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BUSINESS PLANNING IN NONPROFITS: Improving Data Management in CERES' Student Programs Office

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ABSTRACT

This project analyzed the Student Programs Office's (SPO) data management system, identified areas of improvement, and recommended which software the SPO should use. Members of the SPO were interviewed to understand the current data flow and gather feedback. Afterwards, the team evaluated Podio and Monday.com, two CRMs that the SPO wanted to switch to. After ample evaluation, the team recommended the SPO to use Monday.com, and created tutorial resources to help ease the transition.



AUTHORSHIP

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CERES Environment Park

Located in East Brunswick, Melbourne, the CERES Community Environment Park is a non-profit environment park and urban farm that welcomes over 450,000 visitors every year. Their six social enterprises that call the park home share the mission of encouraging the community to join the economic, social, and environmental sustainability movement and make their visitors fall in love with the earth again. One such enterprise is the CERES School of Nature and Climate. The School of Nature and Climate is a social enterprise hosting educational programs for students, teachers, and adults. Every year, 62,000 students travel to the school as a part of their “excursion” programs, and the school’s staff visit 13,000 students in schools as a part of their “incursion” initiatives. The revenue stream for the School of Nature depends critically on the revenue produced by their student programs. It plays an integral role in supporting CERES, as each of CERES’s six social enterprises shares resources and finances between them when necessary.

Like other modern non-profits, CERES collects data about their programs, customers, and finances to optimize performance, maintain relationships with customers, forecast budgets, and perform strategic planning. Technological advancements in data collection and analysis can grant organizations tremendous success in internal assessments and impact reporting to funders (Jain 2005). While CERES’s Student Programs Office has begun to adopt a data-driven approach, they have been unable to allocate the time and resources required to organize their data management system effectively. By embracing new technologies for data storage and management, the Student Programs Office would be able to more precisely forecast budgets, determine the popularity of different programs, maintain contact with local schools and councils, and proactively seek marketing or partnership opportunities.

Further expanding the breadth of their data management system would prove helpful to the SPO when they need to make amendments to their programs. Data management became critical during the COVID-19 pandemic, as the SPO was forced to downsize their team and found allocating staff and resources to all their programs challenging. The SPO needs to constantly evaluate their programs to decide which ones to cut, merge, and keep, and a robust data infrastructure would give them confidence in making those decisions. As these programs are the primary source of revenue for The School of Nature and Climate, the SPO needs to demonstrate the effectiveness of these programs to funders and other stakeholders to qualify for grant money. Effective data management makes data analysis more straightforward, allowing the school to create meaningful and convincing impact reports faster. A capable data management tool can also automate data input and merge stored data in different software and departments.

The Student Programs Office currently suffers from data fragmentation, a common issue with many non-profits trying to collect data. Data fragmentation occurs when similar data is stored in different locations or different software without communicating with each other (Bopp, Harmon, Voide 2017). Data fragmentation complicates the storage and retrieval of data for employees,

hindering their abilities to make critical business decisions and gather data for impact reports. At the time of this project, the SPO was storing data across Podio, Google Calendar, Xero, and Gmail. Still, they have taken the initial steps of consolidating their data into fewer programs, noting Podio as a central hub for their data. However, due to limited time and resources, the SPO hasn’t thoroughly investigated Podio, the primary data management software they’re using. Specifically, the SPO has had trouble integrating its software.

Podio is Customer Relationship Management (CRM) software, which aids in establishing, maintaining, and enhancing customer relationships. CERES, as an organization, has begun exploring Monday.com as an organization-wide CRM. Monday.com offers user-friendly automated workflows and integrations with other applications that CERES uses, such as Gmail, Google Calendar, Xero, and Jotform. Over the year, different departments and social enterprises in CERES will test the various features of Monday.com to evaluate how beneficial it can be to them. While the Student Programs Office has considered opting into this enterprise-level CRM, they are wary of the innate switching costs. Transferring data to a new CRM and learning how it works are two very time-consuming processes. The Student Programs Office currently utilizes the free version of Podio,

which offers minimal functionality. However, their Premium and Plus offerings show promise in meeting the SPO's needs and rival Monday's automation and integration features.

Our overarching goal with the project was to evaluate which of these CRM's can best streamline the SPO's booking, invoicing, and feedback processes. Through data automation and workflow optimization, CERES will be able to manage and maintain relationships with customers and analyze trends to see how they can improve their educational programs and business planning practices. We began by mapping out the current data management of the SPO to garner a deep understanding of their day-to-day operations and then creating a list of criteria that each CRM must be able to do. We then evaluated the effectiveness of Podio and Monday.com as the centerpiece of the SPO's data management, noting their ease of use, breadth of features, and integration with other programs. In the end, this will enable the CERES School of Nature and Climate to make crucial business decisions more confidently and accurately display the full extent of their impacts to funders and other stakeholders.



Summary

The background contains information about non-profit data management, Customer Relationship Management (CRM) systems, and CERES' current CRM usage.

Data Management in Nonprofits

Successful non-profits adopt a data-based approach for measuring their impact. Recording data can help non-profits self-assess themselves to identify areas of improvement and create stories for non-profits to share with funders. However, keeping track of performance data can be difficult due to underwhelming funding, changing leadership, and collecting a broad range of data (Knox, Wang, 2016). Knox and Wang studied the implementation of basic data infrastructure in non-profit organizations and showed that by implementing proper performance measurement tools, non-profits could identify areas of high interest in their programs and expand their programs to cover those areas fully.

Some caveats come with a data-driven approach to performance management. Erosion of autonomy is a phenomenon that occurs when external sources, such as funders, exert too much control over the non-profit's data, leaving little room for the organization itself to choose what data it wants to collect (Bopp, Harmon, Volda, 2017). Additionally, organizations may run into data drift and data fragmentation. Data drift is a response to an organization's changing identity; the type of data collected may change over time to reflect the organization's evolving identity. Data drift often makes comparing current data with older data harder. If data drift occurs for too long, the data becomes fragmented, meaning that one cannot compare new data to historical data, or vice versa. Additionally, data fragmentation may occur if the information is stored in multiple systems (locational fragmentation) and can't be centralized, or if it is collected at an irregular time interval (longitudinal fragmentation). Erosion of autonomy, data drift, and data fragmentation form a positive feedback cycle, making the consequences of poor data management drastic for non-profits.

One of the most important applications of data management is performance measurement. Performance measurement is a "managerial

tool used by organizations to improve performance through describing, monitoring, understanding, and evaluating organizational performance (Knox, Wang, 2016: p.1)." To acquire feedback data, both summative and formative evaluations can be performed. Formative evaluations are performed during or between program implementations and are used to modify the program in the right direction. On the other hand, summative assessments are performed once the program is finished, assessing the program's overall impact. Formative evaluations are internal, occur much more frequently than summative evaluations, and are usually not compared to other evaluations. However, while infrequent, summative evaluations can be compared with previous evaluations and other organizations, and they provide data that organizations can present to funders. In the context of environmental education, Carleton-Hug and Hug (2010) argue that formative evaluation should be used more. They've found that programs that use formative evaluation techniques are "significantly more likely to achieve success as defined by each program's objectives (2010, p. 7)."

The benefits of better data management extend past performance measurement. A data management system (DMS) keeps data secure and organized, making data more accessible to staff across programs. If properly implemented, a DMS can also automate many operations such as data entry, query responses, report creation, and more procedures that are done manually.

Customer Relations Management

Work done by Pacifico, Vaughan, Berthelette, and Garcia for African Community Education Inc. (ACE) shows that for non-profits to improve their data management, a database should be implemented. A database is "a tool that stores data, and lets you create, read, update, and delete the data in some manner. (Pacifico, Vaughan, Berthelette, Garcia, 2014)" Additionally, databases can be configured to automatically input and output information, analyze large amounts of data with little human input, and quickly generate reports. Pacifico, Vaughan, Berthelette, and Garcia performed research on databases too and concluded that they should implement a relational database for ACE. A relational database operates as a table where rows represent different entries and where columns represent different attributes.

Compared to the other types of databases, relational databases are flexible, easy to modify, and have a low risk of redundancy. ACE had similar problems to CERES, promising that CERES can garner noticeable benefit from a relational database. Specifically, The ACE project team implemented a Customer Relations Management system, which we focused our research and project work on throughout the term.

Customer Relations Management (CRM) is an organization's system for managing customer relationships and collecting customer feedback. More specifically, their goal is to document all customers' interactions, sales, and contact information. CRMs have an operational part, which involves the customer's interactions with the organization, and an analytical part, which assesses customer data. Furthermore, successful CRMS have a front-end and back-end. The front end includes customer service and marketing, while the back end includes manufacturing, billing, customer fulfillment, and logistics.

While the use cases of CRM's have been heavily explored and well defined for use in the private business sector, experts have been unable to agree upon their use cases in the non-profit sector. The first step to effectively integrating CRM software into the non-profit sector is to properly understand the "customer" in the non-profit sector. To do this, one must compare the flow of operations of the private sector to the non-profit sector. In private business, shareholders provide funds in the form of capital expecting financial returns, while customers receive goods and services, providing income to the company. In the non-profit sector, funders provide all of the revenue for the organization with no financial return, while "service users" receive the goods and services of the organization. Service users usually provide feedback to the non-profit and may need to pay for the goods and services they've received. Instead of equating customers of a private company to service users of non-profits, it is more accurate to equate customers to funders and shareholders to service users (Flory 49). However, this model fails to consider multiple phenomena, mainly the volunteer workforce in the non-profit sector.

When volunteers are added to the equation, the depiction of the operative flow becomes more complex. This group encompasses trustees, people who provide services for no charge, celebrity supporters or advocates, and sponsors who offer goods in the form of publicity or other nonmonetary value. The complete version of this flow is shown in Figure 1.

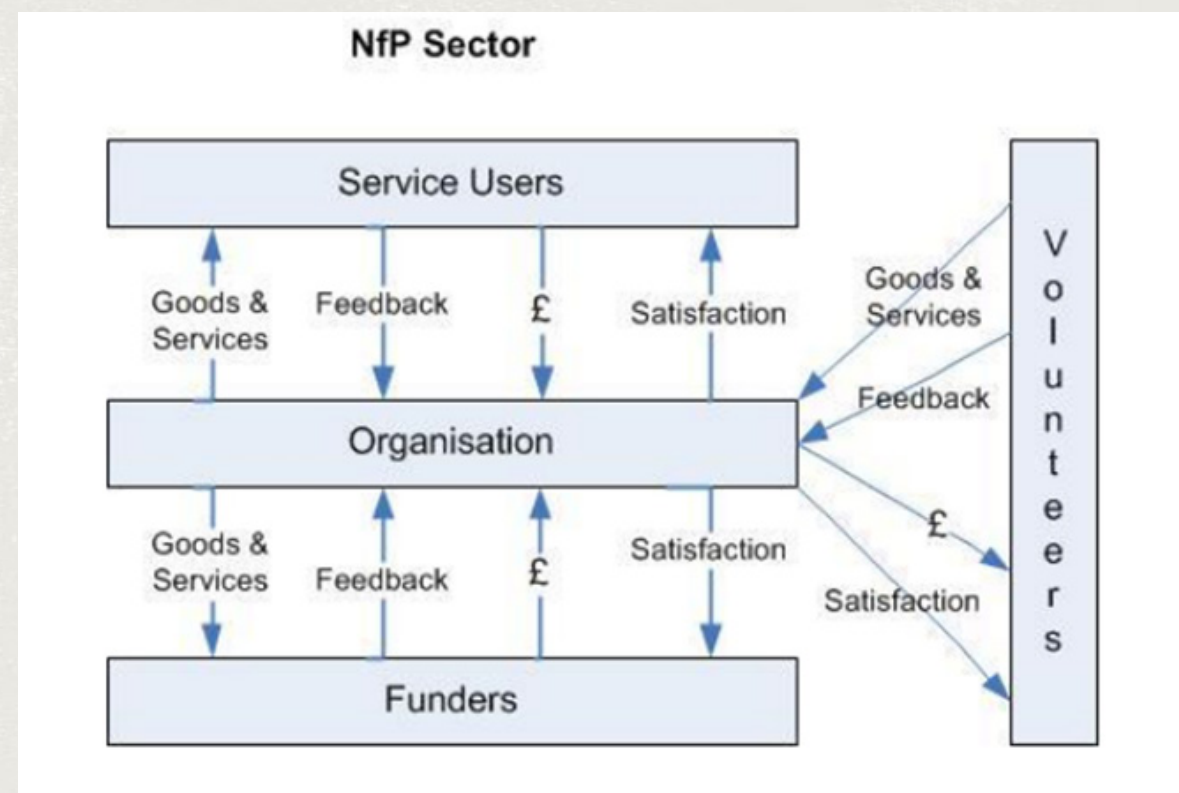


Figure 1: Nonprofit Organization Transaction

The other group of people involved in the non-profit workflow is suppliers. This group encompasses the providers of goods and services to the organization and the provision of goods such as health care directly to the service users (Flory 52). While commercial organizations also have suppliers, these differ from those in the non-profit sector. For example, private suppliers tend not to have a stake in the company and not commit to the customers' objectives.

Through the careful consideration and analysis of all the groups involved in the non-profit workflow, it is possible to understand the stakeholders at each step of the process and the needs of the stakeholders, which CRM's can play a part in fulfilling.

Figure 2 depicts a simplified operational flow chart specifically with the Student Programs Office. When put into this comparative context, it is clear to see the disconnect between the operative flow of private businesses and non-profits and why properly implementing CRM systems into the non-profit flow of operations has proven to be a challenge in many cases.

CERES' Current CRM Evaluation Progress

The SPO recognizes the importance of a strong CRM infrastructure. In the past, they have tried adopting applications such as Salesforce, however, the high maintenance costs and complexity of the program proved that it was not the right CRM for the SPO, so it was abandoned. Over the past 18 months, the Student Programs Office has used a free version of Podio, a CRM by Citrix, to manage their bookings and invoicing processes. While this free version has served the SPO well, they recognize the limited nature of the free version can complicate the bookings and invoicing processes.

While our project's scope was focused solely on the Student Programs Office, the SPO only is one department in one of six of CERES's unique social enterprises. While acting as separate entities, the organization is structured to share revenue streams between them. As all enterprises call the same park home, it is crucial that the different departments can easily communicate with each other, stay informed on the happenings enterprise-wide, and coordinate. To facilitate a more cohesive organization, CERES has been looking into implementing Monday.com as an enterprise-level CRM. Mr. Menassah, CERES's Strategic Partnerships Coordinator, has spent the last fiscal year evaluating Monday.com, writing a business case for the CERES organization, and helping individual departments develop transition plans if they choose to switch their digital infrastructure.

Our project focused on aiding the Student Programs Office in their CRM decision between upgrading to Podio Premium or switching to Monday.com. While Monday.com offers the benefit of buying into a centralized CRM infrastructure, it was vital that we weighed this benefit, along with any others the program may offer, against the switching costs that would come with switching from Podio.

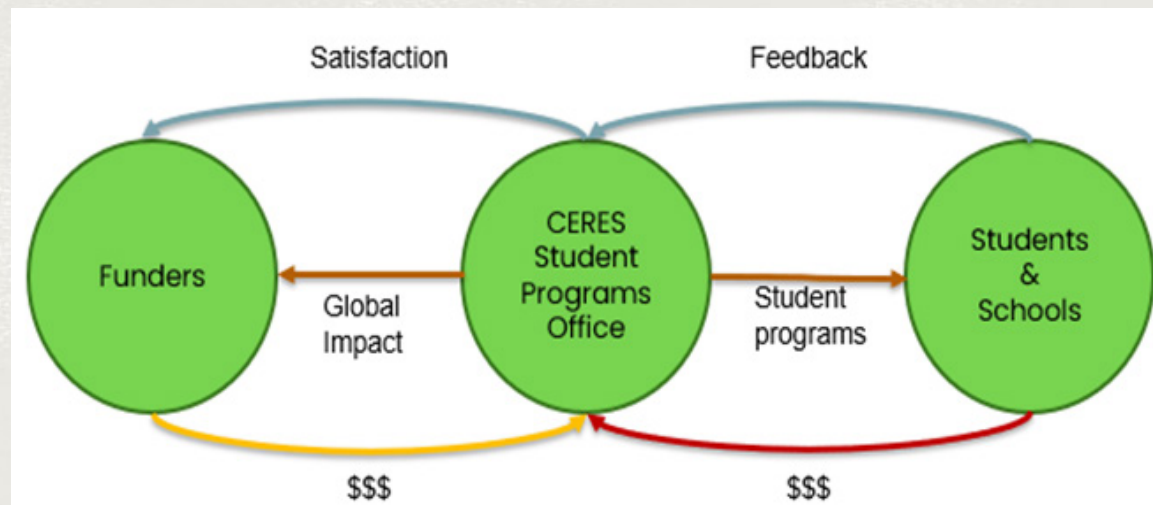


Figure 2: Flow of goods and services between the SPO and its stakeholders

There is currently a wide array of options for an organization looking to implement a new data management system. However, having the proper management system is vital to report and record fruitful data and make informed business decisions. Specifically, for a non-profit, it is crucial to have the ability to summarize performance indicators, as non-profits like CERES rely on consistent revenue such as external grants from public organizations, which are limited in quantity and competitive.

Choosing the correct data management system is a daunting task - a wide variety of suppliers all offer enticing options with promises of being an "all in one data solution." Organizations in the market for data management systems must understand their current data structure and data needs, and for non-profits such as CERES's SPO, this proves to be a challenge. As non-profits often focus resources on their mission and impact, it is difficult to allocate the time and funding towards these data-driven approaches, even with the known long-term benefits.



METHODS & FINDINGS

Our project focused on determining which CRM can best meet CERES's needs for streamlining and automating the SPO's bookings, invoicing, and feedback processes. We worked closely with the SPO to thoroughly understand their needs and ensure that any suggestions we would make would be relevant and feasible. We hoped our recommendations for a data infrastructure would set a precedent for the rest of the School of Nature, and even the entire CERES Enterprise. To reach this goal, our team devised four objectives, which were to:

- 01** Map the Organizational structure of CERES' Student Programs Office
- 02** Map the current bookings, invoicing, and feedback processes in the SPO, and identify areas of improvement
- 03** Evaluate Monday.com versus the different tiers of Podio to determine which program best meets the SPO's needs
- 04** Create resources to familiarize SPO employees with the new data infrastructure

Mapping the Organizational Structure of the SPO

Before any other project work could take place, we had to develop a strong understanding of the organizational structure of the SPO and form positive relationships with the workers. Through interviewing SPO team members, we created organograms, which are visual hierarchies of staff members and departments, lists of their daily and big picture responsibilities, and diagrams of how different programs are integrated into the organizational structure. Ms. Horner, Student Programs Manager of CERES, provided an existing organogram, which we used as a base for our organograms.

Within the SPO, there are two types of programs. Sessional programs are one-time sessions offered for educational and environmental purposes (ex. Towards Zero Waste, Farming for our Future, and Global Perspectives). The Deeper Learning Programs are held on a reoccurring basis and delve into those topics in a more detailed manner. Most programs are offered via incursions (the SPO visiting schools), or via excursions, where students and adult learners visit CERES. Due to the COVID-19 pandemic, in-person events were closed in the months prior to and during much of this project, and only some programs offered an option for virtual excursions.

Participating independents and schools pay a fee for programs, but sometimes programs receive backing from funders such as city council or other state qualifying grants to reduce costs for low-income schools. These funders may ask for activities or materials to be represented in the programs they're funding, so the SPO develops new programs that simultaneously appeal to funders and stay true to the CERES Mission Statement.

Figure 3 shows the currently available Sessional Learning offerings. All excursions have the same time and pricing, but the year levels they are offered to vary. Additionally, all incursions have the same time and pricing as well, but with varying year levels.

Sessional Learning

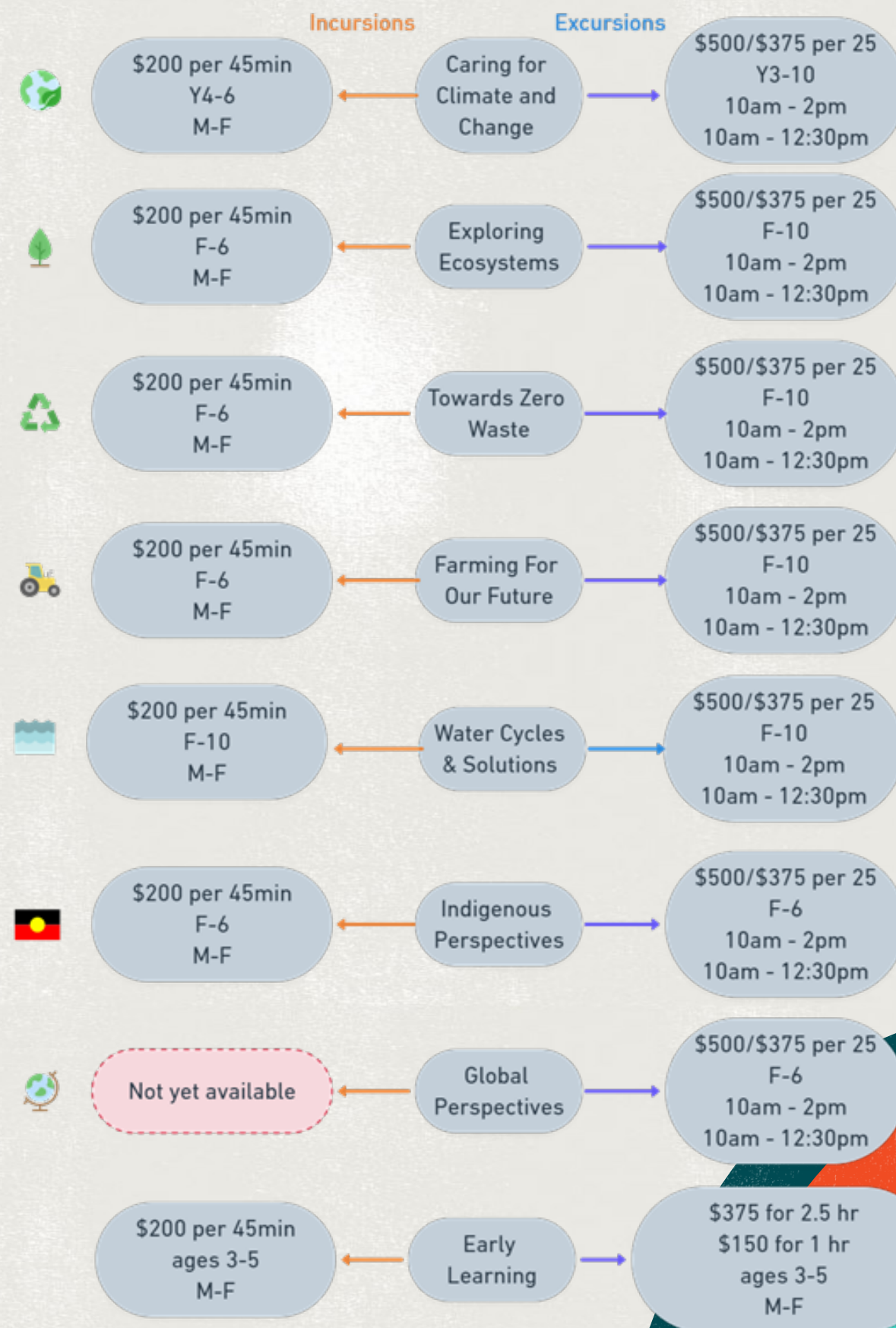


Figure 3: Overview of the SPO's Sessional Programs

Figure 4 shows the Deeper Learning offerings currently available. The Deeper Learning programs have greater variation in their scheduling. SELP has four incursions and one full-day excursion with its package, and its cost varies from region-to-region. Schools for Wildlife contains webinars, incursions, and excursions in its package.

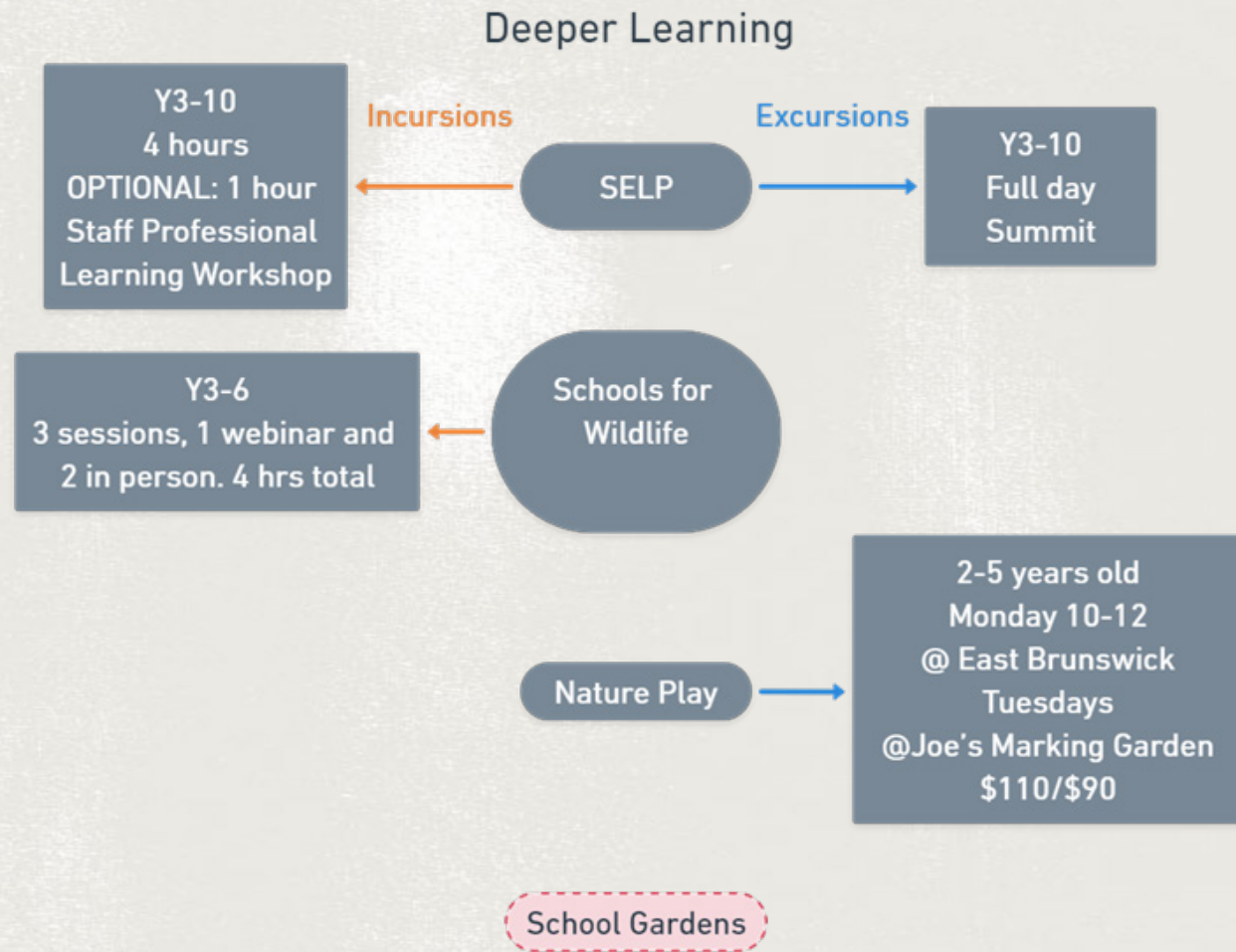


Figure 4: Overview of the SPO's Deeper Learning Programs

Figure 5 shows key staff in the SPO. Each sessional program has a leader, although other people may administer the program instead of the lead. Some of these leaders are also involved in some of the Deeper Learning programs, like SELP or Schools for Wildlife. People in the "Other" section of the map aren't part of the SPO, but were still interviewed.

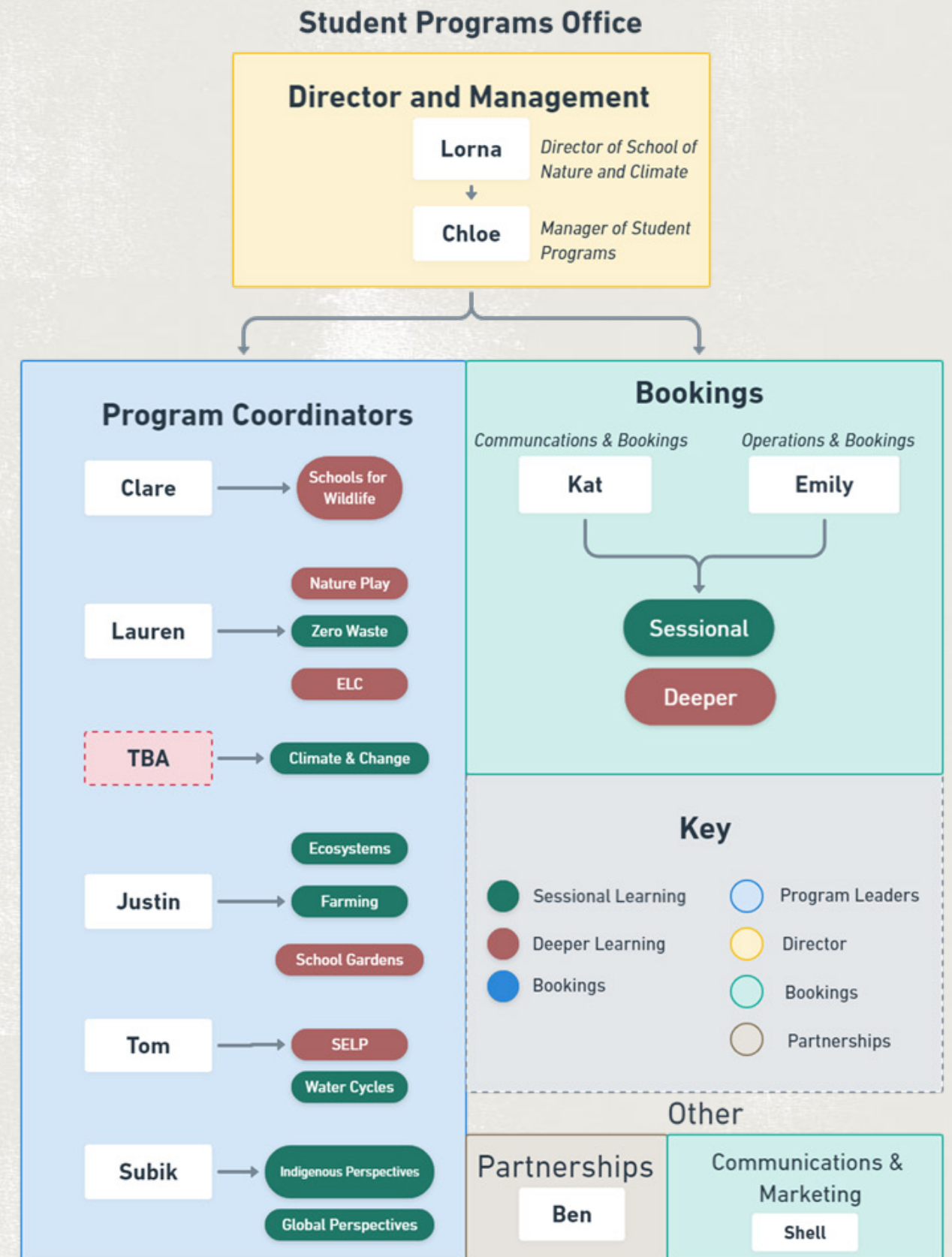


Figure 5: Overview of the SPO's organizational structure

Mapping the Current Data Processes of the SPO & Identifying Areas of Improvement

After learning about the organizational structure of the Student Programs Office, we started analyzing the current data structure. Our organograms helped us identify key stakeholders involved in entering, managing, or using data for booking, invoicing, and receiving feedback from participants. Through semi-structured interviews with relevant staff, we identified what the data management system looked like for these three processes, how data was shared between different branches of the SPO and program participants, and the data analysis and reporting SPO undergoes to communicate their impacts to stakeholders. Ms. Bakyew, the Operations and Bookings Coordinator, walked us through the booking process and highlighted the complexities of their current process, noting how switching between programs and manually entering in data is highly prone to human error. Ms. Young, the Communications and Bookings Coordinator, showed us the current feedback form and process used to collect feedback from program participants and walked us through the invoicing process. In each interview, we identified what programs and apps used to store data, and how the different types of data are entered and organized. We also asked for their opinion on the SPO's current data flow, including how they would feel about switching to a different program that could help automate parts of the data flow.

After our interviews, we created a flowchart of the current bookings and invoicing process, shown in Figure 6. This detailed each step of the process, from when a booking form is filled out to when the booking is invoiced. The icons below each step indicate the programs involved in that step.



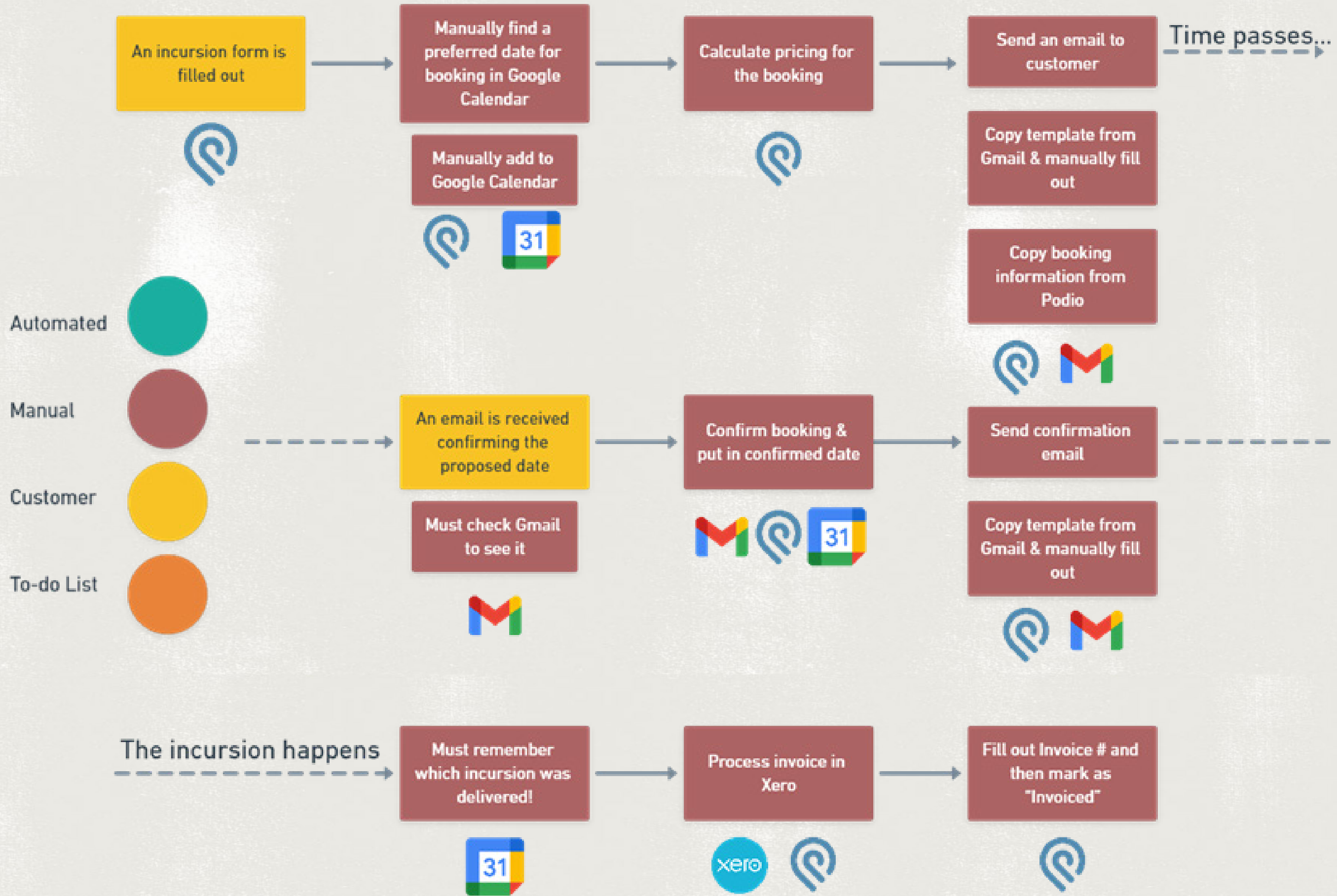


Figure 6: Existing Bookings and Invoicing Processes

The feedback process is shown in Figure 7. It is a much simpler process, but the feedback data does not integrate with Podio and remains in Jotform.

Once we felt we had a solid understanding of how the current bookings, feedback and invoicing process worked, we began focusing on collecting feedback through interviews and brainstorming which criteria is most important and could help address the SPOs needs. We interviewed Ms. Pettifer, the Director of the School of Nature and Climate, and Ms. Horner, the Manager of Student Programs, to figure out how data is shared with funders. They said that the School of Nature and Climate shares their “story” with the funder, and they use data as evidence to back it up. The data used does vary, but they typically post statistics like the total number of students that attended, the number of schools that signed up, or snippets from testimonials written by organizers.

We then interviewed Mr. Manassah, CERES’ strategic partnerships coordinator, to gather technical insight into the CRM Monday.com and its capabilities. Mr. Menassah has been pushing for CERES to adopt Monday.com, pitching a business case to CERES by getting a year trial of Monday.com, which started in June of 2021. He clarified that CERES would be using the Enterprise version of Monday and that Monday would be adopted by all branches of CERES. Additionally, he mentioned that CERES would have a dedicated support team if they used Monday.

In our interview with Ms. Young, she mentioned that the SPO likes to establish a close, personal relationship with their customers. While this is something they already have, it is important that, while automating each of their processes, this human connection is not removed from their workflow. Additionally, we re-interviewed Ms. Bakyew, who mentioned that the current bookings process requires her to remember which sessions have been delivered and had

expressed interest in an automated to-do list to keep track of things.

Finally, we interviewed Ms. Sanahon, the Communications Coordinator, who has been with CERES for 17 years. She offered insight into the organization’s previous attempts at implementing a data infrastructure, including using Microsoft Access and Salesforce. She told us that Salesforce did not work because there wasn’t any formal training for Salesforce, so not many people knew how to use it. Switching to an entirely different system is a lengthy process, as existing data must be copied to the new software. Ms. Sanahon expressed that if a new software has much more value than their current one, CERES would be open to switching.

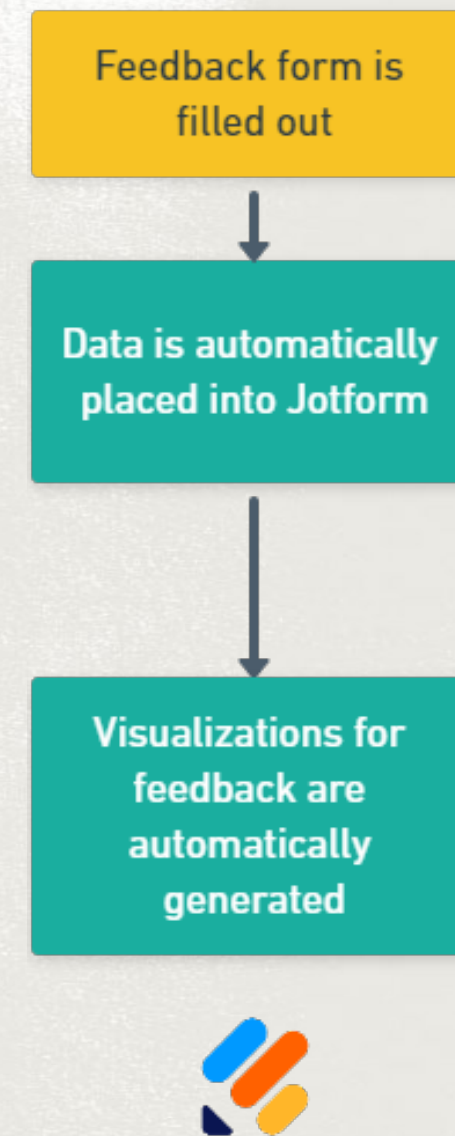
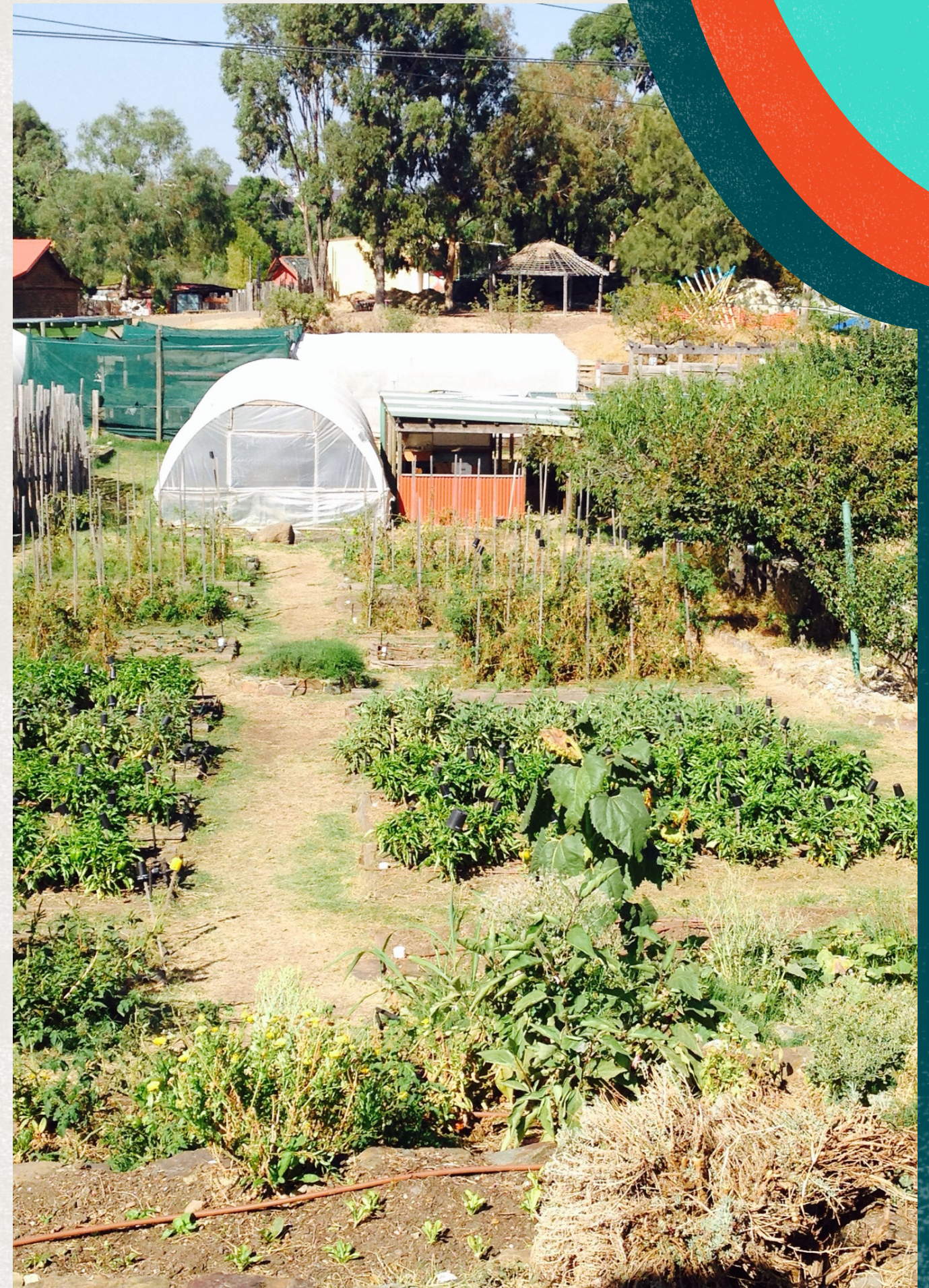


Figure 7: Existing Feedback Process

Evaluating Monday.com versus the Different Tiers of Podio to Determine which Program Best Meets the SPO's Needs

At the time of this project, CERES Environment Park was testing the plausibility of implementing Monday.com as a CRM to use across all their social enterprises and respective departments. The Student Programs Office was aware of this enterprise level partnership and sees the value of a unified system that easily allows data to be shared across the entire organization. However, the SPO had recently implemented Podio as their internal CRM software and were wary of the switching costs that would come with transitioning all their data in Monday.com, which includes transferring existing data and training its staff in a new software.

Through interviews with key members of the SPO, we established a list of criteria that each CRM should meet. The first criteria we created was an "ideal" bookings process. This ideal process represented what the bookings team wanted the bookings process to look like in a perfect world – one where we don't have to consider any technical limitations from software. This ideal process is represented in Figure 8. One important notion we gathered from these interviews was to be wary of excessive automation because the SPO still wanted to maintain a human line of communication with its visitors and patrons. We used this ideal process as a criterion for evaluating these CRMs, to see how closely they could replicate it.



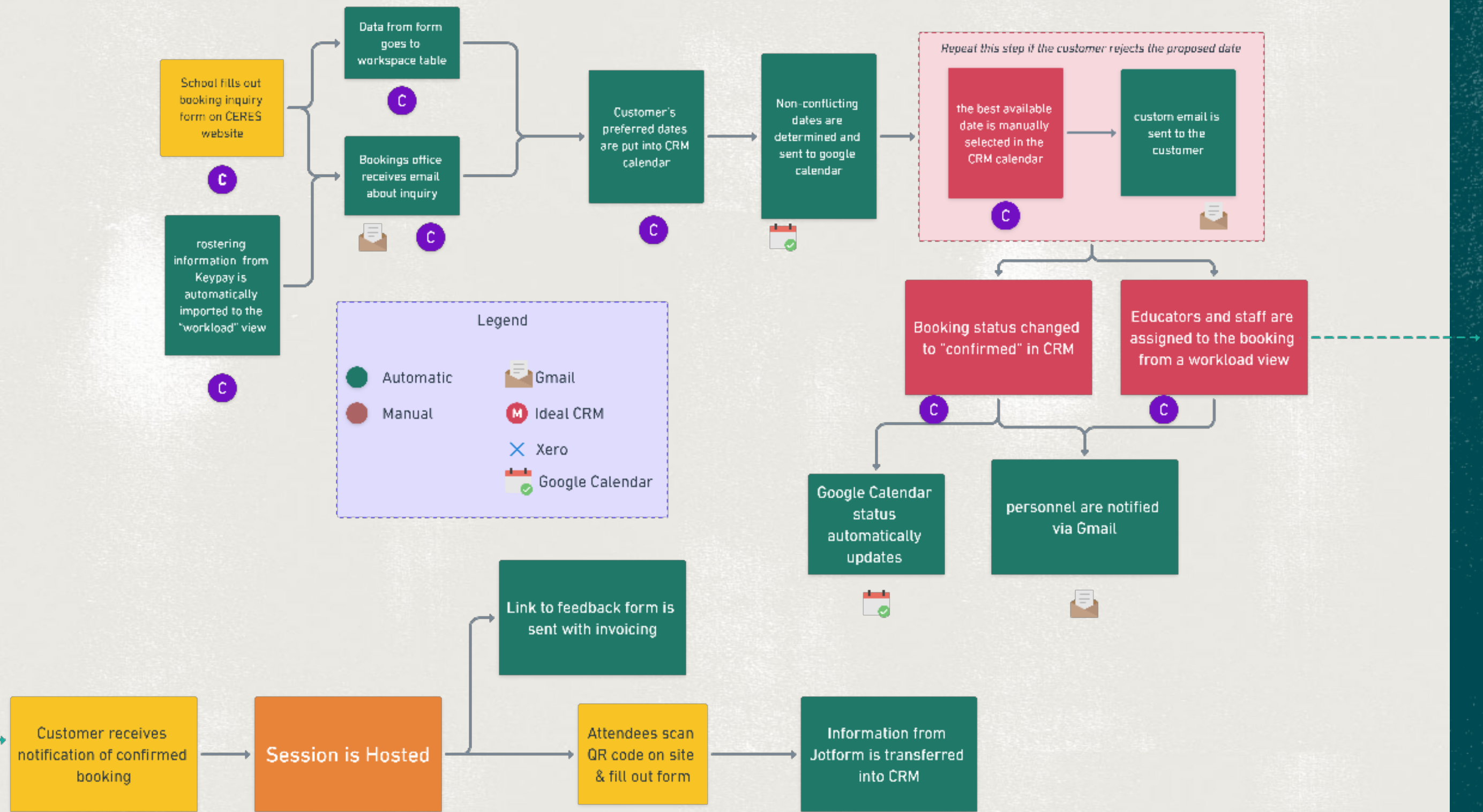


Figure 8: "Ideal" Bookings Process

In Figure 9, we created a more specific list of criteria, where each category represents a feature that each CRM will be compared against. The first of these categories is Scalability, which is the ability of a CRM to increase the amount of data it is collecting, storing, and analyzing. System management rates how easy it is to perform back-end operations, like adding, moving, or deleting data, or implementing integrations and automations. User Interface rates how ergonomic the user interface is, in the context of both front-end users accessing data and back-end users modifying data. Documentation and Tutorials refer to currently available resources documenting the features of each CRM, while Customer Support rates the response time and thoroughness of the CRM's customer support. Finally, Reporting Functions refers to the CRM's ability to filter data and generate reports based on that data.

STUDENT PROGRAMS'S CRM CRITERIA

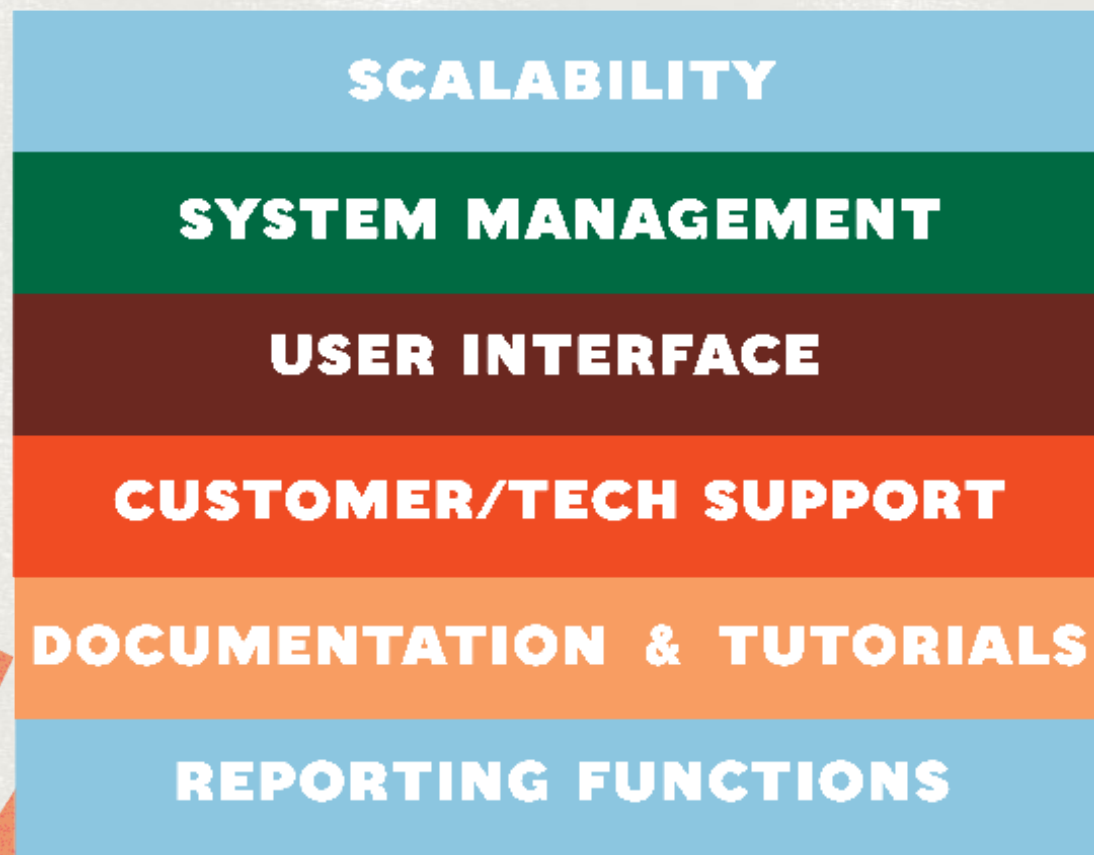


Figure 9: CRM Criteria list for the SPO

We also researched the compatibility between all the programs currently used by the SPO, such as Gmail, Google Calendar, Jotform, Keypay, and Xero. Shown in Figure 10, a green box means that the program is fully integrated, a yellow box indicates that third party software is required to integrate the program, and a red box means that the software cannot be integrated.





				
Integration with Google Suite Apps	Green	Red	Green	Green
Integration with Jotform	Green	Red	Yellow	Green
Integration with Keypay	Yellow	Red	Red	Red
Integration with Xero	Yellow	Red	Yellow	Yellow

Figure 10: Monday and Podio Integration Capabilities

After developing our list of criteria, we gained access to trial versions of Monday.com, Podio Plus, and Podio Premium, and set up "sandboxes" of each CRM to mimic the SPO's data flows that we mapped in the previous objective. We used these sandboxes to put ourselves in the places of the bookings staff at the SPO and determine which CRM can streamline their bookings, invoicing, and feedback processes in the most effective manner, as well as determine which CRM best addresses the feedback we previously collected.

At this point in the project, we were able to rule out Podio Plus and the free version of Podio as viable options for the Student Programs Office. The free version doesn't support any automations or integrations, so it won't be able to streamline any of the processes. We originally evaluated the plus version as a cheaper alternative to Podio Premium, but realized that it lacked the ability to create advanced automations and generate reports, important features that members of the SPO expressed to us as necessary. This left us with two options left to evaluate, which were the enterprise version of Monday and Podio Premium.

An overview of Podio's ecosystem is shown in Figure 11. In Podio, data is composed of attributes, which may represent a single number, date, line of text, or any other quality of that data. Data entries are stored in apps, which serve as a place to store, view, and manage data. Within apps, automations, integrations, and reports can be added. Podio offers two different automation services. The basic automation service has an easy-to-use interface for making basic automations. The advanced service, a feature exclusive to the premium version, provides a greater range of actions but is difficult to use – often requiring knowledge of PHP and/or HTTP protocols. The only integration supported by Podio Premium is Google Calendar. For Gmail, Keypay, Xero, and Jotform, Podio requires Zapier, an external software that integrates software with CRMs that the CRM does not naturally support. While this does mitigate the problem, the SPO would have to pay for Zapier, essentially increasing the cost of using Podio. Finally, Podio has basic reporting functionality, allowing for graphs be created from data within apps. However, reports are tied to only one app, meaning that graphs cannot display data from multiple apps. This makes reporting data from multiple different program formats, like incursions and excursions, impossible to do within Podio, since each program format requires different data and thus must have their own app.

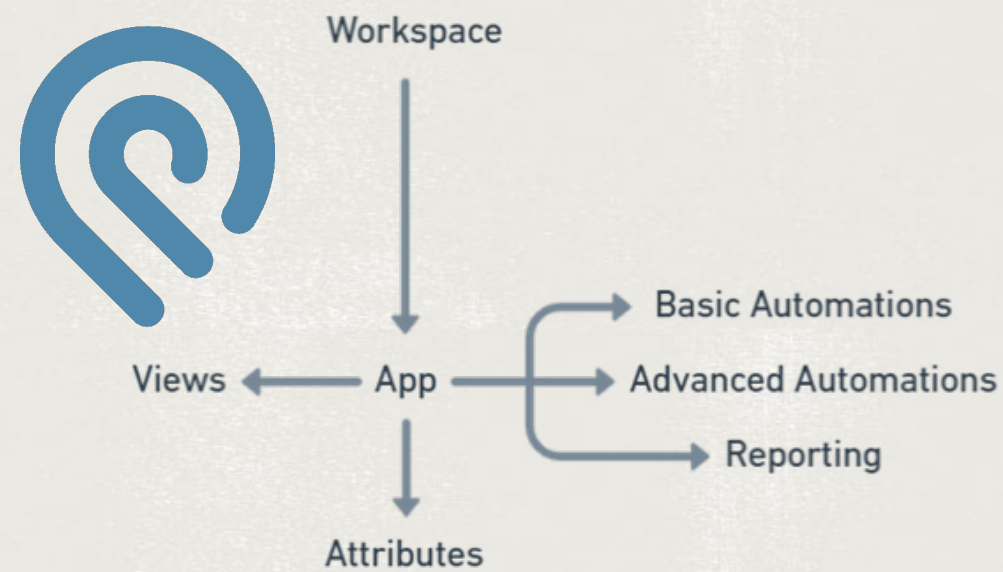


Figure 11: Podio Ecosystem

Figure 12 shows an overview of Monday's ecosystem. Monday.com's ecosystem is also built around attributes that represent qualities of data, including text fields, number fields, or date fields. In Monday, data is stored in boards, which serve as a place to store, view, and manage incoming data, such as booking forms. Monday.com's boards can present data in multiple ways such as tables, calendars, webforms, "cards," and more. Each board has a dedicated section for automations, as well as one for integrations. Here, one can access dozens of pre-made automation templates, or make one themselves. Creating an automation in Monday.com is very simple due to its sentence like syntax. The simplicity of this language means that anyone can create an automated workflow and continuously expand the CRM's functionality. In our Monday.com sandbox, we used automations to automatically move items to different boards depending on the confirmation status of the booking (incoming, date proposed, date confirmed, date rejected, confirmed, delivered, etc).

Monday.com's integrations follow the exact same syntax as its automations, so there is no additional learning involved. The integration menu lives right next to the automation menu, and from here, one can set up automated workflows that allow Monday.com to communicate with other applications. We set up our integrations to eliminate many of the manual steps that bog down the SPO's current bookings process, such as manually filling out and sending emails, calculating the total cost of a potential booking, and creating events in Google Calendar.

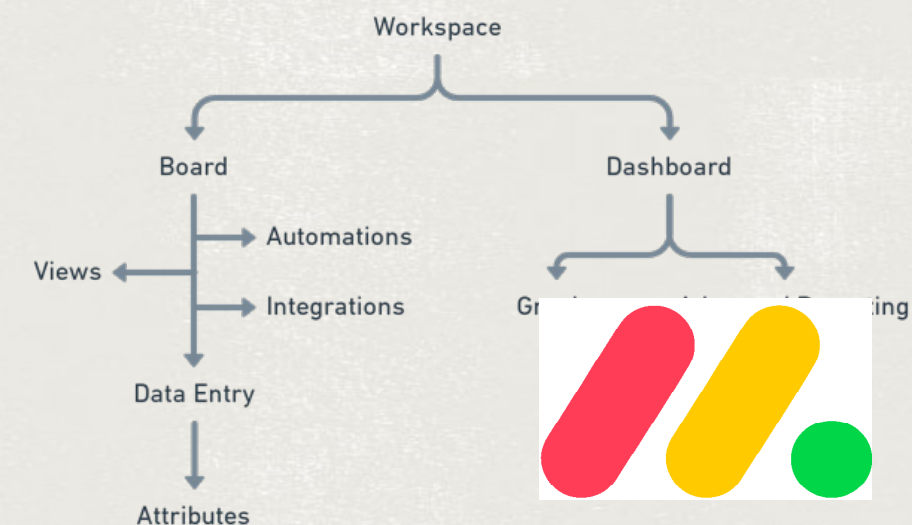


Figure 12: Monday.com Ecosystem

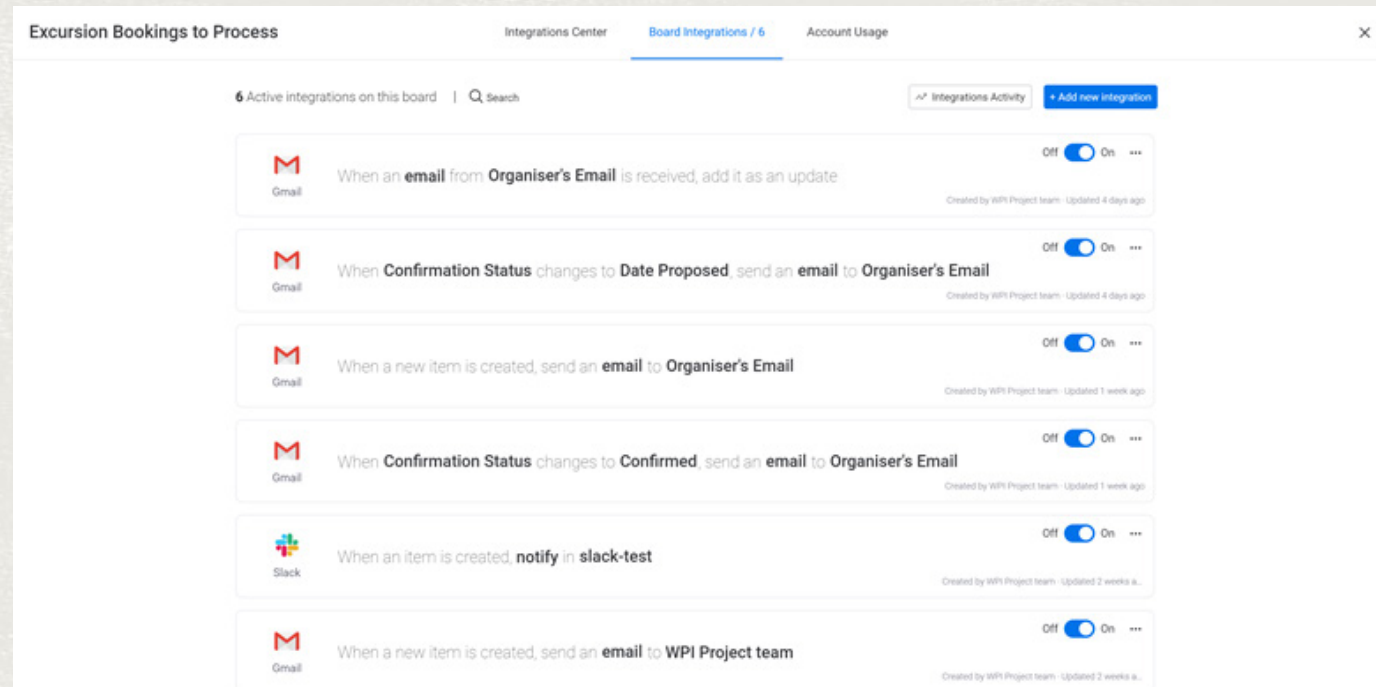


Figure 13: Monday.com Integrations Menu

AFTER WE FAMILIARIZED OURSELVES WITH THE INFRASTRUCTURES AND WORKFLOWS OF EACH PROGRAM, WE BEGAN TO EXPERIMENT AND BUILD OUT OUR SANDBOXES IN EACH PROGRAM, AND COMPARE OUR EXPERIENCE WITH EACH PROGRAM TO THE LIST OF CRITERIA WE PREVIOUSLY MADE.

Scalability

Monday's ecosystem allows for a much more scalable environment. In terms of collecting data, Monday offers more attributes for data than Podio, making data better representative of what the SPO wants. In an organized environment, each board account for one type of data being collected, and new boards can be added as more data is needed. Additionally, Monday allows for data to be moved between boards, which is something that isn't supported in Podio. Monday also allows for data in boards to be placed in groups, which helps organize large quantities of data. In workspaces, Monday allows for boards and dashboards to be placed in subfolders, while Podio does not offer any way of organizing apps.

System Management

Managing data in Monday is a simple, straightforward process. Boards act as Monday.com's back-end, where data is processed, viewed and organized. We also found that automations and integrations are not only much better in Monday.com, but also easier to understand, set up, and expand by users, making work within the back-end of Monday.com easier to accomplish than in Podio.

User Interface

Monday's user interface is much more vibrant than Podio's. When a board is selected, all the data from that board can be viewed from a single screen, with different options for sorting, filtering, and viewing that data. From that same screen, back-end functions such as editing data, modifying the attributes of the data being collected, and adding automations are available as well. In Podio, data can be viewed from one screen, but editing data entries requires going to another screen for each entry. Modifying the attributes of the data being collected requires going to a different screen as well. To add integrations and automations, there is a submenu that must be accessed first before going to the integrations and automations screens. Housing all its features on fewer screens, Monday's user interface is more organized, efficient, and easier to learn than Podio's user interface.

Location	Which program w...	Confirmation Stat...	Session Type	Funding Type	Date Start Time	Date End Time
Queensland North	Indigenous Perspect...	Confirmed	Half Day	Self Funded	Dec 21, 10...	Dec 21, 12...
Renewal Middle	Caring for Climate Ch...	Confirmed	Half Day	Self Funded	Jan 4, 2022...	Jan 4, 2022...
WPI	Towards Zero Waste ...	Confirmed	Full day	Self Funded	Dec 3, 09:0...	
CERES middle school	Exploring Ecosystem...	Confirmed	Full day	Self Funded	Jan 5, 2022...	Jan 5, 2022...
CERES Elementary	Exploring Ecosystem...	Confirmed	Full day	Self Funded	Jan 11, 2022...	Jan 11, 2022...
Breakaway Elemetary	Exploring Ecosystem...	Confirmed	Full day	Self Funded	Jan 4, 2022...	Jan 4, 2022...
emily test	Towards Zero Waste...	Confirmed	Full day	Self Funded	Feb 25, 202...	Feb 26, 202...
Manifest Elementary	Farming for our Future...	Confirmed	Half Day	Self Funded	Jan 6, 2022...	Jan 6, 2022...

Figure 14: A Screenshot of one of our boards in the Monday.com Sandbox

Advanced Reporting Functions

Reporting data in Monday is a much more pliable and dynamic process than that in Podio. Dashboards are completely customizable spaces that are filled with widgets such as charts, graphs, numbers, calendars, rostering information, and more. Dashboards can represent data from as many boards as one wants, creating a centralized place for important statistics. As more data comes in, Monday will automatically update the dashboard to incorporate new data. On dashboards, Monday.com's filtering system really shines. You can filter either the entire dashboard, or just individual widgets by any criteria defined in the boards the dashboard collects data from. This feature allows the Student Programs Office to view revenue, program popularity, and other key statistics over different time frames such as months, years, or fiscal quarters. In Podio, data reporting is tied to only one app, so measuring data from multiple apps is impossible. Additionally, Podio only has a few graphs available, which limits the number of ways that data can be represented.

Documentation, Tutorials, and Customer Support

Monday provides a plethora of well written help resources, with plenty of visual elements and short, concise videos. Podio does have similar resources, but the ones from Monday were more recent and better reflected the current state of the CRM. Monday also had better customer/tech support. Throughout our evaluation process, we had to contact a Monday.com representative multiple times for trial extensions, questions, and general help getting started. Each time, we had responses within hours. However, we cannot offer the same praise for our experience with Podio's customer support, as it took us two weeks and multiple emails to even obtain a free trial of the software. While these were just our individual experiences, they serve as samples for the quality of their customer support, and most likely will be replicated when the SPO needs to reach out to customer support.

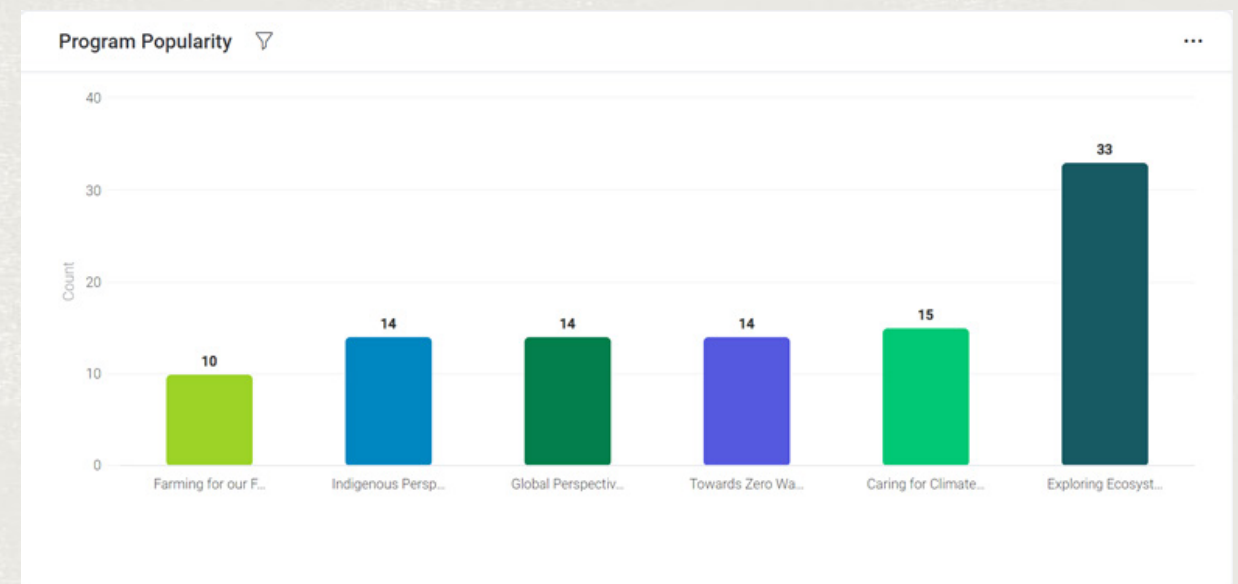


Figure 15: A bar graph made in Monday.com, detailing the popularity of different Excursion Programs



WE FOUND THAT FEATURES SUCH AS WORKFLOW AUTOMATION, INTEGRATIONS, AND ADVANCED REPORTING FUNCTIONALITY, ARE NOT ONLY MUCH BETTER IN MONDAY.COM, BUT ALSO EASIER TO UNDERSTAND, SET UP, AND EXPAND BY USERS. THESE FEATURES NOT ONLY MEAN THAT WORKING WITH THE BACK-END OF MONDAY.COM IS EASIER THAN IT IS IN PODIO, BUT THAT MONDAY.COM CAN BETTER GROW AND EXPAND ALONG WITH THE SPO.

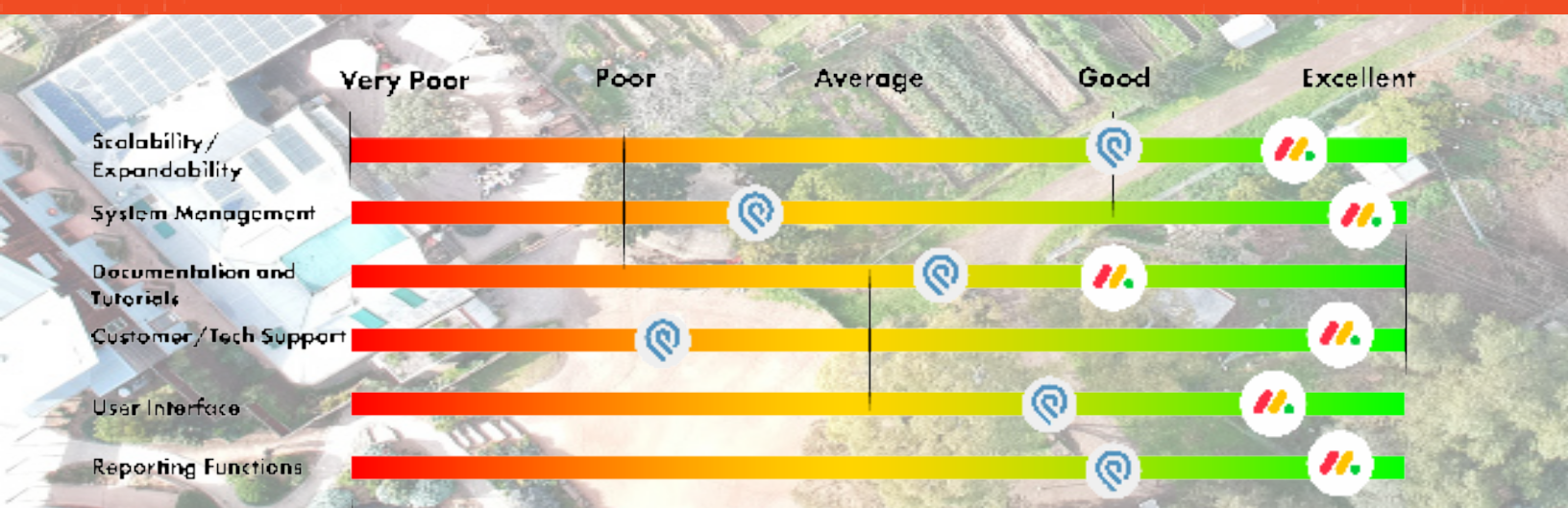


Figure 16: Podio Premium vs. Monday.com evaluation against determined criteria

Our Decision

In our Monday sandbox, we also made sure to address the requests made by Ms. Young and Ms. Bakyew. With our automated emails, organizers can reply to the email and receive a human response, which preserves the close relationships that the SPO facilitates with their customers. We also explored the possibility of a follow-up feedback form, as Monday can take a date and push it back by any amount of time, and then automatically send an email when that date arrives. Finally, we created a to-do list that automatically adds tasks when certain steps happen, like when an email from a customer is received or when a booking is delivered and needs to be invoiced.

While on paper the enterprise version of Monday.com and Podio Premium appear to be very similar CRM offerings, we were able to determine that switching to Monday.com is a better fit for the SPO than expanding their current Podio infrastructure with the premium version. In the weeks leading up to our decision, we were in constant contact with our sponsors from the SPO, as well as other key stakeholders in CERES’s data infrastructure. We were transparent with our findings and opinions on the two programs and discussed with them their hesitancy with switching to a different CRM platform. The main concern that was expressed to us was that of worker fatigue – considering the SPO has only adopted Podio within the last 18 months, SPO administrators were concerned that their employees would be “burnt out” or “reluctant” to learn a new platform. This was a concern that we were receptive to and considered throughout our evaluation process. Monday.com’s streamlined user experience, along with the multitude of online resources and active forums, makes it an easy platform to learn, which means that there would be less worker fatigue associated with switching to Monday compared to switching to a competing CRM. We also discussed with them how we believed the benefits of opting into a CRM used by all of CERES’s social enterprises outweighs other switching costs such as exporting and re-importing data into a new system. Figures 17 and 18 are mappings of our Monday sandbox’s bookings, feedback, and invoicing processes.

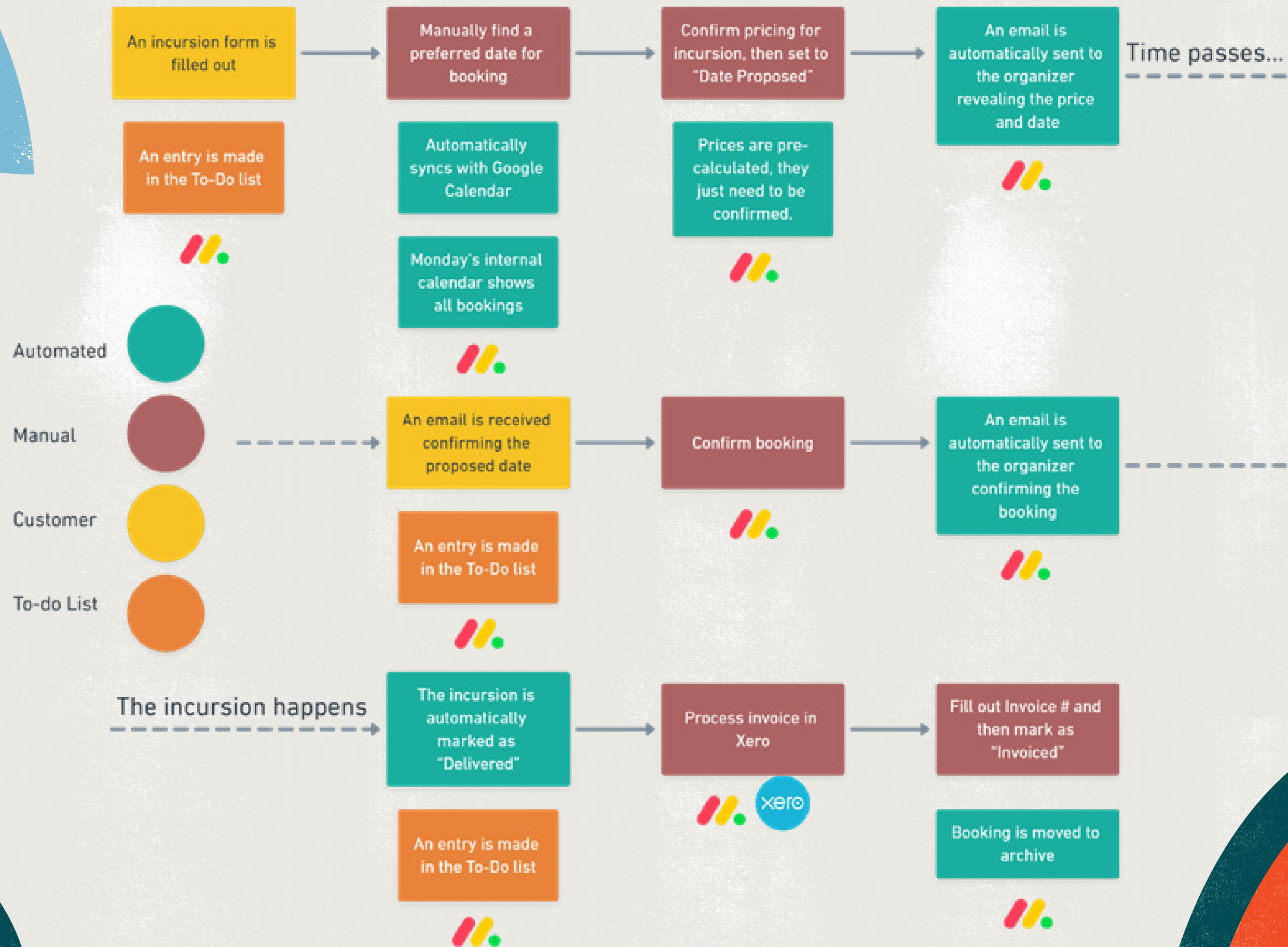


Figure 17: Our Bookings and Invoicing Process

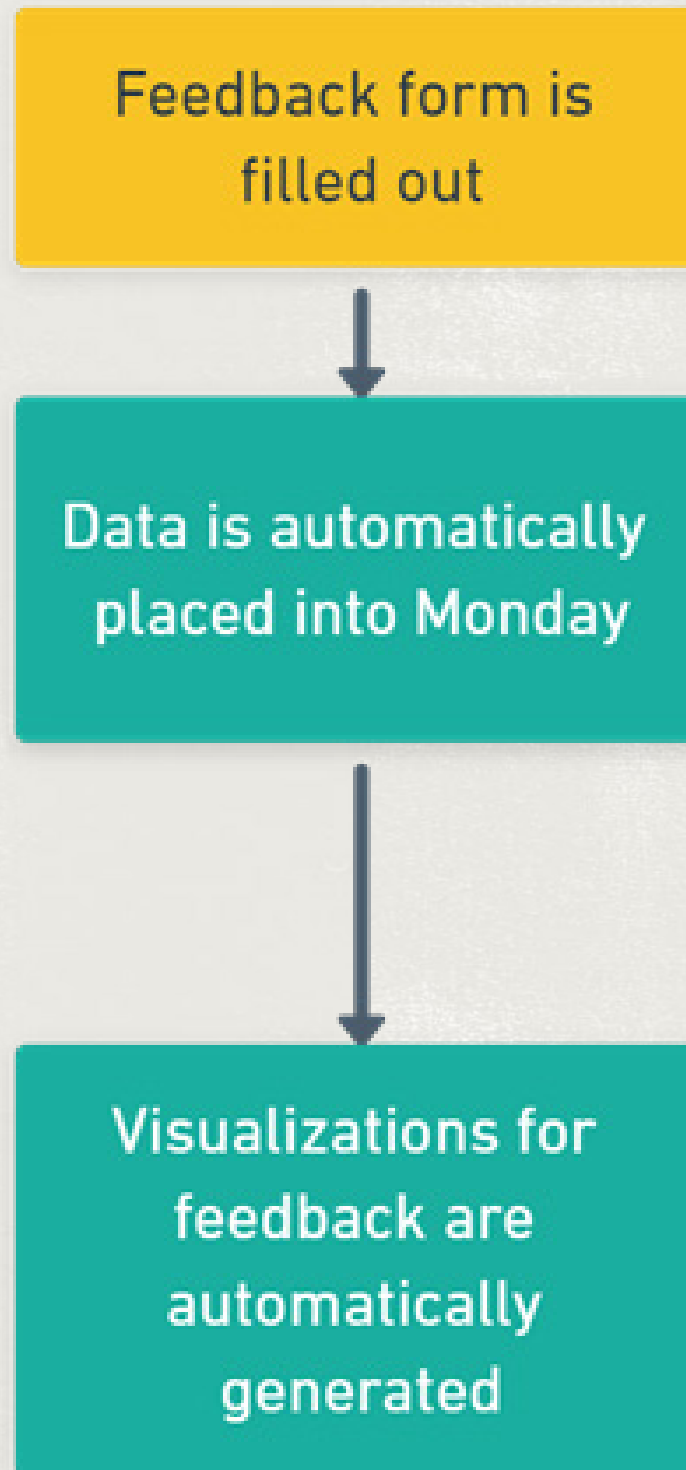


Figure 18: Our Feedback Process

Create Multimedia Resources to Familiarize SPO Employees with their New Data Infrastructure

For the majority of the project, this final objective was up in the air, as this was dependent on the recommendation of the CRM chose in the third objective. Leading up to this, we met with our sponsors from the SPO, as well as other key individuals from the School of Nature and Climate. This was done through a decision-making meeting in which we shared our recommendation for the best CRM software, Monday.com, and asked what ultimately would help jump start the implementation of this software program. After hearing their feedback, the best approach for CERES was to create a series of video tutorials on the user interface and different functionalities of Monday, as well as a video about the bookings, invoicing, and feedback processes we implemented. While there are already an abundance of resources available online about the basics of Monday.com, our tutorials are geared towards the SPO and provide help in the context of their data flow.

We created these video tutorials using Streamlabs OBS to capture our desktop screen and record voiceover. The module of tutorials includes a video about the general UI and how to login and navigate through the different interfaces, a video walkthrough of the complete end to end bookings process, a video explaining the use of dashboards, a video showing how to transfer items to different boards, and a video explaining how to utilize Monday's reporting functions. These tutorial videos will also cover the bookings, invoicing, and feedback processes we made so backend users can quickly familiarize themselves with our improvements. To make our videos as understandable as possible, we chose to make multiple short, concise videos each focused on one specific topic. This ensures that if a SPO staff member has a specific question about Monday, they can quickly find the video they need, as opposed to having everything in one big lecture-style video. Overall, our videos ensure that both front-end users who've never seen Monday before and back-end users looking to tinker with Monday can find the help they need.

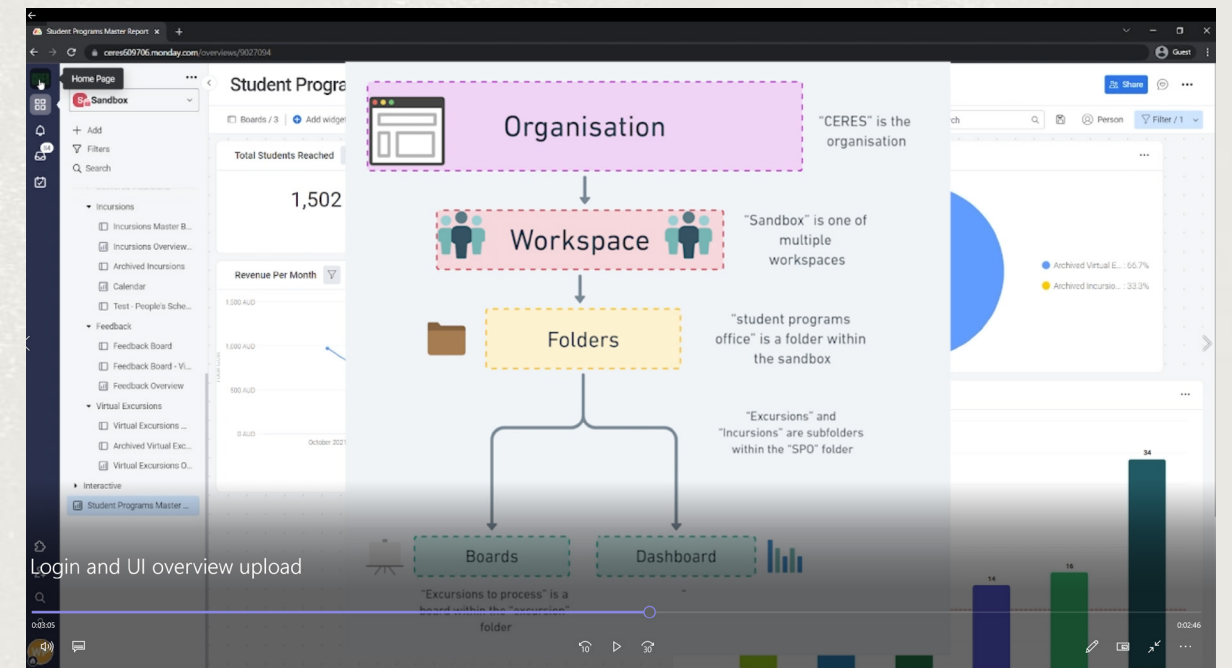


Figure 19: One of Six tutorial videos we made for the SPO

By creating resources to quickly familiarize SPO employees with good data practices, we aim to avoid repeating the past mistakes of previous CRM integration attempts.



CONCLUSION

This project analyzed the CERES' Student Programs Office's (SPO) bookings, feedback, and invoicing processes to identify areas of improvement, and then implement a CRM that would address those areas of improvement. To make a recommendation for the best CRM software to implement, we had to properly understand the current needs of the Student Programs Office and the functionality each program would provide to address those needs.

In interviewing staff and mapping the schools' key processes, not only did we develop specific criteria for their data management needs and recommend a suitable solution, Monday.com, but we learned about how important understanding the user experience is when designing or evaluating any kind of technical tool. By having a stable centralized data infrastructure, the SPO can easily analyze collected data and perform self-evaluations with much reduced complexity.

Dealing specifically with a nonprofit, we had to understand the complexities within these social enterprises that we would not have to consider or tailor to in the public sector. Not only do social enterprises have to be profitable over long periods of time, but they need to readily have feedback data to constantly share with important stakeholders in an increasingly data-based industry. With the advanced reporting functions of Monday.com, CERES can easily produce and share reports about their operations with external stakeholders, some who give CERES funding based on

the reports. Implementing our recommendation of Monday.com will significantly impact their daily operations by streamlining these processes, saving the SPO' bookings' team time and empowering CERES to confidently make business decisions with advanced reporting functions for years down the road.



APPENDIX

Appendix A: Questions for Emily Bakyew

1. What is the most common program used for data collection?
2. What kinds of Data are important to you? What type of data is the most challenging to collect & or automate?
3. How familiar are you with Podio and Mondays? How have you used these programs, if at all?
4. Do you feel that there are any redundant programs in use?
5. How does Podio help you collect that important data and how has it made it easier?
6. What analysis do you have to do to prepare the data to be shared?
7. What processes do you use to share data?

Appendix B: Questions for Chloe Horner

1. What is your role in the school of nature and climate? How long have you been with the school?
2. How is your role involved with the bookings, invoicing, and feedback processes?
3. What are the most important types of data you gather internally and what do you use it for?
4. Describe the process of how the school would apply for funding for programs. What types of data do your stakeholders need to see?

5. How do you come up with the statistics shared in your final reports? How do you think this process could be simplified?
6. What kinds of data and statistics do you share to potential funders outside of your yearly reports? How is this represented?
7. What are your personal experiences with Podio and Mondays? How often do you use them and how have changed your workflow

Appendix C: Questions for Lorna Pettifer

1. What is your role in the school of nature and climate? How long have you been with the school?
2. As director, how does your role contribute to the data analysis process and the strategic or "big picture" thinking process when it comes to your digital infrastructure?
3. How was data collected and stored before CERES made their recent move to a digital infrastructure?
4. Could you walk us through what your vision is for the School of Nature's feedback collections and impact evaluation processes?
5. What are some things you'd like to see improved with your current data management infrastructure?
6. Can you talk to us a little bit about how you collect data? What is the most important type of data you collect and how does it influence your business decisions?
7. What are your personal experiences with Podio and Mondays? How often do you use them and how have changed your workflow
9. Describe the process of how the school would apply for funding for programs. What types of data do your stakeholders need to see?

Appendix D: Questions for Ben Manassah

1. What is your role at CERES and what made you decide to implement the strategic partnership with Monday.com? Why specifically Monday.com?
2. How has the adoption been going so far? Which departments have had successes, have any shortcomings or issues surfaced?
3. What is the difference between the Premium and Enterprise versions of Monday?
4. Approximately how much would the SPO have to pay to opt in to the CERES enterprise level of Monday?
5. How would you be able to integrate Xero and Keypay with Monday?
6. How familiar are you with Podio? Is there anything you like/dislike about it?
7. Chloe reached out to us to set up a form for the 2022 booking process for Nature Play through Monday.com... Is there any way we could get access to the CERES Monday.com system?
8. Are you able to collect payment information in Monday? How could we integrate the invoicing process?
9. Is it possible to automatically check for conflicting dates for program bookings in Monday?
10. We're having some trouble getting the integration with google calendar to work. Could you possibly help us with that?

Appendix E: Questions for Kat Young

1. What is your role in CERES School of Nature? How long have you been with the school?
2. How has the bookings process changed since you've joined?
3. What is the most challenging part of managing bookings?
4. Has Podio helped with these challenges? If so, in what ways?
5. From our understanding, CERES is currently evaluating the CRM "Monday". Have you begun to explore Monday? How does it compare to Podio?
6. What areas of the booking process do you think could be automated or streamlined?
7. Could you describe the current system for feedback and invoicing? Talk about improvements/strengths.

Appendix F: Questions for Michelle Sanahon

1. What is your role at CERES and how long have you been here?
 2. Why was the decision made to start using Podio? What other programs were considered?
 3. How did you help implement the Podio system?
 4. What features did you like about the current system? /dislikes?
 5. How involved are you in gathering data for the feedback process? How does that process work and how is Podio involved?
 6. How did you set up the integrations and apps in Podio?
 7. Are you familiar with the Plus and Premium versions of Podio?
- Yes: Do you think the SPO would benefit from upgrading? How?

No: Explain the current upgrade features for them

8. Are you familiar with Monday.com? If not, *explain some of the benefits we've found so far*

9. Would you like for the SPO to keep using podio, or adapt to the enterprise level monday.com structure if it is implemented?

REFERENCES

Bopp, C., Harmon, E., & Volda, A. (2017, May 1). Disempowered by data: Non-profits, Social Enterprises, and the consequences of data-driven work. *Disempowered by Data | Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*. Retrieved October 13, 2021, from <https://dl.acm.org/doi/abs/10.1145/3025453.3025694>.

Carleton-Hug A, Hug JW. Challenges and opportunities for evaluating environmental education programs. *Eval Program Plann*. 2010 May;33(2):159-64. doi: 10.1016/j.evalprogplan.2009.07.005. Epub 2009 Aug 3. PMID: 19712976.

Decker, A. (2021, June 9). The Ultimate Guide to Nonprofit Marketing in 2021. *HubSpot Blog*. Retrieved October 13, 2021, from <https://blog.hubspot.com/marketing/how-to-run-a-lean-mean-nonprofit-marketing-machine>.

Deitelbaum, L. S., Khor, S. C., & Richardson, V. S. (n.d.). Assessment of Centro Ambiental Santa Ana. Worcester Polytechnic Institute. Dolnicar, S., & Lazarevski, K. (2009). Marketing in non-profit organizations: An international perspective. *International Marketing Review*, 26(3), 275–291. <https://doi.org/10.1108/02651330910960780>

During, R. (2016). (rep.). *Enabling the Flourishing and Evolution of Social Entrepreneurship for Innovative and Inclusive Societies* (pp. 1–57). Wageningen, Netherlands: Alterra - Biodiversiteit en beleid.

Flory, P. (2011). *Toward a taxonomy of reusable Crm requirements for the Not-for-Profit Sector* (dissertation). School of Information Systems, Computing and Mathematics Brunel University.

Hoover, C. (2019, June 25). The 600 year history of the Social Enterprise Movement. *MovingWorlds Blog*. Retrieved October 13, 2021, from <https://blog.movingworlds.org/the-600-year-history-of-the-social-enterprise-movement-and-how-the-next-6-years-are-its-most-important/>.

Jain, S. C. (2005). Crm shifts the paradigm. *Journal of Strategic Marketing*, 13(4), 275–291. <https://doi.org/10.1080/09652540500338329>

Jeffrey Cheah, Azlan Amran, Sofri Yahya, Internal oriented resources and social enterprises' performance: How can social enterprises help themselves before helping others?, *Journal of Cleaner Production*, Volume 211, 2019, Pages 607-619, ISSN 0959-6526, <https://doi.org/10.1016/j.jclepro.2018.11.203>. (<https://www.sciencedirect.com/science/article/pii/S0959652618336060>)

Kevork, E. K., & Vrechopoulos, A. P. (2009, February 6). CRM literature: Conceptual and functional insights by keyword analysis. *Marketing Intelligence & Planning*. <https://www.emerald.com/insight/content/doi/10.1108/02634500910928362/full/html>.

Knox, C. C., & Wang, X. H. (2016, March 7). Capacity to implement performance measurement in small non-profits. *Digital Scholarship @ Texas Southern University*. Retrieved October 13, 2021, from <http://digitalscholarship.tsu.edu/jpmsp/vol22/iss3/3>.

Lowe, S. (n.d.). 8 awesome NON-PROFIT CRM options for your organization [updated 2021]. Blog. <https://blog.elevationweb.org/6-awesome-nonprofit-crm-options>.

Mara Willemijn van Twuijver, L. O. (n.d.). Rural social enterprises in Europe: A systematic literature review - Mara Willemijn van Twuijver, Lucas OLMEDO, Mary O'Shaughnessy, Thia hennesty, 2020. *SAGE Journals*. <https://journals.sagepub.com/doi/full/10.1177/0269094220907024>.

Nasir, S. (2005, August 10). The development, change, and transformation of management information Systems (MIS): A content analysis of articles published in business and marketing journals. *International Journal of Information Management*. <https://www.sciencedirect.com/science/article/pii/S0268401205000411>.

Pacifico, A. C., Vaughan, B. M., Berthelette, C. J., & Garcia, S. R. (n.d.). *Data Management for NonProfit Organizations*. Worcester Polytechnic Institute.

Schniederjans, M. J., Cao, Q., & Ching Gu, V. (2012). An operations management perspective on adopting customer-relations management (crm) software. *International Journal of Production Research*, 50(14), 3974–3987. <https://doi.org/10.1080/00207543.2011.613865>

Yale School of Business. (2009, September 2). What is the for-profit social

enterprise? Yale Insights. <https://insights.som.yale.edu/insights/what-is-the-for-profit-social-enterprise>.