

Collaborative Tools Strategy Task Force Report

Final Draft - Nov 21, 2008

Contents

Executive Summary	1
Problem Statement.....	2
What Do We Mean by "Collaboration"?	3
Associated Issues	3
Scope	4
Landscape	5
Common Collaborative Tools at the UW	5
Previous Work	6
Trends	8
Interesting Tools, Technologies, and Resources	9
Fit/Gap Analysis	9
Communication Tools Needs	10
Production Tools Needs	10
Coordination Tools Needs	10
Gaps.....	10
Governance	11
Recommendations	11
Recommendation No. 1: Develop and Follow Guiding Principles for Choosing and Supporting Collaborative Technologies.....	11
Recommendation No. 2: Adopt Cloud-sourced Tools.....	12
Recommendation No. 3: Create a UW Collaborators' Guide.....	12
Recommendation No. 4: Provide Governance for Centrally Supported Collaborative Technologies.....	13
Recommendation No. 5: Address Institution-wide Efforts Previously Endorsed by Governance Bodies.....	13
Recommendation No. 6: Evaluate Other Institution-wide Efforts.....	14
References	15
Addendum.....	1
Interesting Tools and Technologies	1
Contextual Collaboration Tools	2
New Devices for Collaboration	2
Resources	2
Collaborative Tool Needs.....	2
Task Force Membership	4

Executive Summary

The Collaborative Tools Strategy Task Force was formed in August 2007 and chartered by Provost Phyllis Wise to research the current landscape of online collaboration tools, determine University of Washington (UW) needs for such tools, and make short- and long-term recommendations for how the UW should move forward.

The Task Force included broad representation from across the University, including faculty and staff from a wide variety of academic and administrative departments and disciplines. (See Addendum for a list of Task Force members.) The Task Force's discussions were wide-ranging, frank, and at times heated. The conclusions included in this Report represent the consensus view of the Task Force, but may not represent all of the views of any individual member.

Focus: The Task Force focused primarily on collaborative tools that provide for communication and production of information, with less concentration on tools for managing collaborative projects and programs.

Findings: The Task Force found that there are clear needs for collaborative tools at the UW, both within the institution among faculty, staff, and students, and outside the institution in ever-evolving ways to support the research, teaching, and clinical missions of the institution. Tool support, how to choose appropriate online tools, and interoperability among different tools are issues that need addressing at the UW. In addition, the Task Force noted that some issues that lay outside the scope of this investigation are key to successful collaborative activity: creating a culture of collaboration and enhancing the physical environment to support collaborative activities are important to lowering barriers for successful collaborations.

The University of Washington's teaching, learning, research, and clinical ecosystem is innovative, rich, and diverse. It challenges the boundaries of knowledge, cultivates independence of mind, and encourages partnerships, collaboration, and discovery that has transformational impact. It is sustained by similarly innovative, rich, and diverse collaboration software. In this environment, it is the view of this Task Force that the faculty, researchers, students, and staff necessarily require access to a variety of technology tools and resources. In short, this is not a "one size fits all" institution, and diversity in tools is to be expected, celebrated, and encouraged.

Perhaps the most important key finding of the Task Force is the extremely rapid rate at which the landscape of collaborative tools technology is changing. The past year of the Task Force's existence has, for example, seen the emergence of compelling tools generally available on the Internet (so-called "cloud"-based services) such as Google Docs and Microsoft's Live platform, while not a week goes by that one does not see new features added to existing tools, new entrants to the market, and the evolution of pricing and license models. In addition, the emergence of new hardware platforms (including mobile handheld devices and smartphones) is widening the desired profile of tool use beyond the traditional personal computer.

Fit/Gap Analysis: The Task Force performed a fit/gap analysis focused on four specific areas of University activity: research, instructional, professional/clinical, and administrative. This analysis

took previous UW work into account, including A-TAC-sponsored efforts in CourseWare and ResearchWare requirements, as well as informal, ad-hoc efforts generated by groups of users across the institution. Collaborators universally need tools that are easy-to-use, highly available, platform-neutral, and have a strong support mechanism in place. Requirements do differ somewhat between the various types of collaborators.

Governance Process: The Task Force found that there is no institutional process governing how decisions are made about purchase and adoption of collaborative tools for the UW, and that this lack of process has led to some confusion and frustration across the institution.

Guiding Principles: Because of the rapid flux in the general marketplace for collaborative tools, the University should not become too locked-in and dependent on any one specific group of technology, or with any one provider of tools. The UW should strive to use collaborative tools that are standards-based, browser-agnostic, interoperable, and multi-platform (including mobile platforms).

Recommendations: The Task Force has six specific recommendations, summarized below. We urge the Provost to move quickly to implement this short but critical list of actions:

1. Follow Guiding Principles for choosing and supporting collaborative technologies.
2. Move aggressively toward institutional adoption of collaborative tools hosted in the Internet "cloud".
3. Fund a project to create a "UW Collaborators' Guide" that describes recommended tools, options, and best practices.
4. Establish a governance process for making decisions involving institution-wide or centrally-supported collaborative technologies.
5. Address the existing institution-wide efforts involving collaboration tools that have been endorsed by the A-TAC. Specifically, (1) continue the Catalyst enhancements to meet identified courseware needs; (2) re-evaluate how best to facilitate convenient use of Web conferencing and file sharing tools for researchers, using newer free or low-fee tools; (3) provide funding to create a research-specific wiki template; and (4) provide initial funding to investigate costs for Catalyst to enable research-specific adaptation of its toolset, then evaluate through the governance process identified above.
6. Evaluate - through the governance process identified above - the continued rollout of the two "informal" existing institution-wide efforts, specifically, the SharePoint development platform, and the Confluence Wiki tool. This process should determine if they are compelling enough and are the most cost-effective solutions to stated, specific needs, and if so, then continue with centralized rollout if users are willing to fund them.

Problem Statement

It is clear that faculty, researchers, staff, and students at the University of Washington have a great need and desire to collaborate, yet it is not always clear how best to use technology to do so. There are many collaborative tools and technologies available at the UW, but they often do not

interoperate well, producing islands of collaboration, determined by the tools in use. The collaborative technologies currently in use at the UW have different functions, characteristics, and strengths, making it difficult to know which tools to use and when to use them. A further complication is that the tools are immature, although evolving at a rapid pace.

Given this fluid landscape, there are three specific issues about collaborative tools that must be addressed:

- **Lack of support for using collaborative technologies**, a problem that will diminish as available tools evolve and improve.
- **Confusion about tool choice**, an issue of knowledge sharing that could be solved with better documentation about the available choices (not an operational support issue).
- **Lack of interoperability**, a condition resulting from tools that are tightly integrated *internally* but do not interoperate well with other toolsets.

Beyond these three issues with collaborative technologies, there are decision-making processes surrounding collaborative tools that must be addressed:

- How can faculty, researchers, staff, and students identify collaborative technology needs to someone positioned to help? How does the institution make decisions about centrally supporting these tools and technologies?

What Do We Mean by "Collaboration"?

While Merriam Webster's dictionary defines collaboration as "to work jointly with others or together especially in an intellectual endeavor", not all group work is collaboration. When we speak of collaboration we mean work undertaken by a group of people acting as peers in order to accomplish an agreed upon goal, even if (as is frequently the case) the details of that goal are not clearly understood at the outset. This work is characterized by its informal and non-hierarchical nature, and by the lack of formal roles and controls. People cooperating in a collaborative activity determine the needed actions collectively and as individuals within that collective volunteer and commit to completing tasks to achieve the goal.

The lack of formal organizational structures in collaboration should not be seen as leading to a lack of accountability. Tasks are committed to and undertaken, and the collaborators need to be able to track decisions and assignments and monitor progress on tasks until the endeavor's goal is achieved.

Evan Rosen describes collaboration as "the unstructured exchange of ideas to create value" in his book *The Culture of Collaboration*^[1].

Associated Issues

It is important to remember that promoting a culture of collaboration is a challenge that goes beyond the use of tools. The focus of this Task Force – the technology – is the most tractable aspect of collaboration. Effective, widespread collaboration will require major shifts in behavior, values, and ultimately culture. The UW community values its entrepreneurial and competitive

environment, which despite its obvious merits can, at the same time, dampen collaborative work. University leadership must promote collaborative mindsets and practices on an ongoing basis.

Collaboration is a different way of working, and people often remain stuck in older, more traditional modes of work style that inhibit the effective use of collaborative technologies. For example, when faced with a situation where a group of people are all working on a single document, most people tend to use email to circulate the document as an attachment. This results in a chaotic and fragmented collaborative process; each person has a separate copy of the document, without good visibility to the revisions made by others. It is much more efficient to maintain the document in a central place (in a wiki, or some other shared group space), and have each person access the document in that central place. Email is best used for *communication* within a group of collaborators, not for *transmission* of the document itself.

Infrastructure issues also impact collaboration. Physical spaces could be designed in ways that encourage, facilitate, and even improve collaboration. For example, conference rooms and classrooms could be equipped with projectors, display devices, cameras, and microphones. Increasing use of video may require upgrades to networking infrastructure.

Ongoing efforts should be made to identify and then lower the barriers to collaboration. Some of these barriers are technical and related to tools, although, as described in the Trends, these barriers are beginning to break down. Other barriers are social, political, or cultural in nature and may prove much more difficult to address.

And finally, there are adoption issues that transcend technology. University leadership should actively promote and facilitate collaboration, working to raise awareness and to celebrate collaboration successes.

Scope

University-wide challenges in the use of collaborative technologies cross research, course and instructional, professional/clinical, and administrative uses. The charge of this Task Force is to:

- Research the current landscape of collaboration tools, evaluating current product offerings and identifying future trends
- Determine needs by gathering representative input from across the university community
- Conduct a fit/gap analysis to determine which tools should be promoted and supported institutionally
- Make short- and long-term recommendations about how the UW should move forward

The Task Force chose to focus on foundational collaborative technologies that enable and support one-to-one, one-to-many, and many-to-many communication; the sharing of data; the archiving of communications and data that result from collaborative activities; and the facilitation, organization, and coordination of collaborative work. Necessarily, these technologies can involve content management, work flow, scheduling, and project management. However, tools and technologies that address these work areas exclusively (or primarily, to enable accounting of work,

command and control of collaborative activities, or finely-grained management of tasks, people, and details) are beyond the scope and recommendations of this Task Force, given the definition of collaboration offered above.

Landscape

Common Collaborative Tools at the UW

Collaborative tools can be classified into three broad categories:

- Communication (audio, video, textual)
- Production (authoring, file sharing, etc.)
- Coordination (project management, scheduling, etc.)

Furthermore, most of these tools can also be classified by their "interaction style": either *synchronous* (multiple people participating simultaneously), or *asynchronous* (one person at a time using the tool to manipulate a shared document or object). Within the *Communication* category there are synchronous communication tools, such telephone and instant messaging, and asynchronous tools, such as email or voicemail. *Production* collaboration tools are typically asynchronous, but recently, synchronous authoring and editing tools are starting to emerge; some tools now feature "live co-editing", for example, allowing two or more people to edit the same common file or document, and showing all editors the changes being made, in real time, by others. *Coordination* tools are primarily asynchronous; however, some now have features that make synchronous usage possible.

There are many collaborative tools already in widespread use at the UW; some are ubiquitous, while others tend to create islands or "silos" of usage.

Ubiquitous

The telephone and email are two collaborative tools used by almost everyone at the UW. They may not be the first things that come to mind when people think about *collaborative* tools, but they are the first tools people often turn to when they want to collaborate. They are effective because of their simplicity and the fact that they are completely universal. Although the nature of the collaboration may be limited, there is no difficulty in using these tools, very low barriers to entry, and no difficulty using them in conjunction with other collaborative technologies. Their strengths – total inclusion and interoperability – makes them perhaps the most effective collaboration tools today, despite their many limitations.

Widespread Silos

Several other common tools that people use for collaboration tend to create "silos" of usage across the institution. Widespread silos currently exist in a number of arenas: within a few single-function tools, such as wikis, calendaring, and (synchronous) visual communication tools, and within certain broad, multi-function tools. Some specific examples include:

- wikis: Confluence, MediaWiki, Google Sites
- calendars: Oracle, Exchange, Google
- visual communication: Polycom (video), Adobe Connect (audio/screen)
- multi-function: Catalyst Web Tools, Blackboard, Moodle, Microsoft SharePoint, Google Apps

In almost all cases, these silo'ed tools tend to be self-contained and do not interoperate well with other collaborative tools. For some multi-function tools, integration with other tools is becoming easier due to support for RSS and web service interfaces, especially when this support is offered in a standards-based manner. Some of these tools that are in widespread use are free, and some come with licensing or subscription fees. Determining how to distribute or absorb costs should be done through a governance process that examines the total cost of ownership: acquisition, maintenance, and support.

While silo'ed tools do present some problems, it is also an inevitable situation, for two reasons. First, there is no single perfect tool or platform; they all have their strengths and weaknesses (independent of individual biases). Second, many people need to collaborate with people outside the UW; at other universities, at corporations and private research labs, and at organizations around the globe. The cost to force adoption of a single, homogeneous platform across the entire institution and across all four types of collaborators is very high, and ultimately, an impossible goal given the need for inter-institutional collaboration. Instead, the University should strive for *interoperability* of tools, where information can flow or migrate between them with relative ease, and should adopt – or even develop – bridges between those tools.

Previous Work

Though not specifically focused on collaborative tools, the work of certain other UW committees and task forces has significant overlap with the work of this Task Force. The research, evaluations, needs gathering, fit/gap analysis, and recommendations in this report rely upon and build upon this earlier work. (The members of the Task Force are not aware of any prior formal investigations into collaboration tools for administrative or professional/clinical endeavors.)

Course-Related Efforts

In Winter Quarter 2006, the Academic Technology Advisory Committee (A-TAC) charged a small subcommittee to assess the priorities of UW faculty regarding their future technology needs for course and instructional activities. Rather than perform a cost-benefit analysis of the various tools available in the marketplace or a prioritization of courseware features, the subcommittee decided to focus on the needs of the faculty, their current workflow, and the kinds of tools that would help them perform the course and instructional tasks that they most needed to perform.

The Courseware subcommittee, chaired by Vice Provost for Educational Outreach David Szatmary and faculty member Stern Neill, issued a report on the educational technology needs of faculty. The subcommittee discovered that faculty generally found currently available tools at the UW to be adequate for their needs and that, overall, they want online tools that are simple and easy to use. Interestingly, faculty prioritized support for their instructional uses of technology over adding additional technology tools.

The Courseware subcommittee report identified several baseline courseware features and functions that should be met:

- Online distribution and archiving of course documents
- The ability to easily reuse and share online course materials and tools
- Asynchronous course communication tools (e.g., mailing lists and discussion boards)
- Online turn-in and redistribution of assignments
- Support for ePortfolios
- Access to electronic library reserves and research-related materials or links
- Online administration and access to grades
- Ability to easily share administration of online courses or course tools

With these findings, the subcommittee recommended expanding and accelerating the development of Catalyst Web Tools. It was envisioned that Catalyst would be able to provide the courseware functions listed above, offering the UW a flexible, scalable, and an open-source solution with no licensing fees. The subcommittee also recommended a pilot program to expand support for faculty using instructional technology.

The Courseware report was endorsed by the A-TAC on November 1, 2006. Although the A-TAC acknowledged the need for more support for faculty using instructional technology, the committee forwarded a request to the Provost only for additional funding for the Catalyst courseware effort. Some of the funding was approved by the Provost for the 2007-09 biennium. Since then, the Catalyst team has been working collaboratively with the Office of Information Management, UW Technology, Student Life, the Registrar, Department of Computer Science and Engineering, and others to provide the baseline courseware features and functions identified in the report. The recent releases of Catalyst CommonView and the Teaching Schedule in MyUW are direct results of this ongoing effort, as are current work on the redesign of Student Schedule in MyUW and the design and implementation of an online gradebook and grade submission process.

Research-Related Efforts

In early 2007, the A-TAC established the Researchware Task Force, chaired by Associate Vice Provost for Research and Industry Relations Mani Soma, to conduct a needs assessment and develop a strategic plan for acquiring and/or improving software, systems, and IT (information technology) support for research. The task force focused on identifying and assessing software tools, systems, and staff support needed to facilitate collaborative research, an increasingly common activity across many disciplines. The needs identified in this process served as the foundation for the fit/gap analysis performed for this Collaborative Tools Strategy Task Force Report.

The task force presented its report at the December 2007 meeting of the A-TAC. The report recommended institutional licensing of the WebEx and Files Anywhere tools for Web conferencing and file sharing, a research template in an institutional wiki, a researchware portal to enable tool discovery and access, and funding for Catalyst to enable research-specific adaptation of its toolset. To date, these recommendations have not been implemented, although UW Technology has been engaged in negotiations with WebEx, which so far have not produced any agreement for the UW.

The Office of Research and the College of Arts & Sciences have proposed spending \$20,000 towards implementation of the task force recommendations, but it is unclear how exactly that amount of funding can be best put to use.

Trends

Many organizations are moving from a "build-it" mindset, or even from a "buy-it/operate-it" mindset, to one embracing cloud-sourcing (using applications on the Web, i.e., "in the cloud") and external solutions when possible. The spectrum of solution options is vast, with a build mindset at one extreme and externally hosted solutions at the other end, and numerous options in-between.

Cloud-Sourcing (Externally Hosted Applications and Infrastructure)

So-called "cloud-sourced"^[2] applications such as Google Apps, Microsoft Office Live, and Zoho are emerging as a significant solution for personal productivity and collaboration. The engineering prowess and market leverage that these large providers can bring to bear are now outstripping the capabilities that any single institution can muster to create and support similar collaborative technologies. At the same time, many smaller companies are providing new innovative online collaborative tools, from wikis (wetpaint.com) to audio and video conferencing (skype, dimdim, vidvic) to project management. An especially significant factor for these solutions is cost; in general, these solutions are free or available at minimal cost. There are however, significant compliance and some legal challenges involved in cloud-sourced solutions that need to be examined.

Rapid Evolution and Maturation of Tools

The cost of tools should be minimal so that any and all can use and access them. The cost of many collaborative tools in the marketplace is diminishing rapidly, and more and more are offered for free. Ideally, the complexity should also be minimized, so that the technology fades into the background and does not stand in the way of collaboration. With gains in user-centered design, tools are getting better in this regard, although they have a ways to go. (See "Contextual Collaboration Tools" in the Addendum.) Convenience is especially important for easy collaboration, so tools need to be readily available, handy to use, and in some cases even integrated with the other tools that faculty, researchers, students, and staff already use. Here, too, the situation is getting better in this regard, especially with the spread of single sign-on mechanisms, but more evolution is needed. (See "Contextual Collaboration Tools" in the Addendum.) Platform neutrality is critical so that tools work on all operating systems, with all browsers, and on all devices. This is improving, but remains a barrier with many tools. Exotic devices often render platform neutrality unavoidable. Cloud-sourced tools may present the best hope here, since they are delivered through a Web browser.

New Devices for Collaboration

Rather than the standby collaborative technologies involving telephones and/or personal computers, more and more collaboration is taking place via mobile devices, smartphones, electronic whiteboards, and Internet-based conferencing technologies. Some particularly interesting devices that have recently surfaced are listed in the Addendum.

New Areas of Collaboration

Open science, also known as "open research", is a newly emerging area of collaboration where scientists eschew the "closed" work often associated with the traditional distribution and publication paradigm of the scientific journal. Instead, many researchers are now publishing their work and their data as they develop it, using online tools. Open Notebook is an even more general effort that aims to allow documents, novels, or dissertations to be electronically designed using a graphical interface.

Interesting Tools, Technologies, and Resources

See the Addendum for a collection of interesting collaboration tools, technologies, and other resources relevant to collaboration that the Task Force Members discovered during the course of their deliberations.

Fit/Gap Analysis

As charged, the Task Force performed a fit/gap analysis of collaborative activities across the UW. In the course of this analysis, it became clear that there are four distinct groups of collaborators with some notable different needs: those in research, those in classroom or instructional settings, those performing administrative functions, and those in clinical and professional services settings. Collaboration in each of these four contexts happens according to very different business practices and may be grounded in very different technology requirements, yet there is a substantial cluster of common needs. Relying on some of the previous needs assessment work performed by others, and on the knowledge and opinion of its members, the Task Force ranked the needs of the four groups for a wide set of collaboration requirements, summarized in the table below. (See the complete "Collaborative Tool Needs" matrix in the Addendum.) The research undertaken by the Task Force is not meant to be statistically significant or comprehensive, and we note that more reliable information on needs and trends is likely to be found in the forthcoming report from the 2008 Surveys On Learning and Scholarly Technologies.

Collaborative Tool Needs

	Research	Instructional	Professional/ Clinical	Administrative
Communication Tools				
Blogs	Med.	Low	Low	High
IM	Med.	Low	Low	High
Email	Med.	High	High	High
Videoconf	Med.	Low	Med.	High
Message Boards	Med.	High	Med.	Low
Production Tools				
File Sharing	High	High	Med.	High
Access	High	High	High	High
Recording	Med.	Low	Low	High
Project Mgt Tools				
Project Mgt.	High	Low	Low	High
Calendar	Med.	High	High	High

In addition to the specific “task” needs of the four groups of collaborators, there are many common needs: everyone needs the tools to be easy-to-use, highly available, and platform-neutral, with a strong support mechanism in place. What follows is a summary of the needs of each group of collaborators.

Communication Tools Needs

The communication tools category had the greatest diversity in requirements across the four groups of collaborators. Blogs, instant messaging (IM), audio/videoconferencing, email, and recording/archiving of communication sessions were all high priority for administrative activities. For course and instructional activities, email, message boards and message board postings notification are highly important, and are of medium or low value for the other activities. Communication tools are beneficial but not crucial for research activities, although email is crucial to all.

Production Tools Needs

File-sharing capabilities, such as versioning, co-editing, archiving, and anytime/anywhere Web access to files and documents, are of high importance within all four activities, but especially so for research and administrative uses. Other file-sharing capabilities, such as "check in/check out", automatic notification of file updates, and search, were rated as useful, but not imperative.

Access is a hot issue for three of the four activities: research, professional/clinical, and administrative. All four activities require tools that are highly accessible to users from both within and outside of the UW, including international users. Also highly important for all four activities is the ability to control access with various levels of granularity.

Coordination Tools Needs

Project and time management is another important area of functionality for most collaborators, although less so in instructional settings. Calendaring (community/team calendars) and scheduling (meetings and individual calendars) are of high to medium-high importance for all activities. Project management and workflow functionality are highly important for administrative and research activities, but low priority for research and professional services.

Gaps

What also became clear after performing the fit/gap analysis is that, in general, all the needed or desired collaboration tools are already available to campus users. Some are centrally provided for free or a fee, others are provided by colleges, schools, and departments, and others yet are freely available from the "cloud" or other sources. The actual gaps are in central efforts to manage access and identity issues associated with these disparate collaboration tools, central efforts to integrate a core set of these tools, lack of interoperability, and centrally provided guidance and support for using these tools. Our recommendations suggest several things that the university can do to address these gaps.

Governance

Distributed units and individuals adopt and use the collaborative technologies most suitable for support of their work. Moving forward, integration of these tools, both with one another and with enterprise technologies and services, will be a key strategy for supporting collaboration at the UW. There is frustration, however, over the seemingly unclear way in which decisions to adopt and support collaborative applications on an enterprise scale are made (or not made).

There are several challenges posed by this current state:

- There are no guidelines or standards to direct decisions to purchase, develop, or adopt a collaborative technology that would ensure potential compatibility with other applications and with the UW's enterprise infrastructure. If these guidelines and standards exist within UW Technology, then they are not known to nor available generally to other units.
- There are no clear or predictable means for determining when, if ever, a given collaborative tool or service will be supported more broadly, or whether or not the work to integrate an application into the UW's enterprise infrastructure will be prioritized or accomplished. The process by which one can request this broader support is likewise unclear.
- It is not generally understood who has the authority to allocate the resources necessary to consider, evaluate, and approve the work to integrate and/or support enterprise collaborative tools.
- In cases where individual units identify collaborative tool needs that extend beyond any centrally provided options, there is no structure for partnership with other units that have identified similar needs. Oftentimes the units are not even aware of each other's efforts, and negotiation of resource sharing is ad hoc at best.

Recommendations

The University of Washington's teaching, learning, research, and clinical ecosystem is innovative, rich, and diverse. It challenges the boundaries of knowledge, cultivates independence of mind, and encourages partnerships, collaboration, and discovery that has transformational impact. It is sustained by similarly innovative, rich, and diverse collaboration software. In this environment, faculty, researchers, students, and staff necessarily require access to a variety of technology tools and resources. In short, this is not a "one size fits all" institution, and diversity in tools is to be expected, celebrated, and encouraged. With this in mind, the Task Force offers six recommendations for how the University should choose and support collaborative technologies, and urges the Provost to move quickly to implement this short but critical list of actions.

Recommendation No. 1: Develop and Follow Guiding Principles for Choosing and Supporting Collaborative Technologies

The collaborative tools landscape is changing in an extremely rapid fashion, so rapid in fact that to lock the UW into specific solutions may forestall future innovation and lead to harmful dependencies. At the same time, there are a multiplicity of activities surrounding teaching, learning, research, clinical, and administrative work, and collaborative technologies should

support rather than restrict these activities. The Task Force feels that the UW must continue to implement and support collaboration tools to enable these activities, without waiting for the landscape to settle, while heeding the following principles:

1. The UW should strive to use collaborative tools that are standards-based, browser-agnostic, interoperable, and multi-platform (including mobile platforms) to support the diversity of computing platform environments (operating systems and Web browsers) used within the UW. As much as possible, the UW should avoid collaborative tools that lock data into proprietary formats, or bind the institution to a particular vendor or solution that does not allow easy migration to or adoption of other tools.
2. Cloud-sourced collaborative tools, especially those that provide or enable new capabilities and which do not require local hosting or coordinated efforts with other universities or organizations, have become extremely significant. The time has come for the UW to move from a "build-it" mindset and even from a "buy-it/operate-it" mindset to embrace cloud-sourcing and externally hosted solutions when possible.

The institution should invest in developing, buying and operating tools internally only where the need to integrate with local environments is high, when a risk analysis indicates that for regulatory or legal considerations data is better housed at the UW, or when cloud-sourced solutions are inadequate to the needs of the constituents and the cost of developing, acquiring, *and* operating the tools internally is justified through an appropriate process of weighing costs and benefits. The Task Force acknowledges that "build-it" and external application hosting are the extremes of the spectrum and that there are solutions that lie across that spectrum.

Recommendation No. 2: Adopt Cloud-sourced Tools

UW should immediately investigate and aggressively move toward the adoption of cloud-sourced collaborative tools (e.g., Google Apps and Microsoft Office Live), and focus internal efforts on integrating cloud-sourced solutions with UW access needs (e.g., identity management, group management) and internal tools (e.g., Catalyst, MyUW), and on building bridges between toolsets (i.e., creating or enhancing interoperability). Only where cloud-sourced or external solutions are inadequate or inappropriate should the institution invest resources in building or supporting tools internally.

The UW should rapidly move to understand and document the policy and legal landscape for use of cloud-sourced and externally-hosted collaborative tools, and share and publicize that work to the UW community. A risk analysis approach should be used to determine which data are inappropriate for cloud-sourcing, and then the university should actively encourage, facilitate, and support cloud-sourced solutions for everything else. Funding should be provided to UW Technology to develop middleware to facilitate use of cloud-sourced resources, and appropriate integration with institutional tools, such as Catalyst.

Recommendation No. 3: Create a UW Collaborators' Guide

To make collaborative tools and resources more understandable and discoverable, a "UW Collaborators' Guide" should be created within the next three to six months, describing recommended tools, options, and best practices. The Guide should be oriented toward each of the

four distinct groups of collaborative activities -- research, course and instructional, administrative, and professional/clinical. This Guide will explain the life cycles of collaboration and should itself be a collaborative resource with contributions drawn from the UW community. The Research Portal mentioned in Recommendation No. 5 should be incorporated in this Guide. We recommend that UW Technology be funded to organize and maintain this Guide.

Recommendation No. 4: Provide Governance for Centrally Supported Collaborative Technologies

An on-going governance process should be established in the next three months to six to determine which collaborative tools receive institutional resources and support, in both the near-term and the long-term. This process should acknowledge that various collaboration communities have somewhat different needs – which may require different and in all likelihood, multiple solutions – and should include members of those communities in the decision-making process. The governance body should include instructors, researchers, clinicians, students, and administrative staff, with IT staff from colleges, departments, and units acting in an additional advisory capacity. UW Technology, UW Purchasing, and other key partners should play an advisory role.

The governance process should:

- Create a set of principles and criteria that help determine when it is in the institution's best interest to do the necessary work to offer a given collaborative technology and/or integrate it with UW Technology services and middleware. As part of this process, the definition of "University's best interest" in this context also needs to be made clear.
- Develop a set of guidelines to help inform the selection, procurement, and implementation of centrally supported collaborative technologies in a way that ensures they are compatible with the UW's enterprise infrastructure and consistent with the institution's core mission and values.
- Determine the decision-making authority to allocate resources to do the work necessary to integrate and support enterprise collaborative technologies.
- Periodically evaluate the effectiveness and appropriateness of projects and solutions for any centrally offered or supported collaborative tools, looking at total cost of ownership (TCO) and whether they provide the best fit to user needs. Discontinue use and support of tools that have a prohibitive cost or no longer adequately meet user needs for a broad spectrum of campus users.

Recommendation No. 5: Address Institution-wide Efforts Previously Endorsed by Governance Bodies

A-TAC, based on recommendations from subcommittees on Courseware and Researchware, has previously recommended that Catalyst Tools receive institutional support, and that the Action Plan of the ResearchWare Subcommittee be implemented.

1. The UW should continue Catalyst's A-TAC-sponsored user-centered design work to build out the UW courseware environment to meet the faculty needs identified by the Courseware Subcommittee, focusing on integration with other tools and on open interfaces.

2. The UW should revisit and pursue the recommendations of the A-TAC's Researchware Subcommittee. The Researchware Subcommittee made recommendations for institutional provision of templates for managing research projects on the web, adding a research "dashboard" for Catalyst Tools, and for obtaining web-based conferencing and file storage mechanisms. The Task Force has discovered that the landscape for those tools has changed significantly since the recommendation was made. We recommend that the UW (possibly members of the original Researchware Subcommittee) take a fresh look at tools that can satisfy these requirements, including the free or low-cost offerings listed in the Addendum as well as others that may have recently become available. It is possible that free, simple tools will be satisfactory for some of these needs, and the need for institutional support will be minimal. If free tools are not suitable for all researchers and all situations, UWare should be utilized to seek favorable volume pricing of appropriate for-fee tools funded by individual researchers or groups who have these more specialized needs.

Recommendation No. 6: Evaluate Other Institution-wide Efforts

In addition to the two A-TAC recommended projects mentioned in No. 5, some efforts have emerged recently that are creating pressure for institutional support of two commercial collaboration tools, specifically, Confluence Wiki and Microsoft SharePoint. SharePoint is a rich but complex platform that supports publication and collaboration, as well as business work flow; in fact, it is essentially a proprietary development platform. These two efforts were not created through any formal recommendation or governance process, but are the result of efforts from a variety of groups across the UW. Central or institutional support for these two tools should be considered through a formal governance process, as described in Task Force Recommendation No. 4, within the next six months.

The Task Force recommends that the continued rollout of SharePoint be evaluated through the governance process, to determine if it is a compelling enough platform and is the most cost-effective solution to some stated, specific need, and if so, then continue with rollout if users are willing to fund it.

The Task Force recommends that the Confluence Wiki efforts be evaluated through the governance process, to determine if it is a compelling enough collaboration forum to be institutionally supported and for whom. And if it is found to be compelling, to also make a recommendation on how it should be funded.

Often, collaborative technologies may fail to meet the criteria for enterprise-wide adoption or support, but are of value to a number of units with similar needs. The Task Force recommends that the University consider this common scenario in the context of the IT Project Consortium proposal currently under review by the IT Resource Sharing Group, and recognize that there is value in supporting a structure to facilitate multi-unit resource sharing.

References

1. Rosen, Evan (2007). "The Culture of Collaboration", Red Ape Publishing.
2. The term "cloud-source" describes the practice of utilizing applications or other computing resources that are located "on the Web", or "in the cloud". The term "Cloud Computing" derives from the common depiction in most technology architecture diagrams, of the Internet or IP availability, using an illustration of a cloud. For further information, see Wikipedia.

Addendum

Interesting Tools and Technologies

- Collaboration Suites:
 - Google Apps: Cloud-sourced collaboration tools; individuals and groups can use the Team Edition. UW is presently investigating Google Apps for Edu for email, document, and collaboration tools. See also Wikipedia.
 - Microsoft Office Live: An Internet-based software service designed for Microsoft Office users. See also Wikipedia.
 - Zimbra: "Fully integrated collaboration suite (email, address book, calendaring, document authoring, sharing, etc.) for maximum educational productivity via a single solution."
 - Zoho: "A suite of online applications (services) that you sign up for and access from our Web site. The applications are free for individuals and some have a subscription fee for organizations. [The] vision is to provide customers (individuals, students, educators, non-profits, small- and medium-sized businesses) with the most comprehensive set of applications available anywhere (breadth), and for those applications to have enough features (depth) to make your user experience worthwhile." See also review and Wikipedia.
- Conferencing:
 - Dimdim: Free Web video/audio conferencing (open source).
 - Vidivic: Free Web video/audio conferencing for up to nine participants (IE 6+ for now).
 - Skype: Free, and remarkably good (e.g., effective echo-cancellation in software, avoiding the need for complex hardware solutions).
- Project Management:
 - Zoho
 - Projex: See review.
 - Basecamp: See review.
 - 5pm: See review.
 - DeskAway: See review.
- RSS:
 - RSS: Capabilities are increasingly used as a means for users to manage their personal information in a collaborative culture.
 - FeedSync: Extensions to RSS and Atom feed formats designed to enable the aggregation of information by using a variety of data sources. Used as the basis for Microsoft Live Mesh, a (freeware) data synchronization system that allows files and folders to be shared and synchronized across multiple devices (desktops, servers, cloud, mobile). See also Wikipedia descriptions for FeedSync and Live Mesh.

Contextual Collaboration Tools

- "The concept of online collaboration in which real-time features are built-in components of a standard application and where no one has to leave his production tool in order to share, send or collaborate with others at-a-distance." -- Robin Good
- "Contextual collaboration tools gradually fade into minimalistic user interfaces, show up as tiny system tray applications, and drive strongly toward complementing any core application key features by seamlessly extending their input/output procedure into typical collaborative tasks (share, show, send, co-edit, annotate, etc.)" -- kolabora.com

New Devices for Collaboration

Rather than the standby collaborative technologies involving telephones and/or personal computers, more and more collaboration is taking place via mobile devices, smartphones, electronic whiteboards, and Internet-based conferencing technologies. Some particularly cutting edge technologies include:

- Surface: An iPhone for groups. This coffee-table-sized device allows several people to sit around it and manipulate images and other objects on the screen (via touch). First deployed in April 2008, at \$15,000 (prices are expected to drop enough to make consumer use feasible in 2010). Interesting potential uses involve linking two or more Surfaces together for conferencing and shared use. Since the platform metaphor is already fundamentally designed and organized around group use, extending to multiple units and multiple groups should be a natural.
- RoundTable: Combines the features of a speakerphone with those found in videoconferencing into a device that Microsoft expects will retail for less than \$3,000. Provides two camera feeds: a 360-degree panoramic view of everybody around a table, as well as a view of the person currently speaking.

Resources

- Online Collaborative Work Environments:
<http://www.thinkofit.com/webconf/workspaces.htm>
- Kolabra.com: "An independent forum about online collaboration, Web conferencing, and real-time live presentation technologies, and the issues, problems, and solutions relating to them. Kolabora is an online set of shared public spaces where anyone can find detailed information about the world of online work and collaboration." Authored by Robin Good.

Collaborative Tool Needs

Approximately fifty characteristics of collaborative tools were identified. For each of the four types of collaborators (instructional, research, administrative, and professional/clinical), each of those characteristics was ranked for importance to that group (see chart on next page). This ranking was performed by members of the Task Force; a formal survey of users was not performed.

**Collaborative Tool Needs
for Four Types of Collaborators**
February 25, 2008

Characteristics of Collaborative Work	High	Med	Low
File/document sharing			
File sharing <i>(non-web - for special file format, e..g, Excel)</i>	I R A		P
Web document sharing <i>(wiki)</i>	I A	R	P
Co-editing - asynchronous	I R A		P
Co-editing - live		A	I R P
Automatic notification of updates	I P	R A	
Versioning	R A	I	P
Check-in / check-out		R	I P
Folder / directory capability	I R A P		
Upload anywhere / anytime	I R A P		
Download anywhere / anytime	I R A P		
File synchronization	R	A	I
Export files/directory	R A	I	P
Archiving	R A	I	P
Search capabilities		I R	P
Metadata definition for search		R A	I P
Access Control			
UW internal use <i>(primarily)</i>	I R A P		
Non-UW in US	R A P		I
Non-UW outside US	R A P		I
Ease of adding / removing users	R A P		I
Access control by user	I A P	R	
Access control by group	A P	I R	
Access control - specific file / directory	R A P	I	
Public shared space	R A	I	P
User private space		R A P	I
Communication Mediums			
Message board / discussion forums	I	R P	A
Blogs	A		R
Automatic notification of posting	I	A P	R
Chat room		R	I A P
IM	A	R	I P
Audio conferencing	A P	R	I
Video conferencing		R A P	I
Live web meeting		R A P	I
Whiteboard interaction / brainstorming		R A P	I
Email	I A P	R	
Desktop sharing	A	R	I P
Archiving / recording communication session	A	R	P
Related Tools			
Calendaring	I A P	R	
Scheduling	A P	I R	
Project management	R A		I P
Work flow	R A		I P
Miscellaneous			
Platform neutrality	I R A P		
Records retention management			I R P
Open APIs <i>(interoperability)</i>	I P	A	R
Ease of use	I R A P		
Tool usage stats		I A	R P
Consistency	R A	I	P
Device ubiquity		R A P	I
Tool support	I R A P		
User support	I A P	R	
Rating/feedback/assessment	I A	R P	
Voting			R P
Survey	R A	I P	
Cultural			
Comfort/familiarity with async collaboration	<i>no data collected</i>		

Key:

I - Instructional Collaborators
R - Research Collaborators

A - Administrative Collaborators
P - Professional and Clinical Services Collaborators

Task Force Membership

Charles A. Benson, *Manager of Technology Services, HSAF&F*

Michael J. Campion, *Director of Academic and Learning Technologies, Academic Affairs, School of Medicine*

Kirsten A. Foot, *Associate Professor, Department of Communication*

Tom Lewis, *Director of Campus Engagement, Learning & Scholarly Technologies*

Jim Loter, *Associate Vice Provost, Community & Partnership Development, Office of Information Management*

Erik Lundberg (co-chair), *Director, Computer Science Laboratory, Computer Science and Engineering*

Scott Mah, *Associate Vice President, UW Technology Services*

David L. Masuda, *Lecturer, Medical Education*

Greg Miller, *Associate Dean, College of Engineering*

Brian McFarlane, *Director of Technology Operations, School of Nursing*

Jill M. McKinstry, *Director, Odegaard Undergraduate Library, Odegaard Undergraduate Library*

Stern Neill, *Associate Professor, Business Administration, UW Tacoma*

Tom E. Norris, *Vice Dean for Academic Affairs, School of Medicine*

Oren Sreebny, *Executive Director, Emerging Technology, UW Technology*

Richard M. Strickland, *Lecturer, Oceanography*

Kathryn Waddell, *Executive Director, Health Sciences Administration*

Dinah Walters (co-chair), *Senior Systems Analyst, Finance and Facilities Decision Support*

Grace Whiteaker, *Online Learning Administrator, The Information School*

This report was prepared in the “UW Commons Wiki”, a collaborative space available for use by UW inter-organizational committees: <http://commons.washington.edu>