

Written Description

The Communities of Practice Environment (CoPE) is a novel software platform for supporting cooperative effort among formal and informal groups of people who may be separated in time, space, and language. Essentially all previous group-oriented software has focused on one of two approaches: 1) systems for institutional settings, probably because institutions have the most resources; and 2) groups of small scope and limited interaction, for which extremely process-rigid free products (such as Google or Yahoo Groups) are provided. But there are many thousands of voluntary organizations that can benefit from software that helps them work together and achieve concrete goals beyond what is available through existing products. We have developed such a system, called CoPE, implemented it, and deployed it in a variety of user environments. CoPE does not depend on technically sophisticated users or on supporting institutional structures – in fact, CoPE itself can provide the mechanism for groups to establish their preferred working style and institutional memory.

From the technology perspective, CoPE brings together the concepts of content management, group discussion, and decision-making processes to form a customizable system manageable by non-technical users. Content management is a well-known concept both in traditional physical offices and in modern electronic information systems. The concepts of meetings, brainstorming, and working sessions are common means for conducting decision-making processes in face-to-face interaction. Similarly, there are modern electronic information systems that facilitate communication and collaboration. The CoPE system combines electronic content management and modern electronic collaboration and governance systems to enable a type of workflow more streamlined and more capable than current alternatives. It facilitates any kind of cooperative activity whose output can be captured digitally, but is especially useful when group decisions must be made. This unique capability should prove attractive to vendors of portal systems who compete for the loyalty of wide ranging user communities.

The CoPE system relies heavily on parameterization to strike a balance between the expense of highly customizable enterprise-scale collaboration systems and process-rigid free systems. The CoPE system provides a level of customization based upon discrete sets of pre-designed parameters that determine content organization, style, decision-making process types, user access and notification, and other similar characteristics. The choice of these characteristics is not arbitrary; rather, it results from theories of organizational behavior and from extensive user testing. The encapsulation and parameterization of community governance practices is a unique contribution of the CoPE architecture. The testing protocol can be applied to various target groups to determine appropriate sets of parameters for the classes of organizations those groups represent.

The CoPE system is being designed to be released as a package with these customization capabilities already installed. A user group lacking sophisticated technical knowledge or the resources to acquire such knowledge will thus be able to deploy and customize the system to their needs via the parameterization structure described above. The extent of specific expertise required will be limited to the ability to learn to operate the web-based interface used to set the system parameters. In addition to this limited technical expertise requirement, one or more individuals will serve as “coordinators.” The person filling this role will be responsible for coordinating those processes and activities that require manual user administration. Such activities include vetting CoPE membership, structuring discussion around documents, selecting appropriate models of decision-making for various processes, and providing necessary

information to the system (e.g., deadlines, members of various groups, access permissions, document organizational structure, etc.). These tasks require no specialized technical expertise.

The ability to work collaboratively in an asynchronous manner is not novel to the field of information technology. However, the integrated capabilities of CoPE are novel and provide added utility and efficiency to a very wide range of pursuits. For example, typical work products include organizational actions and minutes, public or web releases, operational manuals, process schedules, and best practices guidelines. For many groups, CoPE can provide the central organizing mechanism for all of their activities.

Reduction to Practice

We have achieved initial Reduction to Practice by providing an Internet-based information system through which users can carry out all the essential CoPE functions and have deployed this system in two quite different environments. The initial results are very encouraging. Users have exploited the ability to post documents, have conducted organized discussion of those documents, have searched the archives, and have voted/decided on the documents through a process structured by the system. The visible software for the initial implementation is based on Plone© (<http://www.plone.org>) which operates on the Zope© (<http://www.zope.org>) platform.

The two pilot deployments involved very different user groups. The first group (CVP) consists of people who are widely dispersed geographically, are not experienced computer users, and are not all comfortable in English. The organization is a public one and there is contention for resources and other controversy within the group. This group has been using the CoPE since Fall 2004 and has exploited the archiving capability to organize past as well as ongoing activities.

The second pilot group (CogFac) comprises faculty members at a major research university. They are all sophisticated users and some are computer scientists who do research on software. The group itself is the teaching faculty of a program that is not a university department, which means that the group members are scattered across the campus and have incompatible schedules, making it very hard to meet. This group has conducted all of its business using the CoPE in the fall semester of 2004, without a single physical meeting. For both pilot groups, the CoPE provides the first usable record of its activities after years or decades of prior operations.

We attach five screen images of the pilot CoPE implementation in actual use.

- 1) System Login (User Identification)
- 2) Sample Workspace
- 3) Sample Work Process – Discussion
- 4) Sample Workflow – Voting (Part 1)
- 5) Sample Workflow – Voting (Part 2)

1) System Login (User Identification)

Each user will “login” (identify themselves) to the system. This enables the system to have contextual knowledge of who they are similar to that knowledge which would be tacit to traditional face-to-face meetings and physical work environments.

small text normal text large text

home news members cogsci documents

you are not logged in log in join

you are here: home

navigation

Home

log in

Name
guest

Password
.....

log in

Forgot your password?

New user?

Welcome to the Cognitive Science Faculty Portal

This Portal is for use by the Cognitive Science Faculty at the University of California, Berkeley.

Please Note: Users who had registered with the previous portal will need to re-register (once) with this updated portal.

To register, please visit the [Registration Page](#).

Already registered? [Login](#).

Created by [admin](#)
Last modified 2004-11-29 05:31 PM

<< December 2004 >>						
Su	Mo	Tu	We	Th	Fr	Sa
		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	

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SECTION 508 W3C AA W3C XHTML W3C CSS ANY BROWSER

Fig. 1 – Login/Identification

Login feature circled above in red.

2) Sample Workspace

The following depicts a preliminary sample collaboration workspace. It includes a set of documents and folders, each of which has properties including its workflow state, dates (creation, expiration, discussion, etc.), and associated discussion. In this example, documents represent the substance of the workflow and folders (and sub-folders) are used to organize the state of each substantive object within the workflow. Discussion (see *Fig. 3*) and Voting (see *Figs. 4,5*) comprise the conduct of collaboration and workflow in this example.

Other “parameterizations” of the system (see Written Description above) would use different organization schemes (other than folders for workflow and documents for substance).

The screenshot shows a web browser displaying a Plone workspace. At the top, the Plone logo is on the left, and text size options (small text, normal text, large text) and a search box are on the right. Below the logo is a navigation menu with links for 'home', 'news', 'members', and 'cogsci documents'. A user bar shows the user is 'quest' with links for 'my folder', 'my preferences', 'undo', and 'log out'. The breadcrumb trail reads 'you are here: home » groups » cogsci faculty workspace'. The main content area is titled 'CogSci Faculty Workspace' and includes a link to 'Up one level'. Below this is the heading 'Collaboration Workspace for the Cognitive Science Faculty.' and two document links: '_Curriculum Proposal' (with the subtitle 'Changes to CogSci 1 and 100') and '_Affiliates Proposal'. On the left side, there is a 'navigation' sidebar with 'Home', 'Groups', and 'CogSci Faculty Workspace' (selected). Below it is a 'recent items' section with the message 'No items published or changed since your last log-in.' and a 'More...' link. At the bottom, a footer contains the copyright notice 'Plone and its visual design is Copyright © 2000-2004 by Alexander Limi, Alan Runyan, Vidar Andersen.' and a 'PLONE POWERED' logo. Below that, it states 'This site conforms to the following standards:' followed by icons for SECTION 508, W3C AAA, W3C XHTML, W3C CSS, and RNY BROWSER.

Fig. 2 – Sample Collaboration Workspace

(Note: Excerpted with permission from one of our test groups)

3) Sample Work Process - Discussion

Discussion about a document is one example of work conduct (as part of overall workflow) facilitated by this system (other modes will be selectable through the “parameterization” discussion in the Written Description section above). Below is an example of discussion.

CogSci Faculty Workspace

recent items

No items published or changed since your last log-in.

More...

Recall that the core CogSci faculty can add affiliate faculty who have no fixed responsibilities to the program and no vote. After consulting with the Executive Committee, I propose that all faculty who are affiliates of the ICBS research unit be invited to also be affiliates of the UG program. The current ICBS roster can be found at the web site:

<http://...berkeley.edu/>

Please add any comments using the "Add Comment" feature(s) below.

add comment

Clarification Posted by ivry at 2004-11-29 10:38 PM

"Affiliates" of ICBS is same thing as members.

reply to this

Rationale Posted by feldman at 2004-12-01 03:18 PM

It seems obvious that we want to have an integrated CogSci community.

reply to this

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Fig. 3 – Sample Discussion

(Note: Excerpted with permission from one of our test groups)

The text in the upper-right hand corner of each dashed box (“Created by <name>”) indicates the author of its respective comment. Below and to the right is a control for adding comments. Discussion is organized in a “threaded” manner.

4) Sample Workflow – Voting (Part 1)

In this example, standard majority voting is the method by which workflow decisions are accomplished. The figure below depicts a control (web link) from the top of the document used in *Fig. 3* used to access the voting feature.

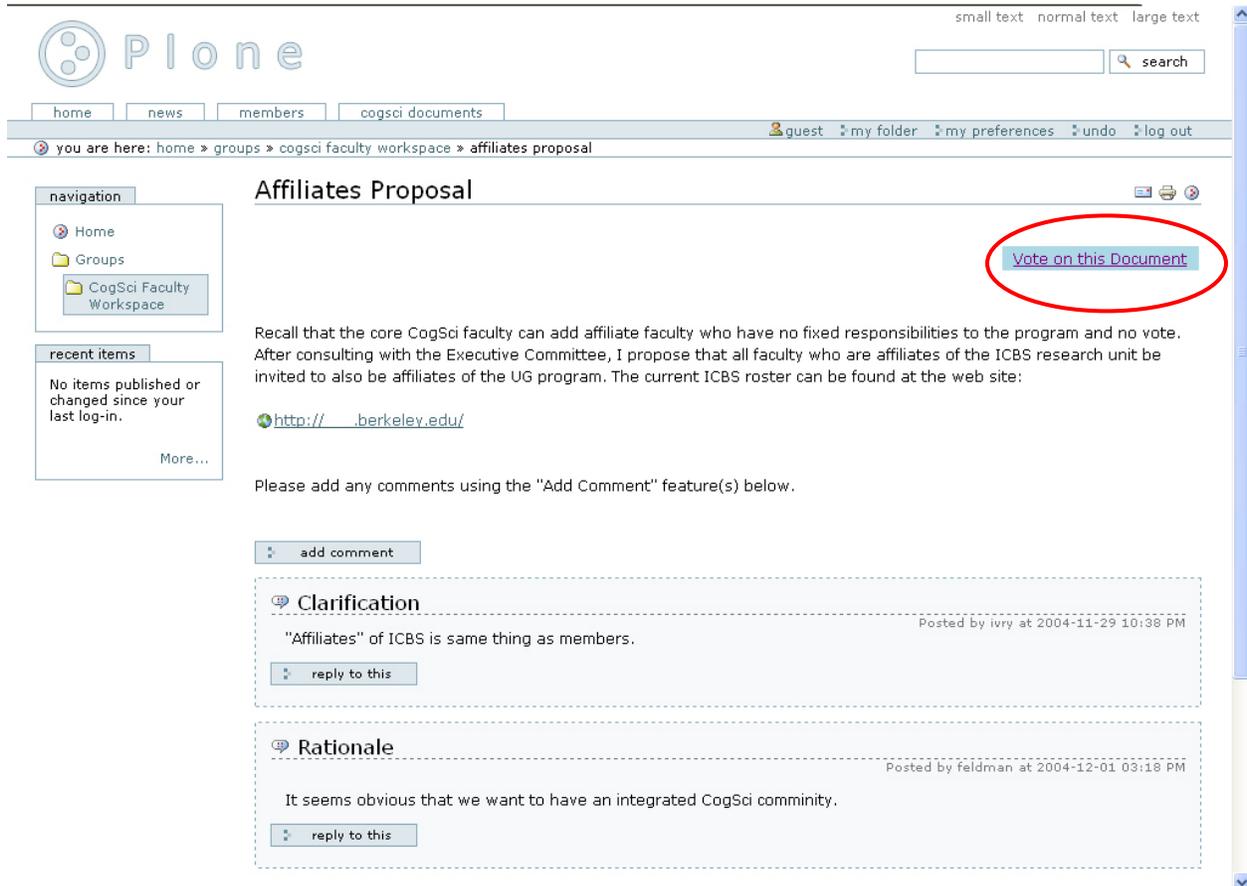


Fig. 4 – Sample Workflow (Voting) Link

(Note: Excerpted with permission from one of our test groups)

Voting link circled above in red.

5) Sample Workflow – Voting (Part 2)

In this example, standard majority voting is the method by which workflow decisions are accomplished. The figure below depicts the voting method of choice (majority rule) and other details about the voting process. It also includes specific voting instructions.

The voting method of choice and voting instructions will change depending on the “parameterization” of the system.

The screenshot shows a Plone web interface. At the top left is the Plone logo. To the right are text size options: 'small text', 'normal text', and 'large text'. Below these is a search box with a magnifying glass icon and the word 'search'. A navigation bar contains links for 'home', 'news', 'members', and 'cogsci documents'. Below the navigation bar is a breadcrumb trail: 'you are here: home > groups > faculty_voting workspace > affiliates vote'. On the right side of the breadcrumb trail are user-related links: 'guest', 'my folder', 'my preferences', 'undo', and 'log out'. The main content area is titled 'Affiliates Vote' and contains the following text: 'Voting form for the CogSci Faculty document "Affiliates Proposal"', 'Document: Affiliates Proposal', 'Voting Open: December 7, 2004', 'Voting Close: December 14, 2004', 'Voting Method: Majority Rule', and a section for 'Voting Instructions' which asks users to email '@icsi.berkeley.edu' with the subject '[CoPE Vote] Affiliates' and to type 'yes' or 'no' in the message body. A 'Back to Document' link is provided at the bottom of the instructions. The footer of the page includes a 'Plone POWERED' logo, a statement 'This site conforms to the following standards:', and a copyright notice: 'Plone and its visual design is Copyright © 2000-2004 by Alexander Limi, Alan Runyan, Vidar Andersen.' The page also shows 'Created by dbthaw' and 'Last modified 2004-11-29 05:26 PM'.

Fig. 5 – Sample Workflow (Voting)

(Note: Excerpted with permission from one of our test groups)