



Article

Online Management System: Wielding Web 2.0 Tools to Collaboratively Manage and Track Projects

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Abstract

Online social media software, commonly used for interacting with library patrons, can be creatively wielded for communication, supervision and project management within a library department. This paper outlines in detail an innovative online management and communication system created by the Digital Services Department at the University of Houston. The system harnesses a suite of free online collaborative software products and Web 2.0 communication tools. Some advantages of implementing an online management system include: remote workforce management, streamlined management responsibilities and robust capture of project data. The paper includes in-depth descriptions of how the system was created and configured along with lessons learned and suggestions for establishing similar procedures at other institutions.

Online social media tools are not new to libraries. Many libraries now use blogs, microblogs and other Web 2.0 technologies as a means of connecting users to events, collections, and services offered in the library (Bardyn, 2009; Belden, 2009; Brookover, 2007; Chatfield, Radajeski, Wang & Bardyn, 2010). Blogs have also been used by librarians as tools for collaborative scholarly publication (Hendricks, 2010) and knowledge management (Bodeaux & Boyd, 2007; Chen, 2009; Rodriguez, 2010; Xiaofen Dong, 2008). Despite widespread adoption, the focus of blog projects within libraries

has been somewhat narrow. However, social media tools have enormous potential for cultivating an efficient, collaborative library workplace. This paper outlines in detail an innovative online communication, supervision and project management system created by the University of Houston Libraries Digital Services Department (UHDS). This Online Management System (UHDSOMS) wields a suite of existing free online collaborative software products and Web 2.0 communication tools. The primary tools used are Blogger, Google Calendar, Google Docs and Skype, although a similar system could be constructed using either fee-based proprietary products or homegrown tools. Notably, this unconventional use of Blogger and Google Calendar allows a small number of full-time staff to efficiently manage a large workforce of students and volunteer interns.

The first section of this paper provides an overview of the staffing situation at the University of Houston Libraries Digital Services Department that prompted creation of an online management system and outlines the core technology tools that drive the system. The next two sections discuss in detail how Blogger and Google Calendar are used to provide online communication between supervisors and workers. The fourth section addresses the training and managerial responsibilities of all online management system users and outlines time commitments for reports and staff. Finally, the advantages of using an online management system are discussed. The conclusion includes lessons learned and tips for creating an online management system from scratch.

Online Management System Overview

The UHDS department is a small unit within the University of Houston, M.D. Anderson Library on the main campus of the University of Houston. Established in April of 2009, the department now manages online collections containing over 15,000 image, video, and audio files. Additionally, the department supports an institutional repository that electronically publishes theses, dissertations, and scholarly communication materials. As the UHDS department grew it became apparent that without more staff, student workers, and interns the flow of digitization, publication, and preservation would be greatly curtailed. With only a small full-time staff the number of interns and student workers the department could manage and supervise was limited. A way to drastically streamline managerial tasks associated with student workers and interns was needed in order to continue to develop this department in the face of budget reductions.

The UHDS workforce is composed of three separate but interconnected groups—full-time staff, student workers, and library school interns. Each group participates in the UHDSOMS with its own set of responsibilities and expected use behaviors. Full-time UHDS staff is divided into three units—project management and marketing; digital reformatting; metadata—usually with only one staff member per unit. Dividing such a small staff into units may seem excessively ordered, but the staff unit structure informs usage of the UHDSOMS, the rotational system of the UH Digital Services Internship Program (UHDSIP), and other departmental tasks and workflows (Westbrook & Reilly, 2011). Student workers are undergraduates at the University of Houston who are paid to assist with projects in the department. Student workers are usually trained to work exclusively for one of the units above, most often in digital reformatting or metadata.

Interns are graduate students enrolled in library and information science schools who perform unpaid work for the department over the course of a semester in exchange for school credit. Interns may work in the office or remotely. Interns who work in the office participate in the UHDSIP curriculum that includes rotations in each of the three aforementioned units. Finally, there are interns who work remotely for the duration of a project on one-time or annual initiatives that can be performed outside of the office. Staff, students and interns each have unique roles in the online management system.

The core of the UHDSOMS runs on Blogger and Google Calendar. The blog is used for communication about projects including assignments for each shift, progress reports on individual projects and questions that come up during student shifts. The office calendar resides in Google Calendars and is used in several ways. First, it is used to plan the weekly schedules for all interns and student workers in the office. Second, the Google Calendar is used to chart the semester-long unit schedules for all interns participating in rotations. Finally, remote interns record their hours spent on projects and status of remote initiatives in the blog and calendar so that robust project data is captured regarding these satellite tasks. In addition to these core tools, UHDS staff members frequently create and maintain Google Docs for collaborative use among staff, interns and students. Skype is used to conduct orientation, training sessions and meetings with interns who work remotely.

Once work on a project is complete, information captured in the daily use of the UHDSOMS is gathered and analyzed by interns to inform project management decisions moving forward. During the project management rotation of their internship, library school interns perform retrospective project analysis of one digital project to determine the time and resources used to complete that particular project. Examining data mined from the management system, interns are even able to reconstruct projects in which they did not personally participate. Reports are then collaboratively generated by staff and interns to extrapolate general findings about workflows in the Digital Services Department and report on lessons learned for a particular project.

UHDSOMS Blog

The blog component of the UHDSOMS was originally envisioned as a portal for students and interns in the department. It was designed to aggregate links and online tools students might need to use to complete tasks during their shifts. Quickly, UHDS staff realized that while portal features were minimally used by students, the structured posting system instituted to track project progress provided many benefits to the department. Blog posts fall into two primary categories and build a cyclical dialog between supervisors and their student workers or interns. The first type of post is an assignment post. The assignment post is authored by supervisory staff and tells a student or intern what needs to be done during a single shift. Assignment posts are typically brief for ongoing projects (see Figure 1).

Assignment--12.19.2011--Theo

Hi, Theo--

Please keep working on yearbooks. If you need me to grab yearbooks for your from SC, please come on over at some point and let me know. Thanks!

0 comments Posted by Nicci Westbrook at 10:30 AM 

Labels: [Yearbooks](#)

Figure 1. Screenshot of UHDSOMS in Blogger showing a typical short assignment post.

Long assignment posts are created when detailed instructions are needed, often including screenshots and text formatting. These more detailed posts are tagged in the blog as “Procedures” and can be referred to and used for other training and assignment activities (see Figure 2).

Assignment--3.24.2011--Michelle

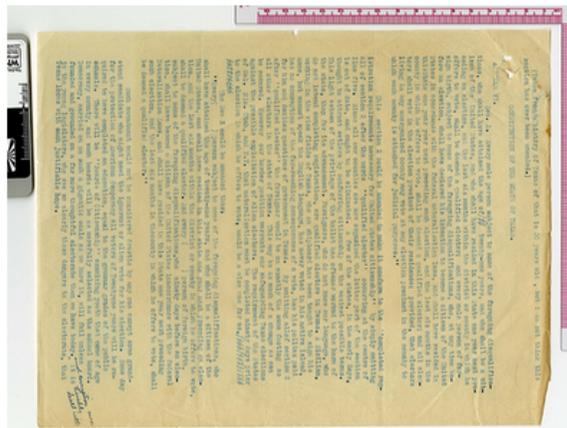
Hi, Michelle--

I will be out of the office March 23-April 1.

When you come in today, please begin working on a blog post as usual. Your blog posts have been great lately and I think you are ready to publish them without my reviewing them. So go ahead and publish when you are ready and push the post to facebook as usual.

When you finish your blog post, please meet with the other Michele. She is going to get you started working on the Minnie Fisher Cunningham collection--picking up where another one of our interns left off last semester. You will receive training on the flatbed scanner and will do image editing in Photoshop rather than in OPUS. Here are some details that will help you two get started:

- The archival tiffs for the sub-collection are located here: X:\2010_006_Minnie Fisher Cunningham\2010_006_TIFFs\2010_006_No Dot Life. Please make sure to capture the whibal card and the transparent ruler like in the example below.



- The MFC no dot corrected jpeg images that David worked on are saved here: X:\2010_006_Minnie Fisher Cunningham\2010_006_JPEGs\2010_006_No Dot Life. You will be able to see the naming convention for the collection and the type of cropping he was doing if you look at the files David created.
- If you all need information about using the flatbed scanner, there is a guide right next to the scanner itself.
- Yuli will also be in the office at 11:00 am today and she has completed two sections of the project, so she will also be able to answer questions.

Figure 2. Screenshot of UHDSOMS in Blogger showing a longer post tagged with the Procedures tag.

Assignment posts are consistently titled “Assignment—MM.DD.YYYY—Worker Name” to easily distinguish them from other posts made on the same day for other students and on different days for a particular student.

The second type of post is a status post. Status posts are created by both student workers and interns and are in direct response to the assignment post. At the end of each shift, students and interns, including those working remotely, are expected to make a status post documenting their progress on the project. Status posts are expected to be detailed enough so that another student worker can pick up where the previous student left off, if necessary (see Figure 3).

Status--Yearbook--Theo

Cropped and treated first 200 pages of 1964 yearbook and scanned first 200 pages of 1967 yearbook.

0 comments Posted by Theo W at 4:30 PM 

Labels: Yearbooks

Figure 3. Screenshot of UHDSOMS in Blogger showing a typical status post.

This ensures that robust data about the project status is captured that can be used later for project analysis. It also facilitates collaborative project work so that two students working different shifts can collaborate on one project. Similar to the assignment posts, the title structure is “Status—Project Name—Worker Name” and post content and length vary based on the situation. If a student is not able to ask a question of a supervisor in person during their shift, they are encouraged to post a question to the blog. Supervisors are then encouraged to reply either via the blog or in person during the student’s next shift (see Figure 4).

Question - - 1937 yearbook

Nicci,

In the "Organization" Section, should I only put the name of organizations or should I also include its Officers' and Members' names?

Thanks

Minh

Posted by Nicci at 2:56 PM 

Labels: [Yearbooks](#)

2 comments:

Nicci said...

Please just put the names of the organization.

Nicci

February 2, 2010 9:15 AM 

Minh Tran said...

I fixed that

Minh

February 10, 2010 10:57 AM 

Figure 4. Screenshot of UHDSOMS in Blogger showing a status post with a question and further comments.

Short assignment and status posts take about five minutes to create and publish on the blog. Supervisors can create assignment posts in large batches for a particular student or for many students. Students are expected to stop work on their projects at least five minutes before they are scheduled to leave in order to create their status post for the day. This simple two-post system ensures that student and intern shifts run smoothly, while capturing a comprehensive picture of the work accomplished on a particular project without making undue demands on the supervisors, student workers or interns.

The final important procedure associated with the blog is adding tags to the “Labels” field in Blogger. Each project is assigned a tag by the supervisor who creates the first assignment post for the project. Thereafter, each assignment, status and question post that relates to that project is tagged with the same project tag. Both students and staff are responsible for tagging posts, and staff members periodically review all posts to ensure they are properly tagged. For instance, the Minnie Fisher Cunningham Papers project is tagged as “Minnie Fisher Cunningham.” Tagging each post allows staff to collocate all blog posts that refer to a particular project and creates a permanent URL so that at any time during or after the project, all of relevant posts can be reviewed together. This is especially important since there are often multiple concurrent projects in the UHDS Department and supervision of projects is distributed across units.

UHDSOMS Office Calendar

We use Google Calendar to organize student and intern shifts for a given week and to coordinate semester-long schedules for interns rotating through the internship program. First, the weekly schedule of all students is recorded in the office calendar (see Figure 5).

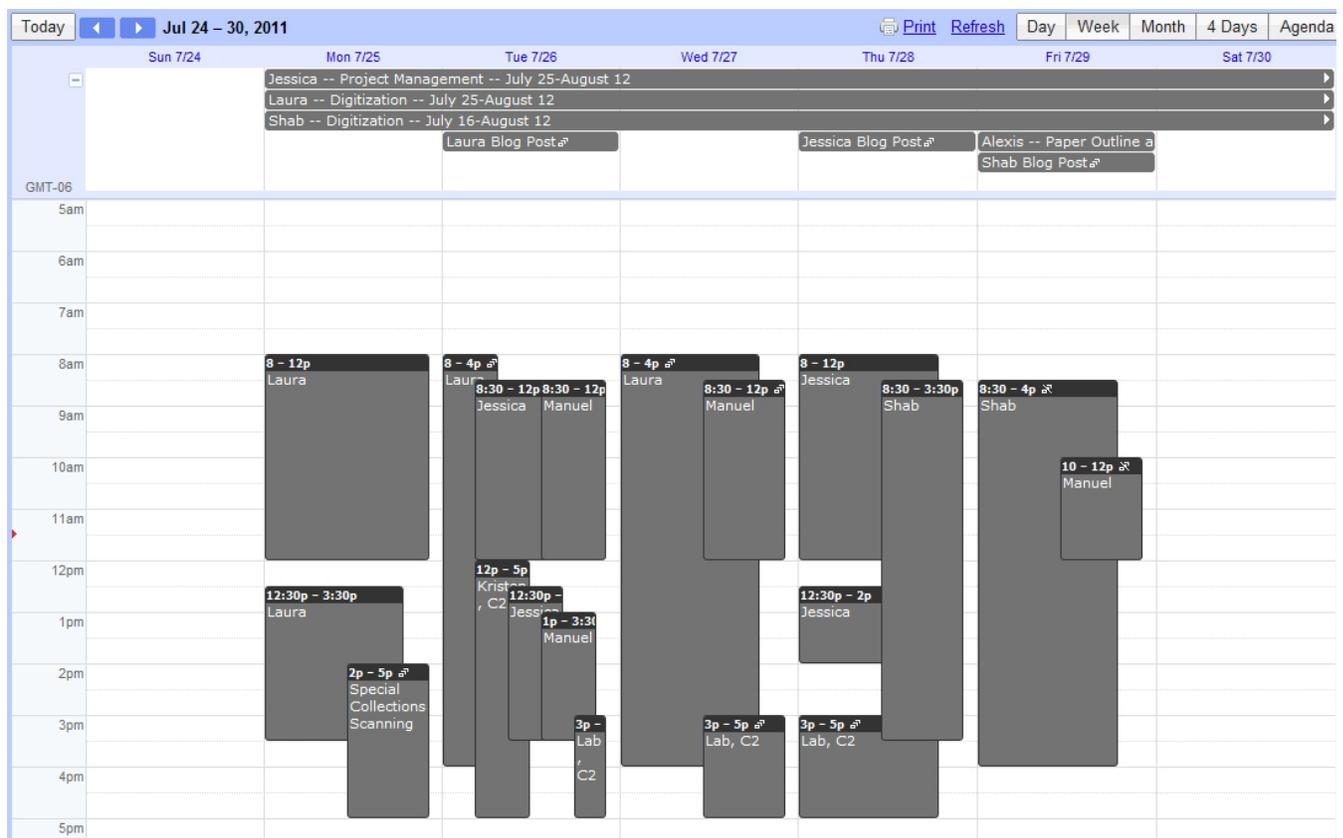


Figure 5. Screenshot of Google Calendar showing daily and unit schedules for a typical week.

Students are encouraged to determine a weekly schedule that they will adhere to throughout the semester; supervisors then coordinate schedule changes as needed. While students are expected to ask a supervisor before making one-time or ongoing changes to their weekly schedule, students are ultimately responsible for ensuring their shifts in the Google Calendar are up-to-date once changes have been approved. Remote interns are not required to plan their hours in advance, but are asked to ensure that the office calendar accurately reflects the time spent on each project for project tracking purposes. Using the Google Calendar, supervisors are able to plan blog posts for upcoming shifts and assign work spaces prior to when students arrive. In a small department with limited workspace, allotting workspaces in advance is essential to comfortably accommodating a large number of students and interns. Comparing shift durations recorded in the office calendar with status posts recorded in the blog, interns can reconstruct a retrospective view of time spent on particular project tasks.

The Google Calendar is also used to coordinate unit schedules for interns who rotate through the three units within the department over the course of a semester. For instance, if three interns are working in a given semester, their unit schedules are often planned over the course of the semester so that one student at a time will work in each unit. This distributes the workforce and supervisory duties evenly throughout the department. The “All Day” feature in Google Calendar is used to create long term events that show each student’s unit schedule (see Figure 5). Sharing the unit schedule with student workers and staff via the Google Calendar makes transitions from unit to unit smooth. Using Google Calendar to coordinate intern unit schedules enables UHDS to accept a large number of interns and coordinate a competitive, sustainable internship program.

Staff and Worker Training and Management Responsibilities

The success of the UHDSOMS relies heavily on staff and worker proficiency with Blogger and Google Calendar. To this end, UHDS staff drafted documentation that details the training needed each time a new student or staff member joins the team. Training includes Blogger and Google account creation, invitations to the appropriate blog and calendar, general training on use of the tools, and specific training on how the tools are used within the department. Documenting training practices ensures consistency and efficiency.

At the beginning of each semester when interns are trained and unit schedules are created, the management workload is somewhat heavy. Weekly and semester-long student and intern calendars are created and the Blogger and Google Calendar training sessions for incoming interns and new student workers are held. Because many student workers are continuing employees from previous semesters student training is easily combined with the intern training at the beginning of each semester. Directly following training extra vigilance is needed to ensure all team members are using the blog and calendar and are formatting posts and shifts appropriately. For instance, new employees and interns sometimes need reminders to tag blog posts or make updates to their schedules in Google Calendar. Students and interns may also devote more time

to UHDSOMS responsibilities at the beginning of the semester while they are learning the Blogger and Google interfaces and the appropriate formats and tagging practices within the system.

Once new workers and interns are fully trained, management responsibilities become streamlined, limited to creating assignment and status posts on an ongoing basis. Assuming student projects have been determined for the following day, six to eight assignment posts can be created by supervisors in about fifteen minutes. Supervisors are also expected to read the status posts of students and interns currently reporting to them. Blog posts are short with ongoing or well-known projects and focused attention is needed only when a question arises. Thus, keeping up with status posts can normally be achieved in five to ten minutes per day and can be directed to any email account to be perused like email messages. Students and interns spend a few minutes reading assignment posts at the beginning of each shift and about five minutes at the end of each shift creating status posts.

Advantages

The foremost benefit is the streamlining of managerial tasks which manifests itself in time savings, convenience and remote supervision. The efficiency with which UHDS staff can create blog posts saves significant staff time compared to conducting one-on-one conversations with the same set of students at the beginning of each shift. Rather than interrupting staff work to get a worker started on a project each time someone arrives for a shift, supervisors can create all assignments for a day at one time and respond to questions posted on the blog at their convenience. Creating blog posts in advance also benefits students. With pre-posted assignments, students can immediately read their assignment for the day without waiting for supervisors who might be returning late from a meeting or might not be in the office at all that day. Managers also have the freedom to create a large volume of posts as far in advance as is convenient. Therefore, when supervisors travel, they can create posts before leaving town and then monitor status posts and questions remotely so that progress on projects can continue in their absence. For a small full-time staff, remote supervision allows for unhindered professional development and conference activity.

Just as the blog gives staff the opportunity to supervise students and interns remotely, interns also have the opportunity of working remotely. While staff do not create assignment posts for remote interns, tracking intern progress during projects is crucial to ensuring interns are on track with projects and capturing robust project tracking information. Remote shifts entered on Google Calendar and status posts made to the blog keep supervisors in the office constantly abreast of remote student progress and decreases the amount of email exchange and Skype meetings necessary to successfully conduct projects outside of the office.

The online management system makes it possible for the supervisory staff to manage a larger number of interns and student workers than was possible previously due to the collaborative management style that emerged from the implementation of the

UHDSOMS. Every member of the UHDS workforce has access to all posts from all units. Supervisors tend to read status posts and stay informed about developments on projects conducted across the department. Therefore, if a supervisor in one unit is unexpectedly unable to create blog posts or answer questions, another supervisor can quickly assess the existing blog posts on a project to create assignments or answer questions on-the-fly.

The rotational nature of the UH Digital Services Internship Program also encourages collaboration between supervisors as each manager has the opportunity to supervise each intern. Managers are able to share tips about the strengths or working style of an intern and supervisors tend to collaboratively design solutions to intern issues knowing that this workforce is shared equally across the Digital Services Department. Doing so creates a consistent experience for the intern throughout the semester and allows supervisors within the department to benefit from collective managerial wisdom.

Distributing the workforce among units in the department also means that there is never one staff member solely responsible for the entire student and intern population. The staff has found that hosting three to five interns at a time per unit is more manageable than one person hosting nine to ten individuals all semester. Flexibility when creating the rotational system also allows for flexibility in staff schedules.

The “Procedures” tag reduces staff time spent training incoming interns each semester and provides a framework for ongoing departmental workflow creation and revision. UHDS staff members assign this tag to any blog post that contains detailed instructions for procedures within the department. Some of the blog posts marked as Procedures are later polished to become official departmental policy, while others are frequently linked to so that supervisors do not have to write detailed instructions for each student who works on a project.

Formal assessment of the internship program and informal discussions with staff and students shows that the UHDSOMS helps all members of the department organize their time in the office and that they work more productively as a result of using the system. Staff reports at least a two thirds reduction in time spent in active supervision. Interns and students report that their productivity has increased because they no longer have to wait for staff to be physically present to begin a shift, end a shift, or answer a minor question that occurs during the shift.

The final and perhaps the most significant advantage of the online management system is robust data collection about the projects conducted within the department. Because most managerial behaviors occur online in the UHDS department, there is a digital trail for nearly everything that happened on each project. Since January 2010, the UHDS Department has posted over one thousand blog posts, with the ongoing UH Houstonian Yearbooks collection boasting the most posts for a single project at 228 posts. By analyzing historical data from past collections, staff and interns are able to reconstruct projects and assess the successes, inefficiencies, and lessons learned from each. Not only do interns gain valuable project management experience, but the staff obtains sev-

eral detailed reports per semester on past projects that inform decisions about future projects, including developing accurate timelines and goals moving forward.

Conclusion

For those interested in building their own online management system, the following points should be considered. First, be open to negotiation with your library systems staff. The University of Houston Libraries officially supports WordPress and Outlook Calendar. Because the Digital Services Department was concerned with the learning curve involved with WordPress and because our students and interns do not have access to Outlook Calendar, we were able to negotiate the use of Blogger and Google Calendar within our department. Check with your colleagues in systems as there may be tools that they support that will suit your needs.

Second, create robust documentation. Creating training documents, including a quick guide for experienced trainers, has transformed the task of training new team members on Blogger and Google Calendar from an hour and a half training session to a thirty minute session that can be presented in person or via Skype. If you decide not to use Blogger and Google Calendar, try to select tools that are intuitive and easy to learn to reduce the amount of staff time spent training new interns. When you create your expected behaviors for blog and calendar use, keep it simple because staff, student and intern buy-in is difficult to solicit if the daily tasks seem onerous. It is also advisable to be mindful of the number of new accounts staff and students are required to create to participate in your online management system. Because Blogger is affiliated with Google, users only need to create a Google Account to access and use all of the UHDSOMS tools within the department. UHDS staff also works to recruit students and interns who are technology savvy or at least not afraid to learn new platforms. Following the tips above ensures that training new staff, students and interns on the procedures associated with your online management system does not become unwieldy.

Another important step to consider is preservation of the content created in your online management system. The valuable project data captured by the online management system could be lost if data loss occurs. Blogger contains functionality to export all posts as an xml file. This is useful should your blog ever need to be migrated to another blogging platform or should Blogger ever lose your data. UHDS staff has a quarterly blog update policy that ensures frequent and ongoing scraping of our blog site to prevent total data loss. Unfortunately, Google Calendar does not currently have an archive or export feature and shifts are only stored for a finite period of time before they are purged from the calendar permanently. Although UHDS staff does not have an ideal solution to this problem as of yet, an effort is made to conduct project reviews in a timely manner in order to capture shift information elsewhere before it is unavailable.

Finally, if you plan to manage collaboratively, cultivate staff buy-in for your online management system. The UHDSOMS grew from the ideas of one staff member and was eventually adopted as departmental procedure. There were staff members at the time who were indifferent to the system and used it inconsistently, which created confusion

about expectations when interns transitioned from unit to unit within the department. Discussing the advantages of the online management system and encouraging consistent participation from staff has helped to make the system itself and the supervisory experience for students more coherent.

In summary, creating an online management system is a project that can be completed with a moderate upfront investment of staff time using free social media tools. The Digital Services Department at the University of Houston Libraries created a structured online management system with clearly communicated behavioral expectations for all user groups. Ongoing formal assessment will inform the evolution of system procedures within the department. The benefits of creating an online management system include streamlined management responsibilities, remote management capabilities, and robust tracking of management interactions. The Digital Services Department has gained much from the implementation of the UHDSOMS and plans to continue to improve and expand the system as departmental goals shift and evolve.

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