

Collaborative Tools Strategy

University of California, Berkeley

Spotlight: Definition of Collaborative Tools

Collaboration

In a 2004 paper, "Define Collaboration Before Planning a Strategy" (http://www.gartner.com/DisplayDocument?ref=g_search&id=463030&subref=simplesearch), Gartner research analysts Tom Austin and Betsy Burton define collaboration in this way:

To collaborate means to work with others on a nonroutine cognitive task — that is, working together.

In their report, the authors describe some of the necessary aspects of collaboration. These include:

- Collaboration takes place between two or more people, but needn't involve a team or a long term commitment.
- Collaboration refers to non-routine tasks, rather than repetitive, invariant work. Processes that have been, or could be, automated do not qualify.
- The work at hand may be a large-scale project, but it could equally well be a single task. In fact, the task need not even be completed.
- Collaboration involves work done among peers, regardless of role or title.

For the purposes of the UC Berkeley Collaborative Tools Strategy, we add one more characteristic:

- The effort must be interactive in manner.

To give a clearer understanding of the nuances intended, let's look at several examples: Communication and coordination activities may be collaborative, but are not necessarily so. Broadcasting information – sharing webcasts on YouTube, for example, or blogging – is not the same as working together; coming together to analyze or build community around a common set of content is. Giving orders is not; coordinating efforts with a partner or colleague is. Likewise, many forms of classroom learning are not collaborative, as the teacher-student relationship is typically hierarchical (a point clearly understood by students interviewed during the research performed in the development of this strategy). In contrast, research work that engages students with faculty, and group work among students, is inherently collaborative.

Similarly, when staff run reports from the Berkeley Financial System, they are building upon the work of colleagues who prepare and load that financial information into the database. The flow of work that leads to the availability of the financial data involves many people, all of whom rely on the work of the others; but insofar as the process is essentially routine, or serial, it is not collaborative. If the user were to work with technical staff to create new types of reports, that non-routine effort would be considered collaboration. So, too, are those efforts among back-end colleagues in which they share techniques, ideas and timelines to solve a particular problem or to enhance the service.

Scholars regularly build upon the prior work of others, an act that is fundamental to the advancement of both one's career and the field. Quite often, this "interactivity" occurs in articles or volumes published over long periods of time. For that reason, we haven't considered books or traditional forms of publications as "collaborative tools" for the purposes of this strategy. Yet, much research today, spanning most if not all fields, does involve active collaboration, and is often aided by a variety of collaborative tools.

The Gartner analysts note that many different types of work behaviors are facilitated by collaboration, among these:

- Leading
- Analyzing
- Solving problems
- Communicating

It's important to understand, they point out, that collaboration is an *aspect* of each of these behaviors - one which often improves their processes and outcomes - rather than an end in itself.

Collaborative Tools

Information technology can both facilitate and augment the reach and power of collaboration by providing "collaborative tools."

In the context of this strategy document:

Collaborative tools are computing systems that include, as one of their major design goals, features designed to facilitate work that involves more than one person.

Due to the growth of online tools (a.k.a. "Web 2.0"), the collaborative tools realm has been growing very rapidly. These tools can be classified as follows (the included lists of common examples are by no means exhaustive):

- Email (particularly as used to share documents, schedule meetings, coordinate events and services, host discussions, foster decision-making, etc.)
 - Institutional email services, such as the CalMail service at UC Berkeley
 - Hosted email services, such as Yahoo! Mail, Gmail, and Windows Live Hotmail
- Calendaring and scheduling systems
 - Institutional calendaring systems, such as the CalAgenda service at UC Berkeley, often based on products such as Oracle Calendar and Microsoft Exchange
 - Hosted calendaring systems, such as Google Calendar
- Content-sharing tools
 - File shares, e.g. disk space for document storage; file servers; web-based file storage
 - Institutional repositories (e.g. DSpace)
 - Photo sharing services, such as Flickr and Picasa
 - Social bookmarking services, such as delicious
 - Video and podcast sharing services, such as YouTube and iTunesU
- Group interaction tools
 - Discussion forums
 - Discussion forums and bulletin boards, such as phpBB

- Weblogging ("blogging") tools, particularly in the context of trackbacks and commenting that allows bloggers to interact, akin to discussion forums
 - Conferencing tools
 - Instant messaging and 'chat' tools
 - Voice conferencing tools, such as Skype (or the telephone)
 - Web/video conferencing tools that facilitate virtual meetings, such as WebEx, Microsoft Live Meeting, Adobe Acrobat Connect, and GoToMeeting; and similar tools focused on teaching and learning contexts, such as TeamSpot
 - Collaborative authoring tools
 - Wikis, such as Confluence, MediaWiki, and PBwiki
 - Collaborative document editing tools, such as Google Docs, Adobe Buzzword, and 37signals Writeboard
 - Project coordination
 - Customer relationship management systems, when used to support customer-service provider interactions, or to help coordinate services provided by multiple people or organizations
 - Issue tracking (e.g. ticketing systems, to-do lists)
 - Project management systems (e.g. Microsoft Project, when used in a collaborative manner to assign and track tasks)
 - Time tracking (e.g. milestones, team member work breakdown)
 - Version control systems
 - Workflow systems
 - Social networking tools
 - Facebook, MySpace, LinkedIn, Elgg, Ning, and others; these environments enable users to share personal and group profiles and activity streams, helping them identify and attract collaboration partners.
- Workspace-oriented collaboration suites, encompassing learning management systems such as Sakai and Moodle, as well as general purpose suites targeted at organizations, such as Microsoft SharePoint and Novell Teaming+Conferencing. These suites gather together multiple different types of collaborative tools, which can be used within virtual online workspaces.

In addition to the gamut of Internet-hosted collaborative tools listed above, another emerging trend we've witnessed is that certain personal productivity tools have been evolving to become more collaborative. Two examples illustrate this trend: Microsoft Word's 'track changes' feature, which facilitates the handling of revisions from multiple editors, has extended the usefulness of the word processor to groups; and the Zotero plugin for the Firefox Browser, which enables scholars to manage bibliographic references to resources found on the web, is in the midst of being redesigned to incorporate social networking features.

Along one simple axis, these tools can generally be categorized as either:

- Synchronous: allowing people to work together in real-time; or
- Asynchronous: facilitating work over longer timeframes, where each member of a team may contribute at different times.

The participants in the research for this strategy document tended to focus on asynchronous tools when they were asked to think about the collaborative activities they engage in. Because of this, we have primarily focused on these tools in this strategy.

Suggested References

Many authors over the years have discussed these tools and attempted to develop taxonomies. A good starting point for understanding includes:

- Digital Rendezvous: Social Software in Higher Education (Oren Sreebny, University of Washington), <http://connect.educause.edu/Library/ECAR/DigitalRendezvousSocialSo/40158>, accessed 12 January 2009.

University of Washington Executive Director for Emerging Technologies explores the genesis of social software, defines common characteristics of the tools, describes their use in higher education, and examines the implications.

- Collaborative Software (Wikipedia), http://en.wikipedia.org/wiki/Collaborative_software, accessed 12 January 2009.

Wikipedia discussion of the field.

- Hype Cycle for Collaboration and Communication, 2006 (Gartner Group), http://www.gartner.com/DisplayDocument?ref=g_search&id=493636&subref=simplesearch, accessed 12 January 2009; paid subscription required.

Depiction of the maturation of related technologies

- Communication, Collaboration, and Content: Compelling Convergence (Peter O'Kelly, Burton Group) <http://www.burtongroup.com/Client/Research/Document.aspx?cid=899>, accessed 12 January 2009; paid subscription required.
- Topic Overview: Collaboration Platforms (Erica Driver, Forrester Research) <http://www.forrester.com/Research/Document/Excerpt/0,7211,41813,00.html>, accessed 12 January 2009; registration required.

"Discrete collaboration tools are morphing into broad collaboration platforms..."