

Evaluation of tools for synchronous collaboration

Executive Summary

In cooperation with a number of Swiss academic institutions, the NET – Network for Educational Technology at ETH Zurich conducted an evaluation of e-collaboration tools to learn more about the features of existing products and to provide a basis for the decision to implement one of them. Adobe Connect, Dimdim, Openmeetings, and Wimba Classroom made it to the final round.

Background

The starting point to the evaluation was twofold: On the one hand, the acquisition of Mar-
ratech by Google in 2007 led to an uncertainty about the further development of this product, which was in use at ETH Zurich at that time; in 2008, it eventually turned out to become abandoned altogether. On the other hand, e-collaboration services at ETH Zurich were re-launched in 2008 within the NET – Network for Educational Technology) and the DiZ (Centre for Teaching and Learning). Part of that process was to describe the status quo in e-collaboration - also with regard to the solutions available.

The decision was therefore taken to conduct and organize an evaluation of a number of e-collaboration tools with a distinctive focus on synchronous cooperation, supported by audio and video (a.k.a. webconferencing). This coincided neatly with a second project headed by the *Scuola Universitaria Professionale della Svizzera Italiana* to look into virtual organization support tools with a focus on asynchronous solutions.¹

The products we considered in our evaluation were either already in use at Swiss academic institutions (Adobe Connect, Wimba Classroom) or alternatives to these discussed in the e-learning community; this pre-selection resulted in some popular and well-known products like GoToMeeting or WebEx not being considered.

Evaluation process, evaluation team

The evaluation process consisted of two major steps: First, a predominantly quantitative analysis was carried out using a matrix with a number of criteria the evaluation team considered to be relevant. These ranged from general considerations about the product (licensing, implementation) over technical characteristics at the user end (installation procedure, supported platforms) to their respective features. The majority of criteria was dealt with on a yes/no basis, with some of them defined “critical” in that they were prerequisites to further investigating the product; a list of these can be found in the next paragraph.

¹ <http://si.supsi.ch/index.php?page=vo-tools-e>.

In the second round, a more detailed analysis looked into specific questions and finalized the evaluation with a short report on each of the products that had survived the first round. The selection was made with regard to overall and critical criteria within the matrix and on the basis of a voting process within the evaluation group. Therefore, the selection is a subjective decision of the team members also. The team consisted of representatives from four different Swiss universities and SWITCH, the Swiss NREN.²

Matrix evaluation

16 products were featured in the matrix, Marratech was added for comparability reasons. Some of these were fully evaluated, others received a shorter review due to obvious inadequacies or deficiencies, especially regarding critical features (e.g. Microsoft Communicator). The testing and evaluation of a product was executed by one or two team member(s). Each of them also had a vote to choose products for the second round, selecting from those that had passed all the critical criteria.

Critical criteria were defined by evaluators to sort out inadequate solutions as defined by institutional needs; these criteria were, in the context of their justification:

- Cross-platform functionality. Webconferencing solutions have to connect users from at least two of the three operating systems relevant in academia (Windows, OS X, Linux)
- Installation ease. To provide a low threshold for users, programmes should not require the installation of a file or a programme; also, system requirements should be low overall (e.g. with regard to Java installation)
- Audio and video functionality, thus filtering for example avatar-based working spaces.
- Sharing functionality as the prerequisite to some form of object-based collaborative learning or working. Therefore, programmes should at least allow for the desktop or programmes or files to be shared; whiteboard and chat are a must.

Further criteria related to additional functionalities (recording capability, integration with LMS/VLE, possible roles).³

A summary of the matrix can be found on the NET e-collaboration website.⁴

Six products passed the threshold of the critical criteria: Adobe Connect, Dimdim, Elluminate Vroom, Open Huddle, Openmeetings, and Wimba Classroom - too many for a detailed analysis. The team therefore voted for three products they wanted to take a closer look at. Adobe Connect, Dimdim, and Wimba Classroom were the winners of that vote; Openmeetings was included for having a closer look at an Open Source solution.

² From the University of Bern: Hansjörg Lauener, Marcel Raimann, Martin Studer, Ulrich Woermann (iLUB); Philipp Tobler, Reto Schürch (ID). University of Zurich: Joël Fisler (MELS), Benno Volk (ELC), Florian Gnägi. University of Fribourg: Dominicq Riedo. SWITCH: Rolf Brugger, Andreas Röllinghoff, Olivier Jeger. ETH Zurich: Claudia Schlienger-Merki, Julia Kehl (NET), Olaf A. Schulte (NET).

³ In the original matrix (available on demand; please e-mail schulte@net.ethz.ch) we also came up with ratings regarding ease of use and usability for different scenarios; here, marks ranged from -1 (not good) to +1 (good).

⁴ <http://www.net.ethz.ch/services/e-collaboration/evaluation>; for a full version please e-mail schulte@net.ethz.ch.

Qualitative evaluation

For the detailed evaluation, three teams of 2-4 people were set up to look into each product. The team after the first round decided upon criteria to guide their analysis throughout the second round. The majority of these is more qualitative in nature, some more quantitative came up as “missing” after the first round:

- Statistics, protocols, and documentation
 - How can the engagement of students be diagnosed and/or analyzed?
 - Can chats be stored?
 - Can the whiteboard be stored and distributed?
- WYSIWIS⁵: Is there a way to see what other users (i.e. students) are seeing?
- File management
 - How are files being uploaded?
 - How are files being shared in a meeting?
 - Is there a way to retrieve files after the meeting?
- File format: What formats does the programme support for uploading and sharing?
- Are there different layouts for different scenarios/settings (presentation vs. interactive conference)
- Additional rooms: Is there an easy way to separate groups within one conference?
- Usability
 - Easy to use
 - Plausible icons and layout
- Roles
 - How many are there?
 - How are they managed?
 - How do they translate into different scenarios?

In addition, when other relevant features or problems occurred during the testing, they found their way into the report.⁶ The following summaries describe the second evaluation phase.⁷

Adobe Connect

While there are no dedicated statistics in Adobe Connect⁸, the chat can be logged, stored and e-mailed easily. WISIWYS does exist at least for desktop sharing, but not for other layouts. The file management in Adobe Connect is comprehensive, which also makes it a bit complicated. Files can be uploaded before a meeting and retrieved from that moment on, even after the actual meeting. URL can be created and e-mailed to provide access to files and folders and access to these can be individually assigned. The whiteboard, however, can not be exported from the actual meeting.

⁵ What You See Is What I see.

⁶ Full version available in German only, please e-mail schulte@net.ethz.ch.

⁷ If a feature (e.g. WISIWYS) is not mentioned in the summary, the product does not provide it.

⁸ At least not in the version SWITCH is providing for Swiss institutions. Other versions will probably contain functionalities along the line of learner tracking and course management; cf. <http://www.adobe.com/uk/products/connect/productinfo/features/training/>.

With regard to file formats, it is rather surprising that Adobe's very own PDF has to be converted to some Flash format using Adobe Flash Paper - a non-free programme from Adobe, which is available only for PC! Mac users have to get Contribute 3 from Adobe (containing Flash Paper) or convert documents using online services⁹. JPG (not TIF) and PPT are easier to handle, they can be imported directly.

There is a number of layouts in Adobe Connect (Sharing, Discussion, Collaboration) to switch to quite easily and you could also create your own layout. In addition, modules within these layouts (chat, camera, whiteboard) can be moved as well.

In order to split groups for their size or for didactical reasons, Adobe Connect provides for break-out rooms the moderator can easily create and manage. Host, presenter and participant are the three default roles in Adobe Connect with the presenter being something in between the others. As roles can be customized and changed easily, individual and ad-hoc scenarios are feasible. Recordings of the meetings come as Flash Video (FLV) and the URL can be e-mailed minutes after the meeting.

Usability overall was considered good, especially from the user end (with the click-to-speak mechanism being the exception to prove the rule). Moderators, however, should consider a training or at least an intense preparation for each meeting as the functionalities are manifold and therefore hard to handle - especially with complex settings.

Openmeetings

Having released 0.8 at the time of this report, Openmeetings was in release 0.7 at the time of our evaluation. Unfortunately, there was some maintenance work that prevented us from using the official demo version. We therefore decided not to further explore Openmeetings; however, it seems an alternative worth watching in the future as the development work seems very active (cf. <http://code.google.com/p/openmeetings/updates/list>). For an external hands-on report cf. <http://gopaultech.com/blog/2008/05/openmeetings-free-video-conferencing-software/>.

Dimdim

Again, timing was a bit unfortunate for the evaluation in that it used version 4 - with 5 being released days before the end of the evaluation phase, so it should be helpful to look at the latest version for improvements. We are looking at the free distribution here.

Dimdim doesn't support statistical analysis of your meeting and recording excludes the whiteboard and shared browsing of the web. Also, we realized that Dimdim did not offer video for more than two participants and needs a plug-in to share the desktop - at least in the free version. It also lacks a marker to highlight parts of the shared document or whiteboard. The visual impression is positive, it's easy to recognize different functionalities and dialogues with the user are efficient and informative. Chat protocols seem to be part of the recording process and come to the organizer of the meeting together with the information about the URL of the recording.

⁹ E.g. <http://online.print2flash.com/>.

Sharing PPT(X) and PDF is easy, other formats are not supported. Only the organizer can upload documents and there is really no role management: Either you're organizing or participating. The same goes for break-out rooms or layouts: The free version does not support these additional functionalities.

This is somehow characteristic in that Dimdim uses the free version to lure people into products with costs, an approach other vendors also take. Here, this might actually work because the quality is quite reasonable and the fact that it is Open Source makes it even more attractive. On the other hand, the combination of a free basic and several commercial full versions with an Open Source release is somewhat difficult to understand.

Wimba Classroom

The first impression was that Wimba Classroom took quite some time to get started, but that's a side note only. Overall impression of the user interface was very favourable, easy to understand and use.

Wimba Classroom provides three break-out rooms in our version and supports PPT and JPG for instant document sharing – though the latter caused problems and actually asked for PPT files. Alternatively, files can be managed by the meeting organizer ("Presenter's Console") or the "eBoard Tools", the Wimba term for a whiteboard. The eBoard is one of three layout variations, „Web" and "Share" are the others. In addition, one can choose to see content in a new window or the "content frame", which integrates it into the existing layout.

Roles are surprisingly undifferentiated (presenter – not a presenter), considering Wimba's focus on (higher education) learning. The meeting can be recorded overall and downloaded as a ZIP file, but the resulting files are not easy to manage. Whiteboards can be archived as GIF additionally. Statistics are available to the Admin at the „Reports" section, including a log of the chat activities over different rooms.

Result

This collaborative evaluation of e-collaboration tools was not designed to nominate a winner nor does it claim to be a perfectly objective assessment of the products at hand. Different people from different backgrounds, different releases and versions, operating systems and hardware as well as the nature of computers and humans suggest that this report is biased by personal preferences, technical settings and mistakes. Sorry for that. However, we are convinced that results will be helpful in an analysis of e-collaboration tools.

There is half a dozen sound products to support more or less collaborative learning process with and between students. All of them seem to use Flash to provide a solution across platforms and feature similar configurations and functionalities (audio, video, chat, sharing, recording). This shifts the focus towards details of these (e.g. additional private chat) and secondary functionalities (statistics, break-out rooms etc.). The importance of the latter depends very much on personal preference and (local) needs, however.

The people involved in this evaluation share the following judgements: Adobe Connect is a very powerful and abundant product with only minor issues (import of PDF) that asks for a bit of preparation on behalf of the organizer - maybe too much for an ad hoc meeting sometimes. Wimba Classroom is also good, but does lack some of the abundance of Adobe Con-

nect, with the lack of variety in roles being most disappointing. On the other hand, it is being given kudos for the integration with Blackboard and Moodle. As for the Open Source world, Openmeetings looks promising, but is not yet “ready for action”. Dimdim, on the other hand, seems more mature - as you would expect from a commercial product - but has a confusing mix of Open Source, free, commercial, and enterprise releases.

References, further reading

- Wikipedia on web conferencing software: http://en.wikipedia.org/wiki/Web_conferencing.
- A related comparison in table form of web conferencing software: http://en.wikipedia.org/wiki/Comparison_of_web_conferencing_software; background is unknown though.
- An extensive (in numbers) but very short (in description) overview of “Screen Sharing & Web Conferencing Tools” by the Centre for Learning and Performance Technologies (C4LPT) with an elected top five list; <http://c4lpt.co.uk/Directory/Tools/conferencing.html>.