**DE GRUYTER**

**Research Article**

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# Managing the Electronic Resources Lifecycle with Kanban

**Abstract:** This paper discusses the implementation of Kanban as the framework for managing electronic resources workflows by presenting case studies from the University of Saskatchewan Library and at the Saskatchewan Polytechnic Library in Saskatchewan, Canada. Librarians at both institutions independently chose to adopt Kanban to manage electronic resources work, applying the essential Kanban framework of lists titled *to do, in progress,* and *done.* Examining the similarities and differences in each librarian's experience and discussing two different software programs used, we have included descriptions of our implementation, in-depth information about the origins of Kanban, and its more recent applications to technical work. We found numerous benefits—including reduced email communication and improved due date tracking—to our implementation of Kanban and no significant drawbacks. Interest in applications of Kanban in libraries is on the rise, and we found there were significant benefits of using Kanban for electronic resources teams when used in conjunction with other tools (e.g., spreadsheets, email, ERMS).

**Keywords:** project management; electronic resource management system (ERMS); Trello; KanbanFlow; communication

## 1 Introduction

As the volume of electronic resources (e-resources) subscriptions has increased in academic libraries over the past ten years and the complexity of managing them became clear, discussions about workflows and tools to manage the e-resources lifecycle have proliferated in the published literature (Collins & Grogg, 2011; Dowdy & Raeford, 2014; Imre, Oberg, Vieira, & Duggan, 2016; Minchew & Slutskaya, 2016; Ostergaard, 2016; Pesch, 2008; Wilson, 2011). Unlike a print management model where a physical item is acquired, catalogued, and put on a shelf, completing the technical services workflows for that item, e-resources have ongoing needs (e.g., managing perpetual access entitlements, updating KBART files, processing annual renewals) (Pesch, 2008). Electronic Resource Management Systems (ERMS) have emerged as one solution to manage the e-resources lifecycle. From the early years of ERMS implementation however, these systems have not met librarians' needs. Collins and Grogg (2011) conducted a survey of librarians and vendors and identified librarians' top six priorities for ERMS, none of which were being met well by any available system. Managing the information about e-resources is an ongoing challenge that can be managed in many ways. In this article, we focus on the application of Kanban to e-resources lifecycle management tasks (e.g., ongoing evaluation and management, annual review for renewal, cancellation & management) in two different academic library settings. In the absence of a single system like an ERMS to manage the information well, is there a way to manage the work in a more holistic manner to alleviate the pressures imposed by the nature of ongoing e-resources work in technical services? We have successfully implemented Kanban process

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management to handle the ongoing flow of e-resources-related work in our libraries and will provide the background and impetus for our decisions. We will also include recommendations and advice for how others can implement a similar system to address their own library's needs for e-resources management.

# 2 Background

## 2.1 Kanban

Lean management was developed at Toyota in the 1950s to improve the efficiency of vehicle production and pursue the goal of eliminating waste and optimizing productivity in repetitive processes (Ostergaard, 2016). One of the most popular processes based on Lean management philosophy is Kanban, which seeks to balance demand with capacity. The three fundamental principles of Kanban are:
(a) limit work in progress (WIP) e.g., a new task should only be started when an existing one is delivered),
(b) visualize the workflow, and
(c) measure the lead time (i.e., the time it takes to finish one item). (Law & Lárusdóttir, 2015, p. 588)
Kanban is a process tool (a way of accomplishing a task in a specific way) (Kniberg & Skarin, 2010) that can help users work more effectively by—to a certain extent—telling them what to do. It uses *cards* attached to each piece of work; they contain information to assist in completion of the larger scope of work. In manufacturing, these cards act as a signal to trigger tasks and communicate how much of a product is required and when. Cards are moved between stages of the project as the materials are produced (Ahmad, Markkula, & Oivo, 2013; Law & Lárusdóttir, 2015; Ostergaard, 2016). Since its creation at Toyota, this philosophy of managing work has been implemented in other industries: to grocery and retail inventory management and to information technology sectors, especially for software development.

*Kanban* means signboard or billboard in Japanese, and a Kanban Board is a tool to visualize, organize, and complete work. Kanban is well-suited for any process that is repetitive, whether it is a limited project or ongoing, somewhat regular work (Law & Lárusdóttir, 2015; Ostergaard, 2016). Kanban boards allow team members to visualize WIP and see the progress of tasks completed and work remaining. Kanban boards have at least three lists: *to do*, *in progress/doing*, and *done*; the *in progress* list may be further subdivided depending on the project (Law & Lárusdóttir, 2015; Minchew & Slutskaya, 2016; Nakazawa & Tanaka, 2016). Each list is populated by cards, which are dragged and moved across the board throughout the process (Bass, 2016; Minchew, 2015; Ostergaard, 2016). The tasks are not time-limited, but visualizing the tasks can help predict the time required.
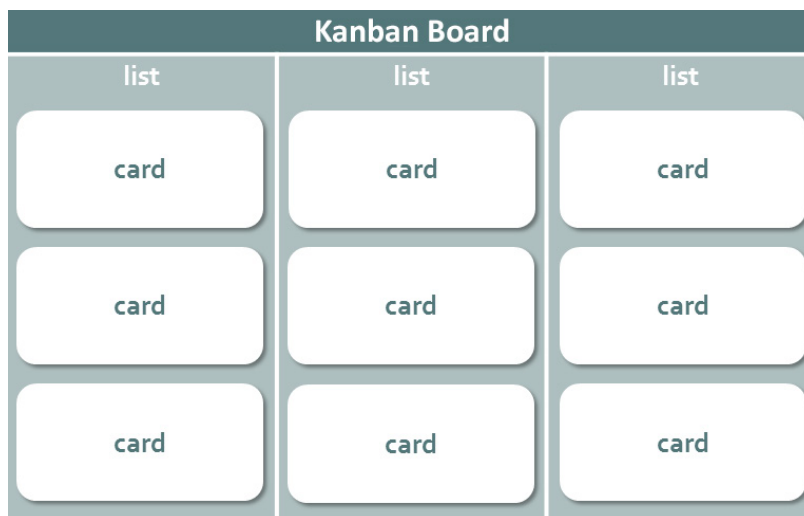


**Fig. 1:** Sample layout of a Kanban board, with 3 *lists*, including *cards* to represent tasks

Use of Kanban in information technology (IT) and software development has been traced to David J. Anderson and a small team at Microsoft in 2004 who were struggling until they started using Kanban to improve their work processes (Ahmad et al., 2013; Law & Lárusdóttir, 2015). Benefits of Kanban in software development include improved lead time, quality, communication and coordination, a better understanding of the whole process, and more timely problem solving (Ahmad et al., 2013; Ikonen, Pirinen, Fagerholm, Kettunen, & Abrahamsson, 2011; Law & Lárusdóttir, 2015). Given the similarities between managing IT projects and managing e-resources work, we expected to see similar benefits in libraries. Implementing and setting up Kanban requires very little or no training and similar overhead with the wide availability of free online Kanban tools (Ostergaard, 2016). Kanban is flexible and can be implemented for any kind of ongoing work whether it is for a specific short-term project or more long-term project (Ikonen et al., 2011), like the e-resources lifecycle. The goals of Kanban in IT are to reduce production time, increase speed of information exchange, and increase productivity (Ostergaard, 2016). Studies examining the use of Kanban in IT projects found that as team members work together on a project visualized on a board, problem solving collaboratively when cards get held up in process, an additional benefit can be improved relationships and communication among team members (Law & Lárusdóttir, 2015; Oza, Fagerholm, & Munch, 2013). Because of its role in improving processes incrementally, Kanban can also be considered a change management approach (Kniberg & Skarin, 2010).

Some of the challenges identified in applying Kanban to technology work are that Kanban 1) relies on other systems/processes to work, 2) does not work independently, and 3) requires the team using Kanban to communicate and collaborate with each other (Ahmad et al., 2013). Continually monitoring the progress of a card or switching between tasks can make Kanban seem more disruptive than other project management systems like Agile (including Scrum) (Law & Lárusdóttir, 2015). However, Kanban has been found to be more consistent than Scrum when applied against the project management factors (schedule, resources, budget, quality, risk, scope) in a recent statistical analysis (Lei, Ganjeizadeh, Jayachandran, & Ozcan, 2017).

## 2.2 The library context

In the past several years, published library literature has discussed ERMS from many perspectives. As technical services librarians realized and admitted that e-resources require ongoing maintenance and management (Dowdy & Raeford, 2014), the search has been on for the perfect tool. At the outset, ERMS looked like the tool to fill the identified need for managing e-resources information, but those tools have fallen short. Specifically, the workflow management aspects are too static and don't allow for a librarian to customize them to meet needs in their library. The time required to implement an ERMS is significant, and many libraries that have ERMS systems do not consider them fully implemented (Bross & Magagnosc, 2016; Collins & Grogg, 2011; Dowdy & Raeford, 2014; Minchew & Slutskaya, 2016; Wilson, 2011). Another challenge is that the workflows associated with e-resources change regularly, thus requiring a flexible system that allows changes without significant re-programming or configuration (Dowdy & Raeford, 2014; Imre et al., 2016). Some libraries have developed their own solutions and shared them with others, most notably CORAL (Centralized Online Resources Acquisitions and Licensing) developed by University of Notre Dame's Hesburgh Libraries in 2010 (Imre et al., 2016; CORAL, 2017). However, due to the general limitations of ERMS with pushing information out and managing the workflow without significant human intervention (Dowdy & Raeford, 2014), supplementary systems for managing this work are common.

In our own search for the perfect e-resources management tool, we found Kanban boards to be a promising strategy and implemented them to manage e-resources work in two different types of academic libraries, a medium sized medical-doctoral university and a small multi-campus polytechnic that offers a wide range of advanced education credentials including advanced diplomas, certificates, and training for apprenticeship programs. In both contexts, as the librarians responsible for the e-resources work, we both grappled with the same challenges and sought solutions. Independently of each other, we both turned to Kanban as a method for addressing the work in our libraries, implemented different software to build our Kanban boards, and developed local customizations to the standard Kanban process.

The University of Saskatchewan (U of S) is located in Saskatoon, Saskatchewan, Canada. It was established in 1907 and currently has 7 library locations on campus that serve approximately 20,000 students and over 5,500 staff and faculty. The U of S Library has 5 FTE employees who manage e-resources, including one librarian (first author, McLean). Originally established in 1988 as the Saskatchewan Institute of Applied Arts and Sciences (SIAST), Saskatchewan Polytechnic (Sask Polytech) received polytechnic status in Canada in 2014. A polytechnic education in Canada includes a very practical, hands-on, skills-intensive approach of learning within a traditional college setting however, often with the depth of study normally associated with a university program (Polytechnics Canada, 2015). Sask Polytech has distributed locations across Saskatchewan at four campuses (Moose Jaw, Prince Albert, Regina, and Saskatoon). The school serves just under 10,000 students and approximately 1,700 staff and faculty, with 2.4 FTE employees who manage electronic resources, including one librarian (second author, Canham).

# 3 Implementing Kanban

Kanban is an excellent philosophy for managing work that is flexible and ensuring that goals and deadlines are met without time wasted on extraneous tasks (also known as "just in time"). Once Kanban has been chosen for a project or a set of work, and a board has been set up, an individual or team can create a card for an individual task or piece of work and follow that card through the different lists, from *to do*, to *doing*, to *done*.

Several different project management software solutions are available that use Kanban. Although both of our libraries experienced the same challenges with e-resources management, which we will describe below, we each implemented Kanban to support our e-resources management needs in unique ways. The ability to customize a board is one of the great strengths of Kanban, and we have highlighted our two unique use cases below using the Trello and KanbanFlow products. Other tools that are available for low or no cost include LeanKit and Kanbanize, and other project management tools like Jira have available Kanban tools embedded in them. Kanban boards do not require technology or specialized software, they can also be created offline, on a whiteboard or other surface with markers or sticky notes. Regardless of format, a Kanban board with its visual representation of the work in progress gives everyone on the team a shared perspective on the work. Kanban is easy to adopt because it is simple to implement, has low overhead costs, and does not require specialized skills or software (Law & Lárusdóttir, 2015).

## 3.1 University of Saskatchewan

At the U of S, we have been in a loop of process redevelopment for our e-resources management for several years. Requiring integration between three teams (acquisitions, access, cataloguing), the workflows grew in complexity and yet were not flexible enough for the changing nature of the work. We tried several tools, from checklists made in MS Word to the tasks feature in Microsoft Outlook which generated several emails to a possible CORAL implementation. None of the solutions provided enough improvement or support to make e-resources management any easier than our existing solutions, and some of them would have required a significant amount of work before any benefits were realized (implementing a new ERMS can take from 2–3 years (Dowdy & Raeford, 2014), and we already had one that did not meet all of our needs). McLean (the e-resources librarian) had used Trello (http://www.trello.com) for some collaborative projects in the library and had come across some examples of how other libraries were using Trello to manage different aspects of e-resources work in the published literature (Garofalo, 2014; Minchew, 2015; Minchew & Slutskaya, 2016; Ostergaard, 2016). Trello has a robust free version that was relatively easy to learn and flexible enough to meet our needs (Minchew, 2015; Minchew & Slutskaya, 2016; Ostergaard, 2016), so we decided to try using it for e-resources work. We began by building a traditional Kanban board with *to do*, *doing*, and *done* lists. Starting with it as an individual tool, we populated the board with cards representing current tasks associated with the e-resources lifecycle work over six months and introduced the tool to

members of the acquisitions team in October 2016, primarily to deal with the over 400 annual renewals we manage. Each team member spent some time with the librarian to learn about how the software and Kanban philosophy worked. Trello has several useful online tutorials on getting started, and as a team, we also practiced making cards for non-work tasks like "take a colleague for coffee" and practiced assigning cards to each other, moving them between lists, and doing other tasks required to use Trello. Once the team adopted Trello, we saw an immediate and drastic reduction in the number of emails sent to discuss ongoing work—from over 20 emails per week to zero between members of the team and the librarian. Trello's due date feature kept everyone apprised of when work needed to be completed by. We no longer needed to check in with each other on who is working on what, which stage the project is at, or what a holdup was. We no longer needed to forward an email from the shared inbox to someone's personal email and wait for a reply about a certain task; it was visually represented on the board.

Using Kanban for e-resources work (see an example of our board in Fig 2), we quickly discovered that our *doing* list was overwhelmingly long because it was full of cards where we were on hold until someone else replied or completed their phase of the work so we could continue. Therefore, we created a new *waiting on response* list in between our *doing* and *done* lists to clearly identify that work. The cards in this list represented tasks that didn't require immediate attention, but kept them visible so we could follow up with others as needed. Using the *waiting on response list*, we developed a new communications strategy for follow-up with internal or external stakeholders. Any card in that list was reviewed weekly, and the person or group we were waiting on was regularly contacted. This has helped us stay on top of which tasks were waiting and ensure that they did not go unfinished because we were waiting for someone else to respond. We also added an *on ice* list at the end of our workflow for those cards that we started but then lost importance or became less timely. This list provided a record of what we started on in the past that was easy to find just in case the work associated with those cards was revived. We used a single board to manage the e-resources lifecycle, including cancellations, renewals, negotiations for new purchases, and licensing. Cards were either assigned or claimed by a member of the team according to the type of work required, and whoever was assigned to the card was responsible for moving it through the different lists with a simple drag and drop on our shared online board, and for assigning it to someone else when needed (Minchew, 2015). Any member of the team could quickly search the board by keyword or browse by cards assigned to each person.
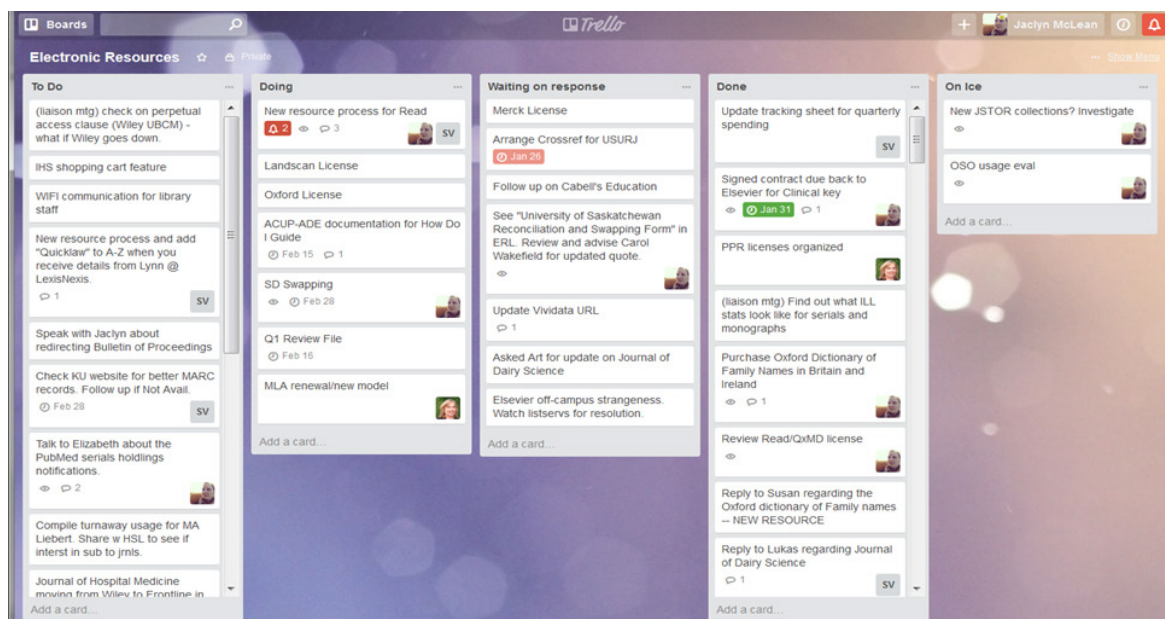


**Fig 2.** U of S Library E-resources Board in Trello

By using Kanban to visualize and manage the e-resources work, backlogs and bottlenecks became much easier to identify, especially as cards were assigned to members of the team; it was easy to follow up with anyone who had a lot of cards that were not moving and support each other in getting any work done in a timely way. The board also supported communication with our clients and vendors. We developed a systematic process for communication with our stakeholders, which was effective because all members of the team had a better idea of the work in progress and who to talk to about specific tasks. Visualizing WIP raised our awareness of deadlines, and provided opportunities to update and change our workflows as needed. We no longer needed to redevelop significant documentation because the updated processes flow from the identified needs. All team members are able to suggest changes, and participate in the process. Any process updates we have made still fit the Kanban model of tracking work as it flows through the different stages: *to do*, *doing*, and *done*. The board originally addressed mostly the acquisitions teams' portions of the workflow, but in 2017, we brought in members of the cataloguing and access teams and discussed how their workflows (that intersect and overlap with those in acquisitions) could be integrated with a Kanban mindset. In doing so, we met some of our first challenges with the adoption of Trello, and found that the creation of more boards to manage the varied types of work was necessary. These challenges are addressed and discussed in the "Lessons Learned" section below.

## 3.2 Saskatchewan Polytechnic

The primary need at Sask Polytech leading to our Kanban implementation was for a tool to better manage communications among members of the e-resources team. The distributed nature of Sask Polytech across four campuses and of the e-resources staff at two different campuses made it difficult to track assignments and projects with email alone. We had attempted to address this issue with several makeshift solutions, all with varying degrees of success. Unfortunately, none of them addressed all our problems—a common experience in e-resources workflow management (Minchew & Slutskaya, 2016). Some of the solutions we tried to track and manage e-resources work included wider application of MS Excel spreadsheets (which became very large and unwieldy and did not address our communications needs) and Microsoft Project (which had workflows that were too restrictive and inflexible).

In the fall of 2015, after recommendations from software developers and a brief testing period by Canham (the librarian), we adopted and implemented KanbanFlow (http://kanbanflow.com) using a Kanban philosophy. KanbanFlow is just one of the many software options available for implementing Kanban philosophy. A flexible free version of this Lean project management tool that allows real-time collaboration between team members is available online (KanbanFlow, 2017). We decided to upgrade to a paid account (for a small fee) to take advantage of the enhanced reporting and tracking features available. KanbanFlow was very quick and easy to set up and learn how to use. The e-resources staff were comfortable with using the software within a week of implementation. Upon implementation of two Kanban boards, the benefits were immediately evident: 1) email among team members was significantly reduced; 2) the visual nature of the boards provided a way to track the work in progress and see what everyone was working on with a quick glance; and most importantly, 3) by using Kanban, we had a way to communicate about all the different types of work we were doing in one place (everything from cataloguing to license renewals). These immediate benefits helped facilitated buy-in and adoption among team members.

We required two boards because we did not already have any software in place for managing technical troubleshooting, so we created one board for our e-resources work and one for recording and tracking troubleshooting tickets. Both boards naturally aligned well with the Kanban process, and we started with *to do*, *in progress*, and *done* as the initial lists on both of our boards. To address urgent work and ensure we met deadlines on our e-resources board, we also added a *do today* list to highlight those tasks. Cards were easy to create in KanbanFlow and could be edited and dragged and dropped between lists within a board with ease. We set deadlines for cards, allowing us to prioritize work in progress. We also attached relevant files (e.g., screenshots or MS Excel files) to cards to keep all the information about a certain task in one place (a feature of the paid subscription).
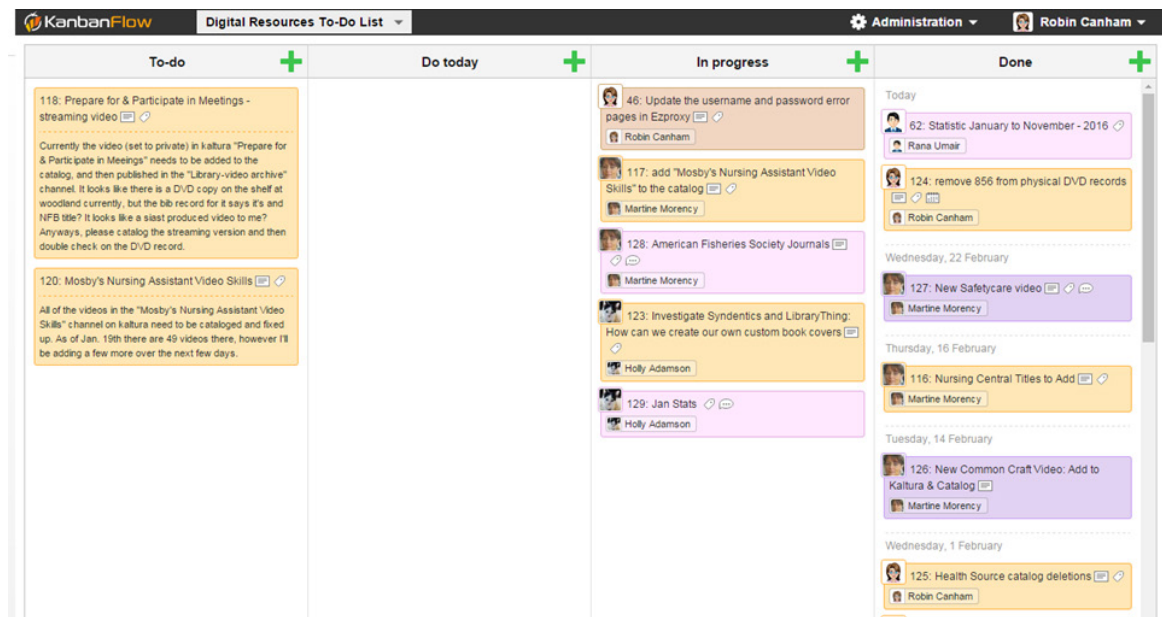
**Fig. 3:** Sask Polytech E-resources Board in KanbanFlow

The reduction in emails between team members was immediate and significant, but the benefits to our communication went beyond this factor. We found that the quality of communication between staff also increased—from a series of back and forth emails to assign and discuss work at the task level (most initiated by Canham) to using the board to facilitate communication. Each member of the team could create cards for different tasks, assign them to themselves or others, and set priorities with due dates. Email tasks did not get buried in individual team members' inboxes, and cards were updated in real time. Everyone on the team knew what the others were working on even though we were not physically located at the same campus. Once cards were moved to the *done* list, they remained searchable and could easily be moved back to an active list if required. This was especially valuable on the troubleshooting board since we treated the cards like *tickets* in a traditional online helpdesk ticketing system (e.g., Jira, Zendesk). The *done* list on the troubleshooting board acted as a knowledge base that documented troubleshooting information and fixes on each card when tasks were resolved. We also enabled an optional feature in the paid version to assign unique numbers to cards on this board to use as "ticket numbers" in our communications with clients who report issues.

Other enhancements available in the paid version of KanbanFlow that we used heavily include the category tags and colour coding for cards and the time log feature. We used colours to establish 10 categories so that team members could identify with a glance the type of task the card involves (i.e., high priority, cataloguing, usage data, LibGuides, etc.). Figure 3 provides an example of this on our e-resources board. The time log feature provided evidence and data on how long tasks take to accomplish. Time spent on a task is added manually to the card, and we can run reports to demonstrate the time the team spent on different types of tasks. This evidence could be used to make a case to a manager that increased staff capacity is required, or when speaking with a vendor about their products to indicate trends in troubleshooting issues in the past year.

## 3.3 Lessons Learned

At both the U of S and Sask Polytech, we chose Kanban to address similar work process needs. We each implemented different software, but have mostly followed the Kanban strategy of tracking work that is *to do*, *in progress*, and *done*. Independently choosing Kanban and sharing our experiences of implementation and development of our boards provided us with a unique opportunity to investigate the reasons behind the decision to implement and the resulting benefits and challenges.

When examining the reasons for implementing Kanban at our institutions, we both found that the evolving and changing nature of e-resources management meant that traditional workflow paradigms were not meeting our needs. We both had to deal with restrictive workflows that were difficult to use and tools that were not flexible enough to revise workflows without a significant time commitment. We were also both coping with overflowing inboxes and too much email. These two factors created a situation wherein the time required to follow workflows and reply to email was much more than that required to do the actual work tasks involved. Other reasons for implementation were unique, at U of S serendipity played a role as McLean had used Kanban to manage other projects, and Sask Polytech needed a better communication tool due to the distributed nature of the e-resources staff.

We have both found significant benefits from implementing Kanban for our e-resources work, and encountered no significant challenges during the initial implementation. Our shared benefits are:
1. easy to learn and implement philosophy and software,
2. a significant, immediate reduction in email,
3. an effective tool for improving communication among team members and with stakeholders,
4. an ability to visually track the shared work, keeping the team informed on current tasks, and
5. a simple way to track timelines and set priority work through the due date features.

Additionally, at U of S, we found that visualizing and managing work using Kanban made it immediately evident where backlogs and bottlenecks continue to exist in our workflows. Using Kanban, it is easier to adapt those workflows, with a lower time commitment than process evaluation required in the past. Sask Polytech implemented additional features in KanbanFlow, allowing for additional realized benefits:
1. Attaching internal files and information about related email subject headings or file paths to active cards helped keep the information about the task in one place.
2. The ability to search cards built a knowledge base of troubleshooting information.
3. Application of category tags and colour coding for different tasks created an enhanced visualization of the tasks.
4. Time log feature helped track time on different tasks, generating evidence (e.g., of effectiveness for management or downtime for vendor negotiations).

Kanban is flexible enough that we each added tweaks (e.g., lists like *do today* or *waiting on response*) and enhancements (e.g., colour-coding and tagging cards) to suit our local needs without compromising the Kanban process. Implementing Kanban was so flexible and easy to accomplish, and yet has had significant positive impacts on the daily work of the teams at both libraries. We have combined Kanban with other communication tools like Slack (a chat client) and continued to use Kanban philosophy in other areas of our work, notably research and academic writing planning (Bass, 2016).

When implementation of Trello was expanded to the cataloguing and access teams at U of S, we did encounter some challenges. The first one was that our single board for managing the e-resources workflow was no longer sufficient. While we could add staff from cataloguing or access to the original board, they then had to follow their own processes, and return to the original board to file the card once their work was complete. Therefore, we now have additional boards for our openURL link resolver, usage statistics, license management, and troubleshooting issues. These additional boards, all created by our access team, indicate a high level of adoption and affinity with Kanban. Buy-in from our cataloguing team was more limited, and we have found that the cataloguing work continues to revert to email, and acquisitions staff are the ones managing cataloguing cards when they are created. The cataloguing team is not currently enthusiastic about adopting Kanban to their existing workflows, and there is no requirement for them to do so. Staff who do e-resources work in conjunction with print management, cataloguing, and troubleshooting have commented that the addition of another tool to use, another place to store information, and another place to look at for the status of a project, is one too many. While our current use of Trello centralizes much of the e-resources work, and is very useful for those of us involved primarily in managing the e-resources workflow, those who do it in conjunction with other tasks find it to not be as effective.

Another challenge, now that we have several boards in active use, is sometimes managing the tasks *in progress*, and staying on top of all the boards, especially when used for time-sensitive tasks. With the additional boards, we also find that we need to consider our use of Trello, because we use the free version, there are concerns about the confidential and sensitive nature of the information we manage throughout the e-resources workflow. We do not attach documents like licenses or invoices to cards, but instead make note of the subject line of the email to retrieve from our confidential email box when we need to work on the task. One consideration we are exploring is moving our work out of Trello and into Jira, as our institution has a local instance installed that we could potentially use and avoid these privacy concerns.

We anticipate that Sask Polytech has avoided these kinds of challenges so far primarily because we have implemented Kanban exclusively with the team that manages e-resources workflows, and created the structure of two boards from the beginning to manage the different types of work that team was already responsible for. Additional boards have been created as needed, for example to manage outstanding work from our May 2017 implementation of a new library management system (LMS). We have extended access to our Systems Admin Technician, and there is interest across the library in Kanban, which is seen as a viable strategy for project management. The creation of many new boards to expand the applications of Kanban in the library has generally been welcomed by staff, but we are also monitoring it to ensure we don't end up with a high volume of boards that are not serving us well. We want to ensure that Kanban continues to be as useful and effective for each of the projects or types of ongoing work it is applied to.

Overall, implementing Kanban to manage the flow of work in our two different library contexts had immediate positive impact, with no significant challenges in the adoption of the workflow or the tools used to manage the tasks. There is significant promise for the future of Kanban in managing and visualizing work in libraries, beyond technical services and e-resources management.

## 4 Conclusion

We have both realized significant benefits to managing e-resources workflows at our institutions after implementing Kanban. We have improved the quality and management of communications, streamlined tasks, visualized our work in progress, and implemented continuous process improvement for our workflows.

Interest in new methods for managing workflows, including Kanban, was clear at the 2017 Electronic Resources and Libraries conference (we ran an informal poll of attendees at our session Kanban, and found that 23% of the attendees currently used Kanban), but comments and feedback from other conference attendees indicated an interest in the method, especially in the areas of technical services and e-resources workflows. We anticipate continued application, exploration and scholarship about applications of Kanban in libraries. As Kanban is more widely implemented in libraries, we expect to see further development of best practices, suggestions for improvements to other library software, and the evolution of the traditional Kanban categories *to do*, *doing*, and *done*, to suit our industry's work.

## Abbreviations

CORAL: Centralized Online Resources Acquisitions and Licensing
e-resources: electronic resources
ERMS: electronic resource management systems
IT: information technology
LMS: library management system
Sask Polytech: Saskatchewan Polytechnic
SIAST: Saskatchewan Institute of Applied Arts and Sciences
U of S: University of Saskatchewan
WIP: work in progress

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