

Working in virtual environments: Three practical collaborative web tools

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In our work as researchers and development workers, we are tasked with producing more and more information, even though we complain about information overload. Collaboration is increasingly complex but is fundamental to achieving our goal of reducing poverty and hunger through high-quality international agricultural research, partnership and leadership. Recent developments in information and communications technology (ICT) can make data, information and knowledge more available, accessible and applicable (CGIAR ICT-KM Program, 2008), which should contribute significantly to the effectiveness of our collaborative work. This Brief describes three web tools that can enhance participation and collaboration in geographically distributed teams: wikis, blogs, and social bookmarking. Each tool is briefly explained, examples of use are provided and analyzed, and some useful practices are suggested. It is our assumption that by making it easy to produce and share information, we can empower our staff, engage more effectively with our partners, and reach a wider audience of end users.

Introduction

Our work in international agricultural research and development is becoming increasingly complex, specialized and global, which is both highly challenging and rewarding and is changing our individual work habits. Less attention is given to exclusive internal consultation processes in favour of multiple views from outside colleagues, stakeholders and targeted users. We are starting to produce and organize our information less on our desktop and coming to rely more on the Internet. The emergence of 'Web 2.0' tools allows staff to practice horizontal and decentralized communication with colleagues and partners. The issue of participatory web-based communication is fundamental to the effectiveness of our work and it requires us to work differently and to share more.

This ILAC Brief aims to reach researchers and all those who are interested in learning about participatory and effective web-based collaboration and communication.

The information provided is based on the experiences of a group of CGIAR staff and partners who led or contributed to the Institutional Knowledge Sharing Project of the ICT-KM Program of the CGIAR. Among other things, the project looked specifically at the tools and methods that can enhance face-to-face and virtual collaborative processes and influence our organizational change processes.

Wikis: create collaboratively!

Many of us are familiar with Wikipedia (<http://www.wikipedia.org>) - an online, multilingual encyclopaedia that users can edit and which ranks as the largest and most widely used reference work on the Internet. Perhaps less well known is the platform on which Wikipedia was built - an online open-source version of a software package known as Wiki (in honour of a Hawaiian term for 'quick'). In addition to being quick and easy to create, wikis also allow multiple users to add, remove and edit content in real time, thereby making it ideal for collaborative writing or information collection purposes. Wikis, like the host service Wikispaces (<http://www.wikispaces.com>), can be public or password protected to enable a wide range of group use. Furthermore, page revision histories are saved automatically, allowing users to go back and compare previously saved

versions and reverse changes if necessary. Thus, this simple tool provides users with an information repository, shared editing space and version history, all in one.

Applications of wikis

The not-for-profit sector has displayed ingenuity in using wikis in support of online learning spaces and the collaborative writing of reports and articles, as well as for managing projects and planning events. Two examples from the field of international agricultural research are described below.

In 2006, the International Rice Research Institute (IRRI) began work on a project geared toward creating an Informatics and Communication Service for Crop Science, which is described as a 'public research, development, and dissemination service for informatics and communication technology targeting agricultural scientific research and extension'. Thomas Metz, the project leader, decided to use a wiki for collecting and publishing good data management practices. This collection of good practices in research data management aims to be like a cookbook with expert recipes for data management. Working collaboratively, incrementally and quickly was crucial in allowing the project team to capture more than 200 learning objects in less than a year - much less time than would be expected in a centrally managed system. Despite the project's success, such decentralized information management and immediate online publishing continues to tug at people's comfort zones. Yet the project team is confident that in highlighting these successes, the wiki model will be embraced by more CGIAR programmes in the future².

That same year also witnessed the launch of the CGIAR Virtual Library wiki, an online platform used by Information Managers and IT professionals from around the world working on a portal to allow searches across more than 180 leading databases related to the agricultural and environmental sciences and more than 4,000 electronic journals and books. According to Luz Marina Alvaré, the project coordinator, the wiki model was selected because project information could be updated quickly and easily by collaborators from around the world without having to constantly send emails back and forth. By making the wiki private, it offered a space for online conversations among

¹ Web 2.0 refers to what is perceived as a second generation of web development and web design. It is characterized as facilitating communication, information sharing, interoperability, user-centred design and collaboration on the World Wide Web. It has led to the development and evolution of web-based communities, hosted services, and web applications. Examples include social-networking sites, video-sharing sites, wikis, blogs, mashups and folksonomies. (Wikipedia)

² http://cropwiki.irri.org/everest/index.php/Main_Page

project team members. Moreover, the wiki soon became the 'living knowledge base' for all project-related information, including annual reports, usage statistics, marketing activities and even budget information. Alvaré contends that the wiki has decreased email traffic among the project team considerably, while avoiding confusion over which document version is the most up-to-date. In short, the wiki has become a 'one-stop shop' for all project-related information.

Blogs: create a 'learn as you go record'

Like wikis, blogs are easy-to-use platforms for free-of-charge online publishing. Blogs started as personal online journals, but are now also used in many professional contexts. They consist of a series of regular entries displayed in reverse chronological order. They allow multiple authorship, the integration of several media (such as photos, video, RSS feeds³ and bookmarks) on one site, and interaction with readers through comments and replies. With 120,000 new blogs launched daily, the so-called blogosphere consists of an infinite range of subject matter written by professionals and amateurs alike.

Applications of blogs

The international not-for-profit world is striving to catch up with emerging trends by publishing research blogs, conference, event and project blogs, and offering technical training to their staff and partners around the world. The following examples illustrate how blogs can be used for different purposes.

Enrich project websites: The ICT-KM blog has become the driver for web-based publishing and outreach for the entire ICT-KM Program and all projects under its domain. When the blog was launched, the team decided to replace the news section of its website with the blog updates in order to highlight more dynamic content. The blog provided individual project leaders with an easy-to-update space on their team's work while also rendering this content shareable in such a way that it could be pulled into different project websites. On a similar note, and taking this practice further, the CGIAR Systemwide Program on Collective Action and Property Rights (CAPRI), as well as the Alternative to Slash and Burn (ASB) Initiative rather than using the blog exclusively to announce their programmes' news, created blogs to fulfil the mission of (and ultimately replace) their email listservs and newsletters. The CAPRI and ASB blogs have become permanent online repositories of programme information, such as conference and publication announcements, job openings, and calls for research proposals that are then emailed to its members. If you start a new project and have a need to communicate information in real time, a blog can fulfil a website's purpose. Besides the chronological news entries that form the main body, blogs allow you to have separate pages for your different project areas. Furthermore, all content can be organized into categories and tagged, allowing the project team to link to specific project activities and readers to search for information of interest. Finally, you can pull into your blog other project information resources that you might want to set up (such as photo galleries, links and maps).

Share and document your meeting live: Another novel application of blogging that is receiving growing attention in the research and development community is the use of blogs to provide live coverage of conferences or workshops. Live blogging, also known as social reporting, raises overall awareness, and allows interested parties to follow an event as it happens even if they are unable to attend the gathering in person. One of the earliest examples is IFPRI's⁴ 2020 Conference on 'Taking Action for the World's Poor and Hungry People', which took place in China in October 2007. The blog was used to post short stories on key issues and presentations covered during the conference while also allowing online participants to comment and ask

questions. The conference team also created short 30-90 second 'blips' (online videos) of interviews with prominent participants at the event, which were intended to provide remote participants with a more realistic glimpse of the issues that were engaging conference attendees. Moreover, with the posting of workshop agendas and PowerPoint presentations, users had a single online point of access to all conference-related materials. Expanding the conference into the blogosphere captured the attention of new audiences, thereby stimulating online conversation and driving traffic to related online resources including IFPRI's corporate website, ifpri.org.

Applications of social bookmarking

Social bookmarking services facilitate online resource sharing. Here are some examples of applications of social bookmarking.

Share useful links on a website: The International Food Policy Research Institute (IFPRI), like many development organizations, regularly maintains a list of useful information resources for citizens of developing countries. For years, this list was maintained as a static web page, and new resources were added by sending an email to the web team who then would alter the HTML file with the updated resource name and link. This list is now managed more effectively through Delicious and embedded into IFPRI's website. This allows users to simply tag new resources in their Delicious accounts which are pulled into the list dynamically. Content on IFPRI's 'Resources for Developing Countries' page is now updated much more frequently than before as the barriers to online publishing and web updates have been effectively removed. Moreover, some users have gone from being passive recipients of information to active contributors to the page, thereby facilitating the creation of a Spanish-language version of the list in 2007.

Construct an online bibliography: A similar strategy was used in creating an online bibliography of reading materials in preparation for the 2020 Conference in China, as users were able to suggest additional background materials for the conference by using a common tag ('food4all') in Delicious. A web-based submission form and email address were also offered as options to allow users to suggest additional resources, and these were also entered in Delicious and pulled onto the conference page.

Keep notes during a workshop: The ICT-KM Program of the CGIAR teamed up with FAO and other partner organizations in developing a series of knowledge sharing workshops. An online learning platform was used internally for workshop announcements, personal learning logs, discussion fora and the sharing of online resources. For this last class of materials, participants were encouraged to share useful links via Delicious by using a common tag ('ksworkshop'). The feed of newly added resources was then pulled onto a private group site so that workshop participants could keep up-to-date with what the facilitators and their fellow participants were finding and recommending from the web.

Useful collaborative web practices

While the tips for web collaboration below are of a very practical nature, the main suggestion is to connect with champions in your organization or team and to start creating a small but vibrant user group to generate and foster web practices. Together you can consider the following tips and steps to scale up collaborative web practices.

- **Define the purpose and clarify roles and expectations:** Before you set up a collaborative web tool, identify a clear purpose and ensure that the key people involved understand and agree with its use for collaborative creation. Use good judgment by looking at present and desired human interactions and not only at what technology

³ RSS (most commonly translated as 'Really Simple Syndication') is a family of web feed formats used to publish frequently updated works - such as blog entries, news headlines, audio and video - in a standardized format. (Wikipedia)

⁴ International Food Policy Research Institute

has on offer. Define responsibilities among team members in terms of contribution, leadership and facilitation, and check the blogosphere for existing blogs in your area of work to help you define your specific niche. If your team is not familiar with the tool, plan a short introduction and training session.

- **Determine accessibility:** Many collaborative web tools can be public (editable by all), private (editable only by a selected group), or closed (viewable and editable only by a selected group). Determine the level of accessibility with your team as this determines how you configure the wiki tool itself and if it has a cost. Consider bandwidth limitations and choose tools accordingly.
- **Get the tagging right:** The process of tagging, meaning attributing keywords or categories to new resources is crucial. Since tagging is largely done via user-generated 'folksonomies' (as opposed to a formal taxonomy), you should be very systematic in determining the tags of your blog posts, wiki pages or bookmarks since this will be the primary mechanism by which users will be able to browse information in the future. Create a tag for events that can be used for all tools and resources. If your team is researching new areas, agree on a single tag or set of tags to allow you to easily notice each other's finds. On a website, tagged resources make a nice sidebar addition to your primary content.
- **Contribute regularly and from your personal perspective:** The primary challenge for many users of collaborative web spaces revolves around being able to sustain them with regular contributions. Take 5 minutes every day and think about information or insights that are worth sharing. While blogging, try to post open questions to your readers and invite them to comment. Blogs work best when readers can perceive your personal learning and insights. Seek feedback from your colleagues, especially when writing in an intercultural context, being careful to avoid institutional jargon. When you bookmark a resource, add a personal comment about the bookmark. By adding a short annotation, you can tell other people why you thought the link was relevant or important, increasing the value of the tagged link.
- **'Listen' to and participate in related sites:** If you decide to start a blog, read related blogs and make linkages: sign up for blogs and for content from your peers' and communities' platforms to help you shape your ideas and keep your content fresh. Bloggers who link to one another are harnessing the viral nature of Web 2.0, in which interesting ideas are quickly spread and picked up and discussed by other online users. If you choose to start social bookmarking, find people who tag resources of interest to your work and subscribe to their 'tag feeds'. In the case of wikis, don't hesitate to join and contribute to open wiki spaces of interest.
- **Mix different media:** Where bandwidth allows, collaborative sites benefit from multimedia such as videos, images and audio podcasts. These add an important 'human touch and voice'. They also address the issue of user preferences. Some prefer text; others like to get visual or audio input to complement the textual information.

Conclusions and recommendations

Online collaborative spaces and practices are used to share work in progress, encourage regular feedback, and improve the use and re-use of information, as well as to create and facilitate online communities. In our experience, these practices support the emergence of an ongoing learning process. They enhance engagement, involvement and ultimately the impact of our work. At the organizational level, expected impacts are the empowerment of staff, increased transparency and internal capacities which should contribute to organizational development and change.

In our experience, three principal barriers have to be overcome to allow those practices to thrive, as follows.

- **Work culture:** Researchers are unaccustomed to publicly sharing their work-in-progress. There is a general habit of waiting for results to be peer-reviewed and finalized prior to any form of publication. Possible solutions are to showcase, through examples or pilot projects, the difference that online collaboration can make, and to build capacity in the use of the tools. Web-based collaboration is also effective for empowering junior staff who are more used to working in online environments and staff based in the regions who often feel isolated from headquarters.
- **Incentives:** Science has traditionally relied on a few key vehicles for sharing and validating new knowledge. One of the most important is the publication of research results in peer-reviewed journals, which is still the most rewarded research output. In order to sufficiently reward collaborative practices, these practices should be included more explicitly in appraisals and staff evaluations.
- **Information technology policies and traditional IT staff mindset:** The problem of connectivity and bandwidth, which is real in many organizations and offices based in developing countries, often leads to the use of web tools being excluded. But bandwidth and security are not the only issues. We have observed the tendency for traditional IT staff to protect their areas of influence, which decrease when staff turn to tools that they can use independently. In order to avoid conflict and the possible risk to information security, users can host collaborative web spaces outside institutional firewalls. Simultaneously, champions of online collaboration should lobby for and encourage discussion about the benefits of these tools inside their organizations.



Online collaborative practices enhance engagement, involvement and, ultimately, the impact of our work. This illustration from one of the Institutional Knowledge Sharing workshops summarizes the important success factors for online collaboration.

Further reading

- CGIAR ICT-KM Program. 2008. Triple A approach. Available at <http://ictkm.cgiar.org/what-we-do/triple-a-framework/>
- Hinds, P.J. and Kiesler, S. 2002. Distributed Work. Cambridge, MA: MIT Press.
- Tapscott, D. and Williams, A.D. 2008. Wikinomics: How Mass Collaboration Changes Everything. New York: Penguin.
- Wenger, E., White, N. and Smith, J.D. Digital Habitats: stewarding technology for communities. Portland, OR: CPsquare, 2009.. ISBN: 9780982503607.

Related websites:

- Blogs: <http://www.kstoolkit.org/Blogs>
- CGIAR vision statement: <http://www.cgiar.org/changemanagement/index.html>
- Knowledge Sharing website (including blog and toolkit): <http://www.ks-cgiar.org>
- Nancy White's blog: <http://www.fullcirc.com>
- Social bookmarking: <http://www.kstoolkit.org/Tagging+-+Social+Bookmarking>
- Wikis: <http://www.kstoolkit.org/Wikis>

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