Change guide provides an exercise that digs more deeply into the questions that can be asked to address some of these broad issues and can be applied to the development of a research data program (Marshall et al., 2020). What biases are affecting how you are collecting data? For example, are you framing survey or focus group questions in a way that emphasizes existing inequities? Are there any voices and/or perspectives that might be excluded from the development process, such as students, adjunct faculty, or lecturers? How does their precarious status in terms of resources and time affect their ability to participate? Do you have a wide enough variety in the types of disciplines and data you want to collect? How can you better understand who your users are and what their challenges are? How can you build trust with them so that they are providing you with meaningful and authentic feedback? How can you ensure your model(s) are reflective of your user populations and their needs? This is especially important in working with underrepresented communities/populations. How can you integrate feedback into your design so that you are making changes that are truly valuable? How have the biases you uncovered at the beginning of this process been addressed? If they have not, what can you do to change that?

Outreach and Relationship-Building

Improving research data services by engaging researchers seems like it should be a popular project. However, you may find that getting researchers to commit is more

challenging than you expected. When planning your project, determine how many participants you need and begin outreach. You can start with stakeholders who have worked well with the library in the past. You may also want to consider expanding your pool to include not only faculty researchers but also students, postdocs, and research associates, as they may provide a different perspective that would be beneficial to determining how to structure both your development process as well as the program itself. Ask for recommendations of colleagues with data intensive research or scholarship and follow up with any that you have helped with research-related reference questions or support. Groups on campus such as the faculty council research committee or any disciplinary or departmental research groups may be interested and supportive, and remember to reach out to satellite campuses or research cooperatives. Groups that are under the radar are likely to have the most unmet needs, and they should be a main focus to ensure as much inclusivity as possible. Remember to over-recruit because you will undoubtedly have attrition.

Develop a communications plan so that your message is consistent and your outreach is thorough. This plan should include information about the message itself, who your audience is, what your communication objectives are, who writes the message, through what communication channels the message will be distributed, and timing as well as frequency. Your message will change depending on your audience and distribution channels, and it will be important to be flexible and use multiple modalities as well as send reminders and updates. Create a concise description that includes the benefits of participation with preliminary dates for each main component as well as an estimated time commitment and any incentives such as stipends or professional development funding. Don't forget informational meetings or open houses, preferably with refreshments if possible, as part of this approach. You can generate initial excitement and strengthen relationships through an event then follow-up through other methods.

Conclusion

Starting a new research data services program can be a daunting task, and it may feel like much is up to chance and organizational context in terms of recruiting participants, developing partnerships, and establishing a guiding framework. Issues of library and staffing capacity, participant interest, and institutional support can make a difference in how the program is structured as well as its overall success. We hope that the outline provided here will assist you in identifying the steps needed to start or re-envision how your library can approach research data services.

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