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# Using Technology to Facilitate Technical Services Workflows

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## Abstract

Managing workflows in a complex and evolving environment is a challenge for technical services librarians. By taking advantage of technology, technical services librarians at the University of Houston Libraries currently develop and revise workflows using tools such as Google Docs, Microsoft Outlook Tasks, and Drupal-based forms. By embracing technology and harnessing the power of these tools, the UH librarians are able to successfully pair effective communication with a high-level of transparency. The Assistant Head of Acquisitions and the Electronic Resources Coordinator will talk about their experiences in creating workflows using a variety of products, as well as share their analysis of the limitations of each tool. Additionally, they will also share their experiences training technology-shy staff and workflow-resistant public services librarians on the newly developed workflows. Highlighted projects to be discussed will include a project to move print titles to online, a project to set up the online portion of print + online titles, and a project to run three serials reviews in 2012. The UH librarians will lastly touch on how these programs have helped to improve communication and to create a better sense of appreciation between technical services departments as well as improving communication between technical services and public services.

## Background

When embarking on projects between multiple departments, the University of Houston, like most libraries, has struggled with ways to share information in a meaningful, editable format that is accessible to all parties involved. The importance of increasing transparency when managing library communications between all parties involved, namely, Acquisitions, Collection Development, and Resource Discovery Systems, remains a challenge that tends to frustrate all the relevant stakeholders. Particularly, when attempting to plan whether or not changing a subscription from print or print + online format to an online only format, it will increase the return on investment (ROI) for the library. When having to cope with diminishing materials budgets, communicating these endeavors presents a conundrum from which few libraries can find a viable solution.

When the University of Houston's administration charged the Collection Development department with moving as many of our print and print + online subscriptions to online only, from the feedback of our users, we had to find a way to rise to the occasion. Indeed, as communication between a librarian and a user succinctly put it, "I

did tell the student that we have a print copy. He told me that it takes too much time to come to the library" (Personal communication, October 19, 2012).

In our endeavours to find a method to facilitate interdepartmental communications, we tried several methods. Our library uses Drupal to manage our intranet, thus we use quite a few Drupal forms to facilitate communication. The advantages are the ease in which the people requesting information can fill out the form, and the form information is e-mailed directly to either the Acquisitions Department or the Resource Discovery Systems Department. The disadvantages are for every item requested, a new form needs to be filled out. Additionally, if any HTML is used in the form, the resulting export of data is usually comprised of code which makes the form data difficult to read. Furthermore, unless the form is very basic, we usually need a programmer to help us construct the form.

Another method we used to facilitate communications is the use of Outlook Tasks. Outlook Tasks allow for a person to share a task request and set a deadline. However, once a person assigns the task to someone else, they lose control of the task. Archiving and maintaining

workflow using this method became extremely cumbersome.

Our Collection Development division, Acquisitions department, and the Resource Discovery Systems department had to find a way to conduct our print and print + online to online only project by devising a collaborative method that not only increased our communications without a multitude of meetings, but also increase transparency between all departments. This method also had to have a clear delineation of workflows. We had to devise a way to make everything sharable, yet somewhat secure, and available both on campus and off campus. Additionally, we needed to ensure that simultaneous editing was possible as well as maintaining an archival copy. For this reason, we decided to look at new office productivity technologies within the cloud.

Much has been said about the virtues of using cloud computing, but much has also been said about the drawback of using any software in the cloud. There is so much information about cloud computing that the concept has various meanings across disciplines. Lin, Fu, Zhu, and Glenn (2009) summarized quite well the various meanings of cloud computing; however, due to the nature of office productivity applications, only one applies “an Internet-scale software development platform and runtime environment [or software as a service]” (p. 10).

Before embarking on an extensive serials project to convert print subscriptions to online only this summer, we decided to evaluate some of the major cloud based office productivity suites on the market. We based our evaluation on how usable the product is, how many simultaneous users it allows, storage space, cost, and the level of specialized training needed to quickly learn the product. We decided to look at Glide OS, Google Drive, Microsoft 365, and Zoho.

## Analysis of Cloud-Based Office Productivity Software

### *Glide OS*

Glide OS is a stable platform that has been on the market since 2001. It is currently in version 4. It is free for 30GB of storage space per user. It is very simple to use, requiring minimal training, and will export content into the Microsoft Office Suite. Glide OS works across all operating systems and all the major browsers (Firefox, IE, Chrome, and Safari). In order to share files between users, you have to upgrade to Glide Premium, which gives you 25GB of storage for \$50 per year. With Glide Premium sharing is limited to 25 users.

Pros	Cons
Easy to use	No collaborative document editing
30 GB of storage	Limited to 25 users in paid version
Export easily to Microsoft Office Suite	Files only shareable on Facebook and Twitter in free version
Multiple OS's and Browser capabilities	

**Table 1. Pros and Cons of Glide OS**

### *Google Drive (Formerly Google Docs)*

Google Drive has been on the market since 2006. It is free for 5GB of storage. Pricing ranges between \$2.49 per month for 25GB and \$799.99 per month for 16TB (<http://support.google.com/picasa/bin/answer.py?hl=en&answer=39567>). Google Drive will work on Mac, Windows, and

Linux operating systems and in all the major browsers. File size is limited to 10 GB, for the paid storage services. Google Drive permits collaborative file sharing and simultaneous editing.

Google Drive is very simple to use. It has a stripped down feel of an older version of the pre-ribbon Microsoft Office suite. It has several features that may confuse the user. For example, in the Spreadsheet application, when a user adds a comment, the comment must be resolved or a list of unresolved comments that look like error messages will appear. Once the user resolves the comment, the comment no longer appears. In the Document application, if a Microsoft Word document is uploaded, it remains in an un-editable format. It is very difficult to cut and paste between documents.

Pros	Cons
Very easy to use	New format is somewhat confusing
The data creator controls sharing capabilities	Costs more if you need more storage
5GB of free storage	Comment feature in Spreadsheets may be confusing
Simultaneous editing	Uploading a document from the office suite maintains that format

**Table 2. Pros and Cons of Google Drive**

### *Microsoft 365*

Microsoft 365 is a stripped down version of the Microsoft Office Suite. Once the user exits the created item, it must be checked back out to the data creator in order to edit it. Multiple users can share the document; however, there is no collaborative editing. Once the document is opened in the client version of the Office Suite, the

document will always open in the client version. Microsoft 365 is not intuitive; users will need training. In order to make use of the Outlook Exchange feature, an administrator who is conversant in Lightweight Directory Access Protocol (LDAP) and Active Directory is necessary to make this feature operational. Each user receives 25 GB of storage space. The cost depends on the license you purchase, ranging anywhere from \$4-\$22 per month for business. Academic institutions have three pricing models to choose from with varying levels of services offered. The free version gives cloud-based e-mails and contacts, use of your institution's own domain, instant messaging and online conferencing, and a Web-based viewing and editing version of the main Microsoft Office Suite. The second pricing version, which includes everything in the free version plus the full version of Microsoft Professional Plus 2010, unlimited e-mail storage, and eDiscovery tools. The pricing for this version is \$2.50 per user/month and \$4.50 per faculty/staff per user/month. The final pricing version, which is \$3.00 per student/month and \$6.00 per faculty/staff per month gives everything in the second pricing version plus access to the Lync Server on premises. With Microsoft Office 2013 in preview release, the features of Microsoft 365 are anticipated to change to take advantage of the new product.

Pros	Cons
Ability to access your Office documents from anywhere	Versions of Word, Excel, and PowerPoint are stripped down enough to make them almost unusable
Reasonable pricing for Academic Institutions	No collaborative editing
25GB of storage per users	Having to check an item in and out in order to edit it
Similarity to Microsoft office look and feel	Not intuitive

**Table 3. Pros and Cons of Microsoft 365**

## Zoho

Zoho is very basic. The latest version is referred to as CRM. It is very good for e-mail marketing and tracking statuses of project. However, it is almost counterintuitive when it comes to managing workflow. It requires heavy customization in order to make it functional. Zoho offers 1GB of storage space per user for free and 5GB for \$3 per user/month. The spreadsheet and document feature are extremely limited and it is difficult to export out. The user has to save the document on the desktop, open it in Notepad, then import into Word. There is no way to open the spreadsheet files in anything other than Zoho. There is no presentation capability.

Pros	Cons
Does contain a workflow feature	Not intuitive
1 GB of storage for free	Very limited functionality

**Table 4. Pros and Cons of Zoho**

Based on the above analysis, for overall functionality, usability, and pricing, Google Drive fit the University of Houston's needs to collaboratively share information across departments, increase transparency, and improve our workflow. In doing so, our ability to cross-communicate our needs between multiple departments without a flurry of e-mails and phone calls was realized. We used many different tools to decide how best to handle our projects, from Microsoft Outlook tasks, Drupal forms, and a WordPress blog, the tool that worked best for our needs was Google Drive. The next section will discuss, in detail, the projects in which we used the other tools with limited success and how our knowledge of Google Drive's features enhanced our decision-making processes.

## Use of Cloud-Based Applications In Library Projects

The University of Houston Libraries Acquisitions and Resource Discovery Systems Departments worked together from November 2011 to November 2012 to explore low-cost project management systems designed to handle one-time projects that exist outside of the normal technical services and electronic resources workflow. Both the Assistant Head of Acquisitions and the Electronic Resources Coordinator agreed that ILS, which is III Millennium, and the ERM, which is Serials Solutions Resource Manager, were relatively good workflow management tools, but they lacked the project management functions and flexibility that were needed for one-time projects, such as moving print and print + online serials to online only, and special projects, such as running three consecutive serial review projects. Specifically, the UH Libraries used Google Drive, Microsoft Outlook Tasks, a Drupal-based intranet, and a WordPress blog to manage workflows and communicate both internally and externally while undertaking several one-time projects.

The three major projects that the acquisitions, electronic resources, and collection development librarians worked on over the past year include a project to identify print + online titles lacking electronic access, a conversion project to move print and print + online titles to online only, and a project to run three consecutive serials reviews during a 6 month time period. The first project, the print + online project, involved identifying titles with a print + online format that were lacking online access. A decision was made by the Head of Serials in the early 2000s to have the serials subscription agents automatically move titles from print to print + online if the price was similar between the two formats. With the merging of the Serials and Acquisitions Departments shortly after the decision was made, less staff time was devoted to making sure that the online component of the print + online titles was set-up. Thus, a backlog of these print + online titles developed and grew over the years.

In running the project, the Assistant Head of Acquisitions verified the format of each journal. Those titles that were identified as print + online and lacking online access were shared with the Electronic Resources Coordinator as Microsoft Outlook tasks on the Microsoft Outlook Calendar. Tasks included information such as title, serials service provider title identification number, ISSN, and format. When the Electronic Resources Coordinator set up access to a particular title on a task, she would then close it, thus generating an e-mail notification alerting the Assistant Head of Acquisitions that electronic access was available. At the completion of the project, approximately 300 titles were identified as print + online titles that were lacking electronic access. In general, Microsoft Outlook tasks were a convenient way to share information between two individuals working together on a project. However, drawbacks to this tool include lack of transparency outside of the two individuals involved in the project and difficulty in archiving the tasks since only an e-mail trail remains of the project.

A second project run during 2012 using low-cost project management tools involved moving print and print + online titles to online only for 2013. In the past, selector librarians had to hand-pick print or print + online titles to move to online only during the annual serial review project. In 2011, a collection development decision was made to automatically move all titles from print to online for 2013, provided that an online format was available and that the online price was similar to the print price. Nearly 675 print and print + online titles were identified as potential candidates to move to online only in 2013.

To change the format of all of the titles en masse, the spreadsheet function of the Google Drive suite became a clear favorite due to the ease of accessing documents stored in a cloud computing environment and the ability for multiple users to simultaneously edit a document. To make the spreadsheet function as a project management tool, each tab on the spreadsheet was assigned to a particular person in the workflow (Assistant Head of Acquisitions, Head of Liaison Services for Collections & Research Support, Electronic

Resources Coordinator, and the Serials Ordering Supervisor). The workflow went as follows:

1. The Assistant Head of Acquisitions began the project by verifying the price with either the subscription agent or the publisher on her tab.
2. Once the price could be verified, the title was pasted onto the tab belonging to the Head of Liaison Services for Collections & Research Support in order for her to approve or reject any large price increases.
3. Next, the title was moved to the tab belonging to the Electronic Resources Coordinator. The Electronic Resources Coordinator verified that the license for the titles could be negotiated and that the titles were available via IP authentication.
4. Lastly, completed titles were moved to the Serials Ordering Supervisor's tab. Orders were then placed for approved titles.

In total, about 650 titles will be moving from print to online in 2013. An additional 25 titles were rejected for various reasons, mostly due to large price differences between formats.

It was determined that while Google Drive is a program that is not designed to be a project/workflow management tool, the benefits, such as its cloud computing capabilities and ease of use, make it a good choice. One major drawback with the system is that the spreadsheet function does not have the same capabilities as Microsoft Excel. In general, Google Drive worked well as a project management tool, but it will not suffice as a long-term workflow management tool.

The third and most challenging project that the Acquisitions and Resource Discovery Systems Departments took on in 2012 was the running of three consecutive serial review projects in a 7 month time period. While running the review projects, information management was imperative to accurately capture and record all of the data gathered in the reviews. The first step in running the reviews was to create a central communication hub to disseminate and collect information. Since most librarians were familiar

with the library's Drupal-powered intranet, the Assistant Head of Acquisitions decided to create a page on the intranet dedicated to the serials reviews. The central location for the serials reviews included links to past reviews and spreadsheets of Interlibrary Loan and Electronic Resources usage statistics. Forms were created using Drupal that the selectors librarians used to record their new title and cancellation requests. While using the Drupal-based intranet as our central serials review hub worked out well, the Drupal forms were limiting and often clunky to download into Excel.

Additionally, Google Drive was used to share with selector librarians information such as titles to be added or cancelled that were submitted on the forms, pricing and licensing information for each title, and fund balances reflecting the title additions or cancellations. Google Drive was again chosen for its ease of use and sharing capabilities.

To facilitate the intranet, a serials review blog was created. The serials review blog helped to inform

selectors when something was added or edited on the serials review intranet site, as well as including further information as to what was happening in the serials units or what to expect in the next steps of the serials review process. In general, the blog helped to increase transparency of the serials reviews by providing an in-depth explanation of the review process and the goals of the reviews.

## Conclusion

The challenges faced by the University of Houston Librarians in managing workflows, maintaining transparency, and facilitating communications between departments has been successfully met by developing and revising existing workflows using the latest technology available. After reviewing a number of cloud-based applications, Google Drive was the product of choice to help us efficiently complete two highly complex interdepartmental projects. In the future, we plan on using Google Drive to collaborate and communicate interdepartmentally on other projects.

## References

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