

Big Rapids Community Library Room Reservation System

**UMdeSigners' Final Report
SI 501 014**

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EXECUTIVE SUMMARY

The Big Rapids Community Library aims to “encourage literacy by sharing resources and experiences that nurture curiosity, education and growth to create a connected and thriving community (About, n.d.).” In service of that mission, the library would like to replace its current room reservation system and upgrade to a more convenient technology-based booking system for their patrons.

The UMdeSIgners team conducted six interviews with staff members to learn how the current reservation system operated and researched the transfer of the current traditional manual system to an online- and technology-based service. These interviews asked about the staff’s working experiences, day-to-day routines, how the current reservation system worked for the staff and library patrons, and new features or updates they would hope to see in the new system. We discovered through this process that any potential recommendations needed to be customizable, usable, and accessible to be adopted by all the library patrons and staff.

After carefully researching and testing the current systems in use, we have come to these findings, covered in more detail in this report:

- Multiple steps in the approval process and waiting on approval from one person causes a delay in room reservation requests.
- The lack of a centralized format leads to scheduling issues and overbooking.
- There are some room reservation policies that may be outdated or in need of reevaluation.
- There is a high degree of unfamiliarity with the room reservation system.
- Room reservations are highly dependent on staff.

In response to these findings, we recommend that the library migrate their room reservation system to Google products, specifically Google Forms and Google Calendar, and provide training on the room reservation system to staff. We believe these recommendations will create a more centralized, efficient room reservation system that will help ensure staff are on the same page.

INTRODUCTION

Big Rapids Community Library is located in Big Rapids, MI, a central Michigan town with a population of just over 10,000. The library is led by director Lauren Moran and includes nine total employees across various roles. BRCL holds a vision that “aims to be the leading local resource for the community to discover, learn, and connect,” and goes to great lengths to realize this vision (About, n.d.). The library accomplishes this through engaging programs that encourage literacy and community participation for kids, teens, and adults.

Community members of all ages and circumstances can count on their local library to provide key services when and if they ever need them. But perhaps the most important role libraries play is not the home of technology or educational services, but as a “third place.” These third places – as described by sociologist Ray Oldenburg - refer to informal spaces outside of one’s home (first place) and their workplace (second place) that lend themselves to “random or intentional in-person relationships (Cabello & Butler, 2017).” These can describe such places as churches, salons, bars, restaurants, and community centers. Particularly in dispersed, rural areas, these places play a critical role in community building.

Big Rapids Library assuredly represents this “third place” for many in the area, as the public are encouraged to use the library as a central meeting place. BRCL has two community spaces that can be reserved by patrons. The Literacy Room seats eight people and is a popular place for studying, tutoring sessions, and virtual meetings. The Community Room is used for larger groups of up to 50 people and is commonly used by organizations like Girl Scouts and 4H to host their recurring meetings. Reservations for both rooms are handled by the Circulation Desk staff. A binder for forms in conjunction with an online service through Wix served as the process for managing reservations. This process was prone to confusion and mixed-up reservations. The library is looking for a solution that 1) is easily accessible from all staff computers, 2) eliminates confusion between paper and digital forms and 3) prioritizes reservations for the library’s programs.

METHODOLOGICAL OVERVIEW

To obtain a complete understanding of the problem, our team interviewed six members of the library staff. These members included the library's director and Head of Programs, along with two library assistants and two library pages. Prior to initiating these meetings, our team developed a series of questions we felt would elicit meaningful responses and aid our recommendations down the line. While the subject of discussion was the library's room reservation system, we understood that not all staff members had experience using the tool. This forced us to personalize questions for each staff member based on their level of familiarity with the system. For those who were generally unfamiliar or unaffected by the reservation system, our questions sought to obtain overarching themes about the library as a whole.

Each interview included two team members and one library staff member. One team member was tasked with leading the discussion and proctoring the questions while the other member took detailed notes. Our interview period spanned three weeks, commencing on October 11 and concluding November 1. These recorded interviews took place via Zoom and averaged 30 minutes in length. Our goal with these interviews was to obtain general sentiments about the current room reservation system and gather particular aspects of it that were most troublesome. Within 48 hours of each interview, our team met to interpret the findings from the discussion. This allowed our team to evolve our notes from fact-based statements to more well-composed themes.

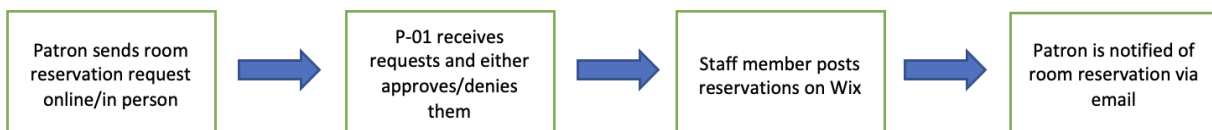
Following the completion of all six interviews, our team had accumulated a large number of valuable assertions from the library staff. These individual anecdotes were useful to a point, but to make sense of them as a whole, we needed a way to cluster these findings into larger themes. For this, our team developed an affinity wall using the online collaboration tool *Miro*. In this affinity wall we grouped our initial findings into clusters based on similar insights. Each of these groups averaged around 10 insights and was summarized by an overarching theme. These themes were then summarized, leading to higher level themes. These themes informed our findings, and ultimately, our recommendations.

FINDINGS

Finding 1: Multiple steps in the approval process and waiting on approval from one person causes a delay in room reservation requests.

- The library has one staff member that oversees the approval and denial of room requests. The process requires the staff member's involvement to get the requests moving along.
- The current approval process involves the delegated staff member's approval/denial for a room reservation request. Room reservation approval may take a day or two and staff members must wait for the staff member's approval before confirming an appointment in the Calendar.
- After the room request is approved, a staff member posts room reservations manually on Wix after ensuring there are no scheduling conflicts.
- Approval time depends on whether the room is available and the complexity of the user's purpose.

Approval process:



Finding 2: The lack of a centralized format leads to scheduling issues and overbooking.

The current room reservation system involves using both a physical format and an online format. By interviewing multiple staff members we discovered that having to keep track of both of those mediums often led to scheduling confusion and overbooking of rooms.

- The previous reservation system used both a physical calendar and an online calendar. It was a complicated issue to manage two separate calendars for library programs. Because of this, there were sometimes overbookings between library programs and room reservations.
- In order to reserve a room, patrons and staff could use either a paper reservation form or complete one on the library's website. This format was prone to errors, as it was very

easy for information to be forgotten or lost in the process. This made scheduling more difficult and inconvenienced staff members and patrons when inconsistencies arose.

Finding 3: Room reservation policies should be re-evaluated.

Policy I.B: “Library sponsored activities have priority and a group may be required to reschedule a meeting if it is in the library’s best interest. The library will do its utmost not to interfere with scheduled meetings and adequate advance notice will be given.”

- This policy shows lack of controllability for both library staff and patrons, it is difficult to avoid future issues that may arise.
 - The current policy allows applicants to be notified when a library-sponsored event happens that coincides with their schedule in an adequate period of time. In this way, the applicants can be informed and take actions to reschedule or make decisions related to their events in the meeting room.
 - However, this policy fails to let applicants view the library-sponsored events that are already on the schedule. This visibility could avoid patrons booking the meeting room during the occupied date and time.
 - A public calendar to view the scheduled library-sponsored events is encouraged and believed to solve this problem.

Policy D: “Reservations will not be accepted for a series of meetings that designate the Library as a regular meeting place for more than 12 meetings each calendar year unless an exception is granted by the Library Director. Groups requesting meeting facilities for a series of meetings must submit, in writing, a list of specific dates and times.”

- The current policy still requires patrons to submit the request in handwritten form and list out the specific time on the written form to use the room. It could be complicated for the library staff to organize and keep track of the forms.
- This setting could disrupt the library’s general workflow as the library staff would need to manually input the data and keep track of them in a written format. When changes happen, they would need to go through the paperwork to contact patrons.
- This also invalidates the purpose of setting up the reservation system in one format.

Finding 4: There is a high degree of unfamiliarity with the room reservation system.

The coronavirus pandemic has paused the room reservation system so employees have not used it in one and a half years. As a result, the majority of staff have either never used the room reservation system or need a refresher on how it works.

- The library frequently gets new employees due to its proximity to Ferris State University and it has hired many employees within the last year. Due to the pandemic, newer staff members have not been exposed to the room reservation system and are uncertain how it works.
- Not all staff members have access to the booking service in Wix, so there is less familiarity with the online room reservation system compared to the paper application. For example, one participant stated that they had only ever processed paper forms.

Finding 5: Room reservations are highly dependent on staff.

- Room availability is correlated with staff availability. For some events, staff members must prepare the room for use before patrons can use the space. A short walkthrough on how to use the equipment usually accompanies this. Which staff member does this largely depends on their availability.
- After a room reservation request has been approved, a staff member would have to manually post it on Wix and the in-library calendar.
- Scheduling a room reservation after hours requires a staff member to be present while the room is in use. This warrants paying staff to stay after hours and restructuring schedules to accommodate after hours room reservations.

RECOMMENDATIONS

Recommendation 1: Use Google Forms to collect and track room reservation requests

What is Google Forms?

[Google Forms](#) is a free online form creator that allows users to see and analyze response data in real time. Google Forms enables users to add collaborators and edit the same document simultaneously, creating a streamlined and centralized form-making process.

Why Google Forms?

- **Easy to learn:** Library employees currently use Google products, such as Gmail and Google Calendar, and are familiar with these tools. It will be more intuitive for employees to use Google Forms than an unfamiliar software program.
- **Seamless:** Google Forms integrates with the Google products that are already in use at the library. Additionally, Google Forms works on any operating system and device, including phones, tablets, and desktop computers.
- **Customizable:** Google Forms allows users to customize the form by installing plugins, writing their own scripts, and setting response validation rules.
- **Budget-friendly:** Google Forms is free so implementing it would be cost-effective for the library.

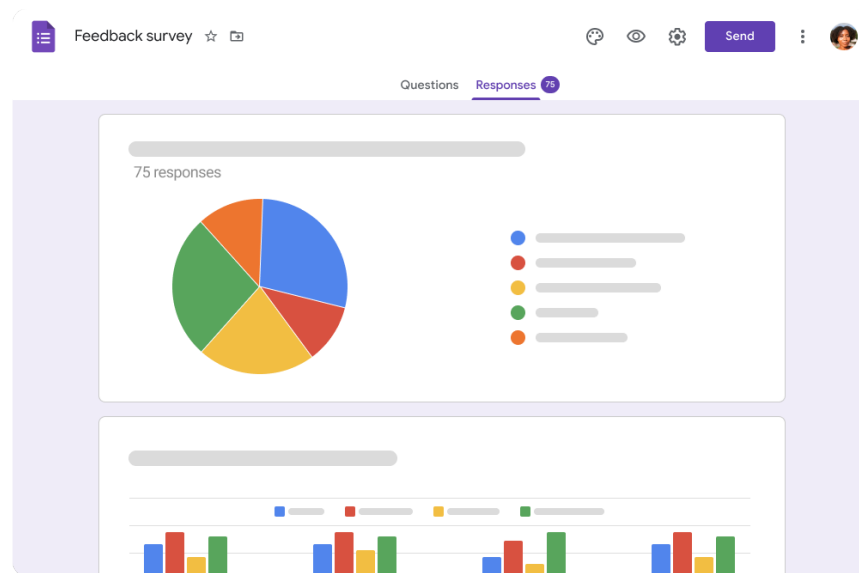
Using Google Forms

We recommend that the library recreate their room reservation application in Google Forms and use the new form to collect requests. The library could replicate the questions from the current version of their application and add a section to the form with the room reservation policy, enabling users to learn about the policies and submit their event request in one centralized space.

Additionally, Google Forms captures data from each form response in a Google Sheet that automatically updates with each submission. We recommend that library staff use this Google Sheet to monitor room reservation requests and track the status of requests. All library employees would be able to access the Google Sheet through their Gmail accounts and instantly view pending room reservation requests, or even receive notifications for each new form

submission. As a result, any available library employee could be instantly informed of a new reservation request and process it almost immediately.

The library could also analyze data in Google Forms to see how patrons are using the room reservation system. In addition to collecting data, Google Forms provides instant data visualizations of form responses to help administrators understand macro trends and patterns. This user data could then be used to inform and update the room reservation system as needed.



Data analysis and visualization within Google Forms

Recommendation 2: Use Google Calendar to allow users to reserve rooms and view the room reservation schedule

What is Google Calendar?

[Google Calendar](#) is a scheduling tool that allows users to create appointments, schedule meetings, and set reminders on upcoming events to stay in the loop. Google Calendar has many features that allow the user to customize and view calendars any way they want.

Why Google Calendar?

- **Cross-platform:** Google products work well on any platform: desktop, tablet, or smartphone. Patrons and library staff can use and view the calendar on any device they

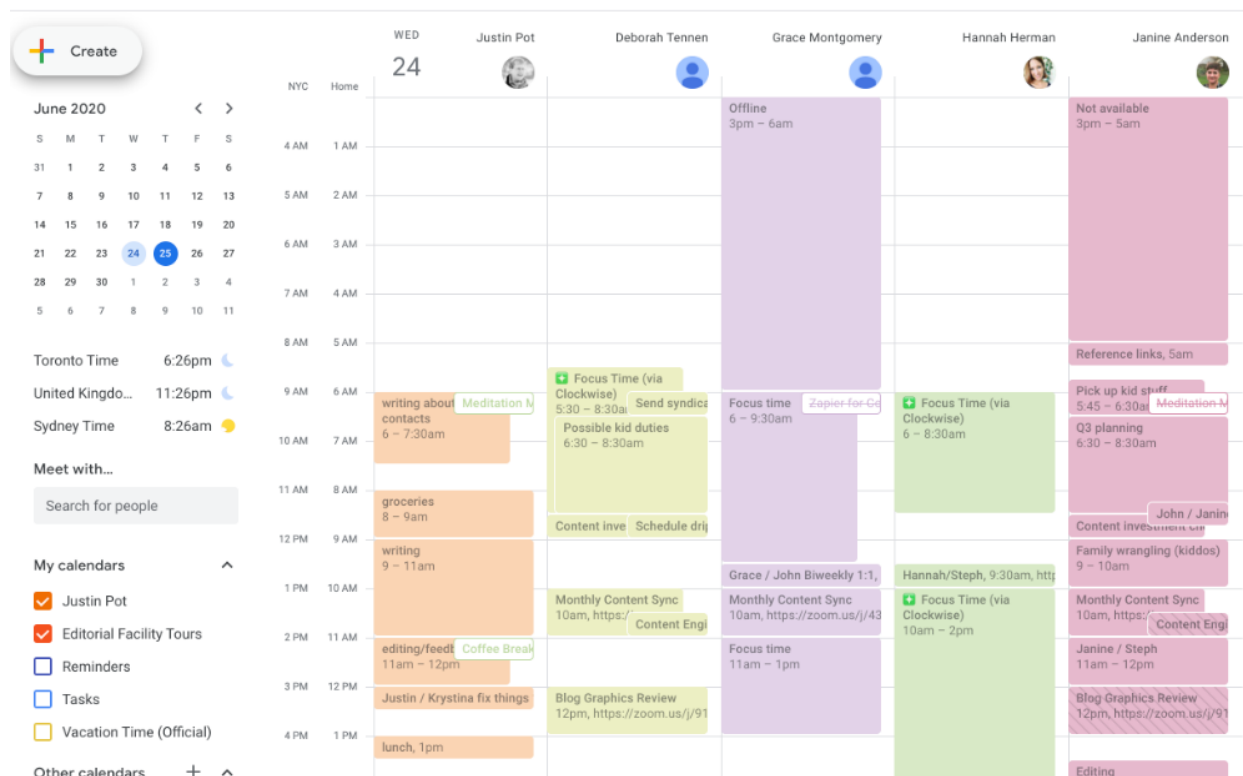
choose. All Android users have Google as a default operating system and Apple users have the option to use Google. The sync up is simple for any smartphone user.

- **Reminders:** One of the best features of Google Calendar is setting up reminders. Patrons can schedule reminders that will inform them of when their room reservation is. They can get these reminders on phone, email, or both.
- **Multiple calendars in one place:** Google Calendar allows users to easily customize their calendar view. They can see multiple calendars in one view. This will be useful to the library since there would be a calendar for events and another calendar for room reservations. Users can easily switch between the two views or view them both. Calendars can be color-coded to distinguish the different views.
- **Scheduling appointments:** Google Calendar makes it simple to book appointments. Users can select when they would like to book a room on the calendar and fill out the details. The changes are instant and can be seen immediately by the user.
- **Booking Rooms:** Google Calendar has a *rooms* tab that allows users to see available rooms. Not only that, but users can see the room's features such as capacity, tables, chairs, etc. Users can filter out rooms based on what is available for their meeting time. There will be no need to worry about double booking.

Using Google Calendar

We recommend the library use Google Calendar so patrons and staff members can view and schedule room reservations. The library should integrate Google Calendar into their website so all who are interested in reserving rooms have access to it. All staff members with a Gmail account would be able to view and edit the Google Calendar. Staff members could also enable notifications to be informed of any bookings that happen on the calendar.

One of the advantages of Google Calendar is that users can create multiple calendars and toggle between them depending on which calendar(s) they would like to view. The library could create one calendar for room reservations and one calendar for library programming and have them both display at the same time. Patrons could also filter out which calendar view they would want to see as well. Google Calendar is easily editable and customizable.



A view of Google Calendar with multiple calendars toggled on

Another advantage of Google Calendar is that it can easily integrate with Google Forms. Various plugins, such as [Form to Calendar](#), can create Google Calendar events based on user responses in Google Forms.

One participant mentioned that the library attempted to use Google Calendar previously to show when rooms were available. However, the participant mentioned that this failed since the Calendar blocks only displayed as “busy” and did not provide event descriptions. For the future, the library could change the settings of the Google Calendar to be public and show event and room details.

Recommendation 3: Create a training manual on the new room reservation system to give to new staff members

In order to familiarize staff members with the new system, we believe it would be beneficial to create a training manual or short video introducing them to how the system works.

- Since the library's room reservations have been paused due to the pandemic many staff members are unfamiliar with the reservation system and some have never used it at all. This would be an easy way for them to get to know their way around the new system
- The manual can be referred back to if any staff member has a question about the reservation process. This eliminates the need to find another staff member to receive an explanation.
- Any new hires will similarly be able to refer to this manual without requiring an in-person tutorial.
- The manual will also be able to expand the number of staff members that are able to make reservations. This will take the burden off of the few staff members who currently shoulder this responsibility.

Recommendation 4: End use of paper forms and allow patrons to complete reservations online.

Usage of paper forms creates extra work for the Circulation Desk staff and increases the likelihood of double-booking and miscommunication. We recommend the library move to a fully online service that is accessible to users in and out of the library. We realize that some patrons may not be fully comfortable accessing the Internet, so we also recommend the library obtain a tablet that can be kept at the front desk. This tablet's sole purpose would be completing and submitting room reservation forms and can be locked to only allow for this activity. For patrons that may have difficulty using the tablet, Circulation Desk staff will be able to guide them based on expertise of the tool.

Recommendation 5: Upgrade the current reservation policy to make it more user-friendly.

- In the long run, to update room reservation policies, show policies at the end of the form. Then, request that the user agree to the policies agreement before submitting it. For example, users can put a check next to each policy to show their understanding. Follow up with a confirmation email to the user after they have successfully submitted.
- In the long term: Have the Google Form show various policies based on room selection and also consider having a slightly different system for the literacy room.
- In the short term: Consider making after-hours bookings available to users.

Recommendation 6: Distribute reservation request approval to other supervisors to decrease approval wait time.

- To reduce the application process in the long term, we would recommend distributing approval powers to other staff members.
- Grant supervisors access to the online system so they can approve/deny requests.
- Supervisors must acknowledge and understand the necessary requirements for a user to book a room.

Long term recommendations

In order to create an effective room reservation system, there are criteria that the system must be evaluated against. The criteria below can evaluate whether a system has all it needs to provide the best possible experience for its end user and the staff.

Criteria 1: Staff Monitoring

If we are to move from a paper system to a digital solution, manual upkeep should be highly reduced. The online reservation system should update automatically and impose policies without having to depend on the library staff (Atkinson and Lee, 2018). Having a pen and paper solution places a burden on staff members as they must keep up with the applications, requests, updates, policies, staff availability, etc. If there is a centralized location for storing all that information, less work and time is needed from the staff.

Criteria 2: Easy Navigation

The room reservation link should be easily located from the library's homepage. Any user would assume that to reserve a room at the library, they must go to the library's website. The room reservation tool should be seen at the top fold of the page thus requiring little to no scrolling from the user. Easy navigation is key because most users come to the library to reserve rooms so that action must be found effortlessly in the library's website.

Criteria 3: Flexibility

As with any software that is used for a website, libraries should ensure that they are making necessary updates to provide the best services possible (Atkinson and Lee, 2018). Technology is constantly evolving, and libraries must be flexible to accommodate for that change. Older technologies will make a system slower thus impeding the user experience. Therefore, libraries must routinely check that they are up to date with the software in their systems (Atkinson and Lee, 2018)

Criteria 4: Privacy

Information that is collected from the user must not be shared with anyone. Application forms generally ask the user for the email and phone number at the very least. Libraries must guarantee that the user's information will not be released to anyone. Whatever solution is used, it must be a secure, confidential solution to store private information that users provide to the libraries.

Criteria 5: Response Time

As soon as a user submits their request or application to reserve a room, how long will it take for them to get a response back from the library? Users generally expect an email or SMS message within minutes of submitting their request. It is impertinent that room reservation systems inform the user as soon as possible of their request details. No system should keep a user waiting for too long. On top of that, users can easily forget about the reservation if they are not sent a confirmation message.

Criteria 6: Saving Forms

No user wants to spend time filling out an application that they have already done before. It is repetitive and generates a negative user experience. If a user were to fill out the forms again, it would detract them from ever wanting to reserve a room again. Forms that must be filled out should be saved in the system so that the next time a user wants to reserve a room again, that information can be pulled up.

Criteria 7: Room Details

Room reservation systems that provide key specific details of the rooms aid users to determine what kind of space is appropriate for their need. Details such as room size and how many people can fit are all factors that can help a user make an informed decision. Along with that, the technology equipment that is included, the number of chairs and tables, and rules that must be adhered to. A beneficial addition to assist the user is to include a picture of the room. All these details will help a user better prepare for what to expect of the room they are reserving.

LIMITATIONS

In our user interviews, we were able to obtain valuable insights that shaped our recommendations to refine the room reservation system. However, there were key players that were not included that could have greatly influenced our findings and recommendations. We were not able to acquire contacts of patrons who use the room reservation system. Interviewing those users could have provided us valuable feedback on the current system, especially since patrons reserving rooms are the main users of the room reservation system. For future studies, interviewing patrons would be a great indicator of what needs to be improved.

CONCLUSION

As a community gathering space, it is vital that libraries have a room reservation system to facilitate and support community engagement. Unfortunately, the previous room reservation system at Big Rapids Community Library did not meet the library's needs and often served as a point of frustration for library staff and patrons.

Our goal was to understand the pain points of the room reservation system and identify areas of improvement through contextual inquiry interviews. We identified several issues over the course of this process including a lack of knowledge about the room reservation system, a decentralized application process, and the use of multiple calendars to track room usage across library programs and reservations. This complicated system often resulted in double bookings or scheduling conflicts when a piece of information was lost in the process.

These findings led us to suggest that the library use Google Products to consolidate their room reservation process under one digital system. We believe the transition to this standard cloud software will help the library develop a more efficient and simple process for managing room reservations.

REFERENCES

About. (n.d.). Bigrapidslibrary. Retrieved October 13, 2021, from <https://www.bigrapidslibrary.org/about>

Atkinson, S., & Lee, K. (2018). Design and Implementation of a Study Room Reservation System: Lessons from a Pilot Program Using Google Calendar | Atkinson | College & Research Libraries. <https://doi.org/10.5860/crl.79.7.916>

Cabello, M., & Butler, S. (2017, March 30). How public libraries help build healthy communities. Brookings. <https://www.brookings.edu/blog/up-front/2017/03/30/how-public-libraries-help-buildhealthy-communities/>