



OpenLearn Initiative

LabSpace e-learning and collaboration tools

Progress Report from Phase 1 (May 2006 – March 2007)

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1	Introduction	1
2	LabSpace resources, dissemination and collaborations.....	1
2.1	Integration of KMi tools with Moodle.....	1
2.2	Getting started.....	2
2.3	Hosting external OER providers.....	3
2.4	Dissemination	4
3	Peer-to-Peer (P2P) Collaboration	6
3.1	FlashMeeting Live and FlashMeeting Memo.....	6
3.2	Usage data.....	8
3.3	Linking public work and public learning	9
3.4	Release schedule	10
4	Social Presence and Identity.....	11
4.1	MSG Instant Messenger.....	11
4.2	Usage data and observations.....	13
4.3	Reflections on main achievements.....	15
4.4	Release schedule	17
5	Knowledge Mapping	19
5.1	Compendium.....	19
5.2	Usage data.....	22
5.3	The role of Knowledge Maps in supporting OERs.....	22
5.4	Release schedule	26
6	Conclusions and future trajectories.....	27

1 Introduction

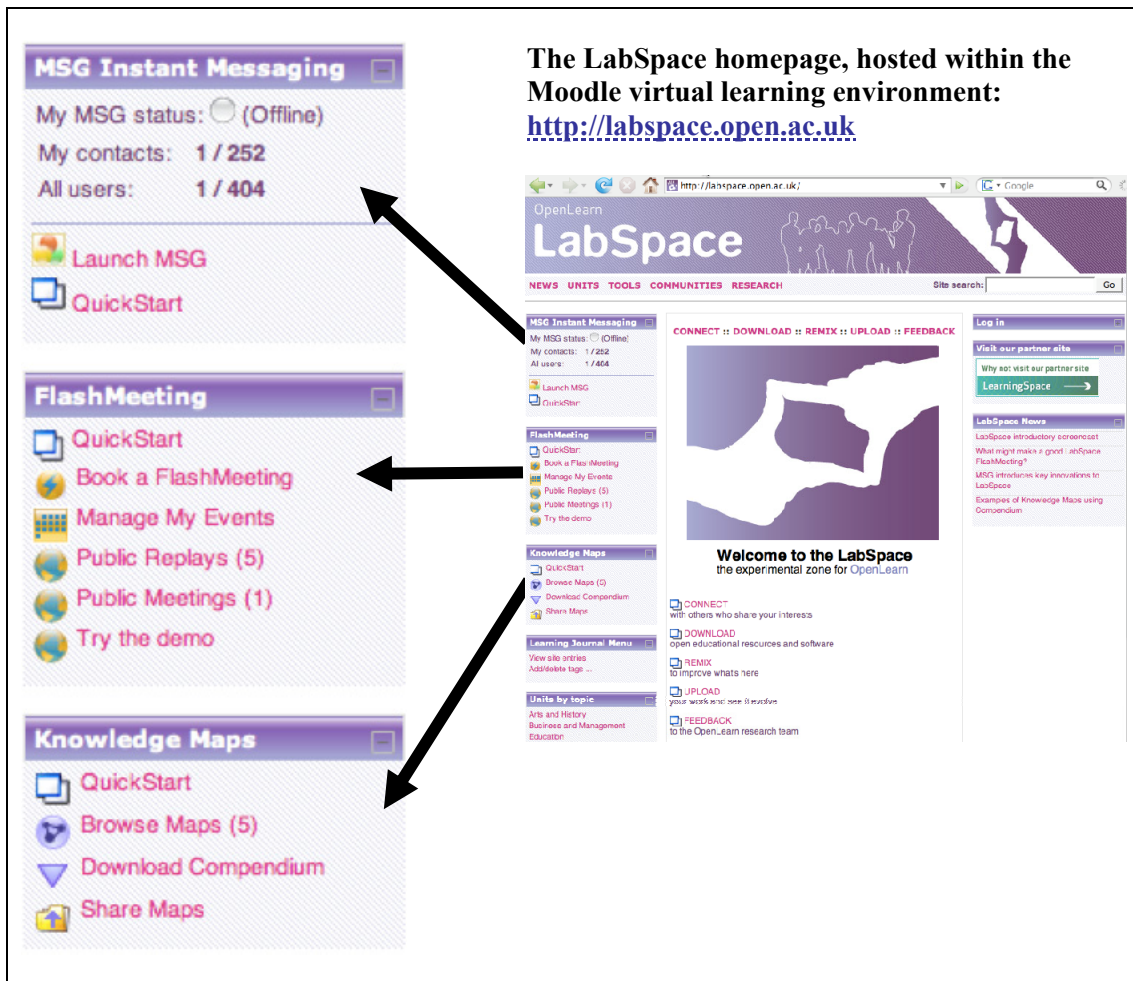
This report summarises the progress made by the Knowledge Media Institute (KMi) in Phase 1 of the Open University's *OpenLearn* initiative [www.open.ac.uk/openlearn]. KMi is contributing to OpenLearn by integrating three of its e-learning support tools into the Web virtual learning environment used to deliver the OU's Open Educational Resources (OERs), and further developing their capabilities. The tools are being released initially within the LabSpace experimental zone, with a view to migrating them into the LearningSpace in Phase 2.

The remainder of this report summarises the progress made under the three activity strands we are investigating (*Peer-to-Peer Collaboration, Online Presence & Identity, and Knowledge Mapping*) which follow after summarising the general resources for learners and educators that have been built into the LabSpace. Readers are referred to the KMi project website [<http://kmi.open.ac.uk/projects/osc>] for background information on these tools, and the concept of Open Sensemaking Communities, which is not reiterated in this progress report.

2 LabSpace resources, dissemination and collaborations

2.1 Integration of KMi tools with Moodle

From an end-user's perspective, the primary development is that KMi's e-learning and collaboration tools are now integrated as standard Moodle 'blocks', i.e. modules in the margin which add new capabilities, as illustrated below:



Behind the scenes, there has been a lot of work to ensure a single login point for users who have profiles, who can then move smoothly between the other tools without the need for further authentication. We do not detail this work in this report.

2.2 Getting started

A **QuickStart Guide** for each tool is linked from its block on the homepage of the LabSpace and each OER unit, providing a brief introduction to the tool's potential uses within OpenLearn. A screencast movie demonstrates how all the tools could be used in concert:

LabSpace introductory screencast
 by KMi Admin - Monday, 6 November 2006, 02:47 PM






Check out the new screencast that demonstrates the use of the LabSpace e-learning tools MSG, FlashMeeting and Compendium:

[4 min 43sec]

Reply

LabSpace demonstration screencast:
<http://kmi.open.ac.uk/projects/osc/screencasts/labspace-intro>

Providing more in-depth learning resources, several courses for educators have been started by the KMi team, to introduce educators to pedagogical issues associated with deploying the tools.¹

Tools_5 Knowledge Mapping for Learning Design	This research zone hosts a group interested in Learning Design using the software Compendium. We will explore mapping techniques and learning design methodologies to plan units for the OpenLearn Project and online courses in general. Maps can be a useful strategy for organising and visualising learning design. They can be used to integrate important issues such as learning outcomes, tasks, assessment , etc...
Tools_2 Using knowledge media tools to foster learning communities 	The main purpose of this research area is to explore and discuss the uses of Knowledge Media Tools in the LabSpace to develop your learning community.
Tools_3 Knowledge Mapping and Digital Inclusion 	This research zone hosts a group who attended an Open Content workshop run by OpenLearn team members at the ICDE (International Council for Open and Distance Education) 2006 World Conference in Rio de Janeiro. This group has been testing Moodle, FlashMeeting and Compendium prior to the LabSpace launch, and is now switching to the LabSpace to continue. Now this group is open to everyone interested in Knowledge Mapping and Digital Inclusion. The working language is Portuguese.
Tools_4 Desktop Videoconferencing and Technology-enhanced Learning 	Background and historical information on desktop videoconferencing, what equipment is needed, its benefits and popular features and how to work with FlashMeeting in LabSpace.
Tools_1 Learning & Collaboration Tools: QuickStart Guide 	These QuickStart guides introduce the different learning-support tools offered in the LabSpace.
Cont_1 Re-using and Remixing Content: Overview 	This guide provides an overview of three ways you can re-use and remix our content.


These courses can be found under the LabSpace OER topic “Using Tools and Content”:

<http://labspace.open.ac.uk/course/category.php?id=15>

2.3 Hosting external OER providers

A dimension of the LabSpace concept that was always envisaged, and which has proven to be of immense interest, has been the idea of hosting OER groups who wish to use LabSpace tools, regardless of their location. We started by creating spaces for two partners currently engaged in international development collaborations with the OU (see below), and will be opening this up to a wider constituency as we add more flexible permissions and functionality for uploading a variety of OER file formats.

¹ These are in fact resources developed initially to support face-to-face workshops held both within the OU and at external OER/e-learning conferences, but making them into OERs seemed to be the obvious thing to do.

DKN OpenUniv-UNESCO Project 

This research zone hosts a collaboration between the Diaspora Knowledge Network Project of UNESCO and the OpenLearn LabSpace. UNESCO's programme on International Migration has, as one of its goals, to strengthen the capacity, sustainability and effectiveness of Diaspora Knowledge Networks (DKNs) as a means of promoting "brain gain" (in contrast to "brain drain") through the use of internet tools such as those offered by the LabSpace.

Learn more about DKNs at: www.dk-network.org

ECOSENSUS1 OpenUniv-Guyana Collaboration 

A project to build bridges between the Amerindian tribes of the Rupununi river basin in Guyana, and researchers in environmental sustainability at the Open University. The UK ESRC (Economic & Social Research Council) is resourcing a project called ECOSENSUS to integrate a tool for modelling geographical information, a tool for knowledge mapping, and open educational resources, to build the capacity of the local people to engage in the decisions that being taken about their region. After prototyping their open educational resources in a basic Moodle installation, the ECOSENSUS project is switching to the LabSpace for the next phase.

Learn more: [ECOSENSUS Project](#)

ECOSENSUS2 OpenUniv-Guyana Collaboration (v2) 

This area hosts Version 2 of the [ECOSENSUS](#) project open educational resources.

2.4 Dissemination

The KMi team has been active in raising awareness of the availability and uses of these tools, giving talks and workshops with OpenLearn partner organisations, and with practitioners and researchers in the national and international conferences, as summarised below.

Date	Institution	Event/Participants
Oct 2006	CNR/LIMSI & UNESCO Paris	Invited address to workshop on Diaspora Knowledge Networks
	Dolan DNA Learning Lab, Cold Harbor Springs NY	Invited address to Hewlett Foundation sponsored workshop on Educational Science Portals
Nov 2006	The Open University	Compendium Workshop for OpenLearn Academic Team
	Nottingham University Learning Science Research Institute	Invited talk: Hypermedia Discourse and OpenLearn LabSpace
Dec 2006	The Open University London Regional Center	Presentation on OpenLearn for Brazilian government – Ministry of Education
	ProLearn – European Community	Webconference –OpenLearn and Knowledge Mapping using Compendium
Jan 2007	The Open University	Compendium Workshop for Social Science Faculty
	Cambridge University	Papers on LabSpace Knowledge Mapping and FlashMeeting, Technology Knowledge and Society International Conference 2007
Feb 2007	The Open University	2 x OpenLearn workshops, Widening Participation and Race Equality Fair, Open University
	University of the Arts London	Invited address: Argument Mapping Techniques in Academic Research: implementation and value
	TEAMS Project - Education at Maximum Scale through Open and Distance	Workshop: Knowledge Mapping & Social Software for Open Learning Teachers' Institute, Nigeria and Open University of Sudan, plus OU staff from

	Learning	CRETE/FELS
	Open University Regional Centre	OpenLearn LabSpace workshop, Sussex Learning Network - eLearning Project Conference
	Informatica2007, Havana, Cuba	Keynote address: "OpenLearn, LabSpace, and ELeGI: New Social Software Tools to assist Open SenseMaking Communities"
Feb 2007 Mar 2007	The Open University	Workshops: Knowledge Mapping for Qualitative Research
Mar 2007	Trinity College Dublin Ireland	Paper on Mapping Techniques applied to learning - CAL Conference 2007
	BBC/Open University futures workshop	From Tag Clouds to Tag Webs: Weaving Narrative into [Edu]Web 2.0
	International Workshop on Social and Collaborative Construction of Structured Knowledge, WWW Conference, Banff	Design Rationale and Evaluation of ClaimSpotter (precursor to the LabSpace Knowledge Map Exchange)
Apr 2007	Workshop on User Centered Design and International Development, ACM Computer-Human Interaction, San Jose	Mapping Dialogue and Argumentation in International Development: The Case of Compendium and OpenLearn LabSpace

We turn now to the progress under each theme, summarising technical advances, usage data, and initial reflections on progress to date, before summarising the milestones passed and the future release schedule.

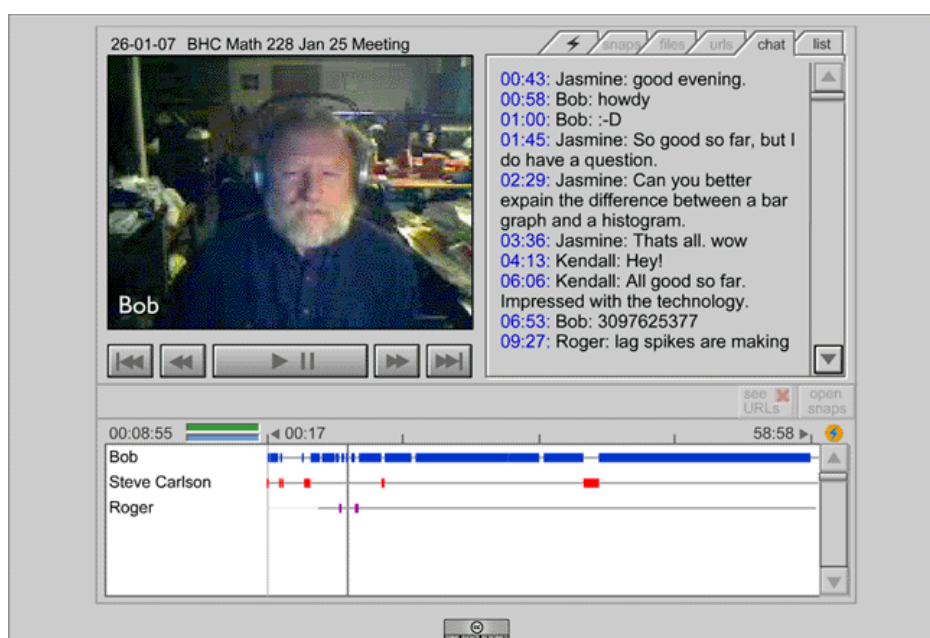
3 Peer-to-Peer (P2P) Collaboration

3.1 FlashMeeting Live and FlashMeeting Memo

As illustrated in the opening screenshot, the *FlashMeeting Live* and *Memo* applications have been integrated with the LabSpace website as a FlashMeeting block, providing links to the QuickStart guide, the Demo, the meeting booking page, a page automatically generated by the System showing the events in which the user has participated, the public meetings and public replays.

As long as the Adobe Flash™ browser plug-in is installed, the users who have signed up with a LabSpace account can access the FlashMeeting demo to familiarise themselves with the concept and function of simplex audio technology, allowing only one person to broadcast at a time. The users can book a meeting of up to 25 attendees and forward the meeting URL generated by the system to the other participants via e-mail or MSG, having the options of making the meeting or its replay public. Since the launch of the website, 270 bookings have been made in this initial phase. Users can instantly access the event at the time of the meeting by clicking the meeting URL, and view and hear other participants, broadcast their image and sound, raise a symbolic hand to speak and take turns in the interaction, receive and send group or private text messages.

All meetings are auto-set to be recorded, however, at this early stage we have not insisted that LabSpace users make the recordings public. Event users themselves have instant access to the *FlashMeeting Memo*, i.e. the recording of their meetings, by clicking on ‘manage my events’.



A public replay on statistics in LabSpace

The Memo can be replayed, edited and annotated. To illustrate the use of FlashMeeting, the above screenshot shows a recent (January 2007) Memo replay of a video lecture, where the teacher supports his students in statistics and interacts with them with the audiovisual channel as well as the text chat. Out of six meeting attendees, three of them broadcast video while the

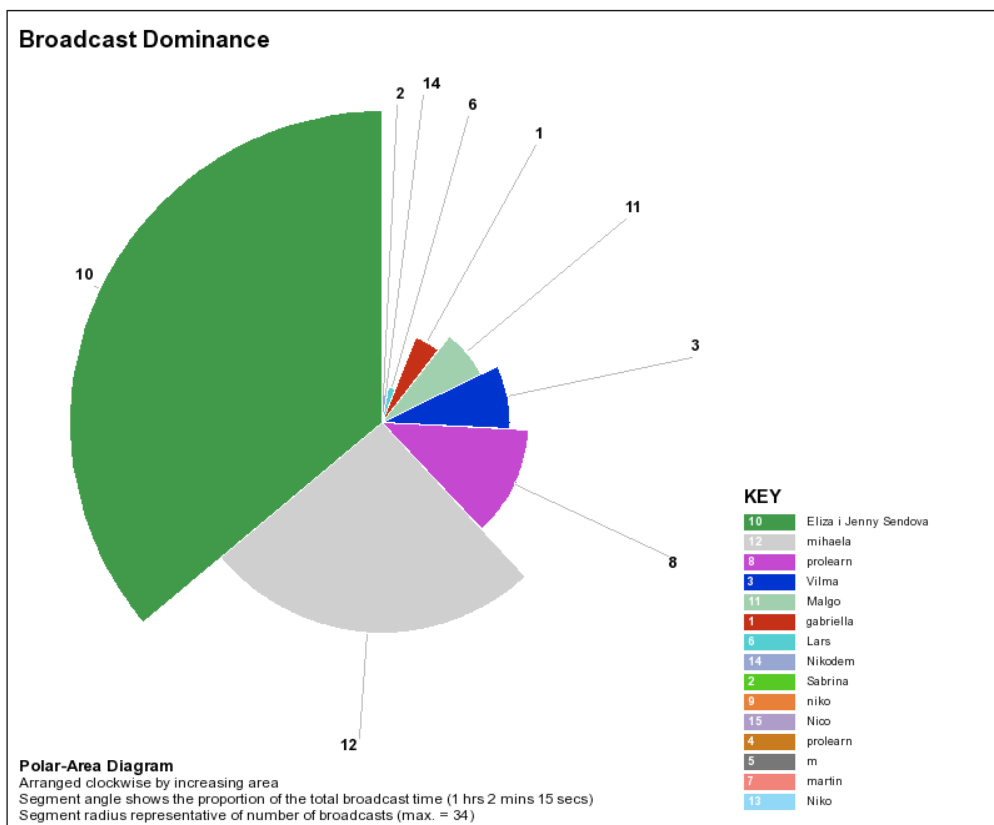
rest exchange text messages. Interestingly, in the beginning of the lecture, the participants note the importance of videoconferencing in e-learning:

Roger: "When on-line learning just came it was just an expansion of the email system, it's really terrific to see some of the directions which it's gone, including this type of online discussion that we're having right now"

Bob: "This is a great addition to the class, Moodle just has a text chat, this FlashMeeting is actually free servers, which ah actually comes from the UK. So, our communication goes through England, ... and it's entirely free"

<http://fm-openlearn.open.ac.uk/fm/fmm.php?pwd=608a58-162&jt=00:04:30>

On a Memo replay page are also automatically generated links to the chat transcript, and to visualizations of participant broadcast and chat dominance which convey at a glance the 'shape' of the meeting in terms of balance of speaker, e.g.



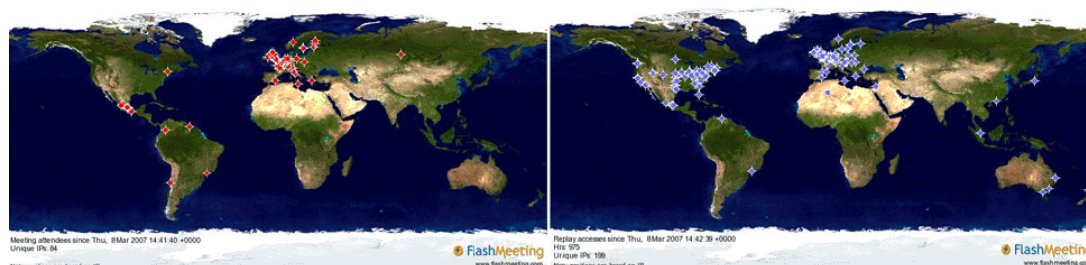
A polar area diagram representing the broadcast dominance in a FlashMeeting event

In addition, a list of contacts is automatically generated according to the meetings attendees. In this way, the users can create their own 'buddy list' by marking a person as a 'contact' for social networking (planned for full release in the social network tools in the late 2007 development phase). Their email addresses are available to users who are their contacts.

End-user support is provided through the FlashMeeting forum, whilst users can get help initially by reading the QuickStart guide, and then by following the 'Desktop Videoconferencing' course, uploaded in the LabSpace unit 'Tools and Content'.

3.2 Usage data

In the four months from 25th Oct. 2006 launch to the end of February 2007, a modest 27 recorded events on the FlashMeeting-LabSpace server have been made public (49 meetings were public when live). 12 replays have remained public and are available via the link 'Public Replays', mostly including presentation-like events, for example a webcast on open content (in Spanish) and a series of video lectures with multiple participants on supporting students in maths. The concept of publishing events in our FlashMeeting staging server began around the end of 2005 and until now 127 public replays have been collected, including different kinds of events, such as academic seminars, video lectures, webcasts, project meetings, interviews, peer-to-peer learning events and other learning scenarios (<http://flashmeeting.open.ac.uk/public/>). 96 meetings were made public in one calendar year since the beginning of the concept; no events were made public in January 2006 and 2 events were published in February 2006. A series of interviews were made publicly available by us in March 2006 as part of a project deliverable, and then the number of meetings drops again to 2 events in April. The number of events is gradually increasing to 3 public FlashMeetings in June, then to 5 events in July and August. It increases to 8 events in September, and then to 22 events in October and November. Finally, it drops to 11 events in December due to the end of the year, as most users take holiday during that period. With the exception of March, which included a series of interviews, and of December, during which many users are on holiday, the number of events has gradually been increasing with time, with the bravest users immediately sharing their meetings with the rest of the world, and the less courageous following their example after a few months. The figure below indicates the impact of the live FlashMeeting events and their replays worldwide on a typical day. For example, high European participation with some attendance in North and South America can be noted regarding the live meetings, and very high European and North-American activity regarding the re-use of replays:



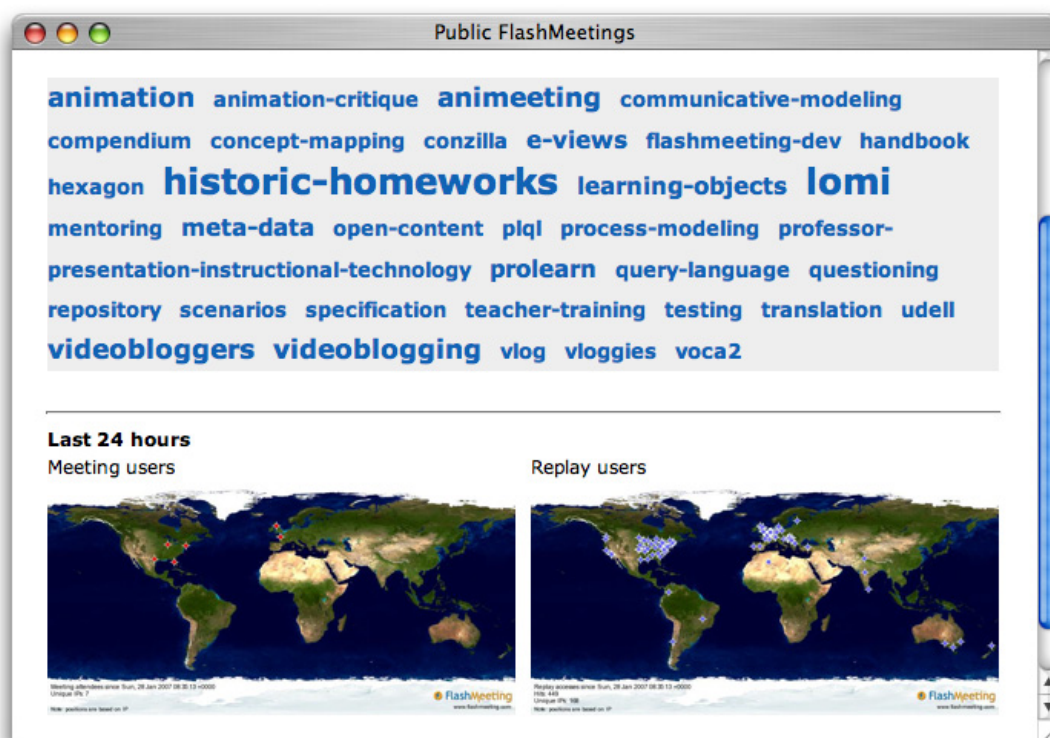
The worldwide impact of FlashMeeting live events and their replays

Following this pattern, the FlashMeeting LabSpace server is expected to gradually include more kinds of public events, taking into consideration the time required for learners to move from the OpenLearn website to start connecting with each other and form communities of common interests in LabSpace, as well as the time needed to experiment with the tool.

By stimulating the syndication and reuse of videoconferencing events, we hope to create new learning objects, which can be shared and browsed through a folksonomy of keywords, helping the learners to select which objects are important and appropriate in their learning experience. A series of similar events published in LabSpace on the one hand shows the creation of communities of common interests, and on the other the tendency of sharing learning experiences with anyone in the world who wishes to learn from them. We are very optimistic that learners in LabSpace will follow the example of the prototype FlashMeeting server, including more than a hundred public replays in around three years of existence, daily viewed by people in different corners of the world, and share their learning experiences, be it seminars or peer-to-peer events, contributing to the culture of open content.

3.3 Linking public work and public learning to open learning

As part of our planned migration and marketing strategy for FlashMeeting Open and Public work the parallel Open FlashMeeting service has been very successful. We run the experimental server (<http://flashmeeting.open.ac.uk/public/>) as a “staging server” for the LabSpace. We have planned that a substantial proportion of the established FlashMeeting learning communities (hosted currently on this staging server) are to be migrated gradually to the LabSpace. This migration is gradual, to not risk negative disruption to these very productive and active communities. A significant set of moves are planned for the first half of 2007. The first part of this strategy involves helping these educators to understand the power of ‘opening up’ their learning.



The FlashMeeting public events

Some 66 live events have been conducted for public reuse, under the creative commons share-alike license since our October 2006 launch. Interestingly, some 118 events have actually been released for reuse, as the supported communities have started to review their own event archives and have made additional events (recorded before our formal launch) available under this license. This is excellent progress.

The work to date provides the following update on the research issues that motivate this work:

- Effective support for peer learning in a synchronous Web 2.0 world is realised through the tool support forum, and supporting material uploaded LabSpace, including activities to be followed. Social networking is being facilitated in FlashMeeting through the webpage ‘My Events’, which allows the users to create their own ‘buddy list’, including their contacts according to the participants of the meetings they have experienced. Research has been conducted towards the direction of different types of online events with FlashMeeting. Good examples of a self-sustaining community of learners and other communities focusing on technology enhanced learning are presented in the paper ‘Live Online Meetings by Different

Communities of Practice', presented in the 3rd International Conference Technology, Knowledge and Society (to appear in the Journal of Technology, Knowledge and Society 2007).

- Re-use and syndication of meetings as shared, public content is supported in the QuickStart guide, as well as the FlashMeeting learning Unit. 12 public replays can be viewed at the FlashMeeting LabSpace server, accessed via a folksonomy of keywords, generated according to the keywords added by the meeting bookers. To date, a series of video lectures on maths and statistics have been made public and people from different continents have used the tool for webcasting.
- Public replays created by communities of learners and teachers can be browsed through the LabSpace FlashMeeting folksonomy, providing clues as to whether the events can be relevant to a learners' curriculum or not. In the future, logs of how many times a replay has been viewed will show the importance of a public replay and the learners' preferences.

3.4 Release schedule

FlashMeeting Live and Memo is an existing robust prototype deployment, used weekly by hundreds of users in a peer-support role. It relies on proprietary server side technologies from Macromedia Adobe™. This means that, although the system itself is not yet suited to a fully open source release at this point, its products can certainly be released. Significant moves are also being made in the open source community to replace the propriety components. In the event that this parallel work is successful, we would hope to move to an open model in the course of this initiative. At this point, we propose a significant deployment into our open learning community to support the evolution of this new world of users. Those who need the most support are not the teachers, but the learners themselves.

FlashMeeting has been properly integrated into the Moodle platform based LabSpace, included in a block with useful links. Support is being provided through the FlashMeeting tools forum, where users can post their questions and get help in using the tool, or learn about its functions. In the future, more functions of the tool, such as the Whiteboard and the facility of slide presentation, will be provided in the version available in LabSpace.

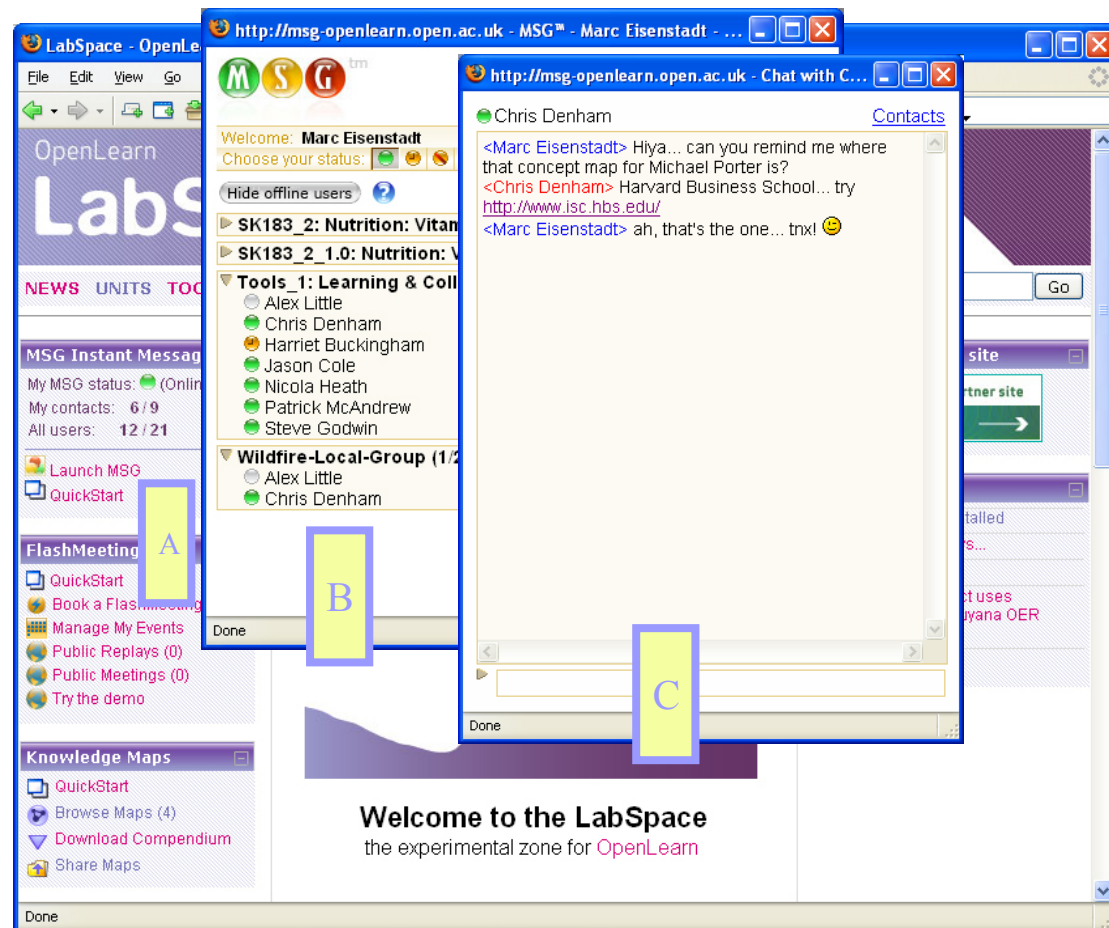
- **Oct. 2006 launch:** Flashmeeting Live and Flashmeeting Memo were released as planned. Small but interesting uses have been made of these systems by the growing LabSpace community. **[Completed as planned]**
- **Q1 2007 [Completed as planned]:**
 - A small set of demonstrator services to showcase potential open educational uses of these new communicative tools to the LabSpace community.
 - Release of FM v3 (including whiteboard and slide/talk production facilities into LabSpace). *[released in the staging server, work in progress]*
 - VideoBlog video annotation service, supported by Rostra news syndication and Podcasting will be initially linked in to core LabSpace services. *[work in progress]*
- **Q2 2007:** Initial release of prototype FM integrations with MSG and Compendium to connect presence and concept mapping with public live events.
- **Q3 2007:** Social presence: extending the social network potential in open live events.
- **Q4 2007:** FlashMeeting, VideoBlog and Rostra systems integrated with all other technical strands
- **Q1 2008:** Full deployment of live Peer Support technologies, and Peer Social Network management functions

4 Social Presence and Identity

4.1 MSG Instant Messenger

Our strand on social presence and identity was based on the following argument, stated in the original proposal: “social networking is critical for learning: finding the right person can be more important than ‘scouring the web for an answer’, particularly when hand-holding or other explanatory services are required.”

Toward this end, we have taken our older BuddySpace tool (which provided instant messaging and maps, implemented in Java, but was found by testers to be ‘over-geek-ish’ to use), and created a new tool we call MSG, which improves and simplifies BuddySpace, is available as Open Source, and integrates with a number of other services, including Moodle and Google Maps.



MSG Instant Messenger embedded in LabSpace. [A] The persistent Moodle ‘Block’ that shows personal status, personal contacts, and all users currently logged in (12 out of 21 in this snapshot), as well as an instant ‘Launch MSG’ link. [B] The MSG messenger itself runs in any browser, with standard browser tools hidden, and allows setting of ‘status’ via the three lights at the top, listing of group members and 1-1 chat after clicking on a user name, as shown in [C].

The attributes that make MSG distinctive can be summarised as follows (all implemented and available throughout the public-access LabSpace unless otherwise stated):

- It runs directly in a web browser environment, using Web2.0/AJAX (Asynchronous Javascript and XML) technologies, so no installation is required
- It provides *only* the functionality that covers more than 90% of what our original BuddySpace users actually used: simple ‘online/away/do-not-disturb’ settings, lists of users, and click-to-chat. We have deliberately restricted the functionality in the interests of simplicity, and therefore there are no user options required!
- It implements a ‘single-sign-on’ capability so that users who log in to LabSpace are automatically logged in to MSG, with no extra step required.
- It enables ‘presence everywhere’ which means that any user’s ‘presence status light’ can be overlaid on any independently-conceived aspect of LabSpace in which it is advantageous to show a user’s presence status, such as a discussion forum or a list of Compendium Knowledge Map uploads.
- It includes an optional ‘desktop notification widget’, specific to Window users, which allows users to receive a compact message alert in their system taskbar.
- *[Currently implemented and released to internal testers]* Where we know a user’s location (from their stored user profile or their live IP address) and have been granted permission to display it, an optional Google Maps plug-in allows large-scale zoomable displays of users locations, preserving the simple presence indicators and one-click-to-chat feature.
- *[Currently implemented and released to internal testers]* It obeys basic accessibility guidelines for users with disabilities, so that (for example) screen-reader software and tab/keyboard/menu access is enabled for blind and partially sighted users.



The MSG philosophy of ‘Presence everywhere’ is indicated by the status lights [A] embedded wherever a user’s name appears, in this case a discussion forum. Clicking on the status light opens a chat window. [B] a custom desktop notification tool [B] lights up when a new message is received. Clicking on it launches the MSG client.

To augment the description of basic capabilities mentioned above, we comment on usage data and reflections on the main achievements of MSG in the next two sections, followed by comments about past and future release plans.

4.2 Usage data and observations

To date, (end of Feb 2007) MSG usage has been as follows:

- Number of registered users: **1240**
- Number of separately-initiated chat sessions (for which full chat logs are available): **43**
- Number of individuals participating in a chat (unique ID's for chat sessions, for which full chat logs are available): **44**
- Open source Developer community: this has only just (1st February 2007) been enabled by our release of full developer notes, blog, and CVS shared environment, but even so there have been strong expressions of interest in co-development from the University of San Francisco, University of Minnesota, SADC Lac-Saint-Jean-Est (Quebec), and the University of the Highlands and Islands, who are now 'getting on board'.

We have the option of automatically logging chat usage and (anonymous) content, and this has only been enabled for a specific window during the current phase of work. Even within this small window, it is useful to observe the characteristics of messaging behaviour in order to create a framework for future observations. The actual *content* of the MSG chat has been largely what we would call 'meta-level-chat' (as opposed to 'object-level-chat' about some **openlearn** content matter). This is entirely as expected since MSG interactions are not directly embedded into any of the educational resources (i.e. none of them guide learners into activities around textchat learner-interaction). MSG is fundamentally about *opportunistic chat and peer presence discovery*, and thus relies not only on the growing critical mass of users but, fundamentally for **openlearn**, on ensuring that chat opportunities are made clear in the content. Such embedding is a priority in the next phase of the project now that the basic infrastructure is in place. For instance, based on our experiences with MSG in other projects, we expect it to serve the needs of *educators* who are committed to collaborating around OERs hosted in **labspace**—even if they do not know each other in advance, they will have to build up trust and familiarity in order to coordinate work, and will have real information exchange needs that MSG can support (as instant messaging does for thousands of teams everyday). Secondly, we aim to address the critical mass and 'what to discuss' issues for *learners* by, for instance, thematic priorities in the OER curriculum which foreground certain topics (e.g. global warming) in order to increase numbers, or by bringing learners together simultaneously to attend synchronous events (e.g. a high profile webcast, or an advertised videoconference tutorial). The fact that we are interoperable with the other major messaging services (but have not yet opened up this capability to our users) is another important factor we can leverage.

Even with little object-level-chat taking place, the meta-level-chat itself has some interesting characteristics. In particular, we've observed that the chat breaks down into six categories. Each category is followed by an illustration taken from the current chat logs; the numbers in the first two columns are the Moodle ID numbers of the 'from' initiator and 'to' recipient respectively (which can be further anonymised). The remaining columns show the time stamp and message content. Here are the six categories of meta-level-chat observed thus far:

- (i) Generic wave/greet/ping, characterised in particular by *no further dialogue in the same session* (correlated to some extent with the next two categories), e.g.

6007	5718	Nov 26, 2006 11:48:26 AM	hello Sue
5718	6007	Nov 26, 2006 11:49:06 AM	Hello from me

(ii) Inexperienced IM end-users 'kicking the tyres' to see how it all works, what it does, and how it differs from other media such as email, e.g.

5731	421	Nov 26, 2006 11:50:06 AM	How do you do the smiley?
421	5731	Nov 26, 2006 11:50:21 AM	I just put in semi colon dash and bracket and it came up automatically
5731	421	Nov 26, 2006 11:50:41 AM	Neat :-)

(iii) Experienced IM end-users test-driving it to see if it has features they already expect, such automatic spelling correction and multi-user chat

5713	5734	Nov 26, 2006 11:47:37 AM	Hi - just seeing if multiple conversations are possible
5734	5713	Nov 26, 2006 11:48:29 AM	Yes, they are possible... but not when I'm busy gossiping in real life. Honestly!
5734	5713	Nov 26, 2006 11:48:31 AM	:o)
5713	5734	Nov 26, 2006 11:48:44 AM	I'm talking to Julie as well
5713	5734	Nov 26, 2006 11:48:49 AM	:o)

(iv) The MSG development team feature-testing and debugging

63	54	Dec 12, 2006 3:51:43 PM	is it appearing now?
54	63	Dec 12, 2006 3:52:39 PM	aargh I think there's still a bug somewhere..

54	50	Nov 22, 2006 9:45:52 AM	d'you think the name string needs to be different to avoid clashes? e.g. 'Joe Bloggs (2)'
54	50	Nov 22, 2006 9:46:46 AM	(I mean just the way it is rendered to the outside world)
50	54	Nov 22, 2006 9:51:24 AM	I think there must be something gone wrong. It shouldn't be possible to register twice with same email, and her two identities in wildfire 55 & 60, 55 seems to no longer exist in moodle
50	54	Nov 22, 2006 9:53:03 AM	maybe a problem inherent in replication strategy, since replicated users are not removed when they disappear from moodle

(v) The wider LabSpace team brainstorming about LabSpace tools and functionalities

60	63	Dec 7, 2006 4:08:49 PM	I was wondering how you were going to work out where some-one is to display geo-loc from Moodle profile?
60	63	Dec 7, 2006 4:09:00 PM	country field? city field? new field?
63	60	Dec 7, 2006 4:09:31 PM	I was picking it up from their profile as the default but than allow them to change it (using www.geonames.org service)

(vi) OpenLearn enthusiasts and prospective authors engaging in dialogue about future developments and challenges

72	54	Nov 8, 2006 3:40:56 PM	ho hum- been having great email conversation with grazr chaps over last couple of days
54	72	Nov 8, 2006 3:41:17 PM	neat - cool stuff!

54	72	Nov 9, 2006 5:26:13 PM	people need structured exercises; you guys need to release your Relevant Knowledge courses into LabSpace!!!!!!!!!!!!!!!!!!!!
72	54	Nov 9, 2006 5:26:15 PM	i don;t think the issue is with content necessarily
72	54	Nov 9, 2006 5:26:32 PM	it's more to do with engaging witht the content
72	54	Nov 9, 2006 5:26:43 PM	re RK - you talked to JN about it?
54	72	Nov 9, 2006 5:27:03 PM	no, but surely he knows? he's been at all the big launches for OpenLearn etc etc

Object-level-chat analysis is the subject of a parallel study being funded by the EU ELeGI project, and will be reported separately.

4.3 Reflections on main achievements

Because instant messaging is so commonplace, it would be easy to overlook the achievements inherent in what MSG does and how MSG works.

What MSG does

MSG's "simple no-download-needed open-source ubiquitous presence" is something that has hitherto been unattainable, and this in itself is a strong achievement worth explaining further. Previously, we have found that IM/Presence tools are either proprietary and locked down (like AIM and MSN Messegner), too hard to use (like Jabber.com's Exodus), or deeply embedded into their own paradigm (like Skype). A rapidly-moving latecomer to the IM scene is Google's GTalk, which we love because of its simplicity, its ubiquity (if you use Gmail then the presence of others "just happens"), and the fact that Google is the only major player to recognise the virtues of the open source Jabber protocol to handle message transmission. But GTalk still requires "a download", and the innards of it are still proprietary.

AIM, MSN, Skype, GTalk and the rest are great and influential tools, and they have such strong traction, growth, and obvious critical mass that we must pay attention to them. Yet they do not fit the bill for messaging in an educational context, where simplicity and openness are of paramount importance. Our background research on BuddySpace suggested that educational users liked the power of the popular IM tools, but preferred the security and 'feel-good' factor of an IM tool associated with an educational resource provider! Our achievement is to offer the best of both worlds, and the interoperability inherent in the architecture we have created is a key enabler that makes both worlds possible.

We aim to lead the way not only in openness and simplicity, but also in accessibility, and are proud of the fact that MSG is designed to be accessible to users with disabilities, including those with severe visual impairment.

In our internal test version, we can already add GTalk/GMail users to MSG buddy lists (and vice versa), and this is a capability we will make available LabSpace-wide, thereby rapidly addressing the critical mass problem discussed in section 4.2. We also have the 'hooks' for adding MSN, AIM, Yahoo, and ICQ users to MSG buddy lists (already proven in BuddySpace), and the only barrier right now is that the actual steps are a little complex for the typical end-user, so we are keeping this in the background as a 'future enhancement'.

How MSG works

A full technical discussion is beyond the remit of this document, so instead we present a broad overview of the underlying technological achievements, broken down into seven main categories, all of which are available to the open source community:

- **Web-centric:** The MSG client uses the latest AJAX technology to work entirely within a browser. This is not an ‘add-on’ or ‘optional’ approach but rather is built in from the ground up. Unlike other AJAX-based messaging tools such as Meebo which operate multiple windows within an overall ‘master’ window frame, MSG launches in an ‘undecorated browser window’ (no buttons or headings) so that it will run within any browser on any operating system yet look like and behave like a standalone application.
- **Desktop ‘bonus’ alerts:** For those who prefer the ‘agile alert’ capabilities of an operating-system-specific tool, we include an optional small download that sits in the user’s taskbar and provides notifications and one-click launch of the web client described above (Windows-only at the moment, but in principle easily done for other operating systems)
- **Single sign-on and the ‘on-but-not-on paradox’:** We wanted MSG both (i) to have an independent life outside of OpenLearn (people might just want to know ‘who is around’ or use MSG as their main IM tool, without necessarily launching the full OpenLearn environment, or indeed to integrate MSG with other learning environments that have nothing whatsoever to do with OpenLearn or Moodle) and also (ii) to be integrated smoothly with OpenLearn (OpenLearn users just want to log in once to OpenLearn, not twice to OpenLearn + MSG). With a ‘core integrated’ product anything is possible, but MSG’s independent existence made this problematic. Instant messengers typically require a ‘launch and log in’ sequence, so we needed to decouple this from the OpenLearn log in, and yet to ensure direct communication between OpenLearn and MSG. Our technical achievement in this respect is to allow cross-communication between the browser sessions that know if/whether you are logged in to MSG, the central server (called ‘Wildfire’) that handles the Instant Messaging and presence communications, and the Moodle infrastructure for OpenLearn that knows your user profile and state of login. Cross-communication is completely modular so the same philosophy can be deployed across different ‘rival’ environments.
- **Moodle extensions:** we have modified Moodle to make a user’s identity within the Jabber Instant Messaging world a primary field in the user profile. Additionally we have enabled the user’s presence state to be directly displayable anywhere within Moodle that the user’s name would normally be displayed (e.g. in a discussion thread), and to make this status display ‘clickable’ so that a 1-1 chat can be launched with a single click. We’ve enabled direct communication between the Moodle database and the Wildfire (Jabber) database so that course enrolment is automatically reflected in MSG groups (thereby chunking users into self-selecting multiple interest groups). Finally, the MSG Moodle enhancements are available as open source directly within the Moodle developer community, and are documented on our MSG news/blog site.
- **Wildfire extensions:** Wildfire is a leading open source Jabber server from Jivesoft, that serves as the ‘home base’ for all instant messaging and presence transactions in OpenLearn/LabSpace. We have enhanced the Wildfire server to communicate with

Moodle as described above (i.e. bi-lateral enhancements were needed to make this work), and provided an XML presence service that enables the various components to communicate with one other so that users can run OpenLearn/LabSpace and MSG in either sequence and entirely independently, yet share the user's presence state and instant message notifications dynamically. A further extension is a simple 'administrator's dashboard', currently under development, that lets individuals and authorised group administrators modify membership lists and profiles appropriately.

- **Mapping plugins:** We have enabled MSG presence indicators to be overlaid directly on Google Maps (illustrated below, to be released in Quarter 2 of 2007), and we also allow for the custom 'office map' functionality of the original BuddySpace to be rendered directly in the web-only environment of MSG.
- **Blog/news/CVS:** We maintain an independent news/blog capability at <http://msg.open.ac.uk> that handles all the user documentation and developer notes, and also links to our internally-maintain CVS repository to share code developments directly with the external developer community that has already expressed great interest in contributing to MSG extensibility.

4.4 Release schedule

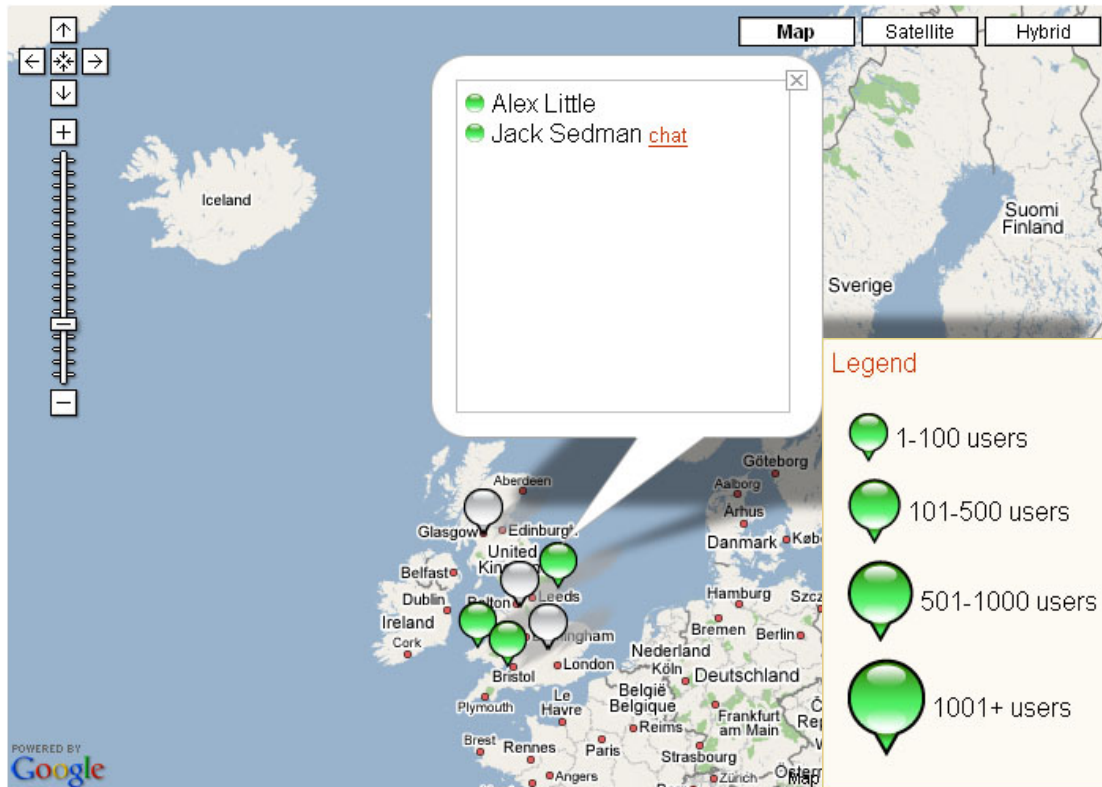
We are currently releasing MSG capabilities either in line with or in some cases earlier than our original timetable, which specified the following items for Social Presence:

- **Oct. 2006 launch:** Jabber/XMPP <-> Moodle interoperability (IM + presence in Moodle workspace) [**Completed as planned**]
- **Q1 2007:** Web-centric BuddySpace client (Jabber IM client with core BuddySpace/Moodle functionality) [**Completed as planned**]
- **Q2 2007:** Extended map functionality for open/custom mixing interoperability e.g. with Google Maps [**pre-release in testing**]

Significant work on the underlying infrastructure, not detailed above, has taken place in order to make all of the above possible, notably on the integration between Moodle (which manages the overall virtual learning environment for LabSpace and OpenLearn) and Wildfire (the server which manages the instant messaging interactions). This has required us to implement certain efficiency improvements to ensure scalability, and to provide suitable 'hooks' to facilitate data collection and to allow users to receive messages directly when logged in to LabSpace.

As with the other tools, support is provided through an online forum, with additional help in the QuickStart guide. MSG also has its own custom news/blog site for rapid updates, complete with open source developer notes, licensing info and supporting documentation at <http://msg.open.ac.uk>.

For year 2, our intention is to complete the release of the Google Maps capabilities for Quarter 2, 2007, as soon as scalability testing and some efficiency improvements have been completed. A screenshot of this facility is shown below:



MSG ‘presence indicator dots’ can be rendered directly in Google Maps, and are automatically clustered in different sizes depending on the zoom factor. If anyone in a cluster is online, the dot is rendered in green. Clicking on the dot shows only those you are allowed to see (members of your groups), along with a click-to-chat link.

Work will continue on the following aspects of social presence (as per original bid unless otherwise indicated):

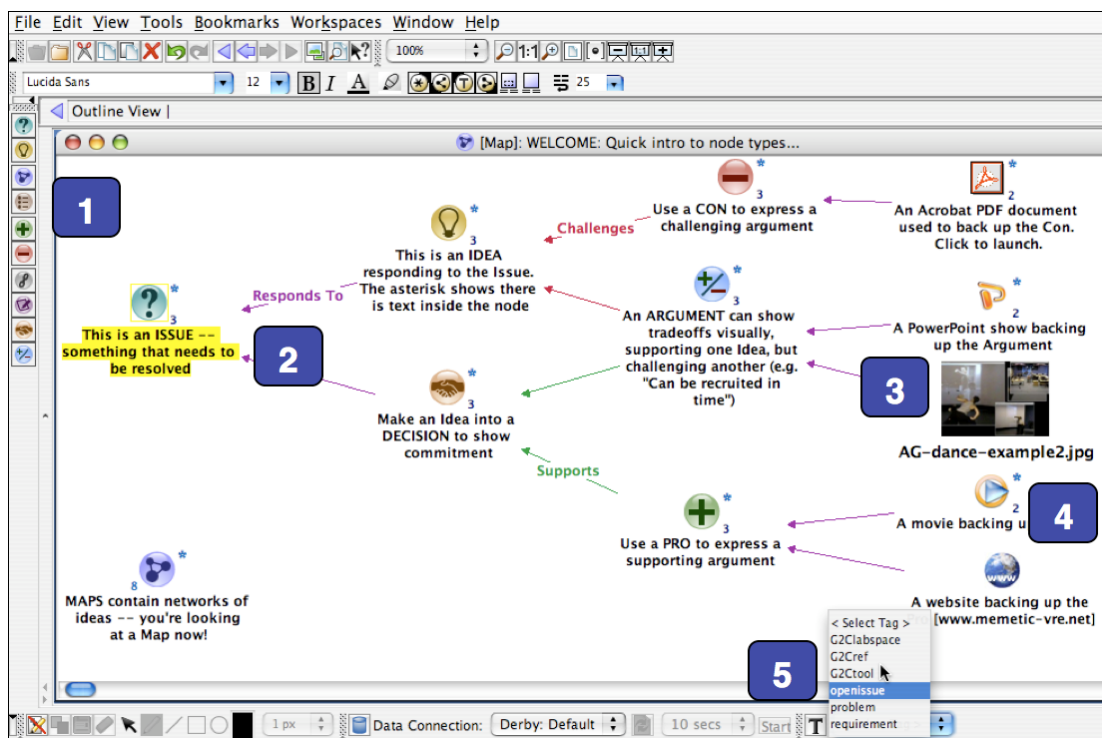
- **Q3 2007:** Generic ‘presence dashboard’ to control augmented presence info and alerts – this will take the form of a revamped ‘web admin’ tool so user’s can update their own settings easily
- **Q3 2007:** Karma/Reputation management features – this will require revision of the Moodle stored profile database for bi-directional integration between MSG and the Moodle data base
- **Q4 2007:** Integration with FlashMeeting [new] – we want to harmonize the MSG and FlashMeeting contact lists, and include 1-click-launch of FlashMeetings directly from MSG
- **Q1 2008:** Generic ‘identity dashboard’ to control personal privacy preferences and reputation management – this will unify the work of the preceding 3 bullet points into one locus of control

5 Knowledge Mapping

5.1 Compendium

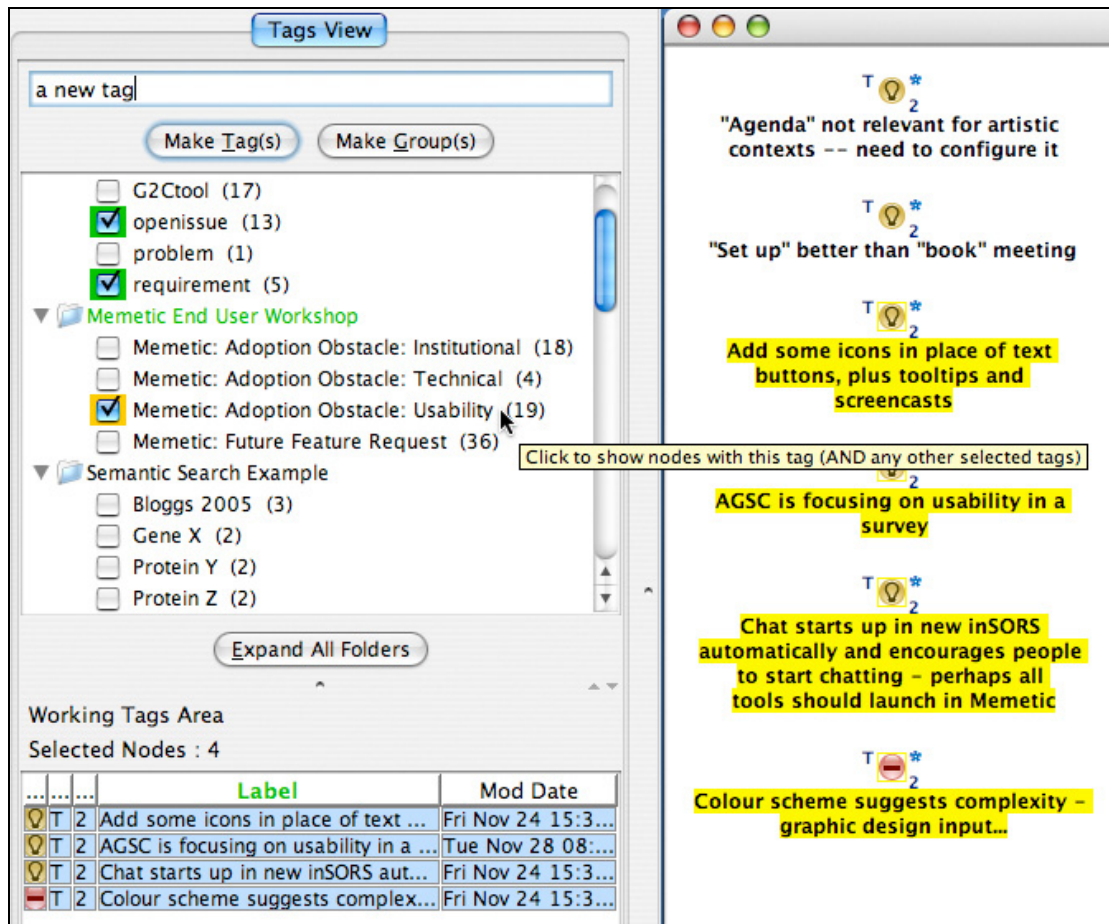
Knowledge Mapping is a shorthand term for techniques and tools for visualizing conceptual models as explicit structures, both models of the world (such as Concept Maps), personal plans (such as MindMaps), and models of dialogue and argumentation (Dialogue/Argument Maps). While this can be done on paper on whiteboard (and often is in meetings), hypertext provides a way to edit, manage and share information structures over the internet in ways that are difficult or impossible with traditional media.

The OU's Compendium software tool provides a visual user interface for users (e.g. learners, educators or software developers) to cluster, connect and tag icons representing issues, ideas, concepts, arguments, websites or any media document. They can use this represent their personal reflections as they study or work on a problem, or share their maps with others. Knowledge maps can be useful as a summary of a topic, or to share a learning path through the maze of the Web.



Compendium's user interface for linking issues, ideas, arguments and documents.

This example illustrates the use of the Issue-Based Information System to structure deliberation over an Issue, but analyses can be mapped in any way deemed appropriate, with user-defined icons and links as required. Key: [1] Drag and drop nodes from the palette onto the map... [2] in order to capture and link key issues, ideas, arguments and decisions. [3] Relevant... media resources/websites can be linked into this discussion. (Users can also create their own palettes of icons.) [4] A digit superimposed on a node means that it appears in more than one map, i.e. the same idea or document can play roles in multiple contexts and conversations, yet be linked. [5] User-defined keyword tags can be annotated onto nodes to help when searching for related material across multiple maps



Tracking/filtering information/ideas in Compendium via Tags (Feb. 2007 release).

Selecting nodes in a Map (right frame) highlights matching Tags in green (left), with Tags held in common by all nodes emphasised in orange, and Tag frequency shown numerically. The nodes can be assigned existing Tags by clicking their checkboxes (or uncheck to remove). To assign new Tags, one types their name in the text field at the top, as in social bookmarking Web tools. Tags can be clustered into *Tag Groups*, which can be expanded and collapsed as required.

The starting point for OpenLearn was that (like the other KMi tools) Compendium already had an established user community, who have found diverse applications for it (see the Compendium Institute website: www.CompendiumInstitute.org). The software development activity in Phase 1 has been to integrate Compendium with Moodle, simplify its user interface and default settings for new users, and to further refine and extend its capabilities. In addition, we have published numerous knowledge map examples and tutorial materials in the LabSpace, tailored to the OpenLearn end-user communities.

LabSpace Edition of Compendium (Windows, MacOSX, Linux). Version 1 released at Oct. 2006 launch, Version 2 in Feb. 2007:

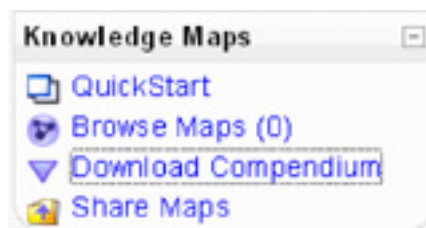
- simplified default menus removing the more advanced features (which can be turned back on if required)
- Knowledge Maps Web export of HTML, Image Maps and XML that can be uploaded to the LabSpace, and automatically linked with metadata to an OER unit

- Web URLs dragged from OpenLearn or other Hewlett OER projects into Compendium (in order to create hyperlinked icons) are recognised, and assigned the source site's logo (e.g. making it easier to spot where resources in a map have been drawn from)
- A “tagsonomic” user interface now makes it easy to assign keywords/phrases to nodes, and to then filter them based on tag combinations. This powerful mode of working has been popularised by social bookmarking websites such as del.icio.us and flickr, and Microsoft's Phlat file management tool.

Knowledge Map Exchange to facilitate the sharing and remixing of maps. A rudimentary first version was released (ahead of schedule) at OpenLearn's launch:

- A forms interface for describing and uploading Compendium maps to an OER unit. The unit's home page automatically indicates how many maps are linked to it
- An automatically maintained listing of maps offering a read-only version for viewing within a web browser, plus the source data for editing and republishing in Compendium
- The code for the Knowledge Mapping block in Moodle has also been released open source, enabling all Moodle administrators to add the above functionality to their installations.

Knowledge Mapping Moodle block: An addition to the original release schedule is the open source release of the Knowledge Mapping code we have created in LabSpace.² Moodle system administrators can now add the Knowledge Map block to courses, with the facilities for map upload and download:



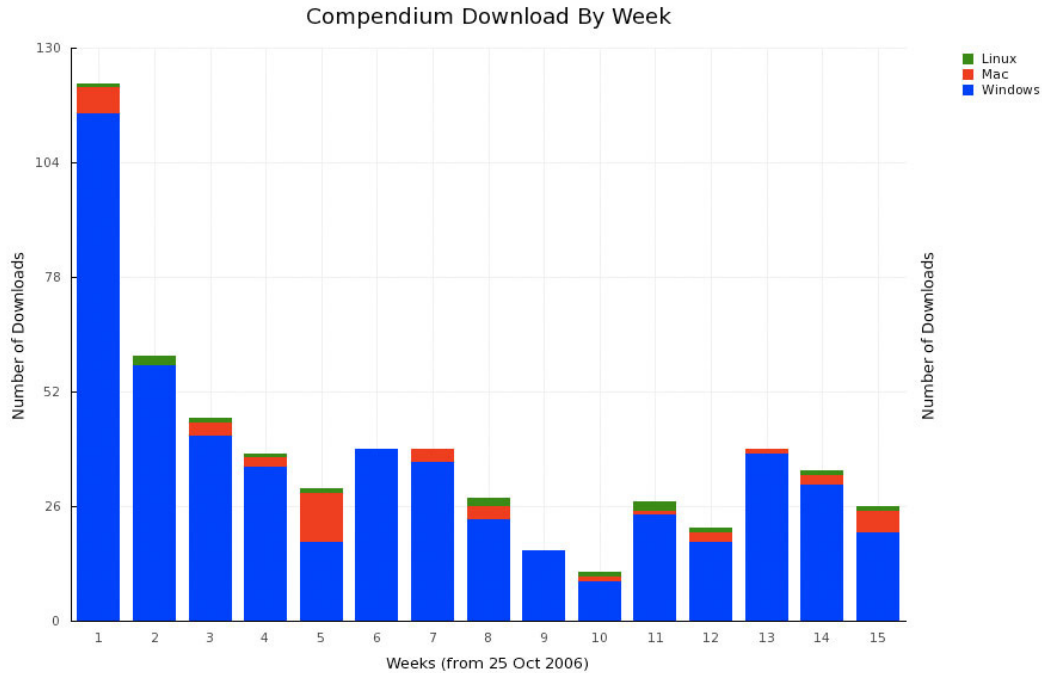
Diagnostic reports of Compendium and Knowledge Map uploads/downloads, as illustrated below:

² *Knowledge Mapping Moodle installation guide+code:* <http://compendium.open.ac.uk/openlearn>

- [Graph by Week](#)
- [Graph by Month](#)
- [Summary by Email](#)
- [All Downloads](#)

Windows Downloads 554
 Mac OS X Downloads 42
 Linux Downloads 15

Total Downloads 611
Weekly Average 41



5.2 Usage data

From the 25th Oct. 2006 launch to end of February 2007, the Knowledge Mapping reporting system (integrated into Moodle) there have been 751 downloads of the Compendium tool (~40/week), with coverage across the different internal OU communities, with strong representation from the current student community, and over double this number from elsewhere in the world (502).

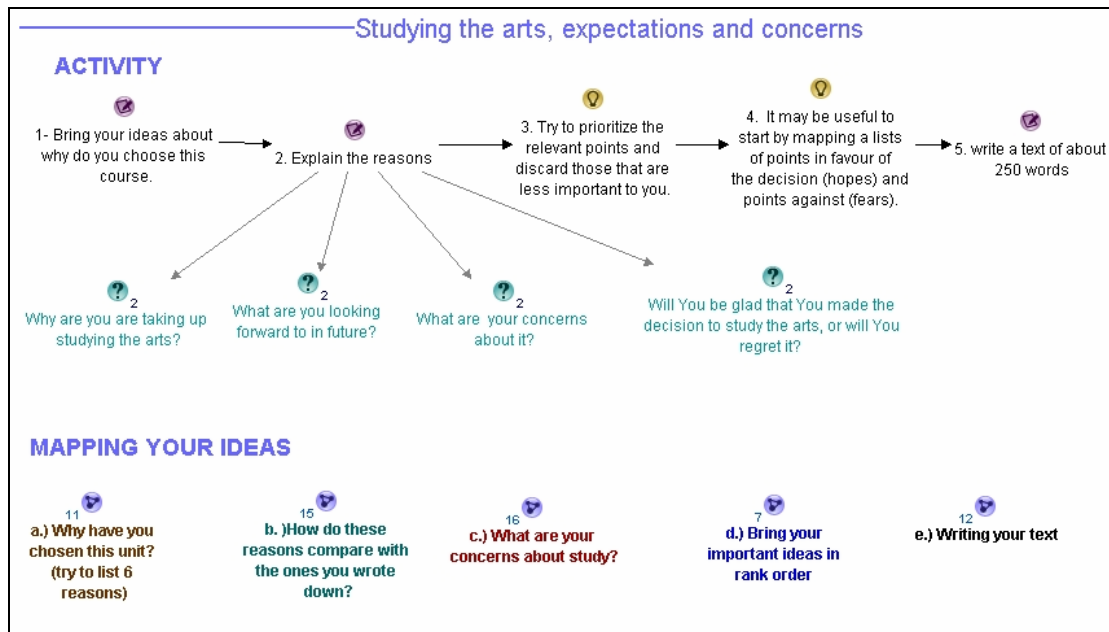
We find this an encouraging level of interest in the tool, although given the established role of concept and mindmapping tools within learning and business, we are not surprised that a free tool offered by the OU (which has been quite widely blogged, and announced to the existing Compendium mailing list of >500) should prove popular. What we are not yet seeing is significant uploading or downloading of Knowledge Maps, which we will be looking to encourage actively in Phase 2, with particular focus on Knowledge Mapping for *educators* (such as Learning Design templates) to complement the *learner* focus to date. The Year 2 technical deliverable of the Knowledge Map Exchange will also provide new modes of interaction and search that will add to our adoption indices

We reflect briefly on the usage data from all three tools in the concluding section.

5.3 The role of Knowledge Maps in supporting OERs

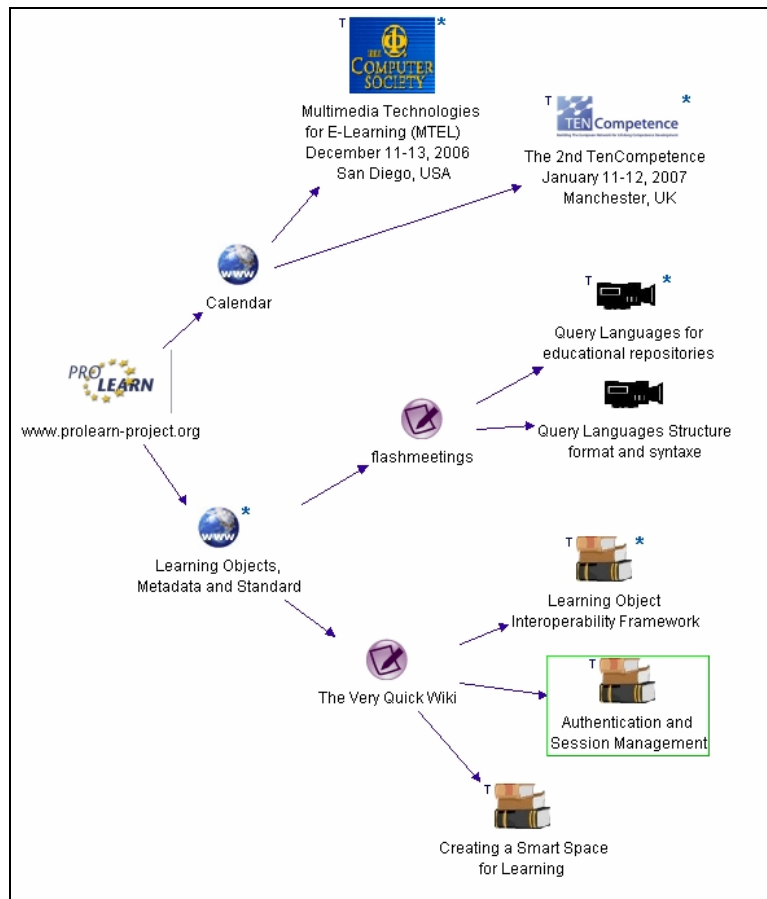
While always envisaged, we are now able to exemplify a number of roles for Knowledge Maps in the context of OERs.

Maps as supplementary representations to OERs: The figure below shows a Knowledge Map designed by KMi to illustrate how a learner activity within an OER unit (*A103: Studying the arts and humanities*) can be translated into a conceptual structure. Learners can explore this within their Web browser, and if they wish, download the file to work with it in Compendium, adding in their own responses (Idea nodes) to questions (Issue nodes), plus relevant information fragments (Reference nodes):



The map below shows how the Knowledge Map block on the homepage for *Studying the arts and humanities* signals the number of maps linked to it, taking the user to a listing of those maps, which can then be viewed:

The map below was used as the agenda to structure discussions in a European project held in FlashMeeting:



Maps as lightweight ‘remixes’ of OERs: A distinctive kind of map is the Learning Path, a sequence of learning resources recommended to a learner (or as a resource for educators to adapt to their needs). A learning path may be simply a trail of Reference nodes hyperlinked to OERs and other resources, or may be more developed, showing branching structures, and specifying prerequisite knowledge, learning objectives and estimated study hours. The map below is from an introductory screencast illustrating the extension of the OU’s default path (along the top), by adding in resources from MIT and Connexions:



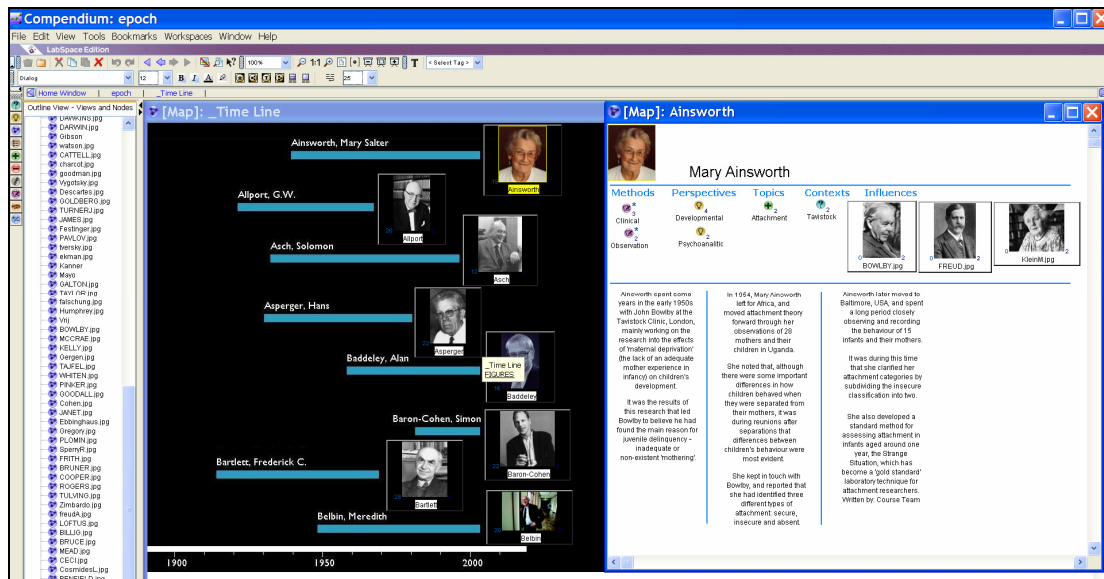
“Creating a Learning Path Map”: Introductory screencast from

<http://compendium.open.ac.uk/openlearn/screencasts>

Compendium thus provides a visual authoring tool for the rapid (re)sequencing of learning resources, a form of high level “remixing” of the OU’s OERs. It does not aim to compete with more complete, purpose designed learning object/activity design environments such as Connexions, X and Y, but conversely, it assumes no prior knowledge about the structure of learning objects, how to import or create metadata, or the ways in which they may be combined. As such, Compendium provides learners and non-technical educators with a way to quickly drag+drop websites, documents and media clips into a map, link them and publish them.

Our hypothesis is that this lightweight approach (which does not assume constant online access unlike a ‘pure Web’ approach) could carve a niche with newcomers to e-learning, who need a quick return on a minimal investment of time and effort, in order to play with novel tools. (The semantic data structures that are possible in Compendium can be exploited for the sharing and integration of maps online, an avenue being pursued in Phase 2 as we develop more advanced Web annotation and linking for the Knowledge Map Exchange proper.)

Knowledge Maps as Hypermedia OERs: In concert with working with the academics who have authored OERs, the Compendium team has also been working with them to create hypermedia OERs, Web versions of interactive resources providing multiple, non-linear paths through multimedia information spaces. One of these projects is the EPOCH resource on the history of psychology, illustrated below:



The EPOCH hypermedia OER.

On the left is a set of maps representing important psychologists and researchers organised on a timeline. Opening a person's map (right window) shows their profile against research methods, perspectives, tasks, contexts, resources and influences, all of which are interlinked. The maps can be browsed on the Web, or downloaded and reworked within Compendium.

A hypermedia repository such as EPOCH provides an OER whose structure is designed from the ground up to support modular extension and the crafting of new pathways, in ways that are far more flexible than conventional prose which is intrinsically dense and hard to rework. Our hope is that educators will extend (and hopefully share back) EPOCH and similar resources, e.g. adding corrections, or new branches reflecting a different area of expertise or perspective. Learners can carry this around with them, and since every resource within the system is a node in a hypertext, this can be tagged with new keywords, and relinked into new analyses, e.g. to help articulate a research question or answer a learning assignment with possible answers and arguments in the literature.

5.4 Release schedule

The original milestones up to the present quarter were as follows:

- **Oct. 2006 launch [Completed]:**
 - Single user Compendium application for all platforms (added: simplified starter menus and custom Web export for Moodle publishing)
 - Basic Knowledge Map Exchange through Compendium Web export/import, linking maps to OERs (not originally scheduled)
 - Example Knowledge Maps to complement selected content + e-learning resources to illustrate different kinds of Knowledge Map **[30 maps published at 31st Jan 2007]**
- **Q1 2007: [Completed]**
 - Knowledge Maps published for further selected learning resources

- Open source code release of Knowledge Map Moodle block (not originally scheduled)

There are no major developments that would lead us to change the release schedule from that originally proposed:

- **Q2 2007:** Design and implementation of Knowledge Map Exchange
- **Q3 2007:** Knowledge Map Exchange, enabling users to publish, share, edit, and search across maps easily and powerfully
- **Q4 2007:** Refinements and extensions to Knowledge Map Exchange in light of user and community feedback
- **Q1 2008:** Knowledge Mapping extensions to integrate with a wider spectrum of tools and offer more powerful search/visualization services.

One issue that we are revisiting are the tradeoffs between a desktop application, and a Web-centric application. Compendium is a rich, highly interactive tool with a full relational database. At present it is downloaded and installed as a Java application on the user's personal computer, which has been the mode of use most requested by our users to date. However, having been convinced of its uses in single-user mode, many are now asking for more Web-centric modes of use to support online discourse and mapping. Within OpenLearn, we are exploring options for a 'lightweight' Web-centric version which could sit within the user's Web browser.

6 Conclusions and future trajectories

The three tools under development each have established user communities in other knowledge intensive domains, which motivated their integration into LabSpace to assess their potential as support for open learning. Having successfully integrated the three tools into LabSpace, we are now in a position to study their adoption patterns.

The relatively low level of *public* activity logged in the first four months with all three tools suggests that while informal learners may be relatively quick to test personal e-learning tools they can install on their own machines (751 downloads of Compendium), there is a further threshold to cross before they are ready to engage in public behaviour of any sort, whether communicating with peers (MSG/FlashMeeting Live) or publishing resources (FlashMeeting Memo replays, or maps). We do not find this surprising, given the previous evidence we have from other FlashMeeting and BuddySpace user communities. It takes time for learners to digest new material, build confidence with new tools, and find peers. These human factors are precisely the focus of our research questions (see original proposal, Appendix K).

We have not yet engaged *educators* with Compendium, which is a focus for Phase 2 work. Having published many examples of Knowledge Maps which illustrate representations to help learners, we are now starting to design templates for Learning Design Patterns based on expertise in this field within the OU. We anticipate that these will be of interest to educators as we release these as OERs in their own right.

Together, the KM*i* tools give us ways to map both conceptual networks of ideas, and social networks of people. Our vision is to bring them together to create not just social webs connecting people, or semantic webs of machine readable data, but hybrid socio-semantic webs (also becoming known as *Pragmatic Webs*, which place at the centre of Web-based interaction the importance of context and differences in participants' perspectives). Here, the

networks of people, ideas and arguments can be overlaid in powerful new ways that can be visualized and analysed not just by learners and educators, but by software agents to support them.