

Activity software: C3MS bricks for socio-constructivist scenarios

TECFA::SEED Project::Working Paper 10 - Version 0.4

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Purpose of this Document:

This document is an inventory of the "C3MS bricks" that exist in the information and communication portals, i.e. what we call Community, Content and Collaboration Management Systems that we started deploying with partners from local school networks. These "bricks" can be assembled in several possible ways and can be used to compose the scenarios proposed in TECFA SEED working paper 11 for the Deliverable D2b. As these two documents are complementary, we believe that they should accompany each other. This document is only a first attempt to assemble in an inventory all those bricks and describe them and the reader should expect important changes and additions in future versions or replacement documents.

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1. INTRODUCTION

For our first action-line (C3MS¹ lightweight tools) we will provide here the inventory of possible “bricks” that exist in those C3MSystems. At the same time, we will give a short description and try to define the potential of each one in an educational scenario.

¹ C3MS is a term invented by the authors and means Community, Content and Collaboration Management Systems

The main goal is to provide not only support for all the scenarios proposed in Tecfa SEED working paper 11 for deliverable 2b but also for many other scenarios that might be conceived (especially by teachers).

2. C3MS LIGHTWEIGHT TOOLS

2.1. What do we call a “C3MS brick”?

C3MS systems are nurtured by a strongly competitive and innovative open source environment and can be adapted/combined/configured according to specific needs and to different scenarios of usage. These systems have a modular architecture based on different components. Most of the information and communication portals (especially the ones that we adopted for our school networks) already include in their default installation several kinds of such components that take care of specific tasks (e.g., a collaborative story/news/journaling system, a links manager, etc.) and are called “**modules**”.

Moreover, there are other available “modules” that can be easily added to the core system of such portals. An example of such a third-party module might be a “Weather block”, a Glossary, a Photo Gallery, etc. So, we can say that there are two kind of modules: “core” and “3rd party” ones. There exist documented APIs for programming this modules and we hope that over time, some modules specially made for educational purposes will “appear” and we may program our own. Many web-applications that existed beforehand as stand-alone applications (e.g. Forums and Wikis) are adapted (or being adapted) for integration into portals like PostNuke. But there exist several interesting Internet applications that can not be easily integrated, i.e., Virtual environments like MOO, but which we still list in this catalogue.

In order to use a term for all these components and structure the presentation of the current document we will call all these modules and applications “**C3MS bricks**”. A “C3MS brick” is a component that takes care of a specific task, can be easily separated from others, can be configured and administered, can be combined and orchestrated with others and all these through the main core portal environment (with the exception of a few).

In our case, we are proposing the above “bricks” to build educational scenarios (mostly CSCL or cooperative ones). A catalogue with exemplary scenarios is provided in working paper 11 for D2b SEED deliverable.

As most development communities for these open-source environments are rather large, there is a prolific production of new external “bricks”, we can have several new modules every new month! That’s why we would like to note down that the inventory that follows in the next chapter, is not complete and the official and support websites should be consulted for the latest ones.

3. INVENTORY OF C3MS BRICKS

The list that follows is strongly inspired from the “postnuke” portal software that we have chosen to use for our initial local communities. Similar “bricks” exist for other portal software. We have to note though, that the “postnuke bricks” collection is probably the richest one and that is in addition to its user system the we have chosen it for our first field trials. We judge also important to inform that all this C3MS technology is in it’s infancy steps, so bugs should be expected (in particular with 3rd party modules and skins

which are called “themes”). Therefore, some technical expertise with MySQL/PHP will be needed to install and configure these portals

For each C3MS brick we summarize a few characteristics and other useful information. Please note again that this is an on-going effort.

Generic name(s)	Name that is usually given in the user community
Software names (Postnuke centric)	A list of names that modules and associated applications and blocks may have.
Functional Description	What the modules does and also a sketch of different functions available for manipulating the contents (needs to be revised)
Structural Description	It's place in the general portal architecture
Pedagogical interest	Hints for pedagogical usages. See also “Support for activities”
Construction process	How to make it available in the (PostNuke) portal
Other Notice	
Support for activities	Pointers to the activities catalog in Tecfa Seed Working Paper 11

Here follows a list of the most common “bricks” that can be found:

<u>3.1. News/Articles/Topics/Sections</u>	Erreur ! Signet non défini.
<u>3.2. FAQ Manager</u>	Erreur ! Signet non défini.
<u>3.3. Search</u>	Erreur ! Signet non défini.
<u>3.4. Search web</u>	Erreur ! Signet non défini.
<u>3.5. Web Links</u>	Erreur ! Signet non défini.
<u>3.6. Polls/surveys</u>	Erreur ! Signet non défini.
<u>3.7. Top List</u>	Erreur ! Signet non défini.
<u>3.8. Member profile</u>	Erreur ! Signet non défini.
<u>3.9. Rating</u>	Erreur ! Signet non défini.
<u>3.10. Mailing lists</u>	Erreur ! Signet non défini.
<u>3.11. Forums/Bulletin boards</u>	Erreur ! Signet non défini.
<u>3.12. Calendar/Planner</u>	Erreur ! Signet non défini.
<u>3.13. Wiki</u>	Erreur ! Signet non défini.
<u>3.14. Forms</u>	Erreur ! Signet non défini.

<u>3.15. Word games</u>	Erreur ! Signet non défini.
<u>3.16. Gallery</u>	Erreur ! Signet non défini.
<u>3.17. Glossary</u>	Erreur ! Signet non défini.
<u>3.18. WebCam</u>	Erreur ! Signet non défini.
<u>3.19. EzMS</u>	Erreur ! Signet non défini.
<u>3.20. Who Is Online</u>	Erreur ! Signet non défini.
<u>3.21. Chat/Shoutbox</u>	Erreur ! Signet non défini.
<u>3.22. Project management</u>	Erreur ! Signet non défini.
<u>3.23. Upload-Download</u>	Erreur ! Signet non défini.
<u>3.24. Review – Books</u>	Erreur ! Signet non défini.
<u>3.25. Headlines</u>	Erreur ! Signet non défini.
<u>3.26. Yellow pages</u>	Erreur ! Signet non défini.
<u>3.27. Feedback</u>	Erreur ! Signet non défini.
<u>3.28. MOO</u>	Erreur ! Signet non défini.

3.1. News/Articles/Topics/Sections

Generic name(s)	News/Articles/Topics/Sections
Software names (Postnuke centric)	News, Submit_News, Story Submission Module, Topics Newsletter, NewsPortal, PN Rapido Stories, PN Submit News PDHTML
Functional Description	Submit news, display the news on the index page, post new articles or stories or topics on the site. Functions: Submit, comment, edit, delete, rate, search, browse, moderate
Structural Description	This is a core module of most portals but there exist also some 3 rd party ones with special features
Pedagogical interest	Interact by providing new information (to start a story, a project, an activity), comment information of others, asynchronous debate, present an expert's view on a theme
Construction process	Exists by default in the main menu
Other Notice	Can be commented
Support for activities	Brainstorm, IntroWork, SendFeedBack, SubmitStory, SubmitComment

3.2. FAQ Manager

Generic name(s)	FAQ (Frequently Asked Questions)
Software names (Postnuke centric)	FAQ
Functional Description	Submit Frequently Asked Questions. Functions: Post, answer, comment, edit, delete, rate, moderate
Structural Description	Internal official module
Pedagogical interest	Knowledge base or online help. Give the opportunity to students to ask questions and share the answers in this simple knowledge base.
Construction process	Exists by default in the main menu
Other Notice	
Support for activities	SubmitQuestion, SubmitAnswer

3.3. Search

Generic name(s)	Search
Software names (Postnuke centric)	Search
Functional Description	Search reviews/users/stories/faqs Functions: Submit, advanced submit, browse
Structural Description	Internal official module
Pedagogical interest	Learn how to search information in the portal Treasure hunt inside the portal
Construction process	Exists by default in the main menu and as a form according to the theme used.
Other Notice	
Support for activities	HandsOn, SearchWeb

3.4. Search web

Generic name(s)	Search web
Software names (Postnuke centric)	Google search, PN DMOZ Search, websearch
Functional Description	Search the web Functions: Submit, advanced submit, browse
Structural Description	External module
Pedagogical interest	Resource-Based learning in information age - Gather resources, learn how to search information, learn how to use search engines
Construction process	Follow instruction notes
Other Notice	Complementary to Web Links “brick”
Support for activities	SearchWeb

3.5. Web Links

Generic name(s)	Web Links
Software names (Postnuke centric)	Web_Links, Links
Functional Description	Submit web links that can be classified into categories and subcategories, for which a small description is asked. Links can be searched, viewed by category and submission date. Moderation can be applied. Functions: View (several parameters), submit, edit, delete, rate, moderate, create/edit/delete category or subcategory
Structural Description	It exists as an internal official module but there exist also external ones
Pedagogical interest	Gather resources
Construction process	Exists by default in the main menu
Other Notice	Can be rated by users
Support for activities	CommentLinks, CreateCategories, RateLinks, SubmitLinks List of resources (2.1.a)

3.6. Polls/surveys

Generic name(s)	Polls/surveys
Software names (Postnuke centric)	NS-Polls
Functional Description	Voting System Module
Structural Description	Internal official module Functions: Submit, edit, delete, vote, view statistics, archive
Pedagogical interest	Rate different kind of things (ex: vote for the best story) or make surveys (for ex: to show a real example in statistics)
Construction process	Exists by default as a separate block and can be administered from the main administration menu.
Other Notice	Can be commented
Support for activities	EditVote, VoteFor

3.7. Top List

Generic name(s)	Top List
Software names (Postnuke centric)	Top_List
Functional Description	Display top x listings
Structural Description	Internal official module Functions: View, browse, configure
Pedagogical interest	Motivate by appreciating students input according to several criteria (the best rated works, the most commented ones, etc.)
Construction process	Exists in the main menu and as a separate block.
Other Notice	Complements to the brick News/Articles/Topics/Sections
Support for activities	ShowBest

3.8. Member profile

Generic name(s)	Member profile
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Software names (Postnuker centric)	NS-User, Your Account Your Own Page
Functional Description	Description of each user, defining a profile, personal page Functions: Edit, browse
Structural Description	Internal official module External module
Pedagogical interest	Ask students to present themselves in an interesting way (ex: speak for their nationality, their country, their town) or present another student the way that they see him. Also for community building (as a side-effect in pedagogy)
Construction process	Exists by default in the main menu and users can edit already by the time that they are registered and can always update through their own account.
Other Notice	Complementary with Members_List and New User modules
Support for activities	(useful for community building efforts)

3.9. Rating

Generic name(s)	Rating
Software names (Postnuker centric)	-
Functional Description	Rate an information entity in the portal Functions: rate
Structural Description	Actually it is not a “brick” like all the others mentioned in this inventory as it makes part of several “bricks” like “Stories” and “Web links”
Pedagogical interest	Motivate and peer interactions
Construction process	Exists by default next to each entity in the main menu and users can edit already by the time that they are registered and can always update through their own account.
Other Notice	
Support for activities	ShowBest

3.10. Mailing lists

Generic name(s)	Mailing lists
Software names (Postnuke centric)	Mail Users Admin
Functional Description	Mail all/individual users Functions: Submit
Structural Description	Internal official module
Pedagogical interest	Inform, give a feedback, stimulate
Construction process	Exists by default through the main administration menu
Other Notice	Unfortunately it is impossible with postnuke to send email only to specific subgroups of uses. For the moment, we can mail individuals or all the members.
Support for activities	SendFeedBack

3.11. Forums/Bulletin boards

Generic name(s)	Forums/Bulletin boards
Software names (Postnuke centric)	XForum, phpBB, Flash Forum, phorum, forum, Forums
Functional Description	Classical discussion forums Functions: Submit, comment, moderate
Structural Description	External modules
Pedagogical interest	Discuss, argument, contribute, debate
Construction process	Have to be downloaded and installed separately
Other Notice	Read carefully first other users comments to see that there is no significant bug and choose the most stable and rich one.
Support for activities	BrainStrom, CreateForum, IntroWork, SendFeedBack, SubmitComment, SubmitStory

3.12. Calendar/Planner

Generic name(s)	Calendar/Planner
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Software names (Postnuke centric)	PostCalendar, Calendar, Evenements, Flash calendar, Ephemerids Admin
Functional Description	Event calendar and journal of the day (Shared agenda) Functions: Submit, browse, edit, delete, moderate
Structural Description	External modules
Pedagogical interest	Organize projects, announce events (i.e., follow expeditions, field trips, etc.), reminder for activities (by using it as a shared agenda)
Construction process	Follow installation notes
Other Notice	Often we use a calendar and an ephemeride at the same time
Support activities for	EditCalendar

3.13. Wiki

Generic name(s)	Wiki
Software names (Postnuke centric)	PhpWiki Module
Functional Description	Collaborative hypertext editing Functions: Edit, browse, create new page, compare versions
Structural Description	External module
Pedagogical interest	Co-construct documents around a specific theme (i.e., encyclopedia, reportage, etc.)
Construction process	Follow installation rules
Other Notice	User and permission administration is separate from the rest portal
Support activities for	BrainStrom, CoEdit, CreatePage, IntroWork, DistributeTasks

3.14. Forms

Generic name(s)	Forms
Software names (Postnuke centric)	HotForms Module
Functional Description	Define HTML forms (like small quiz) that submit info by email Functions: Answer, Submit, edit, delete
Structural Description	External module
Pedagogical interest	Make quizzes, questionnaires, etc.
Construction process	Follow installation rules
Other Notice	The most wanted module!!! (for the moment it doesn't exist much but things are changing fast as several implementations are in their way)
Support for activities	

3.15. Word games

Generic name(s)	Word games
Software names (Postnuke centric)	Hangman module, Crossword module
Functional Description	The know word games Functions: Play, feedback, edit, delete
Structural Description	External modules
Pedagogical interest	Learn orthography, new terms, etc. community building
Construction process	Follow installation rules
Other Notice	
Support for	(can be used in some language teaching scenario)

activities	
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3.16. Gallery

Generic name(s)	Gallery
Software names (Postnuke centric)	My eGallery, Magnish Image Gallery, PN Imagery, Screenshots
Functional Description	Photo and Movie Gallery Functions: Browse, submit, comment, edit, delete, moderate
Structural Description	External modules
Pedagogical interest	Co-construct documents around a specific theme
Construction process	Follow installation rules
Other Notice	Most produce the thumbnails needed for the browsing
Support activities for	EditGallery

3.17. Glossary

Generic name(s)	Glossary
Software names (Postnuke centric)	PN Glossary, Dictionary
Functional Description	Produce a thesaurus of words like a glossary or a dictionary Functions: Submit, edit, delete, moderate
Structural Description	External modules
Pedagogical interest	Co-construct glossaries like knowledge bases (a scenario can be to ask the students to search for the definitions of several terms)
Construction process	Follow installation rules
Other Notice	Most produce the thumbnails needed for the browsing

Example scenarios	EditGlossary
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3.18. WebCam

Generic name(s)	WebCam
Software names (Postnuke centric)	MyLiveKam
Functional Description	Live web camera Functions: Observe
Structural Description	External module
Pedagogical interest	Observation, community building (net meeting)
Construction process	Follow installation rules
Other Notice	Needs also a web camera
Support activities for	(useful for community building, e.g. when classes work together over distance)

3.19. EzMS

Generic name(s)	EzMS
Software names (Postnuke centric)	EZCMS, EZ Submit
Functional Description	Easy Content Creator, a WYSIWYG editor to submit articles Functions: Edit, delete, submit, browse
Structural Description	External module
Pedagogical interest	Observation, community building
Construction process	Follow installation rules
Other Notice	Some bugs are reported
Support for	CoEdit, CreatePage

activities	
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3.20. Who Is Online

Generic name(s)	Who Is Online
Software names (Postnuke centric)	Who Is Online Module
Functional Description	Awareness block for users on line and for individual authentication Functions: Be aware
Structural Description	Internal official module
Pedagogical interest	Presence awareness – important for community building in communities of practice
Construction process	Exists as a separate block in the basic installation
Other Notice	Complements with a “Chat/Shoutbox”
Support activities for	(useful for community building)

3.21. Chat/Shoutbox

Generic name(s)	Chat/Shoutbox
Software names (Postnuke centric)	Chat, IRCchat, webchat, Shoutbox
Functional Description	Synchronous discussion (chat) or postings of little «blurbs» (asynchronous) Functions: Submit, Read
Structural Description	External modules
Pedagogical interest	Synchronous discussion, group building, community building, guest book, reminders
Construction process	Follow installation rules
Other Notice	Complements with “Who Is Online”

		Some show also “smilies”
Support activities	for	BrainStorm, Moderate, CoEdit, DistributeTasks (in particular at distance)

3.22. Project management

Generic name(s)	Project Management
Software names (Postnuke centric)	Dynamic Planning Module, To-Do List
Functional Description	Project organization (planning) and specification, task distribution Functions: Add or attribute tasks, make groups, give feedback, time planning
Structural Description	External modules
Pedagogical interest	Project-Based Learning, collaboration management, teaching of project management
Construction process	Follow installation rules
Other Notice	Important module that is complemented with a calendar and an ephemeride
Support activities	for PlanProject, DistributeTasks

3.23. Upload-Download

Generic name(s)	Upload-Download
Software names (Postnuke centric)	Uploads module, Downloads
Functional Description	Upload or download files Functions: Submit, ask to download, browse uploads (several parameters), moderate
Structural Description	External modules
Pedagogical interest	Document sharing (like upload of essays, summaries, etc.), peer interactions, resources

Construction process	Follow installation rules
Other Notice	Bugs reported
Support activities for	CreatePage

3.24. Review – Books

Generic name(s)	Review – Books
Software names (Postnuke centric)	Reviews, Books
Functional Description	Books reviews and/or recommendations with rating, comments, suggesting of books. Books may have images, descriptions and affiliate links to online bookstores. Not only focused on books, but any catalogue-driven-theme. Functions: Submit, edit, delete, moderate, rate, comment
Structural Description	Reviews is an internal module and Books an external one
Pedagogical interest	Develop critic mind, argumentation, motivation to read books
Construction process	Reviews exist by default installation while for books follow installation rules
Other Notice	
Support activities for	KeepReference

3.25. Headlines

Generic name(s)	Headlines
Software names (Postnuke centric)	-
Functional Description	News syndication - Import/export headlines with other portals Functions: Import, export, configure
Structural Description	Internal module

Pedagogical interest	Community building with other similar portals, dissemination of results to other interested parties, resources, get the web spirit (web culture)
Construction process	Import: exists in the default installation as a separate block that can be configured Export: RDF file that can be configured
Other Notice	
Support activities for	

3.26. Yellow pages

Generic name(s)	Yellow pages
Software names (Postnuke centric)	YellowPHP, Open Directory, Yellowpages
Functional Description	Sophisticated directory that categorizes information and subcategorises name and address information with web link and detailed text or extra page in both text and html. Functions: Submit, edit, delete, moderate, browse, rate, comment
Structural Description	External modules
Pedagogical interest	Resource-Based Learning, classification, information visualization
Construction process	Follow instruction notes
Other Notice	
Support activities for	

3.27. Feedback

Generic name(s)	Feedback
Software names (Postnuke centric)	Feedback module
Functional	HTML form that acts similar to a guest book and targets to

Description	give a feedback to the portal by it's users Functions: Submit, edit, delete, moderate
Structural Description	External module
Pedagogical interest	Feedback to projects, activities, grading, suggestions to teachers by students or other teachers etc.
Construction process	Follow instruction notes
Other Notice	
Support activities for	

3.28. MOO

Generic name(s)	MOO server and MOO client
Software names (Postnuke centric)	MOO server, High Wired enCore database, tkmoo client
Functional Description	A Moo is a text-based virtual environment. In addition, some databases like enCore include a web client & server system.
Structural Description	Separate Internet application
Pedagogical interest	
Construction process	
Other Notice	
Support activities for	

4. SELECTION, INSTALLATION AND CONFIGURATION OF PORTALS

This is a section that will be further developed in a next version. For the moment, we just summarize the basic steps:

4.1. Selection of Portals

We have examined a fair number of portals as candidates to support educational scenarios and we focused on three main classes:

1. Simple WebLogs
2. Complex WebLogs, community enhanced CMS systems built with scripting languages, complex news systems etc., i.e. systems that grow into what we call C3MS (Community, Collaboration and Content management Systems)
3. Large Portal Systems or Java-based modular portals.

We mostly concentrated on portals programmed in PhP and Java. PhP is TECFA's principal language for writing web applications. It is a powerful and relatively easy to learn scripting language despite its syntactical inheritance from C. In addition, it has become the Open-Source most popular scripting language and there are more portals written in PhP than in any other. Java, on the other hand, is a difficult environment but it is the place where more advanced stuff happens, i.e. the Cocoon 2 framework and Portlet servers like Jahia or JetSpeed.

Here are our recommendations of portals that you can safely experiment with, provided that you master typical linux/open source installation procedures. The list is based on what little we have learned from some quick testing and early field testing with some. So take these with a grain of salt.

Portal Name	Technology	Type	Comment
PhpWebLog	PhP/MySQL	WebLog	Extra modules : calendar, shoutbox, etc., no user system, some basic content management. Small and fast. ☺
PhpWebSite	PhP /MySQL	Simple CMS/WebLog	Good compromise ☺ between phpWebLog and PostNuke. Ergonomic interface and good code but not very advanced system for content distribution according to authentication (user permissions).
PostNuke	PhP/MySQL	C3MS	Very popular, many plugins and themes (of very different quality), nice user system and generally quite powerful administration. The core system is stable, but a bit slow.
Drupal	PhP/MySQL	Simple C3MS	Features a collaborative book and a WebLog per user ☺
GeekLog	PhP /MySQL	Complex WebLog	Like phpWebSite, but features a user system. Clean coding and fast ☺ , "My News"
DaCode	PhP /MySQL	News Portal	Like phpWebSite or GeekLog,

		/WebLog	configuration via a file. Clean and efficient and french ☺ “My News”
Jahia	Java/HSQL	Flexible enterprise portal	Implements a portlets architecture, has a sophisticated role model too. Commercial, but open source and it is made in Geneva ☺
Ars Digita	Java / Oracle	Semi-commercial portal	The only portal makes who explicitly seem to share our ideas ☺
Radio Userlan	Frontier	Commercial WebLog	WebLog for the masses ☺ made by a nice company

4.2. Installation

- Installation of an Open Source C3MS Portal needs at least excellent reading skills and maybe access to a technical wizard that can bail you out. In our opinion, open source servers and portals can be installed by persons with very little programming experience, however they need to have the mind set for carefully following instructions, edit files and type commands in terminals.
- Make sure that you have the required software, which most frequently is the Apache Serveur with a PhP module plus the MySQL data base server. This architecture is available for *nix and Windows platforms. Inquire with your ISP if they support this technology and whether they can help you with problems.
- Basic installation usually means to upload an archive (zip or gz) to a server, decompress it, edit parameters in a file and the move on with a web-based installation form. Sometimes you have to manually upload an SQL definition file to a database, sometimes you need to fix file permissions. A first task after the basic installation is to add extra-modules, which follow the same principle. Count 3 days for this if you are a beginner, and about 2-4 hours if you are used to installing server software.
- Configuration of the basic layout (including adding applications to menus, installing blocks, changing the Logo etc.) comes next. This is mostly done via an administration interface for which documentation is not as good as it will be in the future. Can take you from 1 hour to several days according to what sort of customization you want.
- Next, educational scenarios must be planned and maybe additional tools installed and configured. Maybe some content needs to be added too.
- Since there are no provisions for organizing workflow between modules, the teacher will have to manually write down instructions for each step in some

“page” and probably also provide a block with direct links to each activity implemented with a module.

- Finally, students must be given logins and default permissions for certain modules may need to be altered

The cost of installing and running a portal is currently higher than it should be. This is mostly due to the fact that most software is still in beta stage and rapidly changing. Therefore instructions are not always up-to-date and modules that will run fine in one version will not run in the next one (at least in the beginning, as after a while they do of course). TECFA may, sometimes in the future, specially pre-pack systems geared towards support of educational activities and communities.

5. RESOURCES

5.1. Postnuke modules

- [1] <http://mods.postnuke.com/>
- [2] <http://www.nukeaddon.com/>
- [3] <http://groundzero.xtremeoverclockers.com/>
- [4] <http://www.boomtchak.net/> (in French)
- [5] <http://www.trollix.com/> (in French)
- [6] <http://openmind.pwp.ru/pub/Articles/0003/>

5.2. Wikis

- [7] **PhpWiki:** <http://phpwiki.sourceforge.net/>
- [8] **Swiki/CoWeb:** <http://coweb.cc.gatech.edu/csl/9>
- [9] **WikiWiki:** <http://c2.com/cgi/wiki?WikiWiki>

5.3. Resource Pages @ Tecfa

- [10] **Portals:** <http://tecfa.unige.ch/guides/portals/pointers.html> (Index)
- [11] **MOO:** <http://http://tecfa.unige.ch/moo/builders.html> (Index)