Collaborative writing: Tools and tips

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ABSTRACT

Majority of technical writing is done by groups of experts and various web based applications have made this collaboration easy. Email exchange of word processor documents with tracked changes used to be the standard technique for collaborative writing. However web based tools like Google docs and Spreadsheets have made the process fast and efficient. Various versioning tools and synchronous editors are available for those who need additional functionality. Having a group leader who decides the scheduling, communication and conflict resolving protocols is important for successful collaboration.

Key Words: Collaborative writing, Google docs, CVS

INTRODUCTION

Gone are the days when research projects used to be confined to the four walls of an institution. The modern day research teams often consist of experts from various locations and are not bound by geographic constraints. Hence collaboration is a vital part of the entire workflow and writing is no exception. A significant portion of technical writing is done not by individuals now, but by various types of groups [Figure 1]. Internet brought about remarkable improvement in the way researchers collaborate. Protocol writing for clinical trials is an area where collaboration is of vital importance. Several web-based protocol writing systems with integrated support for collaborative reviewing and collaborative editing are already available.[1,2]

EMAIL AND WORD PROCESSORS

Email has made exchange of written material fast and efficient. Almost everybody uses word processors these days among which MS Word is the most popular. MS word documents can be sent as email attachments. However the recipient requires a copy of MS Word installed in his/her computer to open the attachment. MS Word has an option to track changes and comments in a document. Using this feature you can allow others to edit or add comments to your document without changing the original text. These changes can be later merged with the document or rejected. This feature is available from the 'Tools' Menu and the 'TRK' text in the status bar will be black if this feature is enabled. There is an option to hide tracked changes too. Sending the manuscript to the editor without removing the tracked changes is a common mistake.

TEXT BASED TOOLS

However collaborative writing in this way can be quite time consuming if more than two contributors are present. Besides
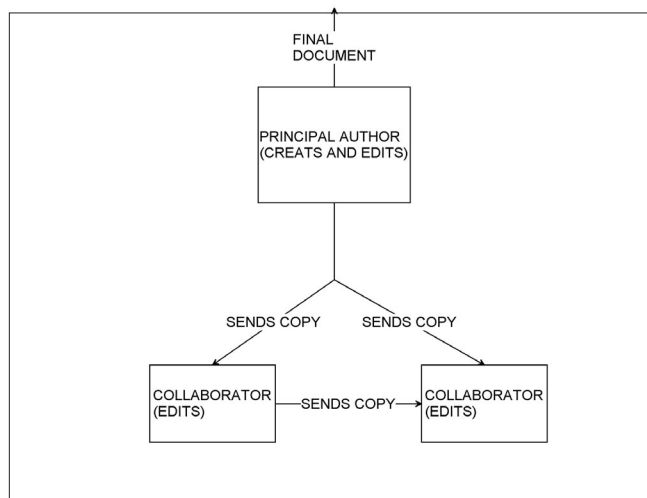

Figure 1: Collaborative writing flowchart

maintaining different versions of the document is difficult and confusing. These limitations have been resolved by various online collaborative writing tools. The earlier 'web writing tools' supported only text and were popularly called as wiki. The editing functions available were rudimentary, but multiple authors could be accommodated and versioning was easy and straight forward. Later more advanced text based editors with more features than a wiki, like whiteboard[3] were introduced.

GRAPHICAL TOOLS

With the advent of web 2.0 technology,[4] web based graphical editors were introduced with powerful word processing capabilities comparable to stand alone applications. Google Docs[5] and Zohowriter[6] are the frontrunners among web based graphical editors. Both support sharing of documents either privately with selected individuals or publicly, along with basic word processing functions including 'making bulleted lists', sorting by columns, adding tables, images, comments, formulas and changing fonts. 'Google Docs' allows you to upload your files including MS Word documents which can be subsequently edited. Zohowriter has several export options like PDF, MS Word and HTML. Both have extensive versioning support and you can easily revert back to any previous versions of your document. However one functionality which is conspicuously absent in both is the bibliography management.

VERSIONING SYSTEMS

Researchers accustomed to bibliography management software like EndNote[7] and Reference Manager can hardly function without it. Hence if you want to use your word processor and bibliography management software, but still want to collaborate and keep track of versions, the best solution is Concurrent Versions System (CVS) commonly used by software developers. CVS in simple terms is a system that lets groups of people work simultaneously on groups of files like document files. CVS consists of a central 'repository' of the most recent versions of the file on a server along with all previous versions so that any collaborator can request an older version. Freepository.com[8] is an online server providing this service free. You or your collaborators may at any time create a personal copy of these files by 'checking out' the files from the central repository into a local repository [Figure 2]. If at a later date newer versions of the files are deposited in the repository, you can 'update' your copy. You may freely edit your copy of the files. If new versions of the files have been placed in the repository in the meantime, doing an 'update'
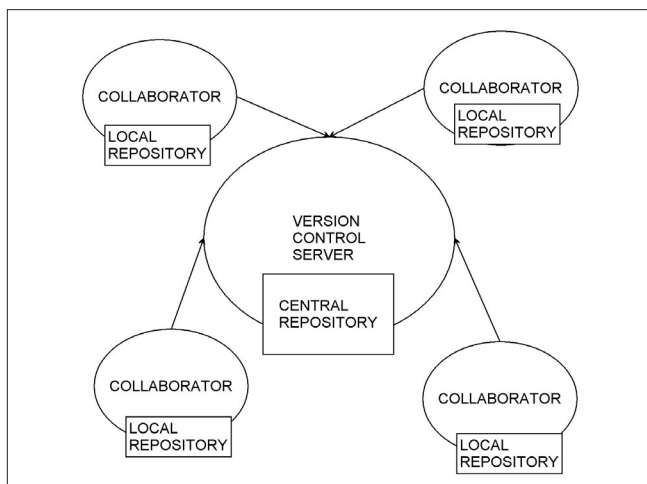

Figure 2: Concurrent Versions System architecture

merges the changes in the central copy into your personal copy. Once you have finalised the changes you have made in your copy of the files, you can 'commit' them into the central repository. All these tasks are usually performed by CVS client software like TortoiseCVS.[9] A superior versioning system called Subversion (SVN) has superseded CVS. A more detailed discussion of CVS is beyond the scope of this article.

SYNCHRONOUS EDITING TOOLS

All the above methods for collaborative writing methods are asynchronous and do not allow editing of the same file at the same time. Synchronous editing tools are still in its infancy. SynchroEdit[10] is a browser based multi-user real-time editor, but it is still in beta stage of development. Coword,[11] a system developed by School of computer engineering at Nanyang Technological University Singapore, converts MS Word into a real-time multi-user collaborative word processor.[12] Changes made to the document are immediately displayed for all users to see and it is available as a freeware. However synchronous collaboration is required only in very few cases.

SPREADSHEETS

Multi-centric studies may also require data sharing.[13] Google and Zohowriter also have web based spread sheets.[14] CoPowerpoint is similar to Coword which converts MS PowerPoint into a real-time multi-user collaborative slide authoring and presentation system.

TIPS FOR EFFICIENT COLLABORATIVE WRITING

Collaborative writing, like any group activity, has problems of scheduling, communication, and conflicts.[15] It is important

to have a writing plan before embarking on the project. It includes a clear description of the writing tasks, sequence of completion and a realistic completion date for the project. A group leader who is in charge of the overall production of the document can assign different tasks to the members. A style guide is important to ensure a consistent format and style. Procedures for resolving possible conflicts should be agreed upon before the start of the project.

As the importance of translational medicine grows in health research, collaboration between individuals, groups and organisations will only increase. The new web based technologies makes collaborative writing fast and efficient.

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