



**Basecamp™**

**Application Evaluation**

SI 689: CSCW

December 12, 2006

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## Executive Summary

People in companies, community organizations, and schools all struggle to effectively manage projects among team members. The ubiquity of project management makes it a natural opportunity for commercial CSCW products. We evaluated one project management tool, 37 Signals' Basecamp, to understand Basecamp's success on its own merits and what Basecamp use reveals about the challenges of developing software to support project management.

To understand users' needs and use of Basecamp, we read user blogs and conducted interviews. This led to the development of group personas ("groupsonas"), goals, and usage scenarios. For each groupsona, we identified a real-world user group whose goals and characteristics closely matched. Based on interviews with these organizations, we generated three case studies and draw some general conclusions about Basecamp. Users consistently referred to Basecamp as an easy and low cost way to manage group projects of limited complexity. These values correspond well to 37 Signals' goal that Basecamp be a highly accessible solution for basic product management. Users reported dissatisfaction with Basecamp, however, when their needs matured, particularly when their projects became more complicated and required monitoring of partial-completion status and interdependencies. Additionally, even when Basecamp matched their needs well, the software's "location" on the Internet kept it out of users' day-to-day work flows. Being out of sight meant it often went unused.

Many users described alternative applications they currently subscribe to or have used. A comparative analysis of these applications found that Basecamp's competitors suffer from many of the similar problems. We examined Microsoft Project, ActiveCollab, and the University of Michigan's CTools in detail and reviewed the features of two other products, Trac and WorkZone. With the exception of MS Project, whose Standard version is a client-side, single user application, the products we evaluated overlapped significantly in terms of features they offer. Each product implements its features at a somewhat different level but all target a narrow set of project circumstances and quickly become less useful outside of those conditions. Issues of visibility, workflow integration and work-benefit balance also remain. One user, currently a product manager at a Silicon Valley company, mentioned that she could not ask her employees to use any of the applications because only she would receive a reasonable return on investment for this additional workload.

Re-focusing on Basecamp, we completed a heuristic evaluation of the software. Ten heuristics were culled from lists developed by Olson and Nielsen as well as five heuristics from Baker, Greenberg, and Gutwin's 2002 work on heuristics for groupware. This confirmed that Basecamp provides useful collaboration tools that are reasonably easy to use, but also identified a number of additional usability issues. Many of these problems are related to how well Basecamp supports changing needs and how well it integrates the different features offered.

In 1994, Jonathan Grudin described eight challenges for groupware developers. More than a decade later, many of these challenges have yet to be satisfactorily addressed for project management software. At the same time as we applaud Basecamp's developers for delivering an easy to use set of core features, we urge them to find ways to make the application more visible when not in use, to better integrate it into users' workflow, and to ensure that the task tracking is designed to be a resource that adds value for all team members. Additionally, we identify a number of key usability areas that should be addressed.

## About Project Management

Project management has been around for decades, and people strive for more effective ways to carry the project life cycle from start to the end. The Project Management Institute defines project management as “the art of directing and coordinating human and material resources throughout the life of a project by using modern management techniques to achieve predetermined objectives of scope, quality, time, and cost, and participant satisfaction” (Alshawi and Ingirige, 2002). A project cycle usually consists of initial planning, actual execution, and completion. The overall role of project management is to make sure all the functions of planning, communicating and monitoring are carried out smoothly.

Communication is a necessity of project management, but it is also causes most project failures (Alshawi and Ingirige, 2002) through the distortion of messages that can result in delays in decision-making. However, technological advances like the Internet can alleviate some of these communication problems. As a global network, the Internet enables people in different locations to communicate and exchange information more easily. Biggs (1997) points out that web-based project management solutions that link with email or collaborative software effectively reduce the frequency of communication problems that lead to project failures.

Deng et al (2001) observe that “timely and accurate information is important for all project participants as it forms the basis on which decisions are made and physical progress is achieved”. The ability to transfer information in an accurate and timely manner directly affects the outcome of the project. Therefore, the fact that many project management systems (software) focus on specific tasks and act as isolated applications results in the “broad spread of stand-alone applications packages with no or ‘fixed’ communication links” (Alshawi and Ingirige, 2002). Even though involves many different stages, project management is one big “project” itself, and information transfer between parties and between stages is crucial. A unified system should successfully integrate all the functions and allow smooth information flow between various stages of the project life cycle.

One key difference between web-based project management tools and other IT tools is that a project life cycle involves many people and different organizations. To successfully implement such a system requires the participation of the whole organization. In the process of implementing a system like a web-based project management tool, one problem is the lack of participation in sharing knowledge. Huang and Newell noted that the “processes of knowledge capture, transfer and learning in project settings rely very heavily on social patterns, practices and process” (2003). Project management is a dynamic and social process that involves rapid exchange of information and communication between participants. Nevertheless, individuals within an organization often wish to “retain their own identity and do things ‘their way’ rather than conform to an impose standard” (Clarke, 1999). This cultural and individual issue is an important problem in motivating people to participate in the use of project management system because using such as system often requires one to change “their way” of doing work.

The last critical point for successful implementation of a project management system is the idea of “perceived benefits.” As Grudin observed, a disparity between work and benefit is one of the eight challenges in groupware (1994). As a system requiring tremendous time and resources to manage, a project management tool has minimal perceived benefits for the individual. To counter this problem, the organization should educate all the people on the potential organizational benefits of effective project management (Clarke, 1999).

## About Basecamp

Basecamp (<http://www.basecamphq.com/>) is an online project collaboration system that comes in several plans including free accounts. Jason Fried, CEO of 37 Signals who created Basecamp, speaks freely about Basecamp as a very different philosophy for project management: that communication is the key to successfully completing a project, and that more features are not always more beneficial in project management applications.<sup>1</sup> This is further developed in “The Basecamp Manifesto”<sup>2</sup> published on the Basecamp website. And while these beliefs negate many conventional views on project management, a private equity investment in 37 Signals by Bezos Expedition (run by Amazon CEO Jeff Bezos)<sup>3</sup>, and Basecamp’s recent acquisition of its 1,000,000<sup>th</sup> customer<sup>4</sup> attests to the growth and industry potential of the company.

Basecamp allows users to share and assign to-do lists, track project milestones, and chat online, among other functions. The system is designed for a project team to share important dates, files and notes through a centralized portal for better communication and collaboration for the project team. Basecamp enables broad functionality through the following features:

**Dashboard:** User-specific summary of milestones, upcoming calendar and project activity

**CSCW06** Logged in as Irene Cheung (Log-out) **HELP**

**Dashboard** To-Dos Milestones People Account Templates Settings

Your project  
**Evaluation Project**

**Late Milestones**

**18 days late:** [Follow-up Interviews](#) [CSCW06 | Evaluation Project | CSCW06]  
**4 days late:** [Presentation Begins](#) [CSCW06 | Evaluation Project | CSCW06]

Due in the next 14 days

Thu	Fri	Sat	Sun	Mon	Tue	Wed
TODAY	Dec 8	9	10	11	12	13 <a href="#">Final Report Due</a>
14	15	16	17	18	19	20

**Latest activity**

**CSCW06 — Evaluation Project**

<b>MILESTONE</b>	1 Dec	<a href="#">Competitive Evaluation</a>	completed by Irene C.
<b>MILESTONE</b>	1 Dec	<a href="#">Heuristic Evaluation</a>	completed by Irene C.
<b>MILESTONE</b>	1 Dec	<a href="#">Initial Interviews</a>	completed by Irene C.

**You're currently using the free 1-project plan**

If you want to manage additional projects [you'll need to upgrade your account](#) (plans range between \$12 and \$149/month).

**Key benefits of upgrading**

- 1. Share files**  
Upload, share and store files in a central repository.
- 2. Manage multiple projects**  
Basecamp shines when you're managing multiple projects. A single login lets you see all your projects on one Dashboard screen. Plus, it's easy to specify who can see what projects.
- 3. No per-person fees**  
Basecamp costs the same no matter how many clients or employees you have.

<sup>1</sup> Hedlund, Marc (2005, March 10). The Builders of Basecamp. Retrieved October 15, 2006, from O'Reilly Network Web site: <http://www.oreillynet.com/pub/a/network/2005/03/10/basecamp.html>.

<sup>2</sup> The Basecamp Manifesto. Retrieved December 9, 2006, from Basecamp Web site: <http://www.basecamphq.com/manifesto.php>

<sup>3</sup> Fried, Jason (20 Jul 2006). Bezos Expeditions invests in 37signals. Retrieved October 23, 2006, from Signal vs. Noise Web site: [http://www.37signals.com/svn/archives2/bezos\\_expeditions\\_invests\\_in\\_37signals.php](http://www.37signals.com/svn/archives2/bezos_expeditions_invests_in_37signals.php)

<sup>4</sup> Fried, Jason (13 Nov 2006). Basecamp turns 1,000,000 . Retrieved November 15, 2006, from Signal vs. Noise Web site: <http://www.37signals.com/svn/posts/106-basecamp-turns-1000000>

**Project overview:** Project-specific summary of milestones, upcoming calendar and project activity – also lists all project participants and acts as a gateway to other project resources

[Dashboard](#) | [Choose a project](#) [Settings](#) | [Permissions](#) | [My account](#) | [Log-out](#) **HELP**

## Evaluation Project CSCW06

**Overview** Messages To-Do Milestones Writeboards Chat People Search

### Project overview

[Add message](#) | [Add to-do list](#) | [Add milestone](#)

**Late Milestones**

**12 days late:** [Follow-up Interviews](#) (CSCW06 is responsible)

Due in the next 14 days

Fri	Sat	Sun	Mon	Tue	Wed	Thu
TODAY	Dec 2	3 <a href="#">Presentation Begins</a>	4	5	6	7
8	9	10	11	12	13 <a href="#">Final Report Due</a>	14

**What's fresh?**

**Today**

**MILESTONE** Done : Competitive Evaluation

**Subscribe to project's RSS feed**

Want to be notified any time someone posts a message, comment or file, or adds or completes a to-do item or milestone in this project? Just [subscribe to your project RSS feed](#) **RSS** ([What is RSS?](#))

**People on this project**

CSCW06

Irene Cheung

David Hsiao  
Last login 1 day ago

Sean Munson  
Last login 4 days ago

**Message board:** Project-specific blog facilitating information sharing and feedback

[Dashboard](#) | [Choose a project](#) [Settings](#) | [Permissions](#) | [My account](#) | [Log-out](#) **HELP**

## Evaluation Project CSCW06

Overview **Messages** To-Do Milestones Writeboards Chat People Search

### All Messages [Edit](#)

[Post a new message](#)

Tuesday, 14 November

**test**  
testing...

Posted by David Hsiao in [Miscellaneous](#) | [Edit](#) | [1 comment](#)

Tuesday, 17 October

**Meeting Reminder**  
Don't forget meeting tonight 7pm at B-School!

Posted by David Hsiao in [Miscellaneous](#) | [Edit](#) | [Post a comment](#)

[Categories](#) [Edit](#)

- All Messages**
- [Assets](#)
- [Code](#)
- [Copywriting](#)
- [Design](#)
- [Miscellaneous](#)
- [Transcripts](#)

[Privacy Policy](#) | [Terms of Service](#) Managed with **Basecamp**

**Simple scheduling and time tracking:** Schedule in calendar and itemized formats to monitor progress and provide reminders of milestones; also tracks responsible parties for deliverables

**Milestones**

[New milestone](#) (or [up to 10 at once](#))

Today is 1 December

**Late**

12 days ago (Sunday, 19 November) - CSCW06

**Follow-up Interviews** [Edit](#)

**Upcoming**

Due in the next 14 days

Fri	Sat	Sun	Mon	Tue	Wed	Thu
TODAY	Dec 2	3 Presentation Begins	4	5	6	7
8	9	10	11	12	13 Final Report Due	14

All upcoming

**Milestones on your own calendar**

[Subscribe to iCalendar](#)

If you use [Apple iCal](#), [Mozilla Calendar](#), or any other program that fully supports the iCalendar standard, you can subscribe to your Milestones in iCalendar format. This will allow you to view your project milestones in your own desktop computer calendar. Please read this [security note](#) before subscribing.

[Toggle past months](#)

Dec:	M	Tu	W	Th	F	S	S
					1	2	3
4	5	6	7	8	9	10	
11	12	13	14	15	16	17	
18	19	20	21	22	23	24	
25	26	27	28	29	30	31	

**Task assignment:** To-do list itemizing steps and responsible parties for deliverables, milestones

**To-do lists**

[New to-do list](#) | [Reorder lists](#)

**Screenshots** [Reorder](#)

Enter project information into Basecamp

Take screen captures of relevant pages

[Add an item](#)

**Evaluation Plan** [Reorder](#)

General plan for how we will tackle this project, including research methods, target audiences, preliminary literature review, and timeline

**David Hsiao:** Evaluation methods

**David Hsiao:** Lit review - academic journals (project management in general)

**Filter by responsible party**

Show to-dos assigned to:

**Current to-do lists**

[Screenshots](#)

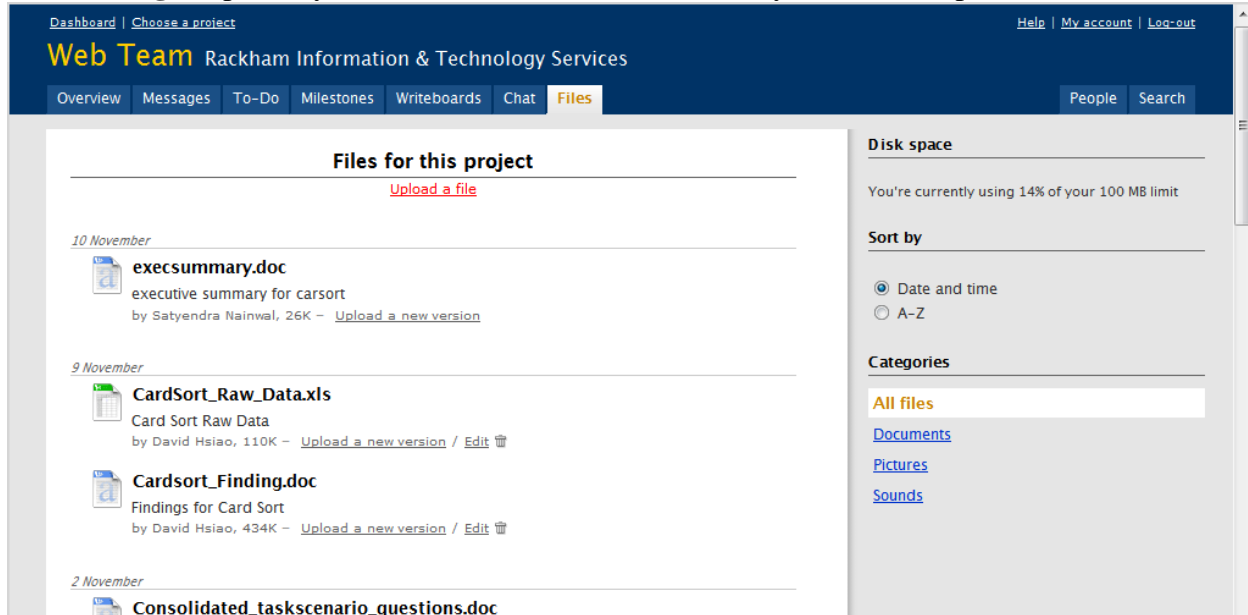
[Evaluation Plan](#)

**Completed to-do lists**

[Proposal for Three Systems](#)



**File sharing:** Repository for relevant documents; sortable by date/time, alphabetical file name



The screenshot displays a Basecamp project page for 'Web Team Rackham Information & Technology Services'. The 'Files' tab is active, showing a list of documents. The files are organized by date, with the most recent at the top. Each file entry includes a file icon, the filename, a brief description, the uploader's name, and the file size. For example, 'execsummary.doc' is an executive summary for carsort, uploaded by Satyendra Nainwal (26K) on 10 November. Other files include 'CardSort\_Raw\_Data.xls' (110K) and 'Cardsort\_Finding.doc' (434K), both uploaded by David Hsiao. A 'Consolidated\_taskscenario\_questions.doc' file is listed from 2 November. The right sidebar provides project statistics, including disk space usage (14% of 100 MB) and sorting options (Date and time, A-Z). Categories for file organization are listed as 'All files', 'Documents', 'Pictures', and 'Sounds'.

The Basecamp project <http://si689.grouphub.com/> has been created for direct examination of the program; in addition, this account will serve as a practical demonstration of its capabilities in managing this group project.

## User Preferences

The nature of interaction with Basecamp depends on the profiles of its users. Based on previous interaction with two known user groups, Case Studies posted on the Basecamp website,<sup>5</sup> and online research, the team developed user group personas and usage scenarios to determine the key characteristics of the Basecamp audience. Three primary user-groups were defined as students, small businesses, and nonprofit organizations. And while the range of technical support and expertise within each group varied, all “groupsonas” possessed the following common needs:

- Ease of use
- Project collaboration among a small group of users, often working remotely
- File sharing
- Public accountability for project tasks
- Status tracking relative to deadlines and project milestones
- Mechanism to discuss issues, ideas, etc
- Inexpensive solution

The groupsonas and usage scenarios can be found in their entirety in Appendix 1.

<sup>5</sup> Full text can be found at <http://www.basecamphq.com/examples.php>.



These requirements were echoed in the case studies presented on the Basecamp website, and overall user assessment of the strengths of the application were quantified by a non-scientific survey conducted by creator 37 Signals in November 2006.<sup>6</sup> In response to “What do you like MOST about Basecamp?”, users reinforced the key advantages that 37 Signals intends Basecamp to have: ease of use (40%, or 306 of 761 of survey responses), simplicity (27%), and an intuitive interface (11%).<sup>7</sup> Other comments also highlighted various features, its speed, low price, flexibility, and web-enabled access.

As each groupsona was inspired by a current or previous Basecamp user who is representative of their target audience segment, the team followed-up with these real-world users to determine the actual usage pattern of the application. All users agreed with their fellow Basecamp users about the positive aspects of the application, as highlighted in the survey and case studies. However, its practical implementation often negated these cosmetic benefits, as adoption and regular usage emerged as the biggest issue in all three real-world cases. Since the usage scenario of each groupsona mirrored the general information transfer and collaboration needs of its live counterpart, the following broad yet significant criticisms of Basecamp emerged:

- Basecamp is better suited to task lists than calendaring or true project management
- Inability to track incremental status of task completion limits utility of to-do lists
- Necessity to integrate new program into workflow requires appropriate incentives and personal benefits
- For simple tasks, email may be a more efficient/effective means of communication
- Basecamp may not be the best project management application for the organization

The actual outcomes and assessments of each real-world user group can be found in its entirety in Appendix 1.

Ultimately, while Basecamp appears to meet the needs of small or young organizations engaging in moderately complex projects, the application is ill suited for very simple or very elaborate ventures. Basecamp excels in the areas set aside in its primary tabs: Messages, To-Do, and Milestones; however, the integration of these functions exists only as a summary of recent items, as shown on the “Overview” tab. As a result, the true interoperability required by many organizations to adequately manage their projects is lost, and Basecamp is often replaced with alternate means of project management.

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## Alternative Applications

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Many users we interviewed or whose blogs and forum posts we read repeated one consistent message: they have tried several project management applications before getting to where they are, and each application brought a unique set of strengths and weaknesses. To better understand how different features and implementations influence choice of project management tool and user experience, we examined the features of five applications that users mentioned using before then completing a more detailed and thorough analysis of three of these applications.

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<sup>6</sup> Survey description and verbatim responses to “What do you like MOST about Basecamp?” can be found at <http://www.basecampHQ.com/survey.php>. Retrieved December 8, 2006.

<sup>7</sup> *Ibid.*

- **ActiveCollab** is almost identical, feature-for-feature and visually, to Basecamp. ActiveCollab is a hosted application, which at least some user groups preferred.
- **University of Michigan CTools** was designed to support courses, projects, and University committees. CTools offers many similar features to Basecamp.
- **Trac** is primarily a bug-tracker with an integrated wiki. Several groups, including one of our case studies, has repurposed Trac as a more generalized project management tool, and the program's developers appear interested in taking the product in this direction.
- **WorkZone** is a more expensive competitor to Basecamp. It offers fewer features but much more depth for calendaring, document sharing, and tracking tasks and milestones. The nonprofit in our case study switched to using WorkZone for these reasons.
- **Microsoft Project** is the only client-side application reviewed. It offers none of the document sharing, messaging, or other collaborative features found in the web-based applications without the additional purchase and installation of Project Server. Microsoft expects Project to be used by groups that have access to these features through other products in the Office suite, and it instead focuses on offering Project users a way to plan and monitor project tasks and resources in great detail. Project particularly excels at critical path management.

We found that all products can be very helpful when matched to the needs of the right project; however, beyond a fairly narrow range of projects, each tool is much less effective. None of the tools we evaluated allow for much flexibility to manage tasks or facilitate communication, and so they cannot change when user needs change. Because user needs vary significantly, both across organizations and across projects within the same organization, this weakness among project management tools is quite serious. We suspect that this contributes significantly to the frequency with which users abandon short-lived tools and search for their next project management application. It is not necessarily accumulated frustration with the tool that causes them to change products; their projects and needs evolve and so a tool that was previously adequate becomes unacceptable.

Each of these tools also requires the user to open a new application or webpage to cross off a task when they have completed it, and most require users to open the project's web page in order to send an announcement to all members. In order for online project management to succeed, these applications must be better integrated with users' workflow. There are some glimmers of hope among these applications that may suggest that project management tools are maturing and moving in this direction. Task lists in Trac and WorkZone, for example, are more detailed than simple lists and allow discussion, notes, and other details about each task to be aggregated. This becomes a resource to the person assigned to this task, and so they are more likely to integrate use of the tool into their work on that task. Basecamp and soon ActiveCollab try to keep users coming to the site by integrating required tasks (eg, time tracking) that users will need to complete anyway. Continued progress may help make project management a more seamless experience for users. Integration with workflow and making the tracking tools into resources for everyone on the team can also help overcome Grudin's challenge of work/benefit

imbalance. Appendix 2 includes a more detailed review of ActiveCollab, CTools, and Microsoft Project, as well as a feature comparison for all six applications.

## Basecamp Evaluation

Heuristic evaluation provides a way of identifying and categorizing critical strengths and weaknesses of Basecamp’s usability, functionality, and visual design during and outside of task completion. The method enabled the team to quickly collect a broad spectrum of focused findings without involving actual end users.

We used an aggregated list of 15 heuristics to complete our heuristic evaluation of Basecamp. The principles used are selected from both groupware heuristics and single-user heuristics. The first five heuristics, taken from “Empirical Development of a Heuristics Evaluation Methodology for Shared Workspace Groupware” by Kevin Baker, Saul Greenberg, and Carl Gutwin (2002), focus on the collaborative and groupware aspects of Basecamp. The remaining heuristics were taken from the list developed by Judy Olson and Jakob Nielsen, and focus on single-user usage of Basecamp. We include both groupware heuristics and single user application evaluation principles because Basecamp must be effectively used by individuals before it can successfully act as a collaborative tool.

From our heuristic analysis we found several things that Basecamp does well, including enhancing the single-user experience and facilitating collaborative work. On the other hand, we also identified some areas that Basecamp can improve, to not only enhance user experiences in general, but also to help users to coordinate and collaborate with one another better. Here we highlight some key findings of both success areas and areas requiring improvements that relate to the collaboration aspects of Basecamp. For a complete list of the successful areas and areas requiring improvements, please see Appendix 3.

Issue #	Description	Severity	Heuristic Category
1	Provide useful tools for overall project coordination	Good	#3 Manage the transitions between tightly and loosely-coupled collaboration
2	Nice access to group member profiles and contact information about individual user profile	Good	#5 Facilitate finding collaborators and establishing contact
3	Minimum connection between Messages, To-Do List, and Milestones	High	#3 Manage the transitions between tightly and loosely-coupled collaboration
4	File descriptions provide limited information and does not prevent file version overwrite	High	#1 Provide consequential communication of shared artifacts #2 Provide Protection
5	Cannot create new category when uploading new files	Medium	#1 Provide consequential communication of shared

			artifacts
6	Unable to post message in Milestone	Medium	# 4 Support people with the coordination of their actions
7	Cannot comment on to-do list	Medium	# 4 Support people with the coordination of their actions
8	No direct hyperlink between usernames and user profile	Medium	#5 Facilitate finding collaborators and establishing contact
9	Each Milestone can only assigned to one member	Low	# 4 Support people with the coordination of their actions

We examine the successful areas, and issues requiring immediate attention in greater detail as follows:

Issue #	Description	Severity	Heuristic Category
1	Provide useful tools for overall project coordination	Good	#3 Manage the transitions between tightly and loosely-coupled collaboration

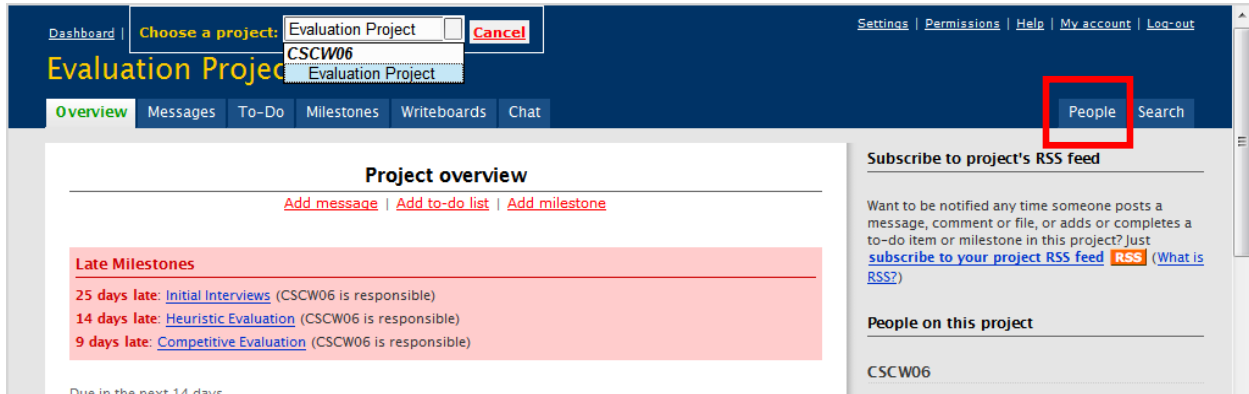
Basecamp operates on two levels of content organization: individual and project-based. The “Dashboard” that each user defaults to upon logging into the system provides broad overviews of all projects that the individual is involved in: project status, recent activities, task responsibilities, and a calendar of milestones set for the next quarter. In contrast, each user can drill down into the specific details of each project to access discussion with colleagues, file sharing, and general responsibilities for the tasks within the project. This ability to clearly distinguish one’s own work within a larger context is especially critical for individuals in organizations who run multiple concurrent projects.

The various means of discussion (message board, writeboards and chat) provide an open forum for colleagues to talk about general status, potential problems, possible solutions, or even propose new ideas. By facilitating this dialogue, even geographically dispersed teams can coordinate their activities much more smoothly, while also maintaining a written record of the discussion. As individuals engage in greater discussion, people can organize message board threads by category to improve the ability to find relative information.

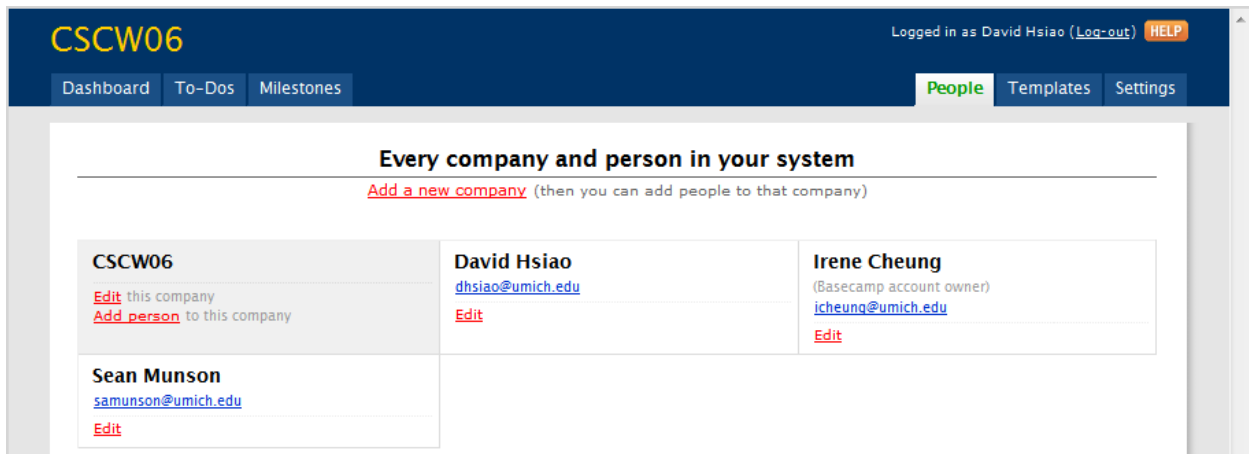
Issue #	Description	Severity	Heuristic Category
2	Nice access to group member profiles and contact information about individual user profile	Good	#5 Facilitate finding collaborators and establishing contact

Basecamp does an adequate job facilitating finding collaborators and establishing contact with them. Once users have been added to the project, they are able to create a profile including their contact information as well as upload an image to use as their avatar. Each user’s contact information is accessible through the “People” tab at the top of each Basecamp page.

**Examples**



Access Link to “People” on Every Page



User Profiles and Contact Information

Issue #	Description	Severity	Heuristic Category
3	Minimum connection between Messages, To-Do List, and Milestones	High	#3 Manage the transitions between tightly and loosely-coupled collaboration

The greatest drawback in Basecamp’s ability to facilitate tightly and loosely-coupled collaboration is its separation of tasks and deadlines. In both the Dashboard and Project view, two different tabs exist for “To-Do” and “Milestones”, and users must toggle between the two to figure out what is due when, and what components are required for the next deadline. As a result,

new users, especially those involved in multiple complex projects, may become frustrated with the amount of time required to assemble the many piece of all their puzzles. This disconnect complicates project management more than it helps it.

At this point, the separation of tasks and timing introduces a complicated facet to project set-up. Though “Quick Tips” may be useful for new users, its persistence over several sections limits the relevance and utility that may be gained from it. Similarly, the logic of completely separating the Milestones and To-Do list tabs is questionable: the organizer must visit two separate screens to enter first the Milestone, then the to-do list, and then associate the two within the “To-Do” tab. Even after figuring out how to do so, deadlines do not appear on the to-do lists; the only dates are the days someone checked off an item as complete (note: NOT necessarily the date the task was completed). Furthermore, checking off something as a completed Milestone does not automatically assume that all the sub-parts (which presumably must have been required to achieve this state) have been complete themselves; since tasks and milestones remain separate, it therefore may not be clear which items really do remain to be done, versus those which may not have been acknowledged as complete. However, the system does respond quickly when one marks something complete; the item almost instantaneously moves to the completed section upon checking it off. One related area in which Basecamp falters, though, is that it cannot always support the order of the project tasks it is designed to track. The tasks within to do lists cannot be assigned dates or dependencies, and so Basecamp cannot indicate an appropriate order for these tasks.

### Example

Today is 13 November

**Late**

- 25 days ago (Thursday, 19 October) - CSCW06
  - Initial Interviews [Edit](#)
- 14 days ago (Monday, 30 October) - CSCW06
  - Heuristic Evaluation [Edit](#)
- 9 days ago (Saturday, 4 November) - CSCW06
  - Competitive Evaluation [Edit](#)

**Upcoming**

Due in the next 14 days

Mon	Tue	Wed	Thu	Fri	Sat	Sun
TODAY	Nov 14	15	16	17	18	19 Follow-up Interviews
20	21	22	23	24	25	26

All upcoming

- Sunday, 19 November (6 days away) - CSCW06
  - Follow-up Interviews [Edit](#)

If you use [Apple iCal](#), [Mozilla Calendar](#), or any other program that fully supports the iCalendar standard, you can subscribe to your Milestones in iCalendar format. This will allow you to view your project milestones in your own desktop computer calendar. Please read this [security note](#) before subscribing.

[Toggle past months](#)

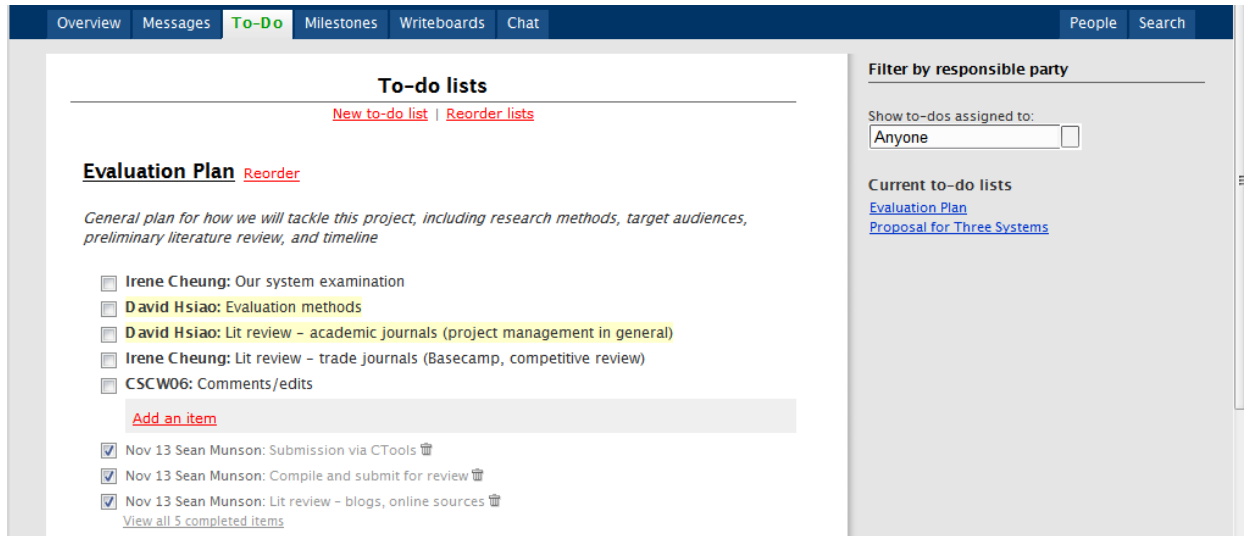
Nov: M Tu W Th F S S

		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Dec: M Tu W Th F S S

			1	2	3	
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Screenshot of the Milestone Page



Screenshot of the To-Do lists

**Solution**

Link the Messages, To-Do Lists, and Milestones together as one inter-related application. When a To-Do List is associated with a Milestone, display relevant information such as the due dates of the Milestone. In addition, if there are pertinent messages associated with either the To-Do Lists or the Milestone, show them to the group members. Also, Basecamp should allow better linking between these three features since due dates and the tasks are interrelated and their relationship is important for effective project management. Therefore, when a user is in one section and wants to see related information located in the other sections, the system should link to it automatically. With that said, a better way to support project management and multiple users of the system is to provide a clear link between the dates, the tasks, and messages associated with them.

In a similar sense, Basecamp should also allow users to post messages or comment on specific Milestones, rather than only in a centralized Messages area. Alternatively, Basecamp can provide a better connection between Messages and Milestones so that members can know the relationship between certain messages and certain milestones, and can navigate back and forth between them with ease. Furthermore, enabling users to comment on the To-Do List to update other group members on progress or problems encountered when carrying out certain tasks will greatly enhance coordination among group members. The project life cycle does not only include a beginning and the end, but also the process and progress in between. Within a project life cycle users often need to notify others of their progresses or problems encountered. Therefore, a close connection between Milestone, Message, and To-Do List and also more communication features will greatly improve the interaction among users.

Issue #	Description	Severity	Heuristic Category
4	File descriptions provide limited information and does not prevent file version overwrite	High	#1 Provide consequential communication of shared artifacts #2 Provide Protection



Basecamp allows users to enter optional descriptions for the file uploaded, but it does not allow extensive notes to be associated with each document. For example, users cannot provide detailed information regarding updates to the document or a summary of the content. In addition, Basecamp only provides two sorting mechanisms: sort by date and time, and sort by alphabet. However, there are other possible sorting schemes that can be used to better support user behavior, such as sort by the member who uploads the file or sort by file type.

The file section also does not seem to integrate well with the whole system. It is an independent section from the primary Message/To-Do List/Milestone areas. Often a file is associated with either a Milestone or a To-Do List Item, but they are not associated with one another in Basecamp. When uploading a file, users cannot specify which milestone or to-do list item this file is for. If they are interconnected, the user can mark a to-do list or a milestone as completed when uploading the file, and s/he will not need to mark the milestone or to-do list item as a separate action.

Basecamp is a shared workspace and thus should provide a way to coordinate individuals' efforts so that users do not interfere with each other. In the event of this interference, Basecamp should provide a way to repair damage. This is most important in Basecamp's file sharing feature. File check-in/checkout is a common feature on collaborative file-hosting applications and can prevent many versioning problems. Such a feature is not included in Basecamp; the file sharing page only shows file title and description, the person who uploaded it, and the date. This oversight has received a number of complaints on the Basecamp forums.<sup>8</sup> Users describe some ways they circumvent this problem, including editing the file's description to indicate they are currently editing it, or adding a note to Basecamp's to-do pane. Some users suggest use of the writeboards for collaborative editing, but most agree that this is a partial solution at best, as they often make collaborative edits in a variety of documents. Basecamp's writeboards also do not support concurrent editing; they only lock the writeboard when another user edits.

In the event that a user mistakenly uploads an older file as a replacement for another, there is also no way to undo this error and no file history is preserved. Similarly, Basecamp cannot detect that users have submitted different edits to the same document and makes no attempt to merge edits, a feature that is common in both desktop word processing software and many wikis (eg: MediaWiki). Users who switch to writeboards rather than files for collaborative editing face similar problems: the software is unable to merge different versions of a file.

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<sup>8</sup> File Check-in / Check-out. Retrieved November 10, 2006, from Basecamp Forum Web site: <http://www.basecampHQ.com/forum/viewtopic.php?pid=7513>

## Example



File Descriptions Provide Limited Information

## Solution

As mentioned in literature reviews and project management overview, exchange of information in the form of documents is a crucial piece of communication. File sharing is often one of the most important features in the project life cycle. With the tremendous amount of data and documents, users need a way to share, organize, and track changes to the information circulated among different parties. In its current state, however, Basecamp only provides minimal support for sophisticated coordination around the shared artifacts.

Basecamp should allow users to better organize their files according to the workflow of the organization, and also provide place for the users to enter more detailed information regarding certain documents. An improvement to support this is to allow users to add and modify a list of categories that can be used to tag the file upload. Different organizations often have different workflow and categorization schemes; however, with only one default set of file categories, Basecamp forces organizations to change their work processes and ways of handling the files. Therefore, the system should let each individual organization, but not necessarily every user, to decide how they will categorize the files.

Moreover, the current system does not support versioning or any kind of history, and these features are important to make sure that the correct documents are updated, and mistakes can be rolled back. This is not only a coordination issue, but also an error tolerance problem. Therefore, in addition to just replacing the old file with a newly updated document, the system should keep the old file, rename the new file with the old version plus one, and allow users to trace back if needed.

## Summary

From our heuristic analysis we conclude that overall Basecamp is a versatile and simple to use tool to coordinate projects. It supports collaboration and coordination among different parties, and the tools that it provides are very useful. Basecamp, nevertheless, fails to integrate these tools into one interrelated application that can better help users communicate with one another. As a project management tool, Basecamp should not only focus on the deadlines and milestones, but the progress of the whole project. Milestones and To-Do Lists are very useful in assigning tasks and defining deadlines, but users need more coordination and communication than just dates and tasks. Basecamp should allow users to see all the messages, tasks, and dates that are related in a easy way without making the link themselves. In addition, the file sharing

feature included in Basecamp is very primitive, and users may encounter issues when dealing with huge volume of files and data. Basecamp does not keep track of the updates of the documents nor the history of the files; thus, it does not have the function of rolling back to previous versions of the file. When circulating and sharing large volume of files, coordination is important, and users should know the difference between different versions so they can better coordinate and communicate. If all these features can be unified and improved, Basecamp will become a better project management that help different parties to collaborate throughout a project life cycle.

## Conclusion

Jonathan Grudin laid out his eight challenges for groupware more than a decade ago, yet our work finds that many of these challenges are substantially unaddressed in Basecamp and its competitors. In addition to adoption issues, the two of Grudin's challenges that most need to be addressed are the disparity on work and benefit and unobtrusive accessibility, including both workflow integration and visibility. We find some reasons for hope, including:

- Third party widgets for the Mac OS X dashboard that allow users to monitor their Basecamp projects
- Basecamp's integration of time tracking
- Trac's outstanding ticketing system that helps overcome the disparity in work and benefit by making the entry for each task a valuable resource for members of the project team
- CTools' use of email listeners so that users can interact with the site from their favorite web client

These actions suggest that developers are aware of the shortcomings and are working to mitigate them. Other efforts at integration, such as the Campfire chat feature in Basecamp, are not as encouraging. In the example of Campfire, Basecamp developers hope to address workflow integration, but pursue an approach that requires drawing users away from tools of their choice. We are optimistic that these efforts, both successful and unsuccessful, will lead to best practices for project management groupware.

In addition to Grudin's challenges, we also find that changing user needs impact project management software. A user may work on one project that needs only the most basic features, while another project needs advanced and detailed task management. Even a user group that provided an overwhelmingly positive endorsement of Basecamp for the product's website found that as their needs and projects matured, they quickly outgrew Basecamp's functionality. While 37 Signals values ease of use – something they have certainly achieved – we believe that this has been achieved at the expense of flexibility, a value 37 Signals celebrates in their Basecamp Manifesto.<sup>9</sup> We do not believe that users should have to migrate to a different tool when their projects' needs change. Project management software designers must continue to create products that are easy to approach – we agree that Microsoft Project can be too intimidating – but they also must find a way for their products to scale and adapt to changing project needs.

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<sup>9</sup> The Basecamp Manifesto. Retrieved December 9, 2006 from <http://basecampHQ.com/manifesto.php>.

In addition to these broader themes, we also take note of Basecamp's specific implementation of its project management features. Overall, this is a competent interface that is easy to use and takes advantage of modern web technologies, such as AJAX, to provide a positive user experience. Improvements can be made with respect to how users link items together, how well other 37 Signals applications are integrated, and file versioning.

Basecamp and the majority of its competitors have by and large succeeded at producing accessible products that offer a good set of core project management and collaboration features. To continue to improve, Basecamp must address a number of usability issues – something its developers say is on their agenda for 2007<sup>10</sup> -- as well as many of the issues central challenges for all groupware products. Finally, Basecamp and other project management tools will need to find a way to grow and adapt as their users' needs evolve in order to retain existing users.

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<sup>10</sup> Basecamp Survey. Retrieved December 9, 2006 from <http://www.basecamphq.com/survey.php>.

## Appendix 1: Groupsonas, Scenarios and Case Studies

To understand the use of Basecamp within a CSCW environment, we needed to first determine the needs and personalities of Basecamp’s target audience. Based on information gathered from user testimonies on the Basecamp website, blog sites, and initial user interviews, we developed profiles of three user-groups to reflect the most likely users of the application within the context of their organizations. Furthermore, we created user scenarios for each of these “groupsonas” to identify common tasks and projects engaged by the users. These scenarios were taken into account during our heuristic evaluations, which helped to ascertain how well Basecamp appears to service the tasks required by its users.

While the three groupsonas are largely based on factual organizations, the details of their day-to-day tasks were generally expanded to create more a wider range of potential needs and projects that could be theoretically examined. Therefore, after each usage scenario, a short synopsis highlights key discrepancies between reality and the groupsona portrayed, as well as hypotheses to understand why Basecamp succeeded or failed in the real-world organizations.

### Groupsona 1: Student Project Group

Five students at Sandia College, a small engineering school in California, are working on their senior design project, sponsored by Armacham Technology Corporation, a federally funded systems engineering company. Armacham – a company of almost 5,000 people – is interested in having the students review how employees casually interact with each other in the hallway, and then suggest and prototype some ideas for how to capture and share the knowledge produced in these meetings. At Armacham, the students are working primarily with Dr. Benjamin Anderson, who heads the company’s internal software design department.

For its part, the college wants the students to have a meaningful, year-long real-world project experience in which they learn about engineering and how to work with a customer. Each team is assigned to a faculty member who acts as an advisor and is responsible for assigning students’ grades. Each advisor is assigned to two teams, the combination of which counts as a half-course in their teaching load. The Armacham Technology team is assigned to Professor Mark Wittel.

#### Margaret Harris

Margaret is the team’s project coordinator, a title created by the project’s faculty that gives her responsibility for communicating with the team’s sponsor and faculty advisor, as well as updating and maintaining the project schedule. Margaret is interested in learning how to lead teams, but is definitely apprehensive about her role: this is the first time she has ever run a project or had the responsibility to communicate with external clients.

Margaret is also determined not to let the huge project coordination workload interfere with her desire to immerse herself in the design and technical challenges of the project. This has, however, sometimes gotten in the way of communicating with her faculty advisor and sponsor. It’s not that she chooses not to, but just that she finds the technical challenges so interesting that she often starts working on that



when she sits down to work on the project and forgets all about her communication and coordination responsibilities. This became a problem at a recent design review, when Dr. Wittel had some scathing feedback on their progress so far. No one has said it outright, but she thinks the team blames her for not keeping him in the loop. She also feels that she needs to do better about keeping Dr. Anderson involved, and has a bad feeling in the pit of her stomach about how well she is doing this.

After graduating, Margaret hopes to attend business school, and knows that if she does well this semester, she can talk about her experiences in her application and interview. Doing really well also can only help her get good recommendations from Drs. Wittel and Anderson. She also knows that Harvard, her top choice, sometimes tells students to go work elsewhere for a couple of years before entering the program and thinks that Armacham might be a good place to spend this time if she ends up going that route.

### Robert Allan

Robert is the team's budget coordinator – he's responsible for keeping track of how the team is spending its money and coordinating with the program's staff member on purchases. This does not take a whole lot of extra time for their particular project, which pleases him, since he did not really want the responsibility. Rob is pretty pleased with how things in the team are working out – he thinks their meeting schedules and email discussions are good, but he wishes that they had more involvement with the sponsor. From his perspective, it might as well be just another school project; they do not get much input from Dr. Anderson, and when they do, it is all through Margaret.



Speaking of Margaret, Robert thinks that he could do better at communicating with Dr. Wittel and the sponsor, but has not said as much. To himself, though, he compares how well he keeps the team updated on money the team has spent with the (lack of) updates Margaret sends her sponsor and advisor. If it continues, he plans to say something, but hopes that things will turn around on their own with the new Basecamp plan.

### Other students

Other students on the team are Ryan Sweeney, Melissa Saltari, and Susan O'Donnell. All team members, as well as the sponsor and advisor, are technically proficient and have used websites such as Flickr, last.fm, and Wikipedia.



### Dr. Mark Wittel

Dr. Wittel cares a great deal about seeing his two project teams succeed – he had a similar experience in his undergraduate career, and found it to be incredibly rewarding. More pragmatically, he also knows that if the teams succeed, he will not have to spend as much time on the road recruiting companies to sponsor teams next year.

Wittel is one of Sandia's most junior faculty members, having just started this fall after completing his PhD. He's full of idealism, but is struggling with the challenges of his teaching load, committee





responsibilities, and trying to get his research going; because Sandia is a small school, there is no research group which he can just join. Still, he's determined to it all, even if it means answering emails until the wee hours of the morning. At a recent one-on-one review, his dean recently advised him to cut back, and Wittel conceded that this might be necessary.

One area in which he cut back is his attendance at all senior design team meetings – now that the teams are a couple of months into the semester and have a good plan and some momentum, he thinks that he can step back a bit. At a design review two weeks after he stopped going to every meeting, though, he was surprised by some of the things his team had done, and offered some strong criticism in the design review. He got some negative feedback on this from both the project team and another faculty member, who felt that as an advisor, he really should be trying to give this input before the more public design reviews. He agreed with the team, and, after talking with Margaret, decided that the Basecamp site might be a good way for him to keep abreast of the situation without needing to attend every meeting.

He and his wife, Yvette, have two young children (Andrew, 5, and Abigail, 2) and just moved into a new house a few miles from campus. He's finding his time to be in very short supply and is secretly relieved that he was told to cut back. Yvette, who is completing her dissertation this year, is less secretly relieved.

### **Dr. Benjamin Anderson**

Dr. Anderson runs the Armacham's internal software development group, which emphasizes on cutting edge internal work. Ideas prototyped here help company employees and the most successful ones are often later deployed as part of government projects. Anderson has been in this job for almost five years now, and really enjoys it; he gets to work on things that he feels are important and exciting, without the usual demands from customers. He had an intern from Sandia in the group a couple of years ago, who did some great work that resulted in a couple of conference papers. On the basis of this experience, he felt justified spending some money to sponsor the team; the odds of getting some great results seem pretty high, and he thinks that it could be a useful recruiting tool. Even if it fails, Armacham supports educational contributions like this, and Anderson knows he has his management's support.



While Anderson supports the project and wants to help it succeed, he knows that he cannot spend a lot of time on it because of his other work responsibilities. He likes getting occasional product updates from Margaret, and having documents he can pass along to people in the department who can offer useful feedback on particular aspects of the team's progress.

### **Basecamp Usage Scenario**

After the team's latest project review, the team and Dr. Wittel agreed they need to do better about communicating. Margaret expressed her concerns about these responsibilities leaving her no time to do the technical and design work. Margaret suggested cc'ing Dr. Wittel on all the team's emails, but he expressed some reservations. Already overloaded on email, he did not think that more message traffic would necessarily make him participate more. Ryan, who reads several tech blogs and has tried another of 37 Signals's programs (*Backpackit*) suggested trying Basecamp. He thinks that it might help keep the project on track and give their advisor and



sponsor access to relevant documents and a dashboard overview of the project team's status. Everyone sounded agreeable and so they decided to give it a try.

One challenge they have yet to iron out is that the team would also like to involve Dr. Anderson and others at Armacham in the team's communication, but they do not want to overwhelm them and they also want to keep some data, such as interview transcripts, private to the project team. As they setup Basecamp, they hope that they will be able to define appropriate user groups and routines for sharing data with the right groups. They also do not want to pay for the file hosting service on Basecamp, since they can use the network share drives the school provides; they will have to figure out the best way to coordinate between these.

Margaret also hopes that the team can get into a routine of checking their to-dos on the website, and that this public visibility of their progress – to both the team and the advisor responsible for their grades – will encourage the team to be more responsible about getting things done, saving her time.

### Real-World Case Study

The student project group groupsona was based a composite of actual groups. We follow up with the group that was the primary basis for this case study to learn if Basecamp met their needs. After deciding to use Basecamp, the team made a strong start. Margaret started a free account and added users for each team member, her advisor, and the company liaison. She added all of the team's current tasks and upcoming milestones and had team members commit to updating them.

This worked for maybe a month, though Margaret found herself doing most of the updates. Team members would complete tasks and email the group to let everyone know they were done, but would update the Basecamp project. Since the site was always not up to date the team members also could not use Basecamp to see what they should work on next, and delegation of tasks was still done via email or at meetings. Additionally, Basecamp's task and milestone management was not very well suited to the team's needs:

- **Tasks had to be created as part of a to-list:** To re-categorize them, a user would have to delete the existing task. The team members wanted to be able to add tasks to the list as they thought about them and worry about categorizing them later, when people could talk about for which milestone they should be completed. Because of this inflexibility, the team members recorded tasks they thought of in their own notes and would either email them out for discussion or save them for a meeting. Margaret would then update Basecamp after the tasks were discussed.
- **Basecamp supports only one level of dependency:** Each milestone can support one level of to-do lists, and to-do items and tasks cannot be dependent on each other. Margaret felt that this presumed that each milestone had one set of independent tasks for each person. If tasks could not be partitioned in this way, task-tracking on Basecamp was insufficient, as she could not see the critical path.

Hopes that it would improve communication with their advisor and sponsor were never realized. The advisor logged in only once; the sponsor never signed into his account. Margaret muses that

the site would not have helped their advisor with his grading either, since she checked off the tasks for every user, so it would appear that she did all the work.

Within two months, the team had given up on Basecamp altogether. Margaret was frustrated that her team did not use it – she still felt it would have been helpful for her to be able to track the team progress through the site – but also realized that continuing to ask them to do this work just to make her life easier was probably not going to get good results. The team discussed what to do and decided that a program that supported managing tasks in a more natural way (record a problem immediately, categorize later, show progress rather than just whether or not it is complete, and allow discussion) would probably increase their use of it. After talking with some other students, they decided to try Trac, an open-source project management tool that the college's IT department could install on a local server for them.

Trac's use within the team was similar to Basecamp. Robert volunteered to move all of the content over from Basecamp, and within a few days he had populated their Trac project. Team members were eager to try their new software and began adding tasks and checking them off. Margaret could go in and prioritize tasks or assign them to different people. This looked like a big improvement over Basecamp. Within a few weeks, though, the team had stopped checking and updating Trac. They were frustrated that while they could add tasks to the project, this rarely resulted in anyone stepping up to do them. Instead, it seemed to be a place where to-do items got recorded only to be forgotten. Figuring out a new way to manage the project was yet again on the team's agenda.

This time when they met, everyone felt that the problem was not *how* Trac facilitated managing tasks but *where* it facilitated task management. Even though most of the team was happy with Trac's features, they felt that it was too out-of-site to be useful; it did not fit into their existing workflow. If a team member sent an email reminding people that something needed to be done, everyone would notice while checking their email, something Sandia students do several times an hour. In contrast, it might be days before anyone logged in to Trac to notice the latest tasks. For online discussion, the team decided they were best off continuing to use email as their primary means of communication. To keep track of how the various tasks and deadlines fit together, though, they agreed they needed something with more presence to help stay aware of the big picture. They decided to make a giant butcher-paper wall calendar in their war room. Since they often met and worked in this room, it would be inescapable. For the duration of the project, the team relied on this calendar to keep track of their progress. Big, immovable course or sponsor-imposed deadlines were recorded in permanent marker, as were completed tasks. To-do items were written on post-its that could be moved around and reprioritized. This worked for the team, but meant giving up on some of their goals to keep their faculty advisor and company sponsor more informed.

In her current job as a project manager at a major Internet company, Margaret still struggles with finding the right project management software. She would not go back to using Basecamp or Trac. For the tasks her engineers do, the work/benefit imbalance between her and her direct reports would make that an unfair request. She notes that if the project management software was tied to something her team members have to do every day – such as entering their time sheets – that could also help address the presence problem. We note that 37 Signals has linked their time tracking program into Basecamp. This may have been an attempt to solve this problem. Because the applications are only loosely coupled, we question whether the presence problem is well-addressed. Tying some desktop widgets, such as one for Apple's Dashboard or Yahoo's Konfabulator, to project data might also help with the visibility problem in both Trac

and Basecamp. Even solving that problem, Margaret feels that the problems with how Basecamp manages tasks would still mean it does not offer enough value to her team.

## **Groupsona 2: Small Business**

Centrix is a newly founded small-business. The firm was established in 2004 by Jonathan Kipp and Patrick Campel, and it has doubled its revenue since its founding. With only 20 people in the firm, Centrix co-locates everyone in the company office in Philadelphia. Centrix is an energetic marketing firm which focuses on new media (website, digital products) and printed brandings. Its services include designing and implementing e-commerce enabled websites. The firm focuses more on the pretty design then cutting-edge, flashy technologies. It also creates printed brochures for direct mailing. Centrix aims to provide a total-package of marketing from online to offline channels. Most of its clients are other small-business companies in their local area. More distant companies, however, are welcome with referrals.

The company values employees with creativity and some geekiness. Its core philosophy is to provide total customer satisfaction and that the clients are unique. For any project, there are usually about 6 people on the project team. Each project team usually consists of a creative designer, content writer, coders, project manager, and a quality assurance person. The range of skills among these people may be very strongly tech savvy to very creative and artistic; however, it is not uncommon to find someone who is both. Not surprisingly, Centrix values this diversified combination of skills and perspectives. These people from different backgrounds and knowledge fields form a team to work with a particular client on one of the projects, and they might need to contact external units such as printer and also other contractors. Each person, on the other hand, usually works on 2-3 projects concurrently, though each project team is a new combination of people. Project duration varies from as short as one month to the possibility of an year; it just depends on the nature and the scope of the project. Since the company has multiple projects going on at any given time, they want centralized a repository to track and manage each project.

As an IT company, Centrix has numerous IT resources to use. Employees have their own desktop computers, and they share files via central servers. All the computers are connected to the central servers, and file sharing is very easy just like normal file manipulation (copy and paste) within an operating system. The managing executives, however, made a decision of not to use Microsoft Project as an institutionalized program because they think this application is anti-creative and does not fit into their company value. They company also has its own domain name, but the website is hosted by other web-hosting services. The e-mail account that each employee owns is also provided by the web-hosting company with the company's domain name. Centrix does not have an Exchange server yet, and the managers have no intention of getting one soon. In addition to these already existing technologies, the company uses Basecamp to manage the various projects that go on simultaneously. The people in the company can use Basecamp to share project progress, post/send messages, and also set-up milestones for the project. Moreover, people within the company use Basecamp to organize social events. This is to align with Centrix's one other value of work-life balance. As a small business, each person in the company is very close to one another, and they enjoy hanging out with other coworkers.

## Jonathan Kipp

Jonathan is a 36-year old web developer who co-founded Centrix four years ago with Patrick. He graduated from Carnegie-Mellon University with a Bachelor's Degree in Computer Science. Jonathan just got married a year ago, and this newly-wed couple does not have plan for having children in the near future. They enjoy their time together very much and travel a lot as a couple. Jonathan is a technology enthusiast, and he reads Slashdot.org and wire.com everyday as part of this routine. He knows the newest buzz in technology, both software and hardware. His role in projects is often as the geeky web programmer. Even though Jonathan is one of the co-founders of the company, he does not truly manage other people since there is really no hierarchical organizational culture within Centrix. In his free time, Jonathan enjoys play online computer games such as the World of Warcraft. He can spend his whole weekend playing it. Nevertheless, he is excited about the social events that the company holds, and he attends almost all the gatherings.



## Patrick Campel

Patrick is a 40-year old co-founder of Centrix who is responsible for designing marketing campaign for the clients. He holds an MBA from the Kellogg School of Management at Northwestern University. He is not very tech-savvy, but he hears about new buzz in technology from Jonathan once in awhile. Patrick is usually the project manager in a project who oversees the overall progress. Patrick is often responsible for assigning people to project teams based on the needs of the projects and the skills of the individuals. He likes to read the Wall Street Journal for leisure. During the weekdays Patrick is very hard-working and often puts in long hours; it is normal to see Patrick around when it is 8pm. However, Patrick tries his best to finish the work during weekdays so that he does not need to come into the office during weekends. Patrick is married and has two children. What he enjoys the most is taking his family to picnics and enjoy the weather. Patrick really values work/life balance, and he encourages everyone to spend time with family members. He often takes family trip over the weekends to different places. He and his wife Jenna love travel; they think traveling is the best thing to do because they not only get to relax, but they also gain new knowledge about different places.



## Tiffany Sumni

As a 30-year old business woman, Tiffany takes her duties very seriously. Tiffany remains single because she wants to focus on her career first. She graduated from Yale University with double Bachelor degrees in Art and English Literature. Before joining Centrix Tiffany worked for The New York Times for 3 years as a journalist. Coming from this background, Tiffany creates and designs the content to be put on client websites or printed brochures. Also holding a Bachelor's degree in Art, she has done some web design and brochure design. During her free time Tiffany likes to be active and outside; her favorite activities are biking and hiking. She and her boyfriend Ken always try to go for a ride or hit the trail together on the



weekend, and they both love nature. Tiffany is very involved in planning social events for the company. Along with 5 other people, she is part of the social event planning of Centrix. Together they propose different fun events for employees and their family members to attend.

## Basecamp Usage Scenario

Centrix has a Social Event Committee in which Jonathan, Patrick, and Tiffany are all part of. This committee consists of three other members to form a team of six people. They have chosen to use Basecamp to help the committee plan out the events. It is November, and the committee is planning to have a Thanksgiving Holiday Potluck for the whole company. They want to invite employees and their family members to attend this wonderful event and enjoy the holiday season.

Jonathan is responsible for setting up this project because he is very familiar with online applications and new technologies. Centrix already has a Basecamp account, and all he has to do is to create a “Thanksgiving Project” and bring the committee people into this project. After setting up the project within the company Basecamp account, Jonathan notifies everyone on the committee via e-mail. Jonathan also starts a to-do list and assigns people for some initial planning. He assigns Patrick to come up with preliminary project milestones including meetings and some critical deadlines. He also assigns Tiffany to come up with an invitation for the event so they can send the invitation to the family members in one week.

Patrick receives the e-mail sent by Jonathan and decides to get things going. After he logs-in to the Centrix Basecamp site, each person will see the project that s/he is involved. On the dashboard each Patrick sees a list of projects, deadlines, and tasks assigned to him/her. Upon seeing the “Thanksgiving Project,” Patrick clicks on it and enters the actual project planning area. He now sets-up a meeting on the “Milestone” section and assigns one person to be responsible for it. He chose the option to notify this member via e-mail (send out automatically by Basecamp). One thing Patrick finds frustrating is that he cannot assign more than one person to each milestone. Now Patrick goes to the “Message” section and post a message to let everyone know about the newly added milestone. In the “Message” section Patrick is able to notify everyone on the committee via e-mail.

Tiffany, upon receiving the e-mail regarding the meeting date, discovers that she has scheduled another appointment during that same time. She immediately log-on to the project site and post a comment on the message regarding the upcoming meeting.

## Real-World Case Study

The small business groupsona was based on a university IT department, which primarily used a collection of various applications to separately coordinate scheduling, file-sharing and information transfer prior to adopting Basecamp. These tools included:

- Email
- Meeting Maker
- Google Document
- Yahoo! Briefcase
- Instant Messenger
- MS Project (Hate it!)

Often, the functionality of these applications were used in ways beyond their core intention, such as e-mail assuming the role of schedule coordination, file transfer and storage on top of its basic

message transmission function. Though the department attempted to use Microsoft Project, it turned out to be unnecessarily complex and difficult to learn for their needs.

While the department eventually started to use Basecamp, its adoption has been limited to more tech-savvy members of the group, and this occurred only after failed trials with several projects. These initial failures stemmed from a series of factors including:

- **Simplicity of coordination:** Less complicated projects were more easily organized through face-to-face or email contact, rather than learning an entirely new system for simple tasks
- **Goals misaligned with the application:** The department originally only wanted a centralized calendar and timeline for task organization, which had been successfully accomplished in the past through multiple other applications; the need for a task and project management tool was not apparent to many of the early users, and therefore little incentive existed to start using Basecamp.
- **Personal preferences:** Comments like “it’s just not my style” raise significant barriers to adoption based on the reluctance or inability to integrate Basecamp into one’s comfortable routine, and the necessity to adapt one’s “style” to a work-mandated application.

Furthermore, the department commented on specific deficiencies in Basecamp, such as:

- Inability to see other people’s calendars
- Preference to add the ability to “ticket” or manually update status on tasks as “in progress”, “completed”, etc
- Too formal for many uses

Despite these criticisms, department members expressed their satisfaction with several functions provided by Basecamp, including:

- Dashboards personalized to one’s own tasks
- Indication of completed tasks
- Email notification of members
- Simple interface and functionality suited for transient users (ie, students), or those without previous project management experience
- Ability to connect remote users

Ultimately, department members indicated that they would recommend Basecamp to others because of its adaptability for various types of projects, as well as its scalability for many different sizes of projects and subsequent project teams. However, its optimal use may be for smaller scale projects involving 4-5 people who are not co-located.

### **Groupsona 3: Global Nonprofit**

The Global Education Organization (GEO) is a globally dispersed non-governmental organization dedicated to improving quality of life around the world through education. It accomplishes its mission through three primary activities:

- establishment and support of local avenues of education
- public campaigns
- cooperation with other organizations to improve quality of life

Headquartered in Arlington, Virginia USA, GEO also fields offices in Australia, Brazil, Czech Republic, Malaysia and South Africa. As a result, the organization must coordinate its activities and share its learnings across multiple countries and time zones. To facilitate this knowledge sharing, GEO uses Basecamp to manage its ongoing governance and project management.

Though the education programs in each regional office are implemented by local staff, Education Director Sonia Baker coordinates these directives in all GEO offices. These initiatives include the building of schools, purchasing books and supplies for classrooms, providing continuing and vocational education for community members, and helping teachers to become more effective at what they do. However, all this requires the sharing of information and assets from one project to another; sometimes, depending on their work load and technical aptitude, the Regional Education Managers (REM) will create these projects and populate them with the necessary documentation, creative assets, and advice, along with any outcomes and/or indicators of success. However, more often Sonia collects the information she has been provided through email communications with each of these REMs and creates each project herself.

Headed by Thomas Jordan, the Public Campaign division of GEO cooperates with media and governments to inform the public of the benefits of education, as well as the opportunities that can be made possible with education. The media portion of these initiatives includes public awareness campaigns in the form of advertisements, informational booths, and event sponsorships; the political portion includes lobbying government agencies to adopt education-friendly policies. In both cases, Thomas relies heavily on timely print-materials to support the issue at hand, and to reflect the many programs founded and perpetuated by Sonia's group.

Executive Director Katrina Lee oversees the general operations of GEO, while also managing cooperative relationships with other NGOs. As a result, she requires a database for names and contact information for her counterparts at other organizations. To maintain these relationships, Katrina makes notes after each discussion with other NGOs, both to remind her of the status of ongoing projects, and to track the plans and direction that the organizations are taking so that she knows who to contact in the future if their paths should dovetail again. For select organizations, Katrina also maintains a clip file of these organizations' work.

As the guardian of GEO's world-wide enterprises, Katrina also interfaces with the Board of Directors, who provide ongoing governance of the organization. Though the Board is not employed by GEO, each Director is nevertheless passionate about the positive effects of education that GEO facilitates. As a result, they all volunteer time on top of their Board duties to further initiatives, including on-the-ground work with regional offices to deploy new programs. This is often made easier with the multi-national nature of many Directors' full-time roles, and the fact that several are based abroad rather than in the U.S.

However, this global nature of the Board has made communication difficult at times, since large volumes of information must be shared in a timely manner for all parties to



effectively do their part. While all employees, Directors and volunteers have access to email, GEO has yet been unable to provide an institutional IT infrastructure since it has been cost-prohibitive for such a small organization. Therefore, much information is transmitted through email; Basecamp has allowed GEO to keep a record of ongoing planning and programming for future reference, as well as the ability to share information widely and centrally for the entire organization to see. This has been most effective across the many time zones that GEO spans.

### **Sonia Baker**

Sonia Baker serves as the Education Director for the Global Education Organization. She originally got involved with education nonprofits as a volunteer while in graduate school and joined her mentor in the organization upon earning her Ph.D. in education from Columbia University. After several years, however, GEO recruited Sonia away with the opportunity to tackle education on an international scale. She earned a B.S. in developmental psychology from the University of California – Berkeley and spent two years in AmeriCorps prior to returning to school.



When not at work, Sonia and her husband, an attorney with the Department of Justice, enjoy exploring the historical sites near their Washington, DC home and discovering new neighborhoods in their constantly changing city. Their daughter recently left for college and, to fill time that had previously been taken up by PTA meetings, the couple has recently joined a local bridge club. Sonia also helped start a local crafts club as a creative outlet for her many interests. Sonia Baker is 47 years old.

### **Thomas Jordan**

Thomas Jordan serves as the Public Campaigns Director for the Global Education Organization. He holds a Masters in Public Policy and an MBA from the University of Maryland, where he also earned his B.A. in Sociology. While a graduate student, he served as the President of Net Impact and was a member of boards of directors of local schools and community development agencies. Since graduation, Thomas has remained an active board member for local organizations, one of which referred him to GEO as the organization expanded into public campaigns.



Prior to joining GEO, Thomas served as the Marketing Director for an environmental think tank, which published respected journals and whitepapers to educate both experts and the masses about safe environmental practices. When not at work, he enjoys hiking, camping and cycling, and he is currently helping his wife, editor of children's books, train for her first Ironman – his third – next summer. A native of Montgomery County, he has remained involved with the Boy Scout troop he belonged to as a child and which he hopes his two-year-old son will someday join. Thomas Jordan is 35 years old.

### **Katrina Lee**

Katrina Lee serves as the Executive Director for the Global Education Organization. She holds Masters degrees in Education and Public Policy from George Washington University after earning a B.A. in political science from Georgetown. She spent two years with the Peace Corps in Cambodia, where she helped to establish a local community



center and one-room school for a small village. Katrina met the then-Executive Director of GEO while in Cambodia and remained in close touch after she returned to the U.S. and started working for an educational lobbying firm before returning to school.

When not at work, Katrina is an active member of two book clubs and enjoys cooking in her newly refurbished kitchen. She and her boyfriend, an aeronautical engineer, take advantage of the cultural opportunities in the Washington-Metro area with memberships to area theatres and museums; however, their friends frequently benefit from these memberships with the couple's busy travel schedule. Katrina has visited 67 countries and expects that to top the 100-mark before she turns 40. Katrina Lee is 33 years old.

## **Basecamp Usage Scenario**

The Global Education Organization has a committed and active Board of Directors who happily provide hands-on help for any initiatives that need assistance. Since GEO is establishing its presence in Laos, the Board anticipates a busy yet exciting year.

With face-to-face meetings every other month, the Directors and the staff have numerous opportunities to discuss significant decisions in-person, but critical issues frequently arise between meetings, especially for such a large new project. As a result, the Directors and staff require a centralized means to share information in an in-progress fashion so that all members are informed and able to make wise decisions.

Since entering a new country requires an in-depth understanding of its policies and regulations, all the Regional Education Managers in the Asia region conducted research into various aspects of Lao culture. In the past, REMs have forwarded along these multiple documents via email to a small distribution list comprised of the organization's Directors and fellow REMs. Each REM is encouraged to add their comparative perspective from their home country to the assessment of each new market. This cultural profile serves as the basis for all future activities in the country.

In addition to the country profile, REMs have been encouraged to share their experiences in each country. This includes information about the programs that have been established, how, their success, and any suggestions for improvement. When tackled in full, each initiative requires a variety of documents to track it from conception to planning to launch and evaluation. This number is compounded by the multiple education and public campaign programs running concurrently in each country at any one time, in addition to discontinued or yet-to-come-online programs. As a result, GEO requires a large, centralized filing system to archive this program data for future reference and guidance. At minimum, each month a list and description of country-wide initiatives is due to the Directors for record-keeping.

Katrina sets the timeline and speed of roll-out under advisement from both the Board of Directors and the REMs. In addition, she coordinates with Sonia and Thomas to build strong educational and public programs that should create the greatest impact with the smallest resistance from local officials and community leaders. GEO also works with associated NGOs who has a presence in the target country, and relies extensively on the in-country networks of the individual tapped to be the new Country Manager. This new Country Manager provides weekly reports on progress, new contacts made, and additional information discovered about the environment.

Six months prior to GEO's official entry into a new country, Sonia and Thomas are expected to have complete and detailed plans for the roll-out of educational and public programs

appropriate to the needs and resources of that country. The Directors then collaborate to establish a feasible schedule and must coordinate with local officials and Country Managers to lay solid foundations for the kick-off. In addition, Sonia works with publishers and other corporations to order the books and other tools required for the early stages of their educational initiatives, while Thomas contracts with printers and publishers to create new materials to raise awareness of GEO's presence and cause. Thomas also identifies and works with potential sponsors – both corporate and private – who can help fund the expansion of GEO's services to a new country.

Where possible, Board members offer both their feedback and ideas, as well as their time if their travel schedules bring them in the vicinity of the target country. Knowledge of progress and status becomes critical for the involvement of Board members and the influence that they can leverage through their in-person presence.

### **Real-World Case Study**

The global nonprofit groupsona was based on an international non-governmental organization dedicated to child education and healthcare.<sup>11</sup> As a primarily volunteer-based organization with members spread across five continents, the NGO has successfully used Basecamp for internal coordination projects. Its recent attempt to engage it for field projects, however, has found much less success.

Prior to adopting Basecamp, the organization primarily relied on email to transfer information and documents. After shifting to an online collaboration application, however, the organization realized a wide range of benefits, including:

- decreased dependence on specific individuals to share information and assets
- centralized location for file and information storage
- greater collaboration among more volunteers
- more public accountability among volunteers
- greater responsibility for tasks taken by volunteers

In the process of using Basecamp, the NGO observed many strengths of the application, most notably:

- Simple, fast and easy to use
- Ability for group discussions and issue resolution via message board
- Collaborative writing via Writeboards
- Flexibility to accommodate many types of projects
- Great value for small monetary investment

Despite these positives, Basecamp has its drawbacks, which has been demonstrated in the organization's gradual shift to using WorkZone, another web-based project management application, for its field projects. Key areas where Basecamp exhibited deficiencies included:

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<sup>11</sup> Taken from mission statement for NGO.

- More suited for simple task management than complex project management
- Calendar issues
  - Lack of true calendar function
  - Lack of scheduling function
  - Inability to filter by a variety of functions (eg, user, timing)
  - No intuitive use of milestones function
- No status tracking of specific tasks
- Broadcast email issues
  - Messages come from “Basecamp” email address instead of personal accounts
  - Default settings overwhelm users with notification of every change to site
- Disorganized and un-indexed help function
- Mac-like interface may make PC users uncomfortable

Magnifying these issues is the distinctly unpaid nature of the NGO’s Basecamp users. Since it relies on people who volunteer on top of full-time employment and who have no enforced obligation to the organization, the introduction of new processes and technologies must require minimal additional effort and confusion. Therefore, the application used must be exceedingly intuitive to learn and overt in its access to key information, since the ability for training and exchange of ideas is limited by the vast dispersion of global volunteers. The newness of the procedure, the wide range of computer literacy, and variety of languages spoken by volunteers merely exacerbated the problems.

Finally, while WorkZone appears to address many of the deficiencies found in Basecamp (perhaps by highlighting them to start with) the success of WorkZone can be explained in part by factors beyond its features and usability. Most notably, time may be WorkZone’s biggest ally: as the first project management tool introduced to the organization, Basecamp had to overcome ingrained routines on top of the traditional adoption and usage challenges. As observed by the President, “In general, think people find WorkZone harder to use than Basecamp, but it’s helped us – Basecamp changed the paradigm in organization. Even if people are not using it consistently and responsibly, it still helped to change the culture.”<sup>12</sup> Therefore, even though the NGO uses Basecamp only for smaller, internal projects, the President considers it a very successful and critical asset to her organization.

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<sup>12</sup> Telephone conversation with President of the NGO on November 20, 2006.

## Appendix 2: Competitive Analysis

To help understand the options available for project management, we completed a competitive analysis of Basecamp and other project management tools. Based on past experience, reading users' blog posts and our interviews, we were able to identify a number of products for comparison to Basecamp, namely:

- **ActiveCollab** is a free and open source competitor to Basecamp. Unlike Basecamp, ActiveCollab is not a hosted solution and requires users to have access to a server on which they can install it. Aside from this difference, ActiveCollab is almost feature-for-feature identical to Basecamp and is also visually very similar.
- **University of Michigan CTools** was developed to support courses and course projects, but it is also used by many committees within the University. CTools offers many similar features and makes a good comparison to Basecamp, particularly when used to manage projects. As the developer and host of the product, UM's CTools team can be seen as an analogue to 37 Signals.
- **Trac** started as a bug-tracking program for software developers. It has since grown to include a wiki and more generalized project-tracking capabilities. Its roots in software development are still apparent, particularly in Trac's robust support of versioning. The student project team from our case studies transitioned to using the Trac after trying Basecamp.
- **WorkZone** bills itself as a step up from Basecamp and charges a price premium for its somewhat more advanced features. The global nonprofit from our case studies has recently switched to using WorkZone and hopes that it will better support their needs.
- **Microsoft Project** represents a different paradigm for project management than the other products in this list. MS Project is meant to be used by one individual at a time and does not include collaborative tools such as file sharing or discussion boards (though these features are available as part of Microsoft Office) in its standard version; the purchase and installation of Project Server and Web Access, however, expands the collaborative nature of the program, though in a more formal manner than the previous applications mentioned. Project excels at helping users plan and track a project's critical path.

A full comparison of these applications' features can be found in Figure 1. All applications, with the exception of Microsoft Project, implemented the same set of task management features at their core, as well as a reasonably consistent set of basic communications features. The six tools differed most in at what level they supported task management and in the implementation and integration of additional collaborative features.

All applications reviewed have only a limited ability to grow or change with their users. For users with larger projects or who like to track tasks at a higher resolution, Basecamp's tools are insufficient, while Microsoft Project's interface and features are overwhelming for a novice user. Since even the same user will likely have different projects with different needs in their

workplace, all applications could benefit from finding a way to support these different levels of use. Additionally, none of the tools makes a particularly strong effort to address the biggest adoption issues described by users: visibility of the application, work/benefit imbalance, and integration with their existing work routines. Some applications do show potential – such as Project’s integration with Exchange calendaring and CTools’ use of email listeners – but overall this is a major area for potential improvement.

	Basecamp	ActiveCollab	UMich CTools	MS Project Standard	Trac	WorkZone
Hosted solution	√		√	n/a		√
Client accounts & permissions	√	√			√	√
SSL encryption		option	√	n/a	option	√
<b>File sharing</b>						
Basic	\$	√	√		√	√
With versioning						
SVN support					√	
<b>Task management</b>						
Critical path management				√	√	
Task lists	√	√		√	√ <sup>13</sup>	
Task assignment	√	√		√	√	
Milestones	√	√		√	√	√
Detailed status				√	√	√
Multiple levels of dependencies				√		
<b>Additional collaborative tools</b>						
Wiki	√		√		√	
Email notifications	√	√	√		√	√
Email listener <sup>14</sup>			√			
Announcements	√	√	√		√	√
Discussion board or comments	√	√	√		√	√
Real-time chat	√		√			
Contact mgmt	√	√				√
<b>Finding items</b>						
Search	√	√			√	√
Tagging		√			√	√
Recent changes timeline	√	√			√	
<b>Calendaring</b>						
Project calendar	√		√	√		√
Individual user calendars			√			
Integration with calendar software				Outlook & Exchange		

Figure 1 Features of Basecamp and competitors

<sup>13</sup> Trac calls these “tickets”

<sup>14</sup> Refers to the ability to send email to an address to which the tool listens in order to have it forward the message to all project users. If this feature is not supported, the user must login to the site to send a message, a requirement that many users felt disrupted their normal workflow and discouraged them from using Basecamp or other tools for announcements.

From our review of five Basecamp competitors, we selected three applications – ActiveCollab, CTools, and MS Project – for more detailed analysis.

## **ActiveCollab**

ActiveCollab is an open-source, web-based project management application that offers a feature set very similar to Basecamp and appears to be designed to appeal to a similar audience. The most significant difference between the two applications is that while Basecamp is a hosted solution, ActiveCollab users must install an instance of ActiveCollab on a server on which they have an account. ActiveCollab requires PHP 5 and MySQL. Consequently, so long as users have access to such a system, they can use ActiveCollab in an unlimited fashion for only the cost of the time required for installation and maintenance.

## **Installation**

After unpacking a .tar file and creating a database on their server, ActiveCollab is installed through a quick, web-based interface. Users progress through a welcome screen that gives an overview of the process, an environment check which makes sure the server is suitable for ActiveCollab installation and a form in which the database name, user, and password must be entered, a screen in which the initial administrator is created (Figure 2). The process goes by quite quickly and takes slightly longer than registering and paying for Basecamp, so long as a properly configured server is available.



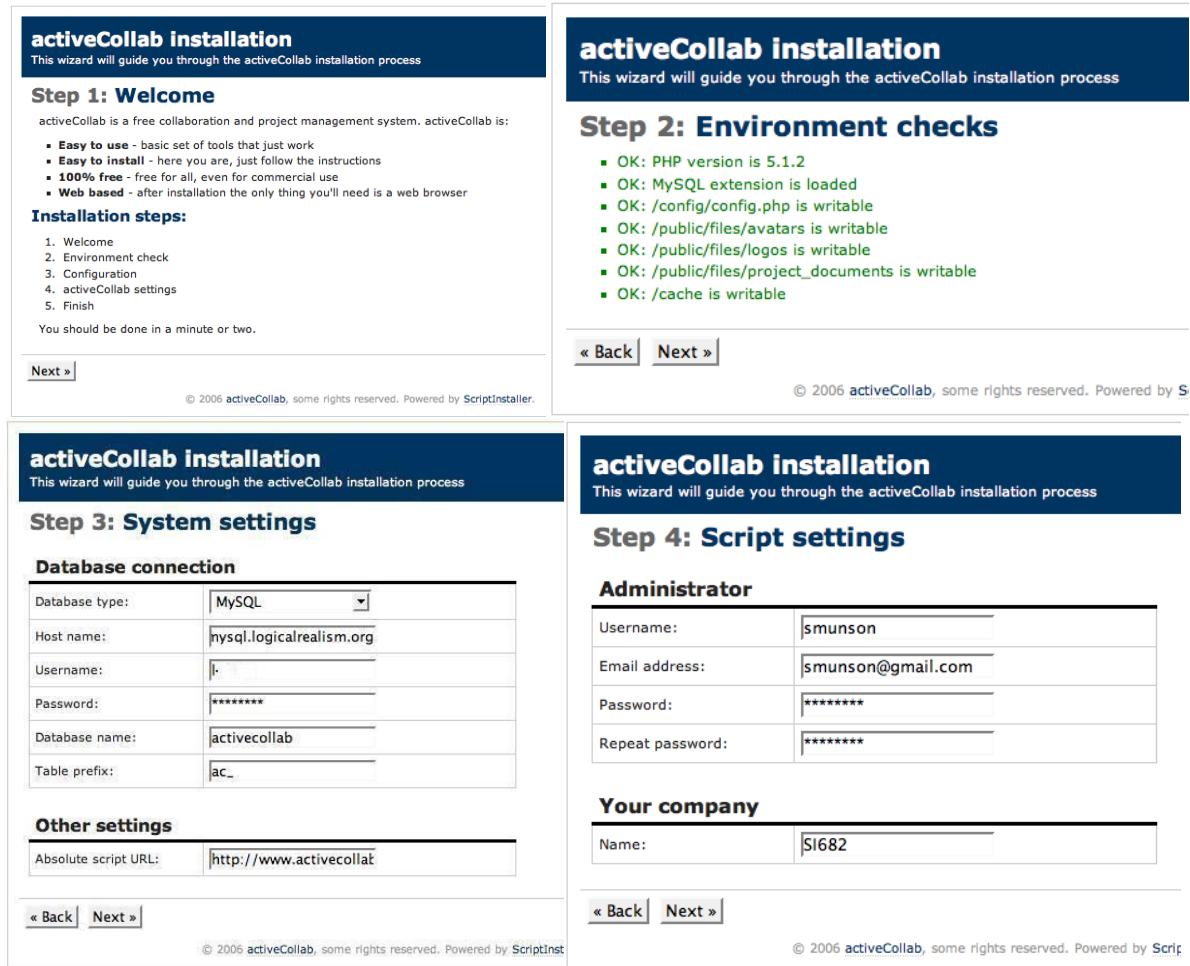
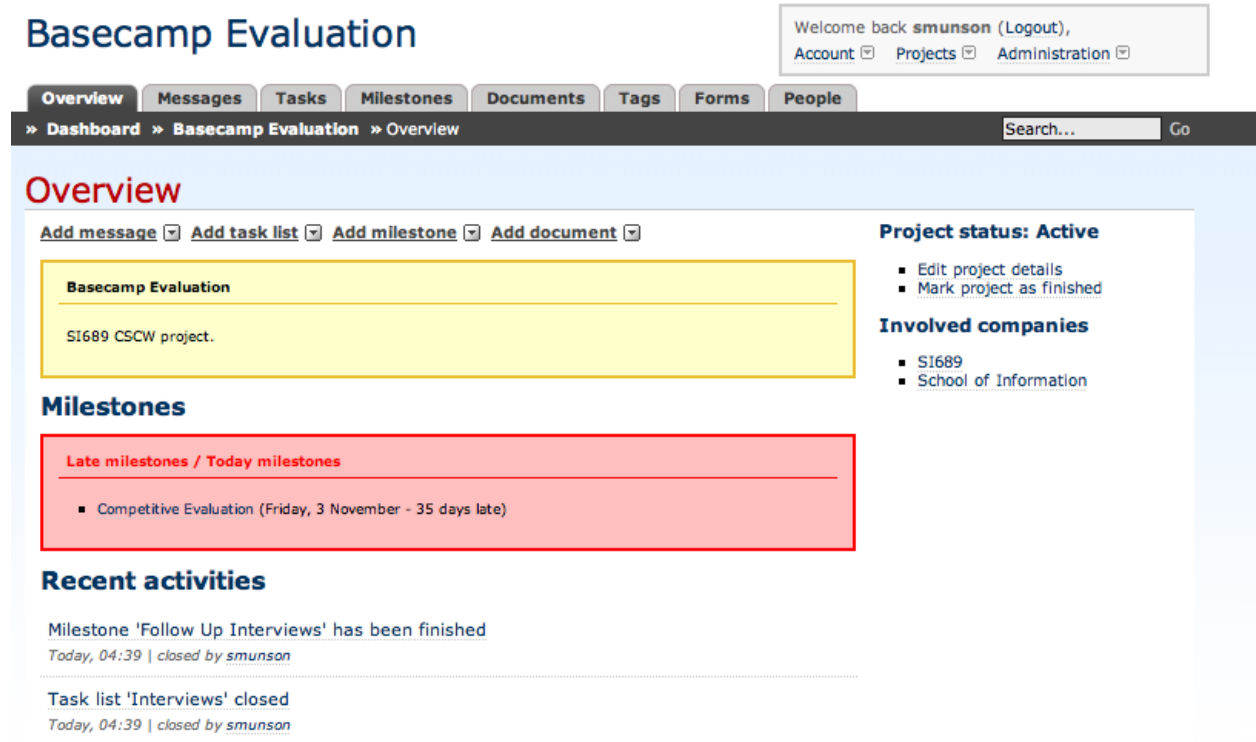


Figure 2 Steps for activeCollab configuration

Once setup has completed – about a three minute process, provided that nothing goes wrong – the administrative user can log in to ActiveCollab to enter information about users, clients, the company, and projects. A checklist helps users keep track of these initial configuration tasks. This checklist is quite similar to steps for the initial setup of a new Basecamp account. Users add information about their company, create accounts for team members, add client information and client contacts, and create their first project.

## Dashboard

On login, users of each system are greeted with their “dashboard.” Like Basecamp’s dashboard, the ActiveCollab dashboard (Figure 3) shows users a quick view of the all of their active projects, including milestones, tasks, and recent messages. As in Basecamp, a column on the right shows presence information in the form of users active in the last *n* minutes. Basecamp, by comparison, shows the last log-in time for all users, but is otherwise quite similar. One area in which this is improved over Basecamp is that user names always link to the user’s contact card. If seeing a user next to an item or on the presence screen prompts someone to want to contact the user, the information they need is just one click away. Unlike free accounts on Basecamp, this column has no advertising in ActiveCollab.



**Figure 3** The activeCollab dashboard appears very similar to Basecamp's Dashboard

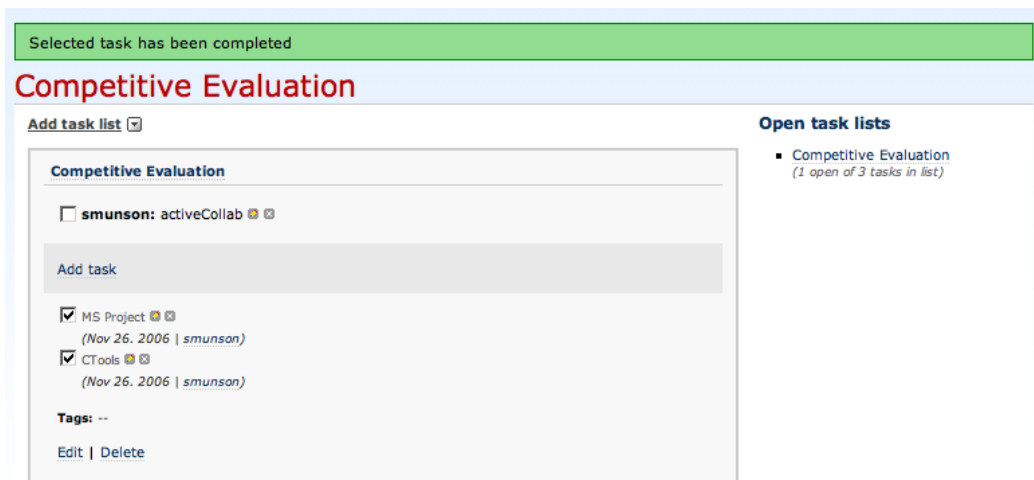
There are some additional differences between the Basecamp and ActiveCollab dashboards. ActiveCollab prominently displays a project name and description at the top of the dashboard. The utility of using this valuable screen real estate for unchanging content with which most site users are likely already familiar is questionable. Basecamp, by comparison, uses this space for milestones that are due immediately or are overdue, which receives the second-highest position in ActiveCollab. Recent activities appear third on ActiveCollab's dashboard, ordered by date. This is a similar feature to Basecamp's recent changes (Figure 4) but information is less dense and ActiveCollab's list does not take advantage of icons or colors to reduce the load on the user. Unlike Basecamp, ActiveCollab does not have a calendar view.

### Collaborative tools

ActiveCollab provides the same core suite of collaborative tools as Basecamp, including milestones, task lists, file sharing, and messaging. The implementation of these features closely mirrors the features on Basecamp, with only minor cosmetic differences, and so they will not be reviewed here. For some of these features, though, ActiveCollab developers hope to gain some ground over Basecamp in their next release, such as by adding version tracking to file sharing. There are also two current features unique to ActiveCollab: tagging and forms.

CSCW06 — Evaluation Project				
TO-DO	TODAY	<a href="#">Enter project information into Basecamp</a>	reopened for	Anyone
TO-DO	TODAY	<a href="#">Evaluation methods</a>	reopened for	David H.
TO-DO	TODAY	<a href="#">Lit review—academic journals (proj...</a>	completed by	Sean M.
TO-DO	TODAY	<a href="#">Comments/edits</a>	reopened for	CSCW06
MILESTONE	TODAY	<a href="#">Follow up Interviews</a>	completed by	Sean M.
MILESTONE	1 Dec	<a href="#">Competitive Evaluation</a>	completed by	Irene C.

**Figure 4** Basecamp's recent activities list (above) is more scannable than the list in



**Figure 5** Sample activeCollab task list

ActiveCollab describes tagging as one of its top features and key differentiators. ActiveCollab users can tag any item including messages, task lists, milestones, and shared files. Tags have generally been shown to be relatively useful for personally locating items in larger collections and also for social/serendipitous exploration of item. For projects of the scope that ActiveCollab appears to be designed, however, tags may or may not provide a useful additional way to view data stored in a project. Since users seem unlikely to be serendipitously exploring their work-related projects, much of tagging's success in ActiveCollab is likely to depend on whether or not it is useful for finding information. This may, in turn, hinge on success in dealing with vocabulary problems associated with tagging (Golder and Huberman 2005). ActiveCollab is designed for small work teams and cannot rely on a large number of users generating an abundance of tags to help address this problem, though a controlled or normalized social vocabulary within the organization may present problems of synonymy and polysemy.

The ability to create forms is ActiveCollab's second differentiating feature, though its purpose and value is unclear. Creating a form entails entering a title, a question, a success message, and a function. ActiveCollab proposes that forms can be used to allow clients to add tasks to private task lists (i.e., task lists which only the project team can see). This is a somewhat bizarre recommendation as it could easily lead to the creation of duplicate tasks. Furthermore, the idea that a client would blindly add a task to a list they cannot see runs contrary how many company-client relationships work.

## Add form

**Name: \***

**Description:**

**Success message: \***

**Action**

**Add comment** to:

**Add task** to:

**Options**

**Enabled:**  Yes  No

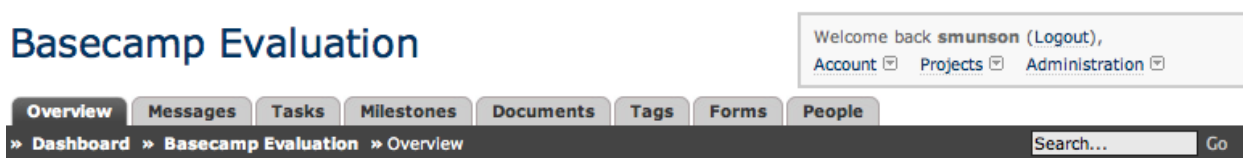
**Visible:**  Yes  No

**Figure 6** Sample form creation. This is currently a very basic tool with limited value.

Basecamp leverages additional 37 Signals products to provide additional collaborative tools, including writeboards (wikis), Sundial (time management), and Campfire (chat). None of these features are included in ActiveCollab. At least some ActiveCollab users do not see this separation of features as a disadvantage, as they already have a time tracking, instant messaging, and/or wiki solutions that, while separate, do better at a specific task than 37 Signals' offerings. For these users, the ability to choose the right tool for each need is more important than having a single, integrated solution. A trade-off of choosing separate tools, though, is the challenge of making each tool visible.

## Interface

### Basecamp Evaluation



**Figure 7** ActiveCollab's heading looks very similar to Basecamp

A reasonable initial impression of ActiveCollab might be that it was designed to parallel Basecamp's interface and vocabulary. The color palettes and usage in each application are very similar, as is the vocabulary. Both applications make use of AJAX to limit the number of new page loads required when users interact with the site, though Basecamp's use of AJAX is more extensive and feels more mature and polished than activeCollab. ActiveCollab's developers

appear to be well-aware of this shortcoming. An advanced interface using AJAX is on their to-do list for the next release.

### **Basecamp vs. ActiveCollab**

We initially chose to evaluate ActiveCollab after running across a number of blog posts in which users declared their intent to stop using Basecamp in favor of ActiveCollab. At first this is surprising, particularly for users who might be content with Basecamp's free offerings, since the two offer nearly identical features. Basecamp also offers more integrated features, such as writeboards, chat, and time tracking, and a better interface. Why, then, are some users abandoning Basecamp?

For some, they prefer the experience of a hosted solution under their control, something which a few companies mandate, particularly because Basecamp does not offer encryption. Others are wary of the idea that they can hit a limit in the number of projects on Basecamp and will then have to pay more. As a free program, all ActiveCollab features are available in unlimited form; there is no point at which an ActiveCollab user will outgrow the available features, at least in terms of number of times each feature is used. ActiveCollab does share many of the potential issues of users or projects outgrowing the simplicity of its collaborative tools. Basecamp is aimed, at least in part, at small software developers and other technology companies. The blog posts and our own user research suggest that many members of this audience prefer to use the right tool; for each task.

### **University of Michigan CTools**

CTools is an advanced web-based collaboration environment for courses and projects. It combines the course management features of CourseTools, UM's original course management system, with the project and research collaboration features of UM.WorkTools. CTools is a set of tools designed to help instructors, researchers and students create sites on the web.

Using a web browser, users choose from the many tools in CTools and combine them to create a site that meets their needs. Users can use CTools to create a website where an instructor or project manager can make announcements and share resources, such as electronic documents or links to other websites. Researchers can collaborate on a project via CTools. Users can use CTools as an online discussion board. Finally, students can work on and submit assignments electronically. In addition, to use CTools, no knowledge of HTML is necessary.

### **Target Users**

With an ultimate goal of all students, faculty, and researchers of the University of Michigan to collaborate via CTools, the application has a very wide range of target users. This audience comes from a variety of backgrounds and has different levels of computing skills. The system does not require users to have prior knowledge of any web programming language, and its purpose is for everyone to create a web site to collaborate, manage projects, and share resources with ease.

A CTools site can be created to support two major purposes: courses and projects. The course site is a website that an instructor has set up for a particular course. Since course websites can only be set up by instructors, these sites are designed for top-down communicate with students via announcements and to share document resources with students. A project site is one that a researcher, project director, or students setup for a particular project or another activity

involving collaboration. A course or project website can have just a few or several tools depending on which tools the site's creator has chosen.

## Features

While CTools categorizes its sites as either a course site or a project site, for our purposes, we will focus on features that support project management and collaboration among the users.

- For communication:
  - **Announcements Tool:** Used to inform users of changes in the schedule or policies of the class, as well as to answer questions or make general comments.
  - **Chat Room Tool:** Facilitates online discussion between worksite participants. Unlike the Discussion tool, Chat operates in real time with any participant who is online. Chat is faster and more convenient than waiting for information to post in the Discussion area.
  - **Discussion Tool:** For conversations in written form.
  - **Email Archive Tool:** Repository for email sent to the worksite email address.
  - **Schedule Tool:** Contains class session dates, deadlines, web assignment dates, special events, cancellations, and other items of interest. It can be viewed in either a calendar or list format.
  - **Wiki Tool:** Collaborative website where multiple users can add and change the content.
  
- For sharing materials online:
  - **Web Content Tool:** For displaying content from another website in a CTools site.
  - **Resources Tool:** Allows user to post documents, electronic files, or URLs for users of a course or project site.
  - **WebDAV:** Uploading *multiple* files at once.
  
- For creating and managing course and project sites:
  - **Worksite Setup Tool:** Allows users to modify current CTools sites and create new sites for both courses (instructors only) and projects.
  - **Modules:** Lesson builder tool that allows authors to publish learning sequences that can be created by using a built-in online editor, by linking to web pages, or by uploading learning objects or documents of various formats.
  - **Help Tool:** Online help guide; also accessible by clicking the question marks (“?”) on the right side of the section header bar for most CTools pages.
  - **Membership Tool:** Manages all CTools site a user belongs to.
  - **Permissions and Roles:** Allows site “owners” to set the read, write, and delete privileges individual site members have.
  - **Preferences:** Allows individual users to dictate the format and frequency of notification for low-priority messages.
  - **Site Info Tool:** Provides overview of site information and a list of participants.
  - **My Workspace:** A personal website that all CTools users have; acts as the default landing page and contains several tools.
  - **Left vertical menubar:** Contains buttons for accessing all of a site's tools.

## Interface

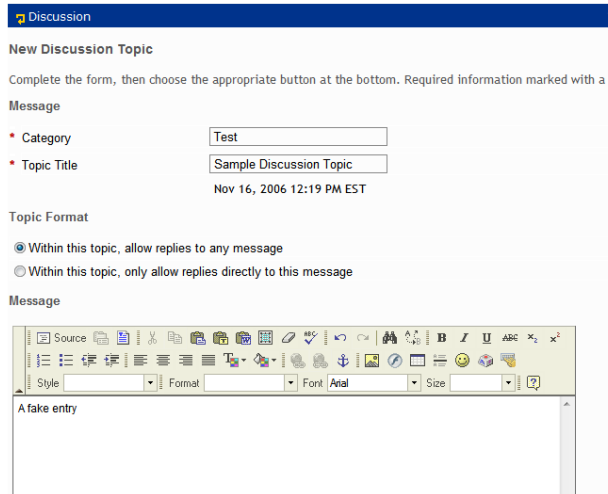
The screenshot displays the ctools.umich.edu interface. At the top, the logo 'ctools.umich.edu' and 'course/project sites' are visible, along with a 'Logout' button. Below this is a navigation bar with tabs for 'My Workspace', 'SI 504 1 F06', 'SI 658 Fall 2006', 'SI 689 001 F06', 'IOE 536 2006', and 'CSCW 06 - Basecamp'. A '- more -' dropdown menu is located to the right of these tabs. On the left side, there is a vertical sidebar menu with links for Home, Schedule, Announcements, Resources, Modules, Discussion, Chat Room, Wiki, Email Archive, UM News, CSCW 06 Basecamp, Site Info, and Help. The main content area is divided into three sections: 'Worksite Information' (showing 'CTools project site for CSCW 2006 group Basecamp!'), 'Recent Announcements' (stating 'There are currently no announcements at this location.'), and 'Recent Discussion Items' (stating 'There are currently no messages at this location.'). Below these, there are sections for 'Recent Chat Messages' (also stating 'There are currently no messages at this location.'). At the bottom left, a 'Users present:' section shows 'David Hsiao'.

After a user logs into her/his account, the University of Michigan CTools defaults to this individual's own workspace. S/he will then select a course or a project site from the top tabs listing the various course/project sites that this user participates in. Once the user selects his/her intended site, s/he will be taken to a screen showing an overview of the projects.

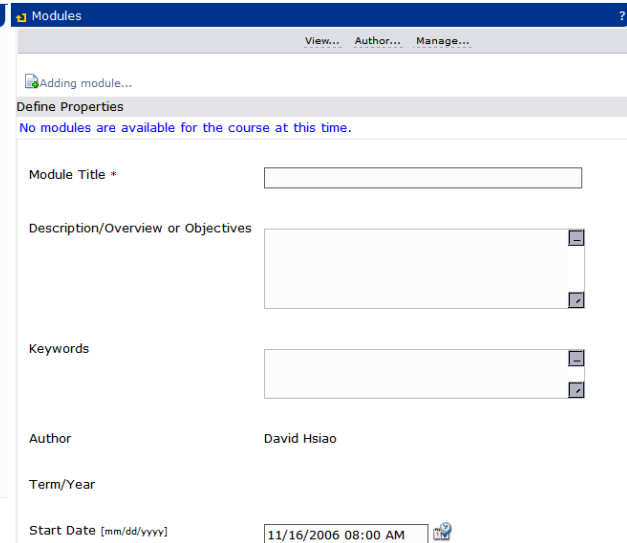
This screen will contain three main portions. The top portion is global navigation for the user to switch from one site to another. The left navigation bar provides the features that are available for the site the user is working on. The majority of the screen consists of the main object that the user works on within this project.

For the "Course Tabs" on the top of the page, it sometimes does not show all the sites in which the user has membership. If the site does not appear as a tab, it is listed in the drop-down menu to the right of all the tabs. The drop-down menu is labeled "-more-". By default, tabs are listed in alphabetical order. If the user is a member of many CTools sites, the tab may have been "pushed" off the row of visible tabs and onto the drop-down menu. To access the site, click the drop-down menu, then select the link for the desired CTools site in the drop-down menu.

Users use the left navigation bar to switch between tasks such as schedules, announcements, and resources. The left vertical menubar contains a list of links for accessing all of the tools in a course or project site. When the site is created, the creator (an instructor, researcher, or student) chooses which tools to include. The tool links that are visible on a menubar may change if the site's creator decides to add or remove tools after the site has been created. In addition to links for tools, nearly all course and project sites contain a Home link at the top of the menubar. This link will take the user to the first page of a site. Because of the nature of the CTools as a mesh-up application (pulling features from different services and produce one aggregated application) the interfaces between different features look different.



Creating new discussion topic



Creating new module

The overall interface is clean and intuitive. It provides information regarding which user is “online” (users present) on each project site. CTools also indicates which users appear in the chat room so other users can join if needed. Because of the nature of each feature, the interface for each function looks different. In addition, because CTools provide the site owner a great deal of flexibility to add and remove features, each section functions independently from one another. The site owner can add all the features available via CTools, or s/he can choose only a few ones that s/he believes are important.

When navigating through a project site, the only place on the screen that changes dramatically is the main content section. This section will present information regarding the function that user chooses to use. “User Present” section also updates each time the individual refresh the web page. The main content section is the area where the majority of user action takes place. Users can engaged in chat, upload files, create/view calendar events, and also view announcements.

CTools is very versatile, and it supports variety of user actions and goals. When working within one feature section, the user can go several levels deep before completing his/her tasks. Sometimes, however, the user wants to return to the top level before completing the whole task. In the CTools, the back button won't always render the desired results. For the most part, the user is required to use the navigation buttons in CTools (e.g., Next, Cancel) to return to previous page. CTools also has a reset button at the left end of each tool's title bar (see image below). Clicking on this reset button will return the user to the starting page of a tool.





## Learning curve

CTools is an online application developed by the University of Michigan for its own population. Therefore, there is no known similar product on the market. Because of its distinctive nature, CTools has a steep learning curve for people who are not familiar with it. The labeling is clear, but the system uses a minimal number of icons and graphical representations. Using text descriptions provides first-time users clear idea of each feature, and can learn the functions faster.

System behaviors in CTools, however, are different than the traditional website. Users must use CTools several times before they can fully predict system behaviors. For example, if the user works his/her way several levels down within creating a new announcement, switches to a chat room, and then returns to announcement section, s/he will return to the “creating new announcement” page that s/he left before. The only way to return to the top-level of the announcement section is using the “back” or ”cancel” button, or the “reset” icon on the top.

Because of the mesh-up nature of CTools and the independence of its functions, the behavior in each section can also be very different. Consequently, users must learn to use the features within each section all over when working in a new functional area. Therefore, learning how to use CTools is analogous to learning several new applications at once. After learning all these functions provided by CTools, the user should have no major problem using the system. Nonetheless, the time spending to familiarize oneself with the features in CTools may be considerably longer than usual web interfaces.

## Collaborative tools

The project sites within CTools are designed to support project collaboration among team members. Almost all the features provided by CTools are focused on communication between team members and sharing resources among them. Users can modify documents on the wiki, share files via Resources, and also broadcast messages in the announcement section.

The system, however, does not support active project management and tracking; the only timeline it has is the schedule. Project managers and members can add deadlines for different milestones, but the schedule serves more as a calendar. The Schedule allows site organizers to post items in a calendar format. The calendar has day, week, month, year, and a flat list view. Any Schedule item can have multiple attachments. All Schedules on sites that the user has access to can be merged in the user’s My Workspace (main portal) Schedule. Each participant can also selectively merge Schedules from sites that s/he has access to using the Merge feature from the site that individuals want to add other schedules. One can also print an Adobe PDF file of any view of a Schedule by clicking the "Print PDF" button while in the desired view.

The screenshot shows the 'Schedule' page in the CTools interface. The top navigation bar includes 'My Workspace' and several site identifiers: 'SI 504 1 F06', 'SI 658 Fall 2006', 'SI 689 001 F06', 'IOE 536 2006', and 'CSCW 06 - Basecamp'. A 'more' dropdown menu is visible on the right. The left sidebar contains a navigation menu with items like Home, Schedule, Announcements, Resources, Modules, Discussion, Chat Room, Wiki, Email Archive, UM News, CSCW 06 Basecamp, Site Info, and Help. The main content area is titled 'Schedule' and includes sub-links for 'Add', 'Merge', 'Import', 'Fields', and 'Permissions'. Below this is a 'Calendar by Month' section for 'Nov 2006', with buttons for '< Previous Month', 'Today', and 'Next Month >'. A 'Printable Version' link is also present. The calendar grid shows dates from 29 to 18. At the bottom left, 'Users present:' lists 'David Hsiao'.

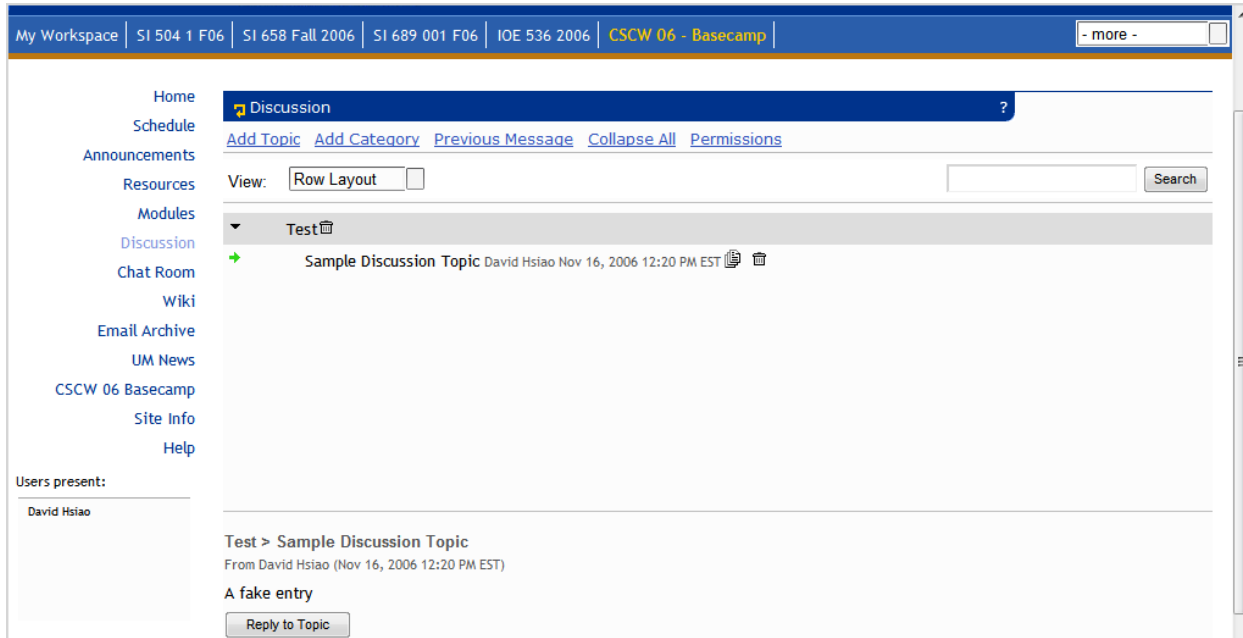
Announcements are used to inform site participants of current items of interest. Announcements can have multiple attachments, such as documents or URLs. Site owners and instructors can choose to have an announcement automatically emailed to all of the site participants by using the "required notification" setting shown below. The user can draft and save an announcement before s/he sends it out to site participants. The drafts will be shown with a red "Draft" marker in his/her list of announcements. Announcements from all sites that the user is a member of are displayed in the My Workspace (portal page in which each member will see upon login to the CTools site).

The screenshot shows the 'Announcements' page in the CTools interface. The top navigation bar is identical to the previous screenshot. The left sidebar is also identical. The main content area is titled 'Announcements' and includes sub-links for 'Add', 'Merge', 'Options', and 'Permissions'. Below this is an 'Announcements' section with a 'View' dropdown set to 'All'. A status bar indicates 'Viewing 1 - 1 of 1 items' and a 'show 10 items...' dropdown. A table lists the announcement details:

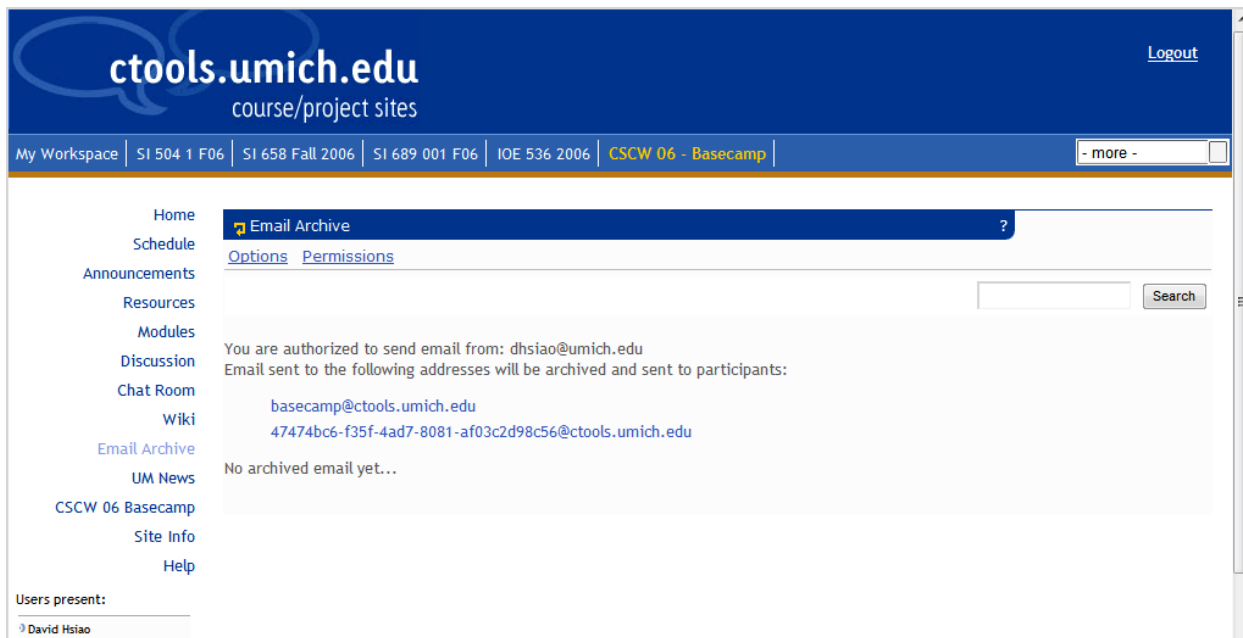
Subject	From	For	Date	Remove?
Test Announcement Revise	David Hsiao	site	Nov 16, 2006 12:18 pm	<input type="checkbox"/>

At the bottom of the table are 'Update' and 'Cancel' buttons. 'Users present:' lists 'David Hsiao'.

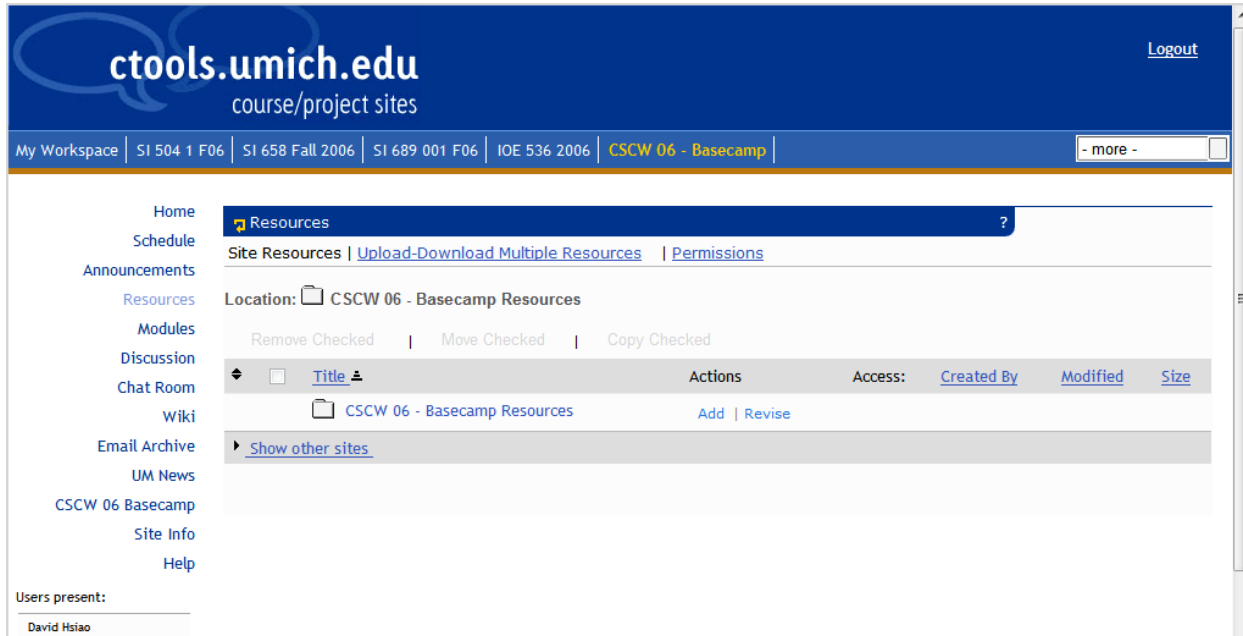
The CTools Discussion tool allows structured conversations that are organized in categories. Site participants can post replies to a topic (a "flat" discussion) or to other replies (a "threaded" discussion) and can view these discussions in either Row or Column format. They can also attach files to share with other discussion participants.



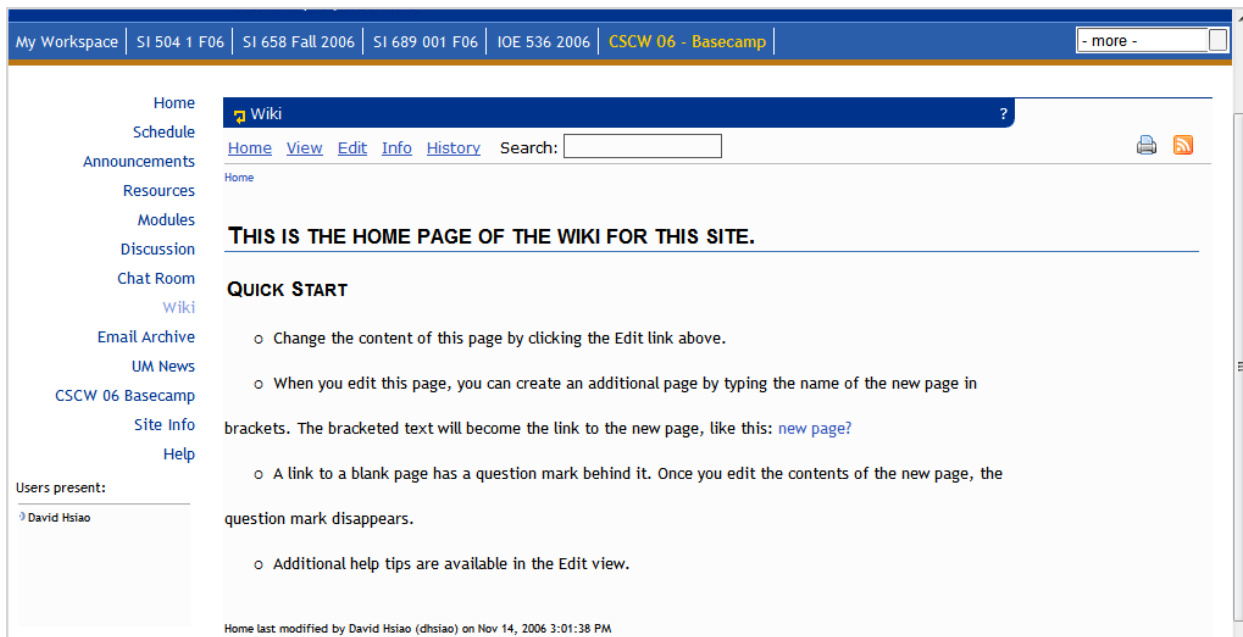
Each CTools site has an automatically-generated site email address, which the user can view using the Email Archive tool. Email sent to the site email address is copied to all site participants and owners. All messages sent to user's CTools site's email address are stored in the Email Archive. The emails sent to site participants will indicate if there was an attachment and provide a link to get it from the site itself.



In Resources, one can make many kinds of materials available online. There are four types of resources: documents (word processing documents, spreadsheets, slide presentations, plain text, etc.); links to other websites; simple text documents that the user enters directly on the CTools page, and html documents that the user creates right on the Ctools page.



The CTools Wiki Tool gives users the ability to create a Wiki that is dedicated to a particular course or project site. Members of that site can monitor, update and edit the content of the wiki. The CTools Wiki Tool also allows users to add images, link wiki pages to other documents, and view the change history of the wiki. The website owner can control what permissions the members have, including access, reading, writing, editing, etc.



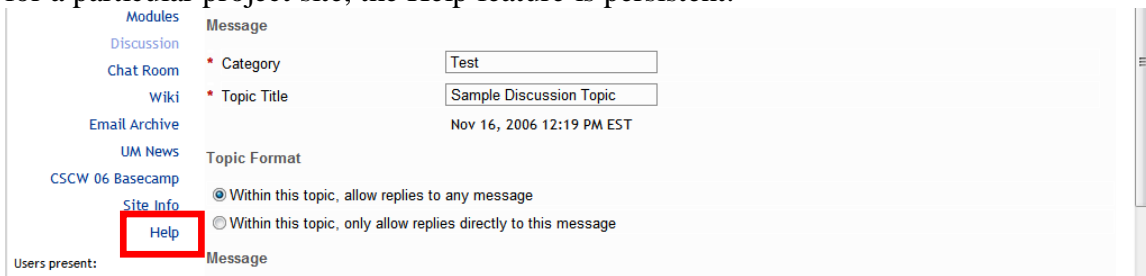
Overall CTools provides broad range of tools and features to support project collaboration. Each feature has its own unique use and purpose suitable for the members to achieve different goals. Together, CTools helps project members to exchange information more efficiently.

## Usability

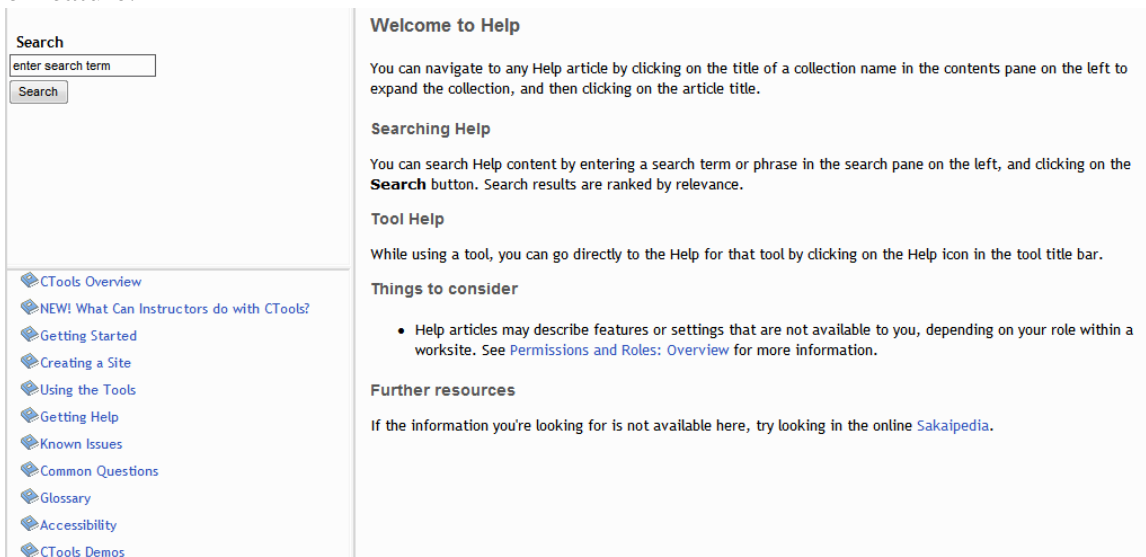
As a web application CTools is fairly complicated, and it requires some learning time. Nevertheless, compared to a regular desktop application, it has relatively few features. The major barrier for using CTools is at the beginning when learning how to use it and familiarize oneself with the system behavior. After the initial phase, the user should feel relatively comfortable with the system when using it. Some areas within CTools, such as the Module section, are not intuitive and need improvement on usability.

### Availability of help

- A Help link is available all the time within CTools regardless of the project that the user is working on. Even though site creators have control over which features are available for a particular project site, the Help feature is persistent.



- The Help section itself is fairly comprehensive by providing all relevant information about the CTools application. The user can search through the Help section for keywords. Help, however, is not linked to the application itself. This means that when users click on the Help link, it always opens up the Help index page, regardless of the referring function or feature.



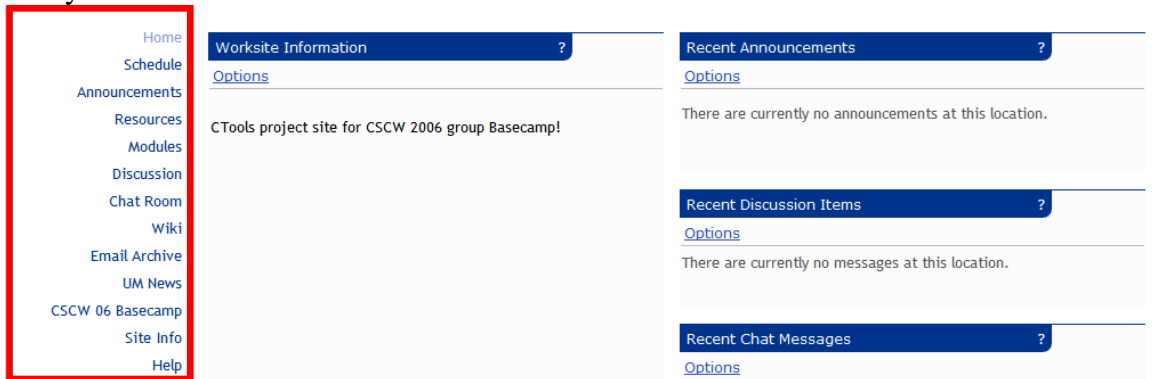
- Within the Help section CTools also provides a printable PDF guide with the information to start using CTools. In addition, there are demo movies for some features.

Navigation

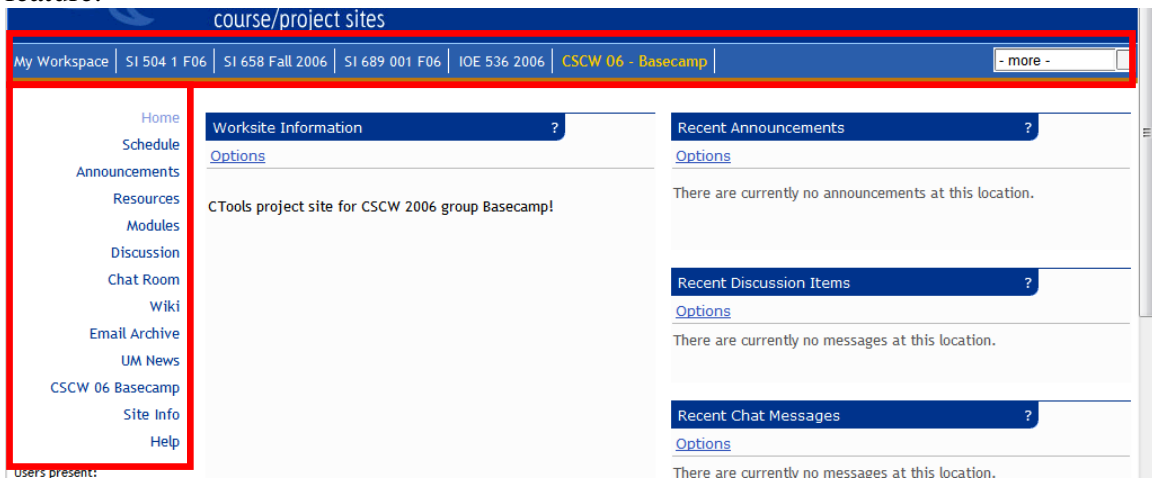
- User switch from one project to another by clicking on the tabs at the top of the page. This tab bar is always available, and the user can switch anytime s/he wants.



- The left navigation bar presents the features available to a particular project, and the choices offered depends on the choices made by the site owners when setting up the site. One can switch from one function to another at anytime since the left navigation bar is always visible and accessible.



- The “inverted L” layout of the tool bar covers most of the navigation within the website. All other navigation within each functional area is different because of the nature of each feature.



### Functionality

- CTools provides ample features to support online collaboration. Because of these various functions, CTools supports many different tasks that a project team will need
- CTools supports different modes of collaboration: from real-time chat to email and announcements. It also serves as an online repository for files and links. Moreover, team members can collaborate on creating and editing new document via wiki technology.
- Project teams can tailor CTools sites to their needs by selecting the specific functions displayed on their particular CTools site. Therefore, CTools can act as a crucial part of project management, or just as a supporting site.

### Aesthetics

The overall look and feel of the CTools is very different from regular websites because of its application nature. It has a blend of regular desktop application and online website features.

#### Matching color scheme with University of Michigan colors

- CTools uses blue and maize as its color scheme, a clear reflection of the UM colors..
- Color contrast between the background and the text is clear and distinct. CTools uses white text when the background is blue, and black text when the background is white
- Overall, blue and maize on a white background with black text is pleasing to look at.

#### Minimal use of icons and graphics

- CTools uses a very limited number of icons or graphs. Most features are communicated to users via words and text.

#### Consistent divisions of screen

- The layout of CTools consists of three distinct sections: course navigation tab, left side function menu, and the main content section. Every page is the same with the course navigation tab and left side bar are always present.
- Layouts do not change as user navigates through the application or uses different features.

### Comparison to Basecamp

While both University of Michigan CTools and Basecamp support project management and collaboration, they target different areas. CTools position itself more as a collaboration supporting application. Authorized users associated with the University can use it as a file depository server to share files, while sharing file on Basecamp requires monthly payment.

CTools, however, does not support scheduling and project management as well as Basecamp. Basecamp provides ways to organize different milestones of the projects, assign them to different responsible parties, and display them in chronological order with an intuitive layout. CTools, on the other hand, only has one calendar, which can be adapted to serve as a scheduling or project calendaring system. The calendar is not the main focus of CTools, and it does not have a function to send reminder email to the party responsible for individual tasks when they approach their deadlines. Basecamp, however, focuses on this project management idea and support scheduling and milestone tracking very well. One advantage of CTools over Basecamp is that users can attach files to a particular date on the schedule, but Basecamp does not have this feature. Basecamp only allows users to enter a text description for a particular milestone, but does not allow artifacts to be attached.

The features in Basecamp, however, are integrated and linked to one another. Project members can post messages and to-do lists associating with a particular milestone. The functions on CTools, however, are distinct and do not support this kind of interaction. Nevertheless, the true advantage of CTools is that it allows user to aggregate resources (files) and schedules from other project/course site into the current project. If a user wants to reuse documentation from a previous project, s/he can easily copy the files into the current project site with simple clicks. Currently, Basecamp does not support interaction between different project sites. While the Dashboard shows users aggregated data regarding schedules and milestones from different projects that s/he is involved in, discrete resources are not available across projects.

Basecamp has a far superior interface design than CTools. CTools aims for minimalist style with very few colors. Basecamp has the new “Web 2.0” style of look and AJAX interaction that allows users to manipulate objects directly on the website. This also supports faster system response. In addition, Basecamp uses far more colors to indicate different issues and messages. The color usage of Basecamp provides a pop-out effect for important messages to catch users’ attention. CTools, however, does not take advantage of color to support different user tasks.

## Microsoft Project

Microsoft Project is a powerful application that can organize, track and report upon all aspects of a project. This includes not only tracking discrete tasks, individual responsibilities and project calendars, but also interdependencies, utilization rates and costs. Moreover, combinations of these items can be displayed in multiple forms through various reports.

As part of the Microsoft Office suite, it has the ability to easily integrate with other commonly used applications, such as Word, Excel, PowerPoint and Outlook. Though Office 2007 has recently been released, only an online demonstration of its capabilities (and apparently significant upgrades) is available to users. As a result, all first-hand evaluation has been done using a trial version of Project Standard 2003, for which full functionality is enabled.

## Target Users

With the level of detail enabled by Microsoft Project, the application is targeted toward managers of complex, multi-user, multi-milestone, time-sensitive projects. While it may be used to track smaller projects, the work required to enter the various fields of required information may not justify a relatively simple, short-term project that may be managed in other forms.

Since Microsoft Project integrates with the Microsoft Office suite, the application earns its greatest benefits if all users have the entire suite available to them. Given the size of an endeavor suggested by capabilities as robust as Microsoft Project, most likely the majority of users are corporate or profitable small businesses engaging in complex projects.

## Features

Microsoft Project is a powerful, comprehensive project management application. Its primary features include:

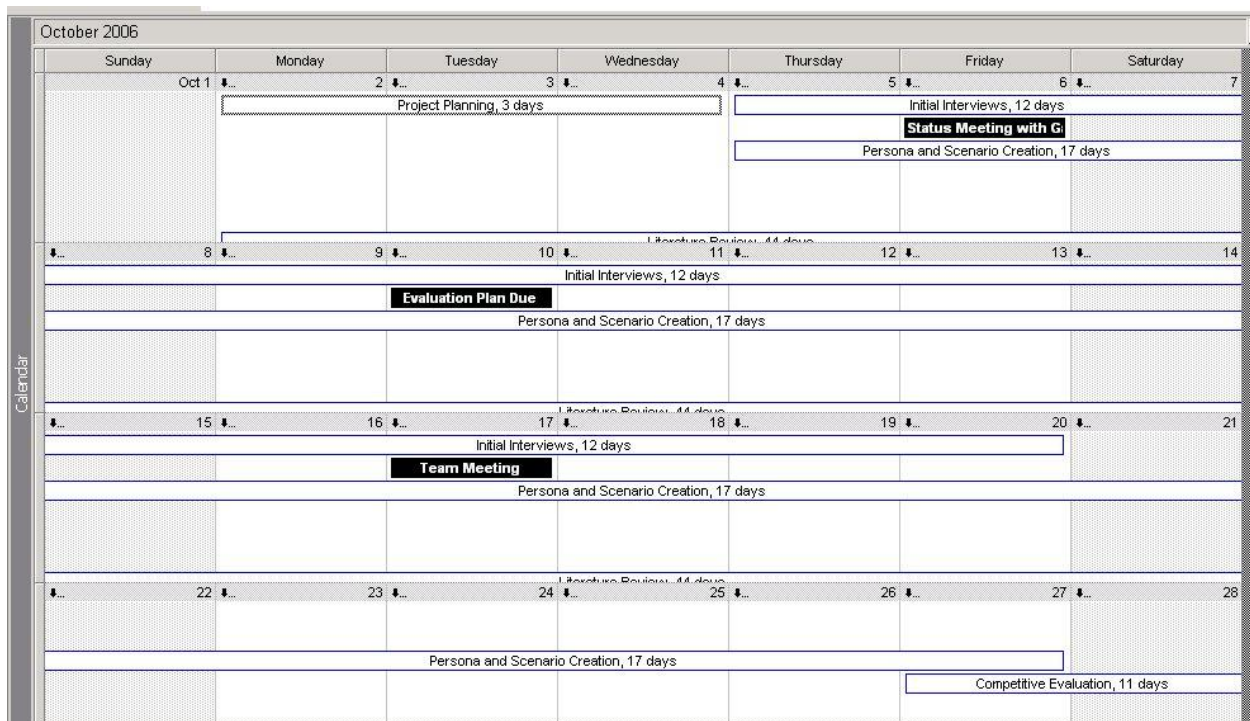
- Task specification and tracking
  - Definition by
    - Name
    - Duration
    - Start date



- Milestone dates
- Multiple task tracking methods
  - Overall project calendar
  - Gantt visual display features
    - Links to other tasks
    - Percent completion
    - Assigned resources
  - Network diagram (summary of key items, linkages)
  - Task usage (resource utilization, cost, etc tracking)
- Resource specification and tracking
  - Assigned tasks
  - Utilization rates
  - Staffing information (available hours, billing rates, etc)
  - Contact information
- Project reporting
- Links to other projects
- Integration with other Microsoft applications (Outlook import, export to Excel, etc)

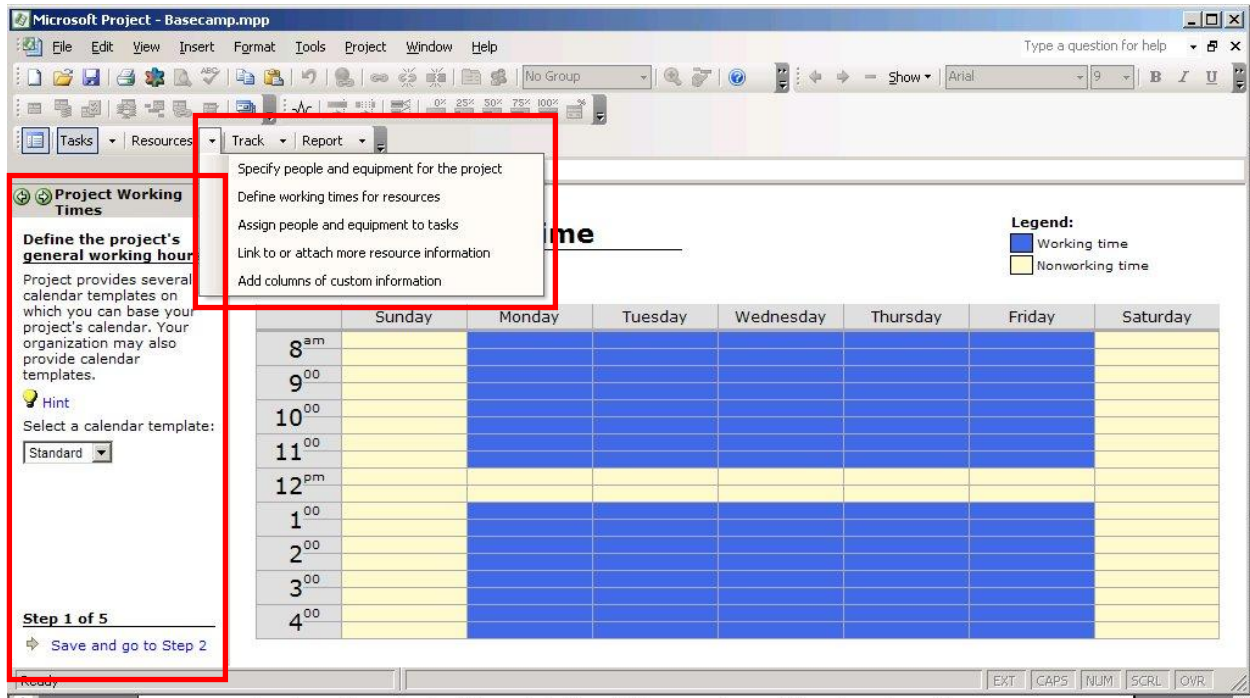
## Interface

Microsoft Project default-opens to the Gantt Chart view, which represents the most recognizable feature of the application. In addition, users can view a project based on Calendar, Network Diagram, Task Usage, and various Resource-based graphs. Similar to other Office products, a Help box and Project Guide box are embedded into the screen upon default launch, but both can be closed to maximize screen space for actual project tracking.



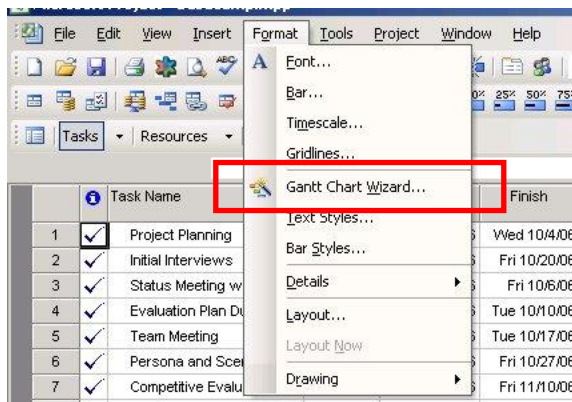
MS Project Calendar View

The Project Guide box is linked to a toolbar that helps the novice (or offers shortcuts for the expert) user set up all aspects of a project. The box serves as an embedded Wizard to walk users through the rationale and options for various set-ups, though the clarity that this is a step-wise process is not clear unless one actually finds the “Go to step #” links at the bottom of the box (not immediately obvious to users who are prone to close the Help box and other non-content features of Microsoft products).

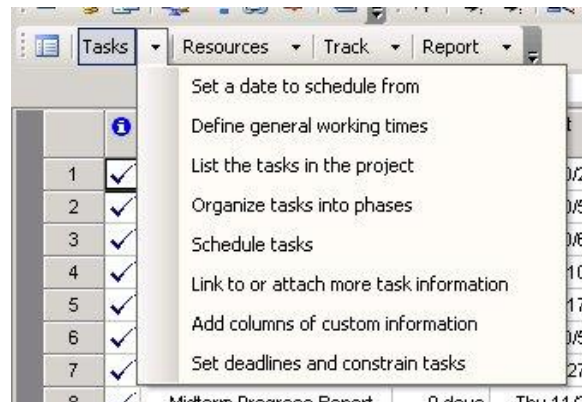


Project Guide Wizards and help menus

However, if users do close the Project Guide, browsing through the menus enables them to enter and/or customize their projects, though this occurs in a much less step-wise and linear fashion. Given the extreme complexity of this program, most likely new and infrequent users will rely on the Project Guide until they reach a significant level of comfort with the interface and features (or simply develop an array of editable templates) of Microsoft Project.

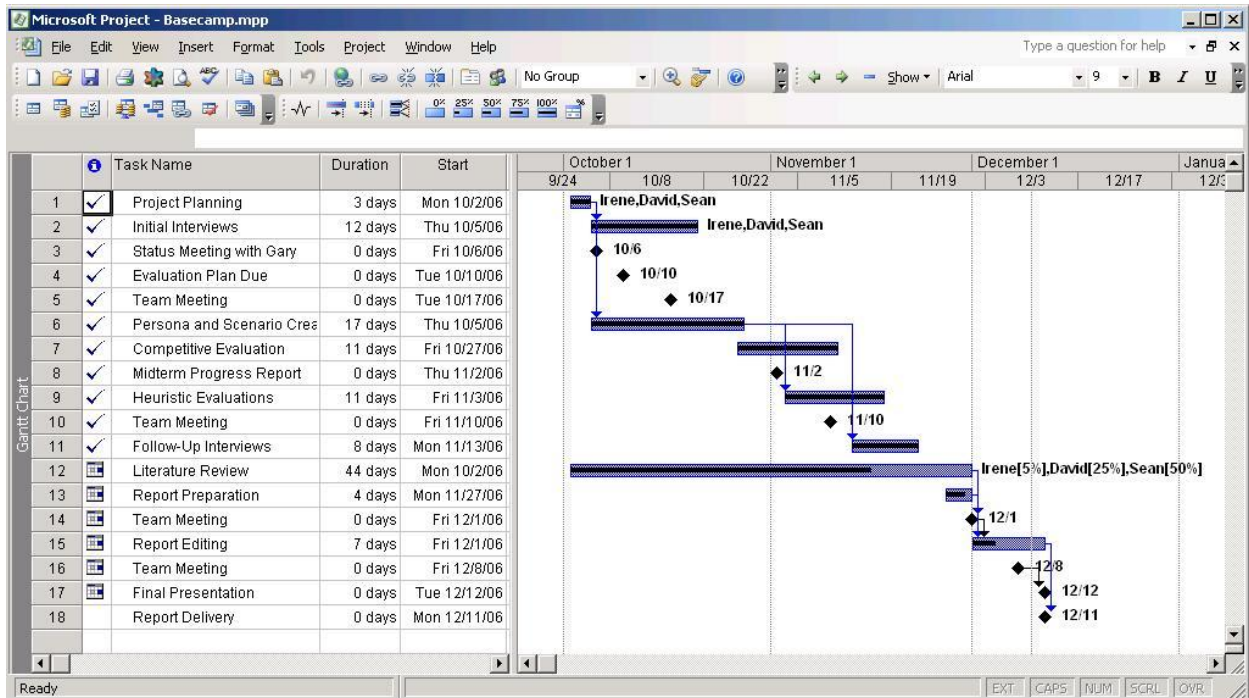


Format menu, including Gantt Chart Wizard



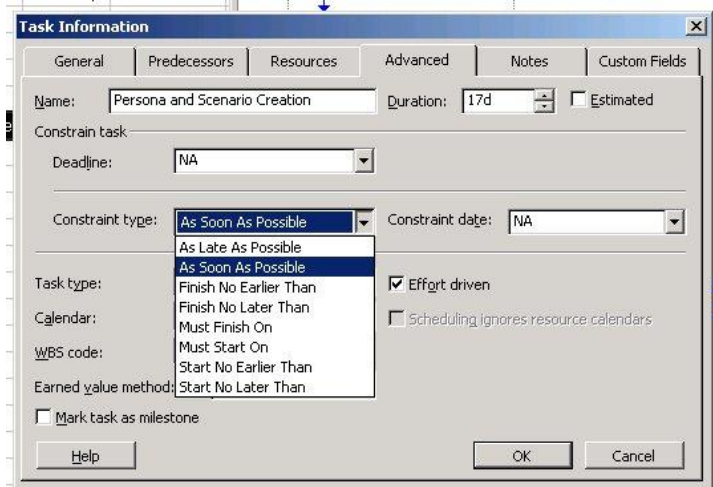
Task Wizard menu in Project Guide toolbar

Regardless of how a project manager sets up his/her project, the Gantt Chart view generates a graphical representation of the tasks as they occur over time; this provides project managers with a distinctive and powerful visual tracking tool that can be easily displayed and understood by all members of a project team.



Default Gantt Chart View

The scheduling process enabled by Microsoft Project is, in its most functional form, forward-pass in nature only, ie, project managers cannot easily work backwards from a set deadline to determine the intermediate steps, milestones and phase durations to fit the timeline. Though deadlines can be arbitrarily set (as found in the “Deadlines and Constraints” guide box after getting an error on a start date), doing so is difficult and requires a degree of exception-handling by the program. And while the forward-pass method is arguably more productive and allows for greater flexibility in the end, in a busy, resource-constrained environment, forward-pass may represent the ideal, while backward-pass scheduling is actually the pragmatic norm.



Advanced Task Information dialogue box with multiple ways to determine task duration



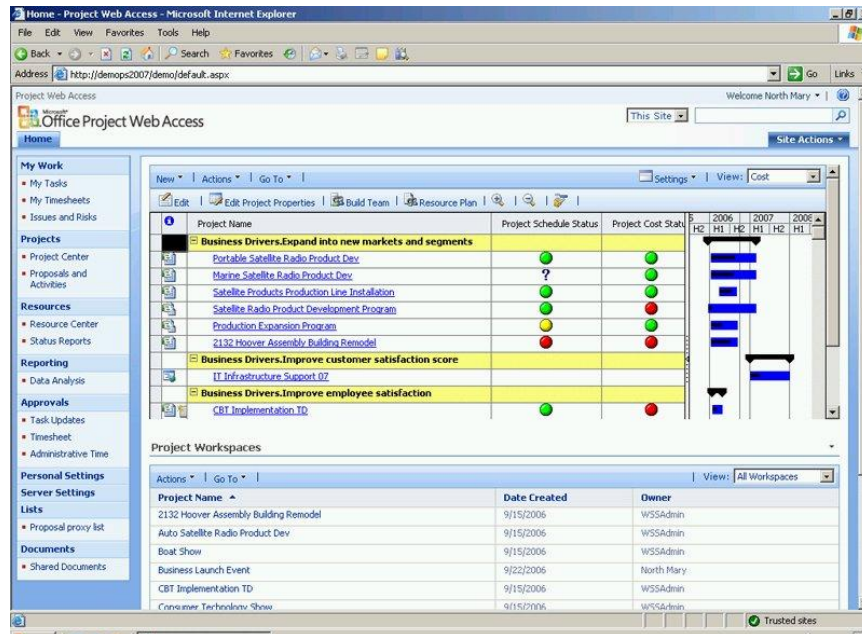
## Learning curve

Because of the extreme complexity of this program, the learning curve is quite steep. In fact, the MPA – the Official Industry Association of Microsoft Office Project has existed in various forms since 1996 to share knowledge, best practices and training among users. For those who are not members of the MPA, a Help box, Project Guide box, and several wizards are available to guide inexperienced users through project creation and management. However, since many functions are not readily apparent through menus or intuition, users will likely have to learn through trial and error through several projects to realize the full potential of the application. As a result, without sufficient training, company-wide mandate or personal incentive, adoption and continual usage may be difficult.

## Collaborative tools

Microsoft Project is primarily targeted at project managers, who will coordinate project status, milestones and modifications, then is expected to enter this information into each project. While this may be natural for project managers, it largely masks the progress and challenges experienced by the project and centralizes problem solving to a single person unless the project manager sends or posts regular updates about the project to its stakeholders. Consequently, most projects are limited to asynchronous collaboration, primarily through the individual modifications of a document; in this scenario, version control becomes critical.

Though Project Standard does not allow collaborative usage, Project Professional can be integrated with Microsoft Project Server, which centralizes all shared project information in a web-based interface. Consequently, this allows project managers, workers, supervisors and other stakeholders to observe, track, update and delegate responsibilities. Furthermore, users can integrate Project Server with additional communication tools such as email and web-page publishing to distribute information to stakeholders. While this still represents asynchronous collaboration, the centralized, hands-on nature of the interaction makes it much more powerful than the Project Standard, project manager-based method.



Demo screenshot of Microsoft Project 2007 Web Access from <http://office.microsoft.com/>

## Usability

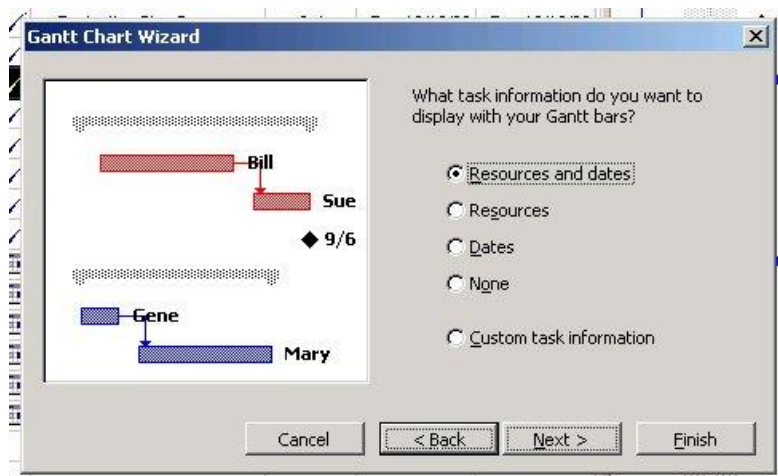
Despite the complexity of Microsoft Project, the execution of basic functions is reasonably intuitive for users already familiar with the Microsoft Office suite of products. However, for new Microsoft users and advanced functions, usability is veiled and poor.

### Availability of help

- Similar to other Office products, a Help box and Project Guide box are embedded into the screen upon default launch, but both can be closed to maximize screen space for actual project tracking.



Help Dialogue



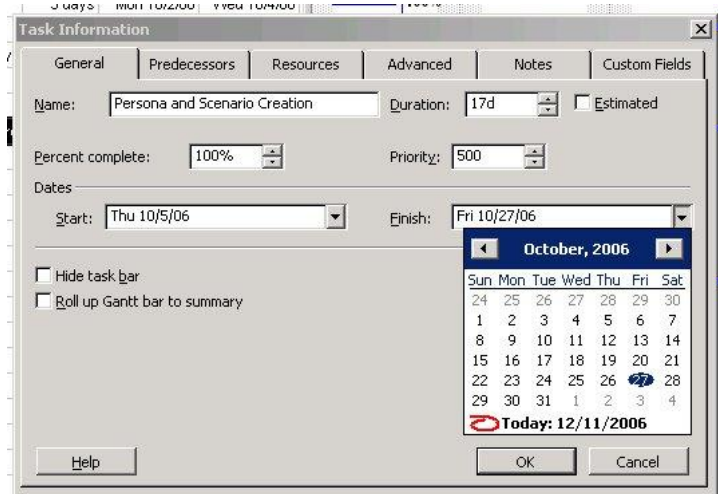
Step 2 of 4 in Gantt Chart Wizard

- In addition, a Gantt Chart Wizard is available in the Format menu, and the Project Guide toolbar makes frequent used functions easily accessible under the “Tasks”, “Resources”, “Track” and “Report” menus.
- Microsoft.com provides self-service help through its Knowledge Base, Learning Tools, and links to other resources on the Project product page.

### Navigation

- The most basic functions (adding tasks, specifying parameters, etc) can be accomplished by clicking and typing on a cell, which will often bring up an additional dialogue box to add greater detail if one double-clicks on it.

*At Left: Task information box with multiple ways to schedule task duration, but varying degrees of success*



- Multiple views display different combinations of information so that managers and various stakeholders can view key aspects of the project.
- A variety of toolbars make frequently-used functions readily available, and the “Add or Remove Buttons” function further helps users streamline their interaction with the application.

Functionality

- Familiarity with other Microsoft products facilitates navigation through Microsoft Project.
- Project-specific functions and the interdependency of various areas is not readily apparent through a quick-scan of the nine menus and their sub-menus. For instance, “Resources” (several items under the Tools menu) and “Predecessors” (functions to “link” tasks in the Edit menu) must be specified in the larger Gantt chart before they can be modified in the Task Information dialogue box; however, the novice user may only discover this through trial-and-error or from direction from their peers.

			Nov 5, '06							Nov 12, '06			
			F	S	S	M	T	W	T	F	S	S	
Resource Usage	[-] Unassigned	0 hrs											
	Status Meeting wi	0 hrs											
	Evaluation Plan L	0 hrs											
	Team Meeting	0 hrs											
	Persona and Sce	0 hrs											
	Competitive Eval.	0 hrs											
	Midterm Progress	0 hrs											
	Heuristic Evaluati	0 hrs											
	Team Meeting	0 hrs											
	Follow-Up Intervik	0 hrs											
	Report Preparatic	0 hrs											
	Team Meeting	0 hrs											
	Report Editing	0 hrs											
	Team Meeting	0 hrs											
	Final Presentatioi	0 hrs											
	Report Delivery	0 hrs											
	1	[+] Irene	137.6 hrs		0.4h		0.4h	0.4h	0.4h	0.4h	0.4h		
		Project Planning	24 hrs										
	Initial Interviews	96 hrs											
	Literature Review	17.6 hrs	0.4h			0.4h	0.4h	0.4h	0.4h	0.4h			
2	[+] David	137.6 hrs	0.4h			0.4h	0.4h	0.4h	0.4h	0.4h			
	Project Planning	24 hrs											
	Initial Interviews	96 hrs											
	Literature Review	17.6 hrs	0.4h			0.4h	0.4h	0.4h	0.4h	0.4h			
3	[+] Sean	296 hrs	4h			4h	4h	4h	4h	4h			
	Project Planning	24 hrs											
	Initial Interviews	96 hrs											
	Literature Review	176 hrs	4h			4h	4h	4h	4h	4h			
	Work												
	Work												
	Work												

Resource Usage view; resources (ie, people) must first be specified before tasks can be assigned

- For users new to or unfamiliar with project management terminology, finding the appropriate functions to execute advanced tasks may be difficult.

Aesthetics

While Microsoft Project is a fairly bland-looking application, its understated design and selective use of colors help to differentiate key functions and project information from supporting background.



Clean, simple non-obtrusive design

- Toolbars can be stacked and rearranged to customize interface; specific buttons can be added or removed to tailor easily accessible buttons to commonly used functions.

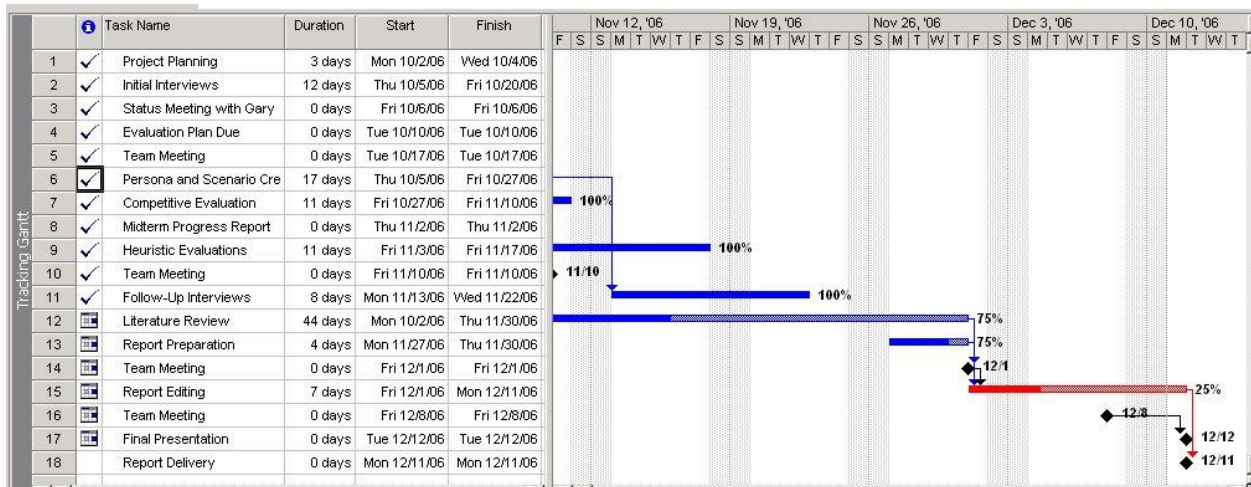


All 15 pre-created toolbars available through “View” menu

- The Help, Project Guide and other boxes that appear to the side of the workspace can be easily opened and collapsed when needed.
- Separate panes of the workspace can be easily resized to focus on area of interest.

Good color scheme

- White workspace contrasts with grey background and design menus and other supporting functions.
- Status bars and other information can be color-coded for quick grouping and recognition.



Tracking Gantt view differentiates concluded or on-track projects with those farther from completion through color scheme

Prominence of important features like navigation and search

- Varies based on view and toolbars selected to facilitate navigation and functions.
- Default settings provide sufficient basic access to key functions (Project Guide), but advanced functions are much more difficult to find.

### Comparison to Basecamp

While Microsoft Project is a true project management application that coordinates the tasks, timeline, resources, personnel, cost-structure, interdependencies and interlinkages of a project, Basecamp represents a very basic task and timeline management program. However,

though one may be able to accomplish more with Microsoft Project does not mean that it is necessarily better; rather, the level of complexity of the project must first be assessed and the work required to create and maintain a Project file determined. For smaller projects that involved a limited number of steps, contingencies and people, Basecamp may often be the better, more manageable choice.

Comparing the two applications on a task-management level, the most powerful feature of Microsoft Project is the single-screen integration of both resources and timeline. Whereas Basecamp separates the To-Do list and Milestones, Project consistently displays them concurrently and allows easy editing of any changes to the project. Moreover, the graphical representation of tasks, timelines and interdependencies provides a simple and easily recognizable progress report that can better help project managers track the status of their team's work.

As a collaborative application, however, Basecamp provides a variety of personalization, coordination and discussion tools that might only be available via Microsoft Project Server, if at all. The default Dashboard allows each individual to track his/her assigned tasks and deadlines, and the clearly marked and color-coded (late) milestones and "What's fresh?" sections provide easily visible progress tracking. Moreover, the Messages, Whiteboard and Chat functions allow colleagues to make announcements or discuss issues asynchronously, a feature not clearly enabled by Project. Lastly, the ability to track all project members and their activities provides greater transparency to the status and active involvement of members; in Project, the levels of engagement are hidden from the team.



## Appendix 3: Heuristic Evaluation

The usability team conducted a heuristic evaluation of Basecamp to evaluate its usability, functionality, and visual design. This report presents a heuristic evaluation of the Basecamp project management application. The main purpose of this heuristic evaluation is to identify usability, functionality, and visual design strengths and weaknesses to inform usability team that representative users might encounter in real settings.

The goals of completing this evaluation are to:

- Understand how to use Basecamp to complete project management tasks
- Identify how Basecamp responds to user interaction
- Gain a quick, generalized view of the current state of Basecamp’s overall usability without involving representative users
- Pinpoint areas in which Basecamp succeeds in providing a valuable service to users
- Pinpoint areas of task completion that might result in usability issues for the users.

## Methodology

### *Overview of Evaluation Methods and Criteria*

Our team conducted heuristics analysis based on derived principles from both groupware and single user application heuristics. The heuristic evaluation provided a way to identify critical strengths and weaknesses of Basecamp’s usability, functionality, and visual design during and outside of task completion. The method enabled the team to quickly collect a broad spectrum of focused findings without involving actual end users.

### *Heuristic Evaluation*

We used a combined list of 15 heuristics to complete our heuristic evaluation of Basecamp. The principles used are selected from both groupware heuristics and single-user heuristics. The first five heuristics, taken from “Empirical Development of a Heuristics Evaluation Methodology for Shared Workspace Groupware” by Kevin Baker, Saul Greenberg, and Carl Gutwin (2002), focus on the collaborative and groupware aspects of Basecamp. The remaining heuristics were taken from the list developed by Judy Olson and Jakob Nielsen, focusing on single-user usage of Basecamp. We include both groupware heuristics and single user application evaluation principles because Basecamp must be effectively used by individuals before it can successfully act as a collaborative tool.

Severity Level	Meaning
Good	The system does excellent job in this area.
High	Issue prevents user from completing the task, or causes significant difficulty in completing the task.
Medium	Issue causes a moderate level difficulty in completing the task; however, user is not completely prevented from task completion.

<b>Low</b>	Issue creates an annoyance but does not hinder task completion.
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A full checklist of design principles used to evaluate Basecamp appears in Appendix 4.

## Findings

Overall, the evaluation showed that Basecamp provides basic support for a number of project management tasks that representative users in interviews indicated as important. The following represent some of Basecamp's biggest successes in being a useable, robust project management application:

- ✓ Provide useful tools for overall project coordination
- ✓ Nice access to group member profiles and contact information about individual user profiles
- ✓ Good overall system response
- ✓ Clear access to all features
- ✓ Good and easily accessed help documentation
- ✓ Adding new item is located in the same area

This section also provides a list of major usability issues that requires immediate attention from both developers and the usability team:

- Disconnection between To-Do List and Milestones
- File descriptions provide limited information and does not prevent file version overwrite
- Unable to post message in Milestone
- Cannot create new category when uploading new files
- Unable to post message in Milestone
- Cannot comment on to-do list
- No direct hyperlink between usernames and user profile
- Cannot send message to group members without log-in
- Minimal feedback provided by Basecamp
- Require user memorization of calendar on Milestone
- Writeboard breaks the browser "back" button
- Small font sizes and low contrasts between texts and background
- The Writeboard section has a totally different look and feel
- Each Milestone can only assigned to one member
- Easy setup, but not intuitive access
- Calendar uses the word "Toggle" instead of "View"

### **Strengths:**

1. Provide useful tools for overall project coordination. Many of the tools provided by Basecamp such as Milestone and To-Do list are useful and crucial in project management. The additional file sharing feature also helps group members to exchange information.
2. Nice access to group member profiles and contact information about individual user profile. With user profiles people can get contact information and know some details about the other members that they are working with.

3. Good overall system response. With the use of AJAX and more advanced web service technologies, Basecamp provides user with fast and almost immediate system response on many of the features.
4. Clear access to all features. The overall global navigation on the top is accessible at anytime except for in Writeboard. Users can switch from one section/feature to another with ease.
5. Good and Easily Accessed Help Documentation. Basecamp supplies users with abundant Help documentation and also forums for users to ask questions should they have trouble using the system.
6. Adding New Item is Located at the Same Area. Consistency is important in applications. The fact that adding a new item and canceling an action are located in about the same place visually makes the whole system more usable and enhances the user experience.

Issue #	Description	Severity	Heuristic Category
1	Provide useful tools for overall project coordination	Good	#3 Manage the transitions between tightly and loosely-coupled collaboration

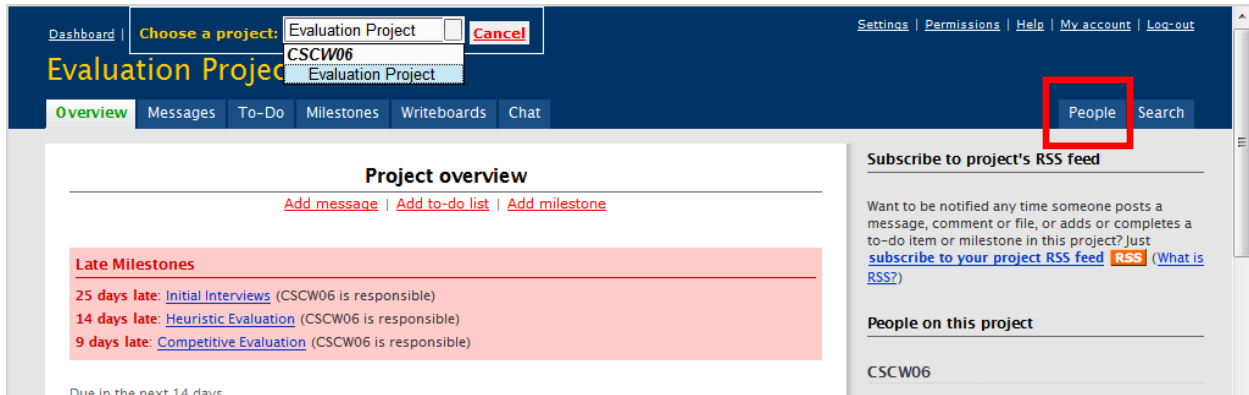
Basecamp operates on two levels of content organization: individual and project-based. The “Dashboard” that each user defaults to upon logging into the system provides broad overviews of all projects that the individual is involved in: project status, recent activities, task responsibilities, and a calendar of milestones set for the next quarter. In contrast, each user can drill down into the specific details of each project to access discussion with colleagues, file sharing, and general responsibilities for the tasks within the project. This ability to clearly distinguish one’s own work within a larger context is especially critical for individuals in organizations who run multiple concurrent projects.

The various means of discussion (message board, writeboards and chat) provide an open forum for colleagues to talk about general status, potential problems, possible solutions, or even propose new ideas. By facilitating this dialogue, even geographically dispersed teams can coordinate their activities much more smoothly, while also maintaining a written record of the discussion. As individuals engage in greater discussion, people can organize message board threads by category to improve the ability to find relative information.

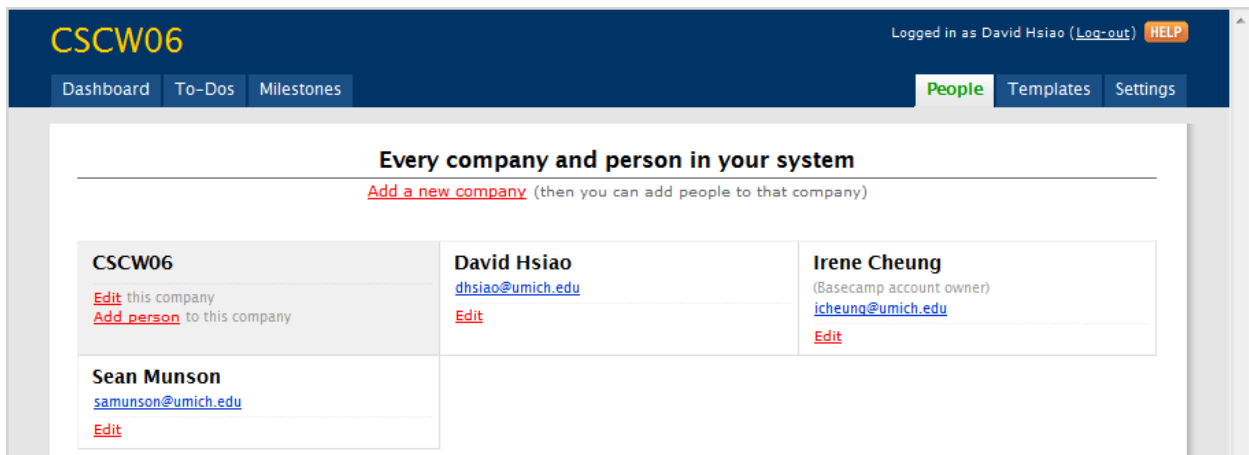
Issue #	Description	Severity	Heuristic Category
2	Nice access to group member profiles and contact information about individual user profile	Good	#5 Facilitate finding collaborators and establishing contact

Basecamp does an adequate job facilitating finding collaborators and establishing contact with them. Once users have been added to the project, they are able to create a profile including their contact information as well as upload an image to use as their avatar. Each user’s contact information is accessible through the “People” tab at the top of each Basecamp page.

## Examples



Access Link to “People” on Every Page



User Profiles and Contact Information

Issue #	Description	Severity	Heuristic Category
3	Good overall system response	Good	#9 System Response Time

Basecamp does a good job in system response time (using AJAX), except when creating a new Writeboard document, which takes about 2 seconds. By utilizing the AJAX (Asynchronous JavaScript And XML) protocol, Basecamp is able to provide immediate feedback and refresh part of the screen without refreshing the whole page. This technology provides superb response time and user experience. The user can interact directly with the system while watching the direct manipulation of the object that they are working on. For example, to reorder the to-do list, the user simply needs to drag the item and place wherever s/he desires. In addition, a dialogue and form box opens up when user clicks on “add new item” in To-do list. This action is accomplished without refreshing the whole web page, and the dialogue can be opened/closed almost instantly.

Issue #	Description	Severity	Heuristic Category
4	Good and Easily Accessed Help Documentation	Good	#11 Help and Documentation

Basecamp provides a “Help” link in the upper-right of each screen, alongside administrative tasks such as settings, permissions and logging out. Clicking on this link replaces the current browser window with a “Help, FAQs and Support” page, with a drop-down menu of various features and sections assistance may be available for. Clicking on each of the questions posed opens a new browser window that houses the answer; meanwhile, clicking on one of the project tabs that have remained in the same browser window replaces the help content with that of the project section you have selected. However, within the new browser window, the right column provides access to the same help topics as in the parent window, only with a slightly different presentation.

This new window brings users to the “everything.basecamp.com” site, self-described as “the official news and support blog for Basecamp”. Here users can discuss questions they have (via blog or chat), request direct support via email, or even request new features for the application. A search box is prominent in the upper-right corner to facilitate the location of a possible answer to one’s question.

Issue #	Description	Severity	Heuristic Category
5	Clear access to all features	Good	#14 Shortcuts Available

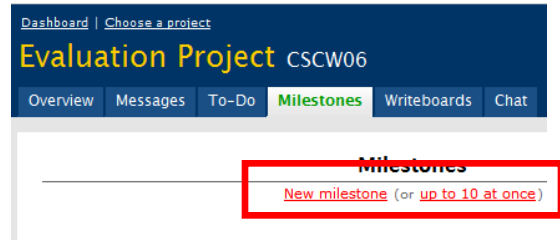
Basecamp provides tabs to the various features and aspects of a project it helps to organize. On all screens, if a task or milestone has further information and has been associated with what is being viewed, a hyperlink is included to quickly bring the user to a detail of the information behind the summary statement. The right side of the screen provides further means of filtering information, whether by message board category, parties responsible for specific tasks, highlighted dates on monthly calendars for key milestones, and chat FAQ. In addition, a search box is prominent on the right side of the screen.

Issue #	Description	Severity	Heuristic Category
6	Adding New Item is Located at the Same Area	Good	#15 Visual Display: Screen Areas

The screen areas are divided into three major actions: top global navigation, left side main content, and right side supporting column. This layout is consistent across various user tasks. In addition, the link to adding new messages, to-do list, and milestones are always at the top, and consistent throughout the site.



Post new message



Add new milestone

### Usability Issues

In this section, findings are presented in the order of severity, with the most severe problems listed first. Within each severity, the issues are grouped together if they are related to the same heuristic principle being violated.

As mentioned before, Issues are rated on a three-point severity scale, as described below:

Severity Level	Meaning
High	Issue prevents user from completing the task, or causes significant difficulty in completing the task.
Medium	Issue causes a moderate level difficulty in completing the task; however, user is not completely prevented from task completion.
Low	Issue creates an annoyance but does not hinder task completion.

Individual issues are listed below in the order of discussion:

1. Minimum connection between Messages, To-Do List, and Milestones.
2. File descriptions provide limited information and does not prevent file version overwrite.
3. Cannot create new category when uploading new files.
4. Unable to post message in Milestone.
5. Cannot comment on to-do list.
6. No direct hyperlink between usernames and user profile.
7. Cannot send message to group members without log-in.
8. Minimal feedback provided by Basecamp.
9. No method to export data regularly.
10. There is no “cancel” option for posting a comment on a message.
11. Require user memorization of calendar on Milestone.
12. Writeboard breaks the browser “back” button.
13. Small font sizes and low contrasts between texts and background.
14. The Writeboard section has a totally different look and feel.
15. Each Milestone can only assigned to one member.
16. Tooltip uses the term “Trash” instead of “Delete.”
17. Calendar uses the word “Toggle” instead of “View.”
18. Easy setup, but not intuitive access.
19. To-Do List filters are visually distant from the main content.

Issue #	Description	Severity	Heuristic Category
1	Minimum connection between messages, To-Do List, and Milestones	High	#3 Manage the transitions between tightly and loosely-coupled collaboration

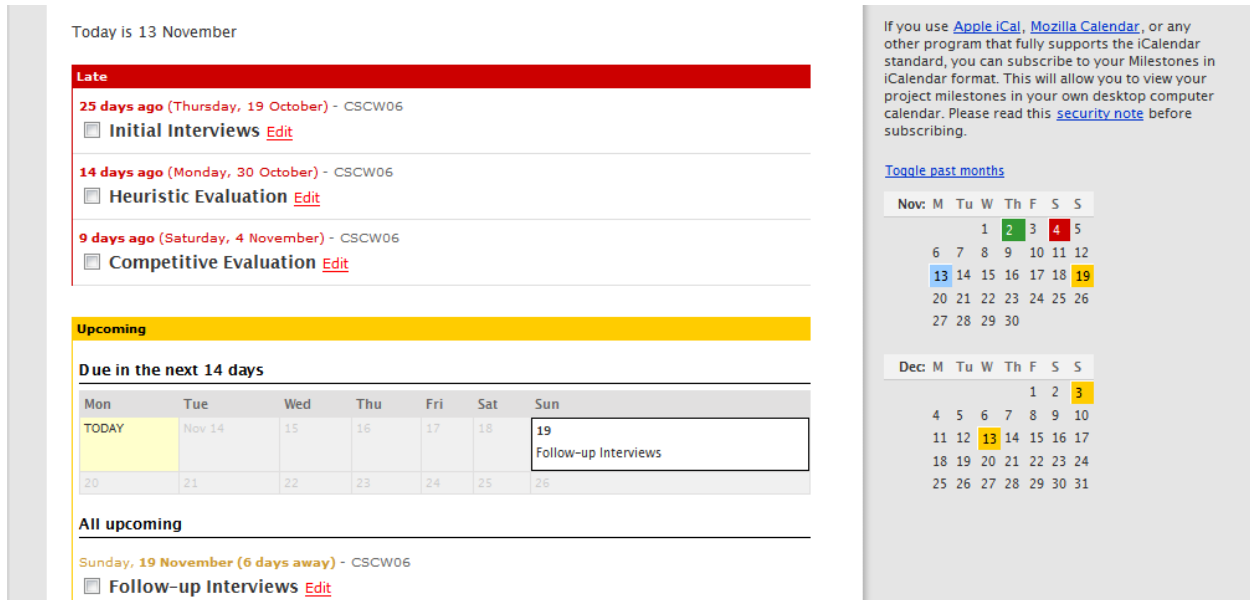
The greatest drawback in Basecamp's ability to facilitate tightly and loosely-coupled collaboration is its separation of tasks and deadlines. In both the Dashboard and Project view, two different tabs exist for "To-Do" and "Milestones", and users must toggle between the two to figure out what is due when, and what components are required for the next deadline. As a result, new users, especially those involved in multiple complex projects, may become frustrated with the amount of time required to assemble the many piece of all their puzzles. This disconnect complicates project management more than it helps it.

At this point, the separation of tasks and timing introduces a complicated facet to project set-up. Though "Quick Tips" may be useful for new users, its persistence over several sections limits the relevance and utility that may be gained from it. Similarly, the logic of completely separating the Milestones and To-Do list tabs is questionable: the organizer must visit two separate screens to enter first the Milestone, then the to-do list, and then associate the two within the "To-Do" tab. Even after figuring out how to do so, deadlines do not appear on the to-do lists; the only dates are the days someone checked off an item as complete (note: NOT necessarily the date the task was completed). Furthermore, checking off something as a completed Milestone does not automatically assume that all the sub-parts (which presumably must have been required to achieve this state) have been complete themselves; since tasks and milestones remain separate, it therefore may not be clear which items really do remain to be done, versus those which may not have been acknowledged as complete. However, the system does respond quickly when one marks something complete; the item almost instantaneously moves to the completed section upon checking it off. One related area in which Basecamp falters, though, is that it cannot always support the order of the project tasks it is designed to track. The tasks within to do lists cannot be assigned dates or dependencies, and so Basecamp cannot indicate an appropriate order for these tasks.

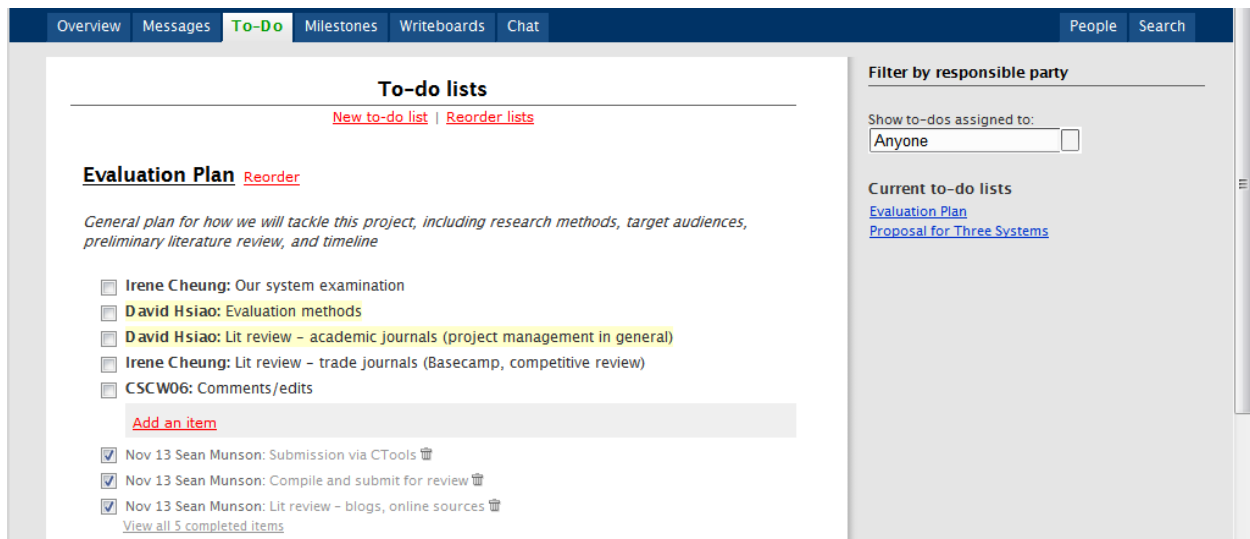
As Basecamp is meant to be a project/task management application, this shortcoming is a critical flaw in the program's utility. For short, small, minimally staffed projects, this may not be an issue; however, for longer, more complex and stakeholder-intensive projects, the dissociation of tasks and time presents a major obstacle to efficiency and clarity. This is further compounded by users who either (a) have limited computer literacy and therefore do not understand how these parts are connected, or (b) have extensive computer literacy and logically expect things to operate under pre-determined logic, but are flummoxed by this bizarre design. Either way, it is only those users who have taken the time to learn, understand and acclimate themselves to the program that seem to thrive under the Basecamp system.



Example



Screenshot of the Milestone Page



Screenshot of the To-Do lists

Solution

Link the Messages, To-Do Lists, and Milestones together as one inter-related application. When a To-Do List is associated with a Milestone, display relevant information such as the due dates of the Milestone. In addition, if there are pertinent messages associated with either the To-Do Lists or the Milestone, show them to the group members. Also, Basecamp should allow better linking between these three features so that when the user is at one section and wants to see related information in other sections, the system will link to it automatically.



Issue #	Description	Severity	Heuristic Category
2	File descriptions provide limited information and does not prevent file version overwrite	High	#1 Provide consequential communication of shared artifacts #2 Provide Protection

Basecamp allows users to enter optional descriptions for the file uploaded, but it does not allow extensive notes to be associated with each document. For example, users cannot provide detailed information regarding updates to the document or a summary of the content. In addition, Basecamp only provides two sorting mechanisms: sort by date and time, and sort by alphabet. However, there are other possible sorting schemes that can be used to better support user behavior, such as sort by the member who uploads the file or sort by file type.

The file section also does not seem to integrate well with the whole system. It is an independent section from the primary Message/To-Do List/Milestone areas. Often a file is associated with either a Milestone or a To-Do List Item, but they are not associated with one another in Basecamp. When uploading a file, users cannot specify which milestone or to-do list item this file is for. If they are interconnected, the user can mark a to-do list or a milestone as completed when uploading the file, and s/he will not need to mark the milestone or to-do list item as a separate action.

Basecamp is a shared workspace and thus should provide a way to coordinate individuals' efforts so that users do not interfere with each other. In the event of this interference, Basecamp should provide a way to repair damage. This is most important in Basecamp's file sharing feature. File check-in/checkout is a common feature on collaborative file-hosting applications and can prevent many versioning problems. Such a feature is not included in Basecamp; the file sharing page only shows file title and description, the person who uploaded it, and the date. This oversight has received a number of complaints on the Basecamp forums.<sup>15</sup> Users describe some ways they circumvent this problem, including editing the file's description to indicate they are currently editing it, or adding a note to Basecamp's to-do pane. Some users suggest use of the writeboards for collaborative editing, but most agree that this is a partial solution at best, as they often make collaborative edits in a variety of documents. Basecamp's writeboards also do not support concurrent editing; they only lock the writeboard when another user edits.

In the event that a user mistakenly uploads an older file as a replacement for another, there is also no way to undo this error and no file history is preserved. Similarly, Basecamp cannot detect that users have submitted different edits to the same document and makes no attempt to merge edits, a feature that is common in both desktop word processing software and many wikis (eg: MediaWiki). Users who switch to writeboards rather than files for collaborative editing face similar problems: the software is unable to merge different versions of a file.

<sup>15</sup> File Check-in / Check-out. Retrieved November 10, 2006, from Basecamp Forum Web site: <http://www.basecampq.com/forum/viewtopic.php?pid=7513>

**Example**



File Descriptions Provide Limited Information

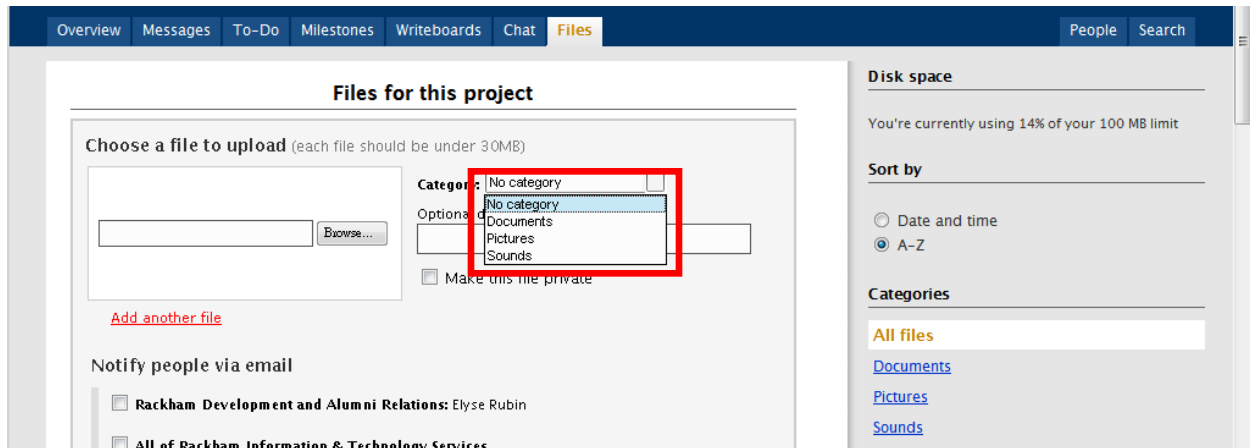
**Solution**

As mentioned in literature reviews and project management overview, exchange of information in the form of documents is a crucial piece of communication. Basecamp should allow users to better organize their files according to the workflow of the organization, and also provide place for the users to enter more detailed information regarding certain documents. Moreover, the current system does not support versioning, nor any kind of history, and these features are important to make sure that the correct documents are updated and errors can be rolled back. Therefore, in addition to just replacing the old file with a new updated document, the system should keep the old file, rename the new file with the old version plus one, and allow users to trace back if needed.

Issue #	Description	Severity	Heuristic Category
3	Cannot create new category when uploading new files	Medium	#1 Provide consequential communication of shared artifacts

When uploading files onto the server, users are not allowed to create new categories; only the default categories can be used. Categories are equivalent to a genre that people use to support coordination between social systems (different parties responsible for the project). The ability to group artifacts into useful categories can greatly enhance the workflow and communication among group members. With only three default file categories, its usefulness is very limited. If the system allowed users to create and modify the categories, they can create ones that are more relevant to the nature of their projects and more suitable for their workflow.

**Example**



Cannot Add Additional Category

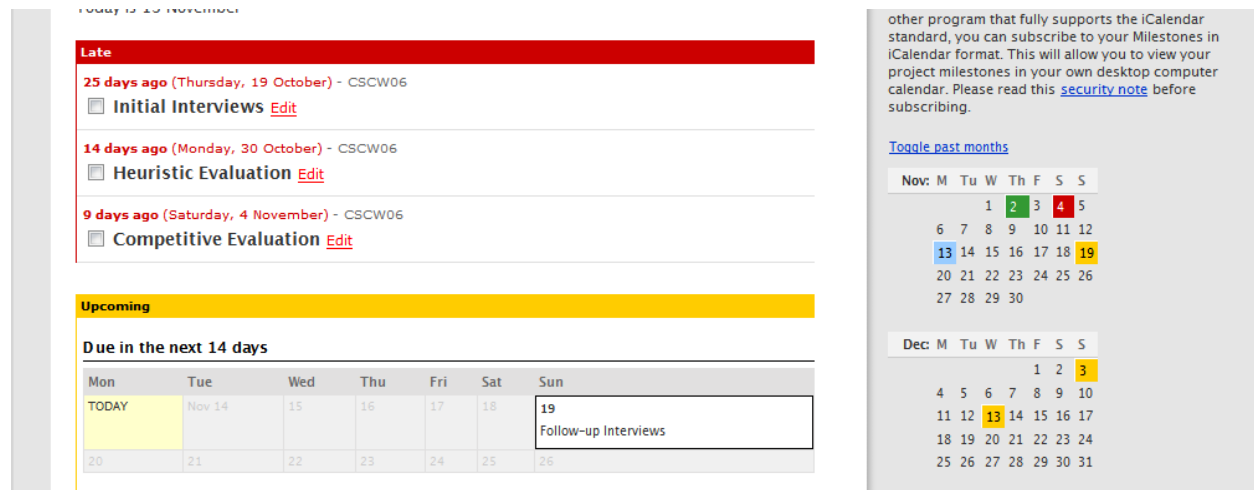
**Solution**

Allow users to add and modify a list of categories that can be used to categorize the file upload.

Issue #	Description	Severity	Heuristic Category
4	Unable to post message in Milestone	Medium	# 4 Support people with the coordination of their actions

In the Milestone section, users cannot comment on the item directly. To post a message and/or to-do list associated with a milestone, the users need to go to Message or To-do section to post their ideas. This creates a barrier for effective communication between different project members to coordinate their actions. There is an extra step needed to inform anything related to the milestone.

**Example**



Screenshot of the Milestone Page

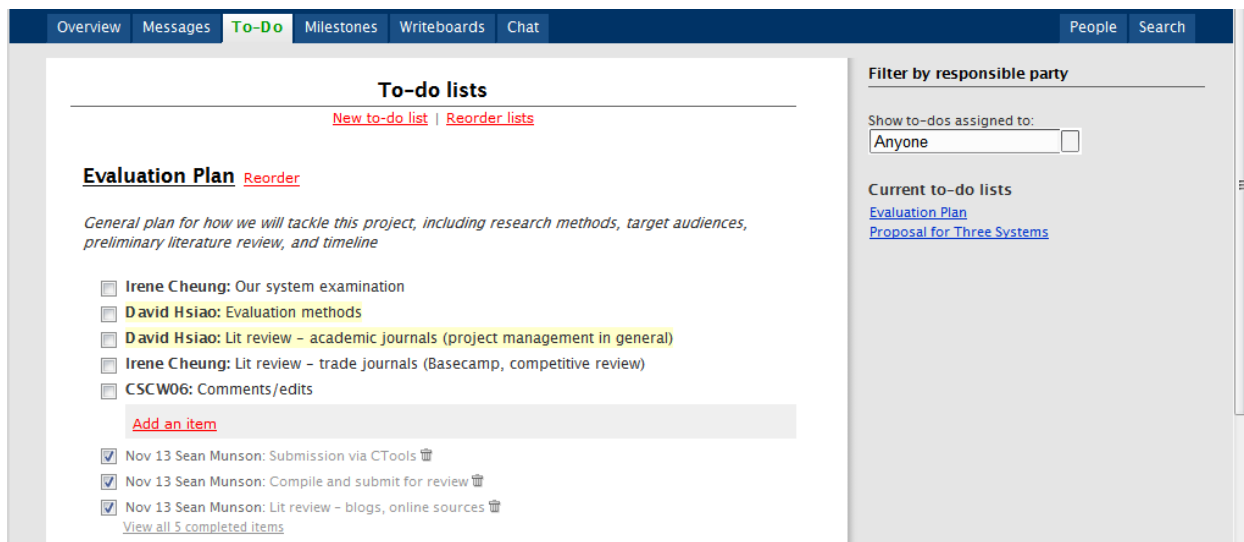
**Solution**

Allow users to post message or comment on specific Milestones. Alternatively, Basecamp can provide a better connection between Messages and Milestones so that members can know the relationship between certain messages and certain milestones, and can navigate back and forth between them with ease.

Issue #	Description	Severity	Heuristic Category
5	Cannot comment on to-do list	Medium	# 4 Support people with the coordination of their actions

The To-do list in Basecamp is very primitive and does not allow effective user communication. The user can only add/edit/delete an item on the list, and also reorder the list. Users, however, are not allowed to comment or do any other actions. It permits each group member to see other people’s list, but s/he cannot give feedback or comment on the list item.

**Example**



Screenshot of the To-Do lists

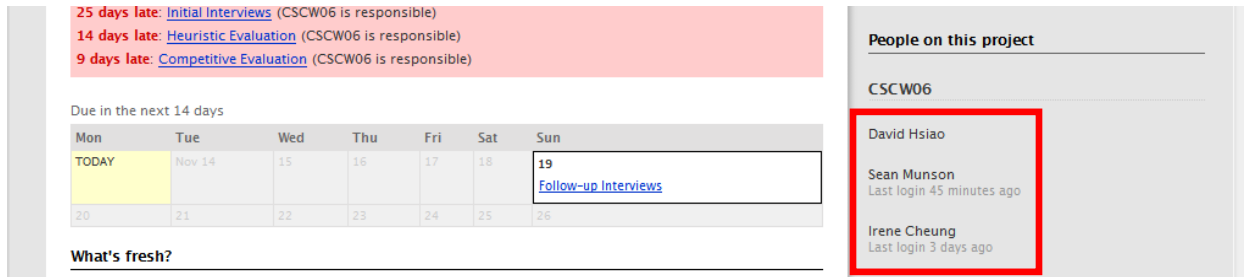
**Solution**

Provide a way for users to comment on the To-Do List so that they can update other group members with the progress or problem encountered when carrying out certain tasks.

Issue #	Description	Severity	Heuristic Category
6	No direct hyperlink between usernames and user profile	Medium	#5 Facilitate finding collaborators and establishing contact

Access to contact information, and awareness of others' presence (something that may lead to more informal interaction), could be improved. While usernames appear at several locations in the site, including on the to-do list, comments, and the file sharing page, these usernames are not linked to anything. If a user sees the name of someone they wish to contact, s/he cannot simply click it to access the other user's contact information; s/he must instead navigate to the people page and then search for the user. Simply linking user names to contact information could improve this process. Basecamp also provides only limited presence information (the time of a user's last login). We believe that increased presence information, with links to the Campfire chat program, may increase informal collaboration.

**Example**



The List of People Only Provide Minimal Information

**Solution**

Display more information about the people that are involved in this project such as their recent actions in Basecamp. In addition, link the names to their personal information page so that group members can find out who's who with just one click.

Issue #	Description	Severity	Heuristic Category
7	Cannot send message to group members without log-in	Medium	#7 Natural order of tasks

Basecamp supports the completion of tasks in the order in which users are comfortable. The majority of Basecamp's features are extremely straightforward and simple and require very few steps to complete, making this almost a non-issue. These tasks also can be tied together in an order that is flexible to users. For example, a user can create a to-do list and then decide that it should end with a new milestone, or a user can first create the milestone and then add a to-do list for that milestone. Unfortunately, there are times when Basecamp requires users to complete additional tasks compared to the tasks they currently complete. To send a message, for example, a user cannot email an alias for their Basecamp group (no such alias exists). He or she must first log in to the website, navigate to the message tool, and then type the message there before sending it.

**Solution**

Allow users to create an alias e-mail so they can send e-mails and quick messages to group members without the hassle of logging into Basecamp every time.

Issue #	Description	Severity	Heuristic Category
8	Minimal feedback provided by Basecamp	Medium	#8 Clear & Instructive/Good Error Messages

Basecamp does not provide error messages. Rather, users are permitted to do what they believe will provide them with a desired result and then view the results of that activity. Therefore, the program requires that users either (a) check their work frequently, or (b) simply know what they are doing. With the level of help available, it may be easy for users to find guidelines for what they want to do; however, for the many people who don't know any better,

or those who simply experiment and wait for feedback if something is going wrong, this lack of error messaging can be dangerous and lead to a lot of wasted time devoted to an unnecessary or inefficient task.

### Solution

When user carries out actions that system does not support, provide informative instructions as to what goes wrong and how to fix the problem. In addition, Basecamp can integrate better with e-mail to remind users with what progress is been done in the Basecamp project, and provide an option for group members to receive notifications for the things going on.

Issue #	Description	Severity	Heuristic Category
9	No method to export data regularly	Medium	#10 System Failure

As a tool used to monitor important customer projects, Basecamp should be able to recover from a failure with minimal user disruption. 37 Signals backs up Basecamp projects on a regular basis, but the exact details of their recovery actions are generally not visible to end users, since this is a hosted application. Aside from backups of specific files that users store on their own computer, the users are entirely dependent on 37Signals' actions to recover from any failure; there is no option to export a site's schedule, to lists, file library, or other content to a user's computer. In the event that Basecamp were to be down for an extended period of time, users would have no access to their correspondence or other project resources, yet Basecamp provides no service level agreement.

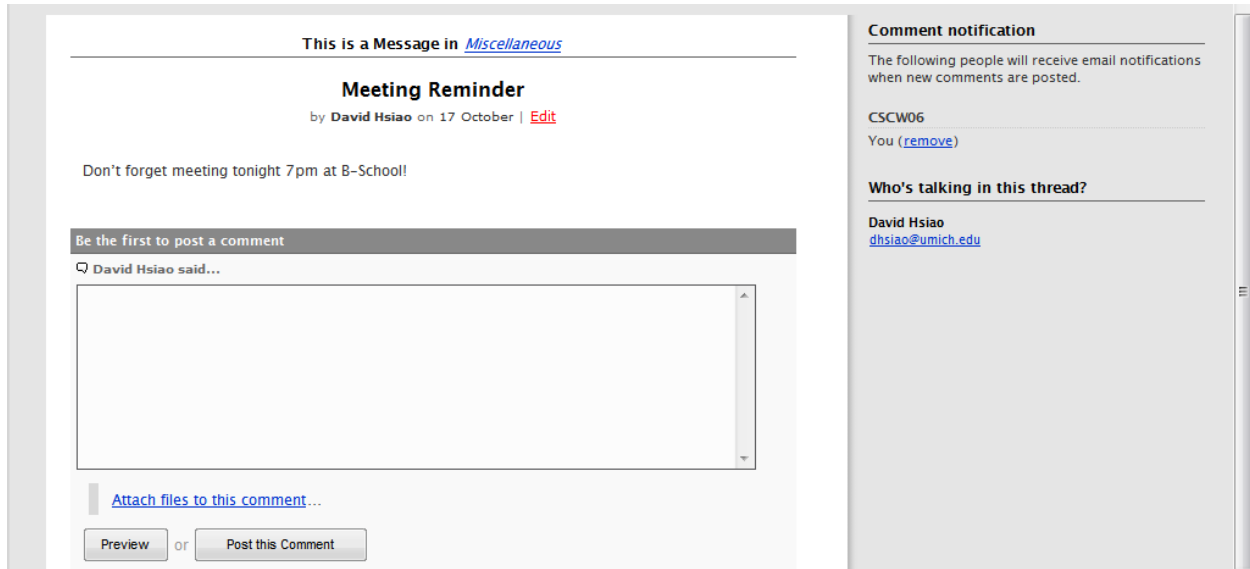
### Solution

Provide a method for users to export the Messages, To-Do Lists, and Milestones regularly to avoid any kind of data lost. The system can also support ways for users to synchronize items easily with other applications or devices such as Microsoft Outlook and/or cellphones and PDAs. In addition, the users should be able to backup data contained in databases with simple procedures and also backup the documents and files uploaded.

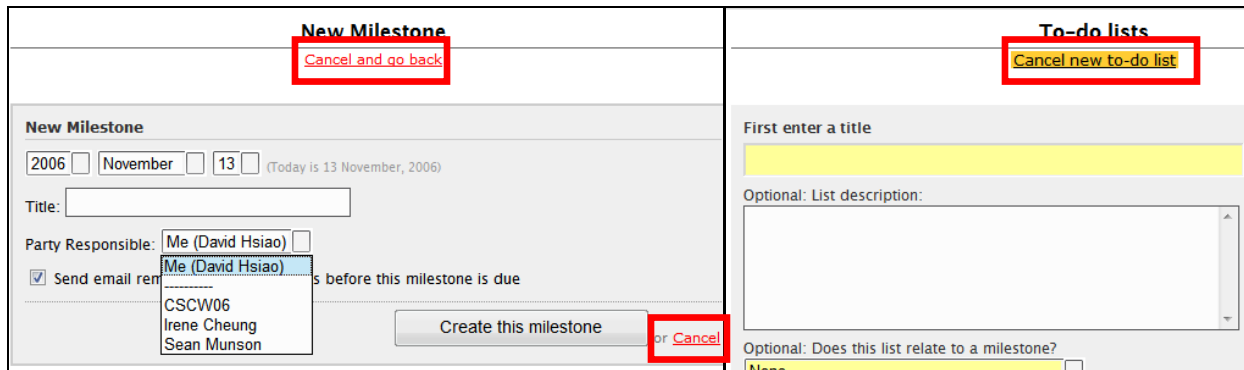
Issue #	Description	Severity	Heuristic Category
10	There is no "cancel" option for posting a comment on a message	Medium	#12 Minimizing the User's Memory Load

When a user tries to post a comment on an existing message, the system does not provide a direct or obvious way to cancel this action. The user is given the option of "preview" the comment and "post" the comment, but not "cancel" the action. On the other hand, the "cancel" option is given in other features such as "New Milestone" and "New To-do list." This discrepancy can render users in panic if s/he is the first time user. In addition, the posting comment page provides no direct way to return to the previous page that the user comes from.

**Examples**



No "Cancel" Option When Commenting on a Message



"Cancel" Option is Available on Milestone and To-do Lists

**Solution**

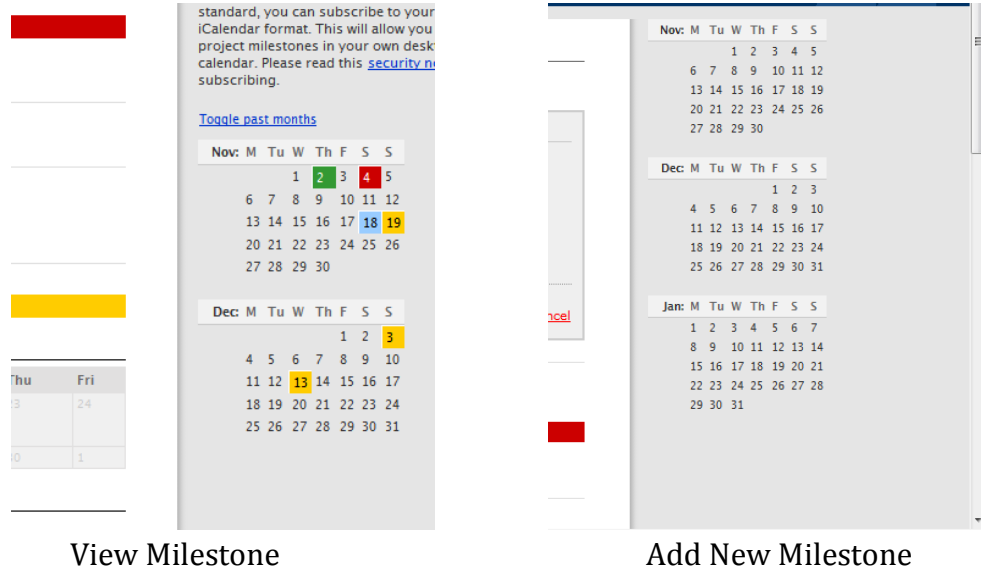
Allow users to "cancel" their action when commenting on a message. Moreover, place the cancel button at the consistent location that other similar functions are displayed.

Issue #	Description	Severity	Heuristic Category
11	Require user memorization of calendar on Milestone	Medium	#12 Minimizing the User's Memory Load

The calendar presented in view milestone is color-coded and associated with different milestones, but the calendar dates on the "Add New Milestone" are not. This not only violates the similarity principle of grouping similar items together, but it requires users to memorize different milestones or go back and forth to check on the dates.



**Example**



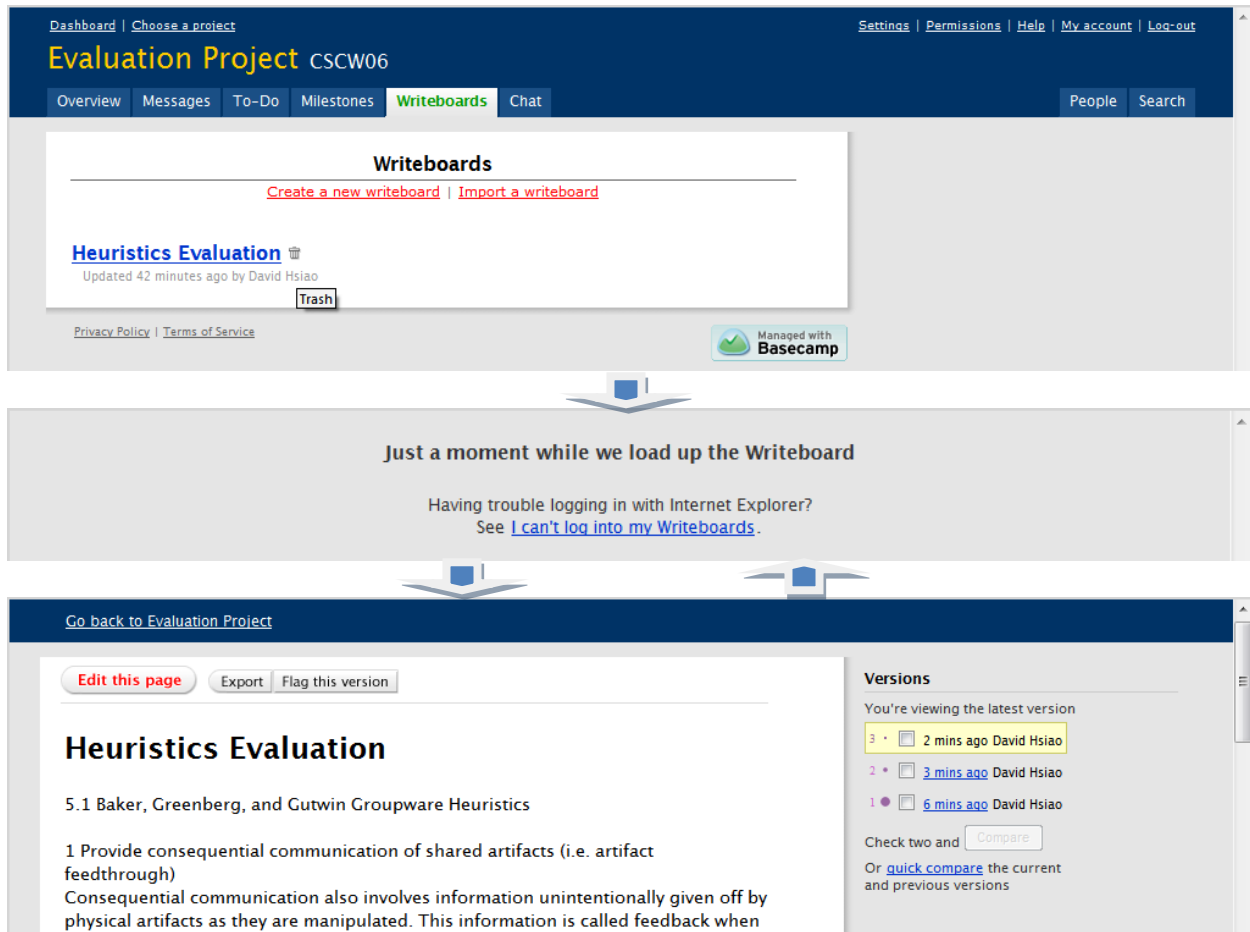
**Solution**

Use the same color-coded calendar mode that is associated with the Milestones in the projects when user is adding new Milestones. This will provide a quick overview of what has been completed and what needs to be finished in the future when adding more tasks.

Issue #	Description	Severity	Heuristic Category
12	Writeboard breaks the browser “back” button	Medium	#13 Clearly Marked Exits

Every Basecamp page has a small “logout” link in the upper-right corner, making it very easy to leave the site from any page. While users can easily leave the application at any point, the ability to exit a given feature and return to another area of the site is less reliable. Most forms for adding a milestone, task, to do list, or message provide an easy cancel button. Other pages, such as a writeboard page, break the browser’s “back” button. When a user clicks on a link to a writeboard, s/he first sees a page saying “please wait while we load the writeboard;” this page then forwards to the document. If the user then presses back, they return to the page asking them to wait, which forwards them back to the document. This should be fixed.

**Example**



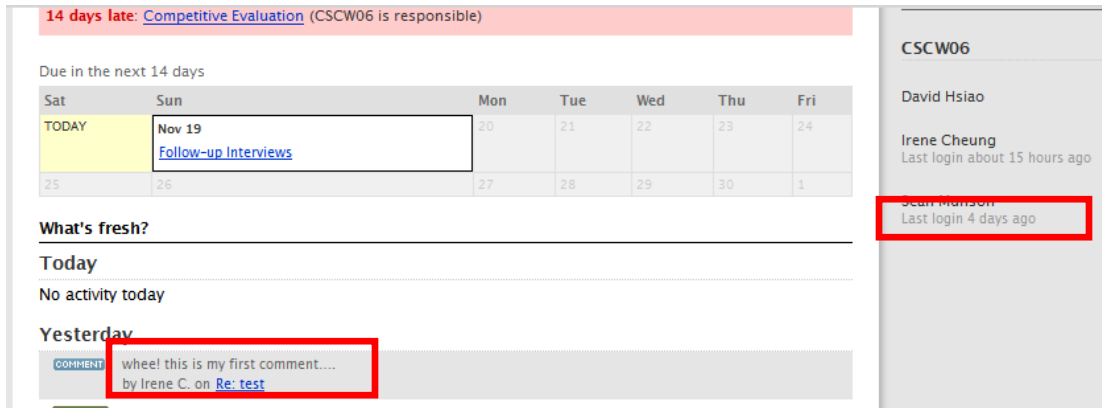
**Solution**

Integrate the Writeboard into Basecamp in a better way so that the look-and-feel is consistent. As part of the same application, functions should have similar system behavior. Therefore, the way that Writeboard operates should also be parallel to other features in Basecamp.

Issue #	Description	Severity	Heuristic Category
13	Small font sizes and low contrasts between texts and background	Medium	#15 Visual Display: <i>Readability</i>

The fonts are small in size, and the color contrasts between the fonts and the background are very low. Both of these reduce readability and may be a problem for users with low eye-sight.

**Example**



The Fonts are Small, and the Contrasts are Low

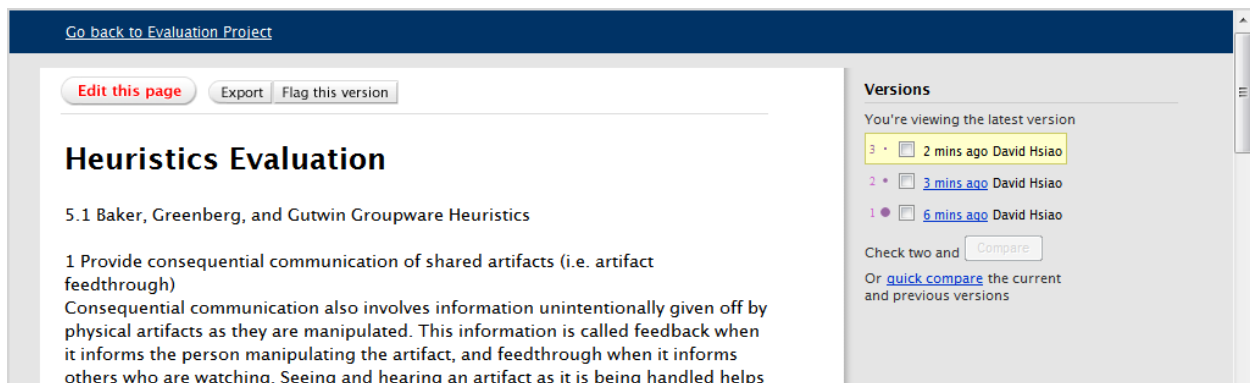
**Solution**

Increase the font sizes and make the contrast between texts and background higher.

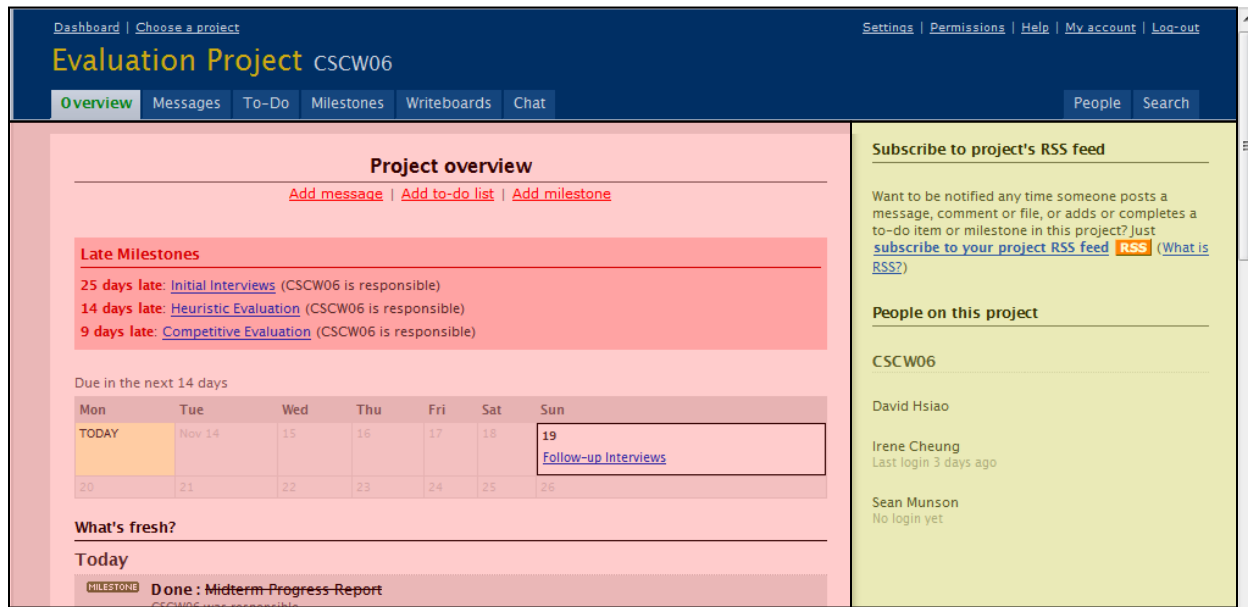
Issue #	Description	Severity	Heuristic Category
14	The Writeboard section has a different look and feel	Medium	#15 Visual Display: Similarity

Even though the Writeboard is an independent product by itself, it should still have the same look and feel when integrated into the Basecamp. 37 Signals developed Writeboard independent of Basecamp, but integrates this feature into Basecamp. Nevertheless, the look and of the Writeboard is still as a separate application from Basecamp. The user is taken to a totally different interface of the Writeboard, and there is no easy way to shift from Writeboard to other features in Basecamp.

**Examples**



Writeboard Screen



Project Overview

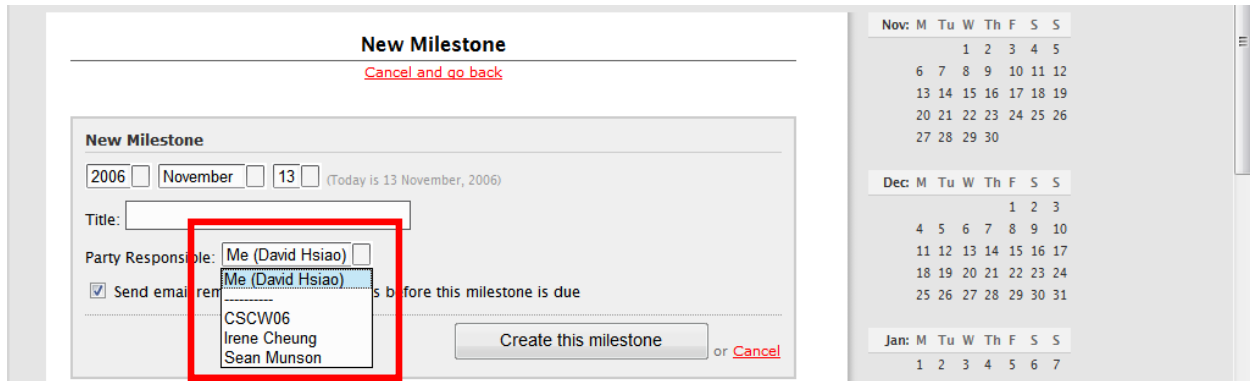
**Solution**

Apply the same design of the Basecamp to Writeboard if it is a part of the Basecamp Project Management system. As a stand-alone application, Writeboard does well in its current design. Nevertheless, when implemented into Basecamp, the overall design should be consistent and that users can switch between features and functions with ease.

Issue #	Description	Severity	Heuristic Category
15	Each Milestone can only assigned to one member	Low	# 4 Support people with the coordination of their actions

When creating a new milestone for the project, only one party can be selected to be responsible for the project. Even though it is possible to create new parties containing several group members, it is an extra task to do. This is the same for the To-do list. Both sections can only assign an item to a single party. With no capabilities to create subtasks, though, we found that tasks might be assigned to the person assigned to compile a section rather than reflect each individual’s contribution to that section. In addition, these two sections do not provide the option to send e-mail to the members in this project group. This feature is available when uploading files or posting new messages. Without this feature, Basecamp requires users to log-on to the system constantly to be informed with the project progress.

**Example**



Can Only Assign Milestone to a Single party

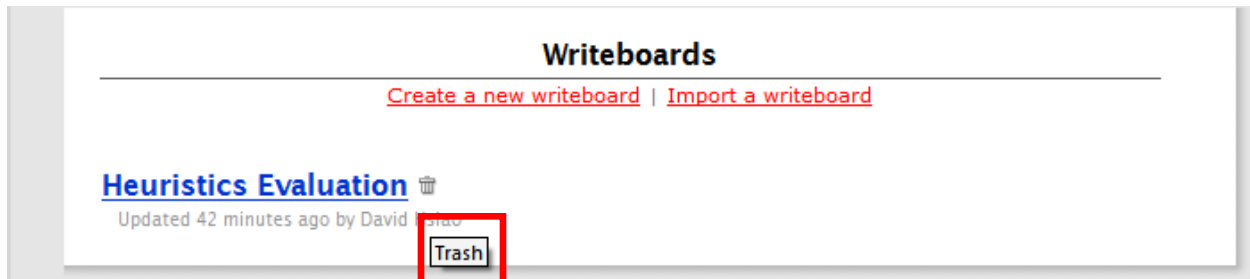
**Solution**

Allow users to assign Milestone to multiple parties at once.

Issue #	Description	Severity	Heuristic Category
16	Tooltip uses the term “Trash” instead of “Delete”	Low	#6 User Terms/User’s Language

The tooltip of this “trashcan” icon shows “Trash” instead of “delete.” This is a minor issue that users still know its function. However, because Basecamp uses the term “delete” in all other features except here, users might get confused.

**Example**



Screenshot Showing Tooltip with the Term “Trash”

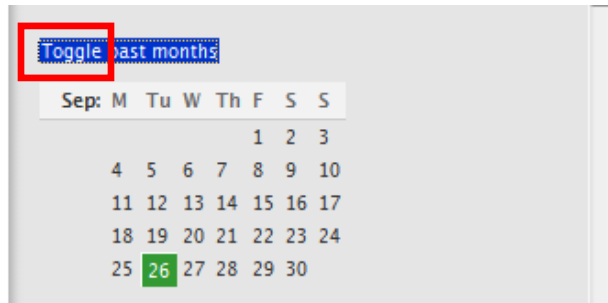
**Solution**

Change the word “Trash” to “Delete” to better match users’ mental models.

Issue #	Description	Severity	Heuristic Category
17	Calendar uses the word “Toggle” instead of “View”	Low	#6 User Terms/User’s Language

“Toggle” is a term that is not used often in people’s daily life. This term is geared toward computer and more technical aspect. Instead of using the word “toggle,” Basecamp can easily fix this issue by using “view.”

**Example**



Calendar in Milestone

**Solution**

Change the word “Toggle” to “Show” or “Expand.”

Issue #	Description	Severity	Heuristic Category
18	Easy setup, but not intuitive access	Low	#7 Natural Order for Tasks

Users encounter two levels of set-up for Basecamp: the initial account, then each successive process. Setting up the initial account is very straightforward: simply choose a plan (six choices ranging from \$149/month for an unlimited number of projects to a free, single-project level), then fill out standard information about the group/administrator using the account. Perhaps the most difficult aspect of this portion of sign-up is creating a Basecamp address – with a world of names to choose from, plus five possible domain names, the unsuspecting user may not understand the implications of choosing one over the other (apparently nothing, as one discovers later). Setting up a project is likewise simple: simply click on the “Sign up” link, name your project, and the new space is ready for information.

After set-up, users access the Basecamp project page for their organization via a unique web address. This web address is created during the initial set-up stage, and this is the only way to access an organization’s Basecamp project site. The users are expected to bookmark the page. If they forgot the address, there is no easy way to find it because the Basecamp homepage only provides information regarding signing up an account, not accessing an account.

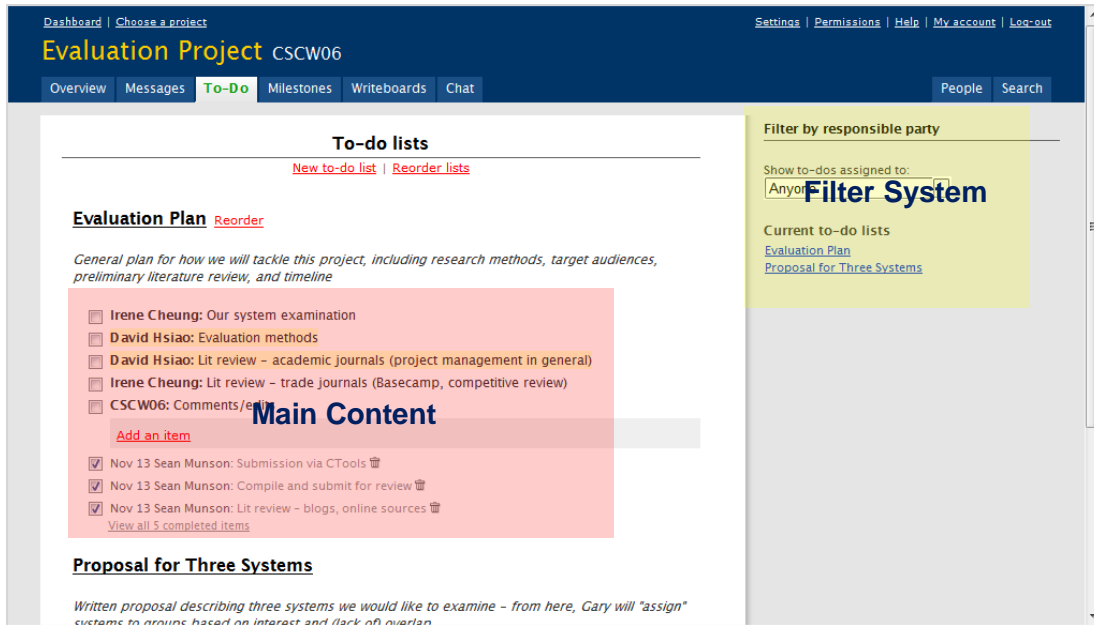
**Solution**

On the Basecamp homepage, allow users to log-in, and the system will display the projects that s/he is involved in. This will eliminate the need to memorize organization’s Basecamp URL all the time, and that the user can access the account through the Basecamp website.

Issue #	Description	Severity	Heuristic Category
19	Filters are visually distant from the main content	Low	#15 Visual Display: Proximity

The screen is divided into three major areas, and the right hand side column acts as a function support area. Some of the features in this area, however, should be placed closer to the main content itself. For example, the filters of the To-do lists should be with the main content so that users can pay attention and get access to these features more easily.

**Example**



Filters are Visually Distant from the Main Content

**Solution**

Reposition the filter system to place near the main content of the To-Do Lists. The filter can locate at the center top of the screen just below the “New to-do list” and “Reorder lists” features.

## Appendix 4: Heuristic Guidelines

### Baker, Greenberg, and Gutwin Groupware Heuristics

#### #1 Provide consequential communication of shared artifacts (i.e. artifact feedthrough)

Consequential communication also involves information *unintentionally* given off by physical artifacts as they are manipulated. This information is called feedback when it informs the person manipulating the artifact, and *feedthrough* when it informs others who are watching. Seeing and hearing an artifact as it is being handled helps to determine what others are doing to it. Identifying the person manipulating the artifact helps to make sense of the action and to mediate interactions.

#### # 2 Provide Protection

Concurrent activity is common in shared workspaces, where people can act in parallel and simultaneously manipulate shared objects. Concurrent access of this nature is beneficial; however, it also introduces the potential for conflict. People should be protected from inadvertently interfering with work that others are doing, or altering or destroying work that others have done. To avoid conflicts, people naturally anticipate each other's actions and take action based on their predictions of what others will do in the future. Therefore, collaborators must be able to keep an eye on their own work, noticing what effects others' actions could have and taking actions to prevent certain activities. People also follow social protocols for mediating their interactions and minimizing conflicts. Of course, there are situations where conflict can occur (e.g., accidental interference). People are also capable of repairing the negative effects of conflicts and consider it part of the natural dialog.

#### # 3 Manage the transitions between tightly and loosely-coupled collaboration

*Coupling* is the degree to which people are working together. It is also the amount of work that one person can do before they require discussion, instruction, information, or consultation with another. People continually shift back and forth between *loosely-* and *tightly-coupled collaboration* where they move fluidly between individual and group work. To manage these transitions, people need to maintain awareness of others: where they are working and what they are doing. This allows people to recognize when tighter coupling could be appropriate e.g., when people see an opportunity to collaborate or assist others, when they need to plan their next activity, or when they have reached a stage in their task that requires another's involvement.

#### # 4 Support people with the coordination of their actions

An integral part of face-to-face collaboration is how group members mediate their interactions by taking turns and negotiating the sharing of the common workspace. People organize their actions to help avoid conflict and efficiently complete the task at hand. Coordinating actions involves making some tasks happen in the right order and at the right time while meeting the task's constraints. Within a shared workspace, coordination can be accomplished via explicit communication and the way objects are shared. At the fine-grained level, awareness helps coordinate people's actions as they work with shared objects e.g., awareness helps people work effectively even when collaborating over a very small workspace. On a larger scale, groups regularly reorganize their division of labor based on what the other participants are doing and have done, what they are still going to do, and what is left to do in the task.



### **# 5 Facilitate finding collaborators and establishing contact**

Most meetings are *informal*: unscheduled, spontaneous or one-person initiated. In everyday life, these meetings are facilitated by physical proximity since co-located individuals can maintain awareness of who is around. People frequently come in contact with one another through casual interactions (e.g. bumping into people in hallways) and are able to initiate and conduct conversations effortlessly. While conversations may not be lengthy, much can occur such as coordinating actions and exchanging information. In electronic communities, the lack of physical proximity means that other mechanisms are necessary to support awareness and informal encounters.

## **Modified List of Jakob Nielsen and Judy Olson Heuristics**

**#6 User Terms/User's Language:** The terms the software application uses (what it calls the objects and what it calls the actions) should be as close as possible to the words users normally think of in conducting the task.

**#7 Natural Order for Tasks:** The order in which the user performs the subtasks should correspond closely with the order the software requires them to be performed.

**#8 Clear & Instructive/Good Error Messages:** Error messages should be clear statements of both the problem and how to recover from it.

### **#9 System Response Time**

- **Keystroke/Mouse (100msec):** Responses to key presses or mouse movements should be within 100 milli-seconds of the act.
- **Computed Response (2 sec):** Normal computed responses (e.g., responses to a request for a font change of the document) should take place within 2 sec, if they are part of an ongoing task.
- **Time Alerts/Response Time:** The only times when system responses can be longer than 2 sec and not disrupt the user's cognition is when they occur at the end of a task, and the user is alerted that the time will be long. Showing how long that delay will be is helpful to the user to decide whether to engage in a secondary task during the time.

**#10 System Failure:** System should be able to recover from a failure with at least disruption to the user as possible.

### **#11 Help and Documentation**

- **Help and Documentation Provided:** Even though systems should be designed so that they are easy to use, help and documentation should be provided.
- **Help Accessible Everywhere:** Help messages should be accessible from any point in the dialog.

- **Help Context Sensitive:** Help should help. It should be written specific to the context in which the help was requested. It should be written sensitive to the task the user was engaged in.
- **Documentation Explained:** Documentation explains both what the functions are in the system and how to use them in common tasks.
- **Documentation Accessible:** Documentation should be accessible through a good keyword index (in the user's vocabulary) and through tabs, headers, and a table of context that makes the grouping of functions obvious.

**#12 Minimizing the User's Memory Load:** Actions should be performed in similar ways on the objects in the application (e.g., all objects should be deleted in the same general way).

**#13 Clearly Marked Exits:** Users do not like feeling trapped by the interface. Users should be able to quit an application with ease.

**#14 Shortcuts Available:** The interface should support shortcuts to quickly access frequently used features.

#### **#15 Visual Display**

- **Readability:** Readability of fonts increases if they are presented in both upper and lower case, serif fonts, variable width strokes, and with appropriate separation.
- **Proximity:** Related items should be grouped spatially; unrelated items should be separated. Gestalt principle of Proximity.
- **Similarity:** Color, highlighting, and special fonts such as bold and italics should be used to indicate similar meaning for those things that cannot be spatially grouped. Gestalt principle of Similarity.
- **Screen Areas:** Screen areas should be used consistently for similar functions. e.g., error messages always displayed in the same, easy to see place.
- **Familiarity:** Display familiar items in familiar ways. e.g., music is shown as musical notation, spatially related items are shown in a spatial display.
- **Less is More:** Only include visual elements and text that is necessary.

## Appendix 5: Bibliography

The following articles helped the team to gain a better understanding of both Basecamp and its competitive environment, namely, project management applications. They have been divided into several categories to reflect their greatest utility in the research of Basecamp.

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