Managing and Sharing Information through the Use of a Wiki

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ABSTRACT
In the current global workforce, it can be difficult for a department to efficiently manage the sharing of information. Often times when a department spans multiple sites, information may be shared in one site but not others. There may be a collection of trainings saved at each office location of global organizations that are not easily searchable filling up a shared drive, or worse sitting on staff desktops. Staff might have great time-saving ideas but may not have a good venue to share these ideas with their colleagues.

A wiki can be used to solve all of the aforementioned issues, helping to facilitate the sharing of information in a global environment. A wiki is a website that allows contributions from any user. It is easy to use, making the input of new information by other users fast and convenient. The search function allows users to quickly find what they are looking for. Due to the many open-source packages available, it is inexpensive to set up.

This paper will cover one of the most popular wiki packages, MediaWiki, which is the same software used to run Wikipedia and SASCommunity.org. How to get your first wiki set up, the different features that can be activated to help share SAS and statistical information specifically, and thoughts on the policies that you will want to implement will also be covered.

INTRODUCTION
There are advantages and disadvantages to be aware of when deciding if a wiki is right for you and your department. A wiki is a website that is easily updated by any user. This allows anyone in the department to quickly share particular pieces of information, code, or statistical formulae using LaTeX, which is then easily read by any other user. In addition to this, users can edit or update the information on this page. All of the information in the wiki becomes a living document that grows over time. In some cases there may be an official document that should not be changed; it is possible to turn the editing off for specific pages.

Once information is available, there are multiple tools to help find and manage it. There is a search function built into the wiki for quickly finding specific topics. The wiki package has a built-in version control that allows users the ability to change information without worrying about damaging the page and allows users to easily see what has been updated on a page. Pictures and other files can be uploaded to be used supplementary to the information posted. There are built-in tools that show site statistics and find pages that need more development. The wiki can even be set up to send change notification e-mails to users when a certain page has been updated.

The biggest disadvantage for a wiki happens to be the same as the biggest advantage: anyone can edit it. While access to editing rights can be limited, the more access that is limited the less useful the wiki becomes for information sharing. The biggest fear is often the ability for misinformation to be posted and spread though this can be reduced or eliminated. It is necessary to have a solid usage policy that the users understand; this will be discussed more in the policy section. Since anyone else can edit, if mis-information is posted then it will eventually be peer reviewed and corrected. The pages in a wiki are living documents, they tend to grow and correct themselves when viewed by a group. It also helps that users can be required to be logged in to post information. Having a page tied to a user’s account helps encourage an awareness for the accuracy of what is posted.

One of the best things about using the MediaWiki package to set up a wiki is that it is open source software, so the starting costs are minimal. All that is needed is a computer to act as a server and the time to get everything set up. After getting the initial install working, along with necessary extensions, testing to ensure the wiki is an appropriate option can begin.

INITIAL SETUP
Before setting up the wiki, becoming familiar with the software in general is recommended. Look around the MediaWiki and Wikipedia website for a feel of how the site is set up and to generate ideas for organization content.

Once familiar with the wiki website, set up can begin. This site can run on either a linux server or a windows server running WAMP. Detailed information for installing to either platform can be found on the MediWiki Installation page so it won’t be covered in great detail here. If unexpected problems occur while running the installation program try searching online to troubleshoot. One of the biggest advantages of using an open source wiki package is that an abundance of information exists for it, including solutions for many of the problems that may be encountered.

Once the wiki is up and running, update the settings, if appropriate. Almost every setting can be updated or modified
in the file "LocalSettings.php," located in the root folder of the website files. Any changes made to this file are immediately made active once the file is saved. Some of the options in this file are:

- **Enabling Thumbnails**
- Change the allow list of upload extensions
- **Enabling the <Math> tag** for LaTeX support
- Add custom Namespaces
- Require users to be logged in before posting (and other permission settings)
- **Full options list**

Another item that can be updated is the wiki's logo. The top left image is 135 x 135 pixels. Once a replacement image has been chosen, modify the Local Settings file to point to the new logo.

This is just a short list of some of the more common items that can be edited. Almost every aspect of the website’s functionality can be customized. Between the MediaWiki website and an internet search, step by step instructions can easily be found for almost anything. Another reliable resource is the MediaWiki FAQ. This is a great page to read through for new ideas on customization when setting up the wiki.

**EXTENSIONS**

Once the wiki has been installed and customized, start adding extensions. An extension is a type of plug-in that enhances the abilities of the wiki for any particular function. At the time this paper was written the MediaWiki extensions list had almost 1500 extensions, so there’s generally something there to fulfill any need you may have.

There are many types of extensions, and appropriate ones can easily be found. If a preferred function is missing, generally an internet search will quickly find the extension needed. Another useful way to discover new extensions is to see what other wikis are using. When going to a wiki, look at the special pages under the toolbar section on the left, and on that page look for a link that says Version. This will display which version of MediaWiki the page is running and all the extensions it is using, including their descriptions.

The following extensions are recommended to get started with.

- **LDAP Authentication**: One of the biggest obstacles with adding a new system that is expected to have a large number of users is having them remember yet another password. This is an extension that will allow users to log in with their Windows username and password. It is a surprisingly simple extension to setup, even with little knowledge of how LDAP works. It doesn’t require any special accounts or permissions to work; just pass it the correct server name and domain, and the wiki will be ready.

- **Syntax Highlighting**: One of the main types of information that will probably be shared in a Data Management or Biostatistics environment is SAS code. Luckily, this extension greatly helps to facilitate this. It will add the <source> tags to the wiki, allowing programmers to wrap SAS, VB, or a plethora of other types of programming languages in a specially formatted box. This box will respect code spacing and add syntax highlighting (similar to the default program of that language) to help make the code much easier to read.

**Code**:

```plaintext
/* Return the contents of the C:\ folder in the FolderMembers data set */
data FolderMembers [keep = ParentFolder MemberName];
  length ParentFolder MemberName 255;
  ParentFolder = 'C:\';
  co = filename('folder', ParentFolder);
  did = dopen(co, 'r');
  nMembers = dnum(did);
  do i = 1 to nMembers;
    MemberName = dread(did, i);  
      output;
    end;
  co = close(did);
  co = filename('folder');
run;
```

**Fig 1. Output from the wiki syntax highlighter**

- **Preloader**: In the next section on policies the usage of templates to help keep the wiki consistent is discussed. To help make this easier for the users, the extension Preloader will allow you to set a template for any new page made per namespace. This allows users who have no experience with wiki markup to jump in and fill out a template in order to make their article.

- **Flash Player**: It is becoming more and more common for trainings to be recorded for future viewing. This
allows for convenient access to any training. Since the wiki is a place to store various pieces of information, it is also a great place to store recorded trainings. By embedding a flash player, a user can upload trainings to the wiki’s server and have them stream directly from any article.

POLICIES
When the wiki is up and running it is a good idea to set some clear usage policies to establish boundaries for the website’s use. Not everything will be considered acceptable to post on the wiki, so laying out the dos and don’ts early on will help eliminate the need for any moderation. While it is important to be as thorough as possible, creating the policies as a list with each bullet point short and to the point will encourage every user to read the list in its entirety.

For policies on content, try to list out items that should not be on the wiki. Avoid limiting what is appropriate, as this may stifle new ideas in the future. Some items that may be considered restricting are any SOP related documents, official training documents or guidelines, and any type of information which already has an established location elsewhere. It is also good to reiterate and link to the company’s privacy and copyright policy.

In addition to the content, it is good to lay out policies on how users may interact with the website. This includes the correct method to post new information, and the correct area for different articles. Having employees use a template when posting helps immensely with keeping a constant look for each article. Another issue is how users should handle making edits to existing pages. Laying out a plan for users to correct faulty information will help encourage them to do so without feeling like they are messing with someone else’s article.

Another way to help with pages needing edits is to encourage the use of flags or corresponding on the discussion page. A flag is a pre-set box of information that can be appended to the top of any page to alert users about that article. These can be used to mark pages that are in violation of a policy, have possible incorrect information that needs to be reviewed, or even mark a page for deletion. The discussion page is a tab associated with each article. Users can go to any article’s discussion tab to discuss that article’s content and whether it needs to be edited or added to.

Finally, it is good to set up policies or guidance on maintenance early on. The MediaWiki package is filled with tools that allow users to quickly review a large amount of content from the wiki in a short amount of time. These can all be found in the special pages section of the wiki. Utilizing these, while occasionally monitoring the Recent Changes list, can allow a person to easily monitor the site for any inappropriate content without having to spend a large amount of time doing so. Designating a small team to this task should help ensure that the wiki runs smoothly. They can also be the same team that users can contact when they have questions on how or where to post new material.

USAGE IDEAS
Once the wiki is set up it is ready for the addition of content. Without focus or a starting point, this can be a bit daunting, so below is a list of some possible categories to start with.

- SAS code: With the ability to add syntax highlighting, the wiki is a convenient tool to share SAS code amongst programmers. Everything on the wiki is quickly accessible and searchable, making it ideal for quickly finding what is needed.

- General Tips & Tricks: The wiki is ideal to share those “how to” tidbits of information that seem to float around through e-mail. By consolidating them all into a searchable format, it becomes a lot easier for users to find what they need without having to ask around.

- Statistical information: There is always a need to share statistical information, whether it is related to a
specific therapeutic area or some new method to learn. With the wiki’s ability to display statistical formulæ using LaTeX markup, this becomes easy to do and eliminates passing large books around the office.

- Conferences: With so many different local and national conferences being held on a regular basis, it is important to get the latest information out to your department. While only a few people may be able to attend a conference, creating an area where they can share this information can help it reach as many people as possible. This section can also be used to keep track of who went to which conference as well as any papers the company presented.

- Bios: As it becomes rarer to have an entire department located at a single site, quite often people work together without meeting in person. A fun way to help bring the department closer together is by having a section where users can post a biography of themselves. This way, when one is working with a new individual, he can review his colleague’s biography and have a face to go with the voice on the phone.

- Frequently Asked Questions: Many times there will be a group or team that ends up answering a flood of questions from users in the department. This can be streamlined by having an area where frequently asked questions (FAQ) can be posted with the answers. Now users can access this FAQ first if they have any questions and see if it has already been answered. This can save teams a lot of time by reducing the amount of inquiries they receive.

CONCLUSION
What a wiki is, how to get it started, and how it contributes to better information management has been introduced in this paper. As an open source solution, it is economical and has extensive help available online. While the users should be cautious at times with the validity of what is posted, through discussion pages and peer review the information stays accurate and up-to-date. Through its easy to use interface, searching capabilities, and fast-loading pages, a wiki can quickly become a hub of information. It is a blank slate that can be set up to share whatever information is needed, especially SAS and statistical information. The sky is the limit!

REFERENCES
MediaWiki - http://www.mediawiki.org/wiki/MediaWiki

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