

# JISC e-Learning CAPITAL PROGRAMME

## Project Document Cover Sheet

### ***PROJECT PLAN***

<b>Project Acronym</b>	MyPlan	<b>Project ID</b>	MyPlan
<b>Project Title</b>	<b>MyPlan – Personal Planning for Learning throughout Life</b>		
<b>Start Date</b>	1 <sup>st</sup> September 2006	<b>End Date</b>	30 <sup>th</sup> November 2008
<b>Lead Institution</b>	Birkbeck College, University of London		
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<b>Project Manager &amp; contact details</b>	Prof Poulouvasilis, with Dr Magoulas as deputy, until end March 2007. To Be Appointed from 1 <sup>st</sup> April 2007.		
<b>Partner Institutions</b>	Linking London Lifelong Learning Network (L4N), Institute of Education (IoE), Community College Hackney (CCH), UCAS		
<b>Project Web URL</b>	<a href="http://www.lkl.ac.uk/research/myplan/">www.lkl.ac.uk/research/myplan/</a>		
<b>Programme Name (and number)</b>	e-Learning Capital Programme		
<b>Programme Manager</b>	Sarah Davies		

## Document

<b>Document Title</b>	<i>Project Plan</i>		
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<b>Author(s) &amp; project role</b>	Alexandra Poulouvasilis and George Magoulas Project Directors		
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## Document History

Version	Date	Comments
1	November 2006	

## Overview of Project

### 1. Background

The **Lifelong Learning in London for All (L4A//)** project funded by the JISC Distributed e-Learning Pilot Call has developed a system to support lifelong learners in exploring learning opportunities in the London region and in planning and reflecting on their lifelong learning activities. The project (see [www.lkl.ac.uk/research/l4all/](http://www.lkl.ac.uk/research/l4all/)) targeted Theme 3 of the DEL pilot call, “Supporting the independent lifelong learner”, and its aim was to allow learners to record and share **learning pathways** through educational offerings, thereby facilitating progression from secondary education, through to Further Education (FE) and on into Higher Education (HE). The L4A// system provides a Web Portal that allows learners to access information and resources registered with the portal by their providers, to plan their own learning pathways, and to maintain and reflect on their learning. Tutors are able to publish recommended pathways through courses and modules (which might be developed by a number of providers).

Learners can share their learning pathways with other learners (if they wish) in order to encourage collaborative learning and collaborative formulation of future learning goals and aspirations. The focus has been particularly on those post-16 learners who have traditionally not participated in higher education. Recent research into learning object ‘trails’ has been integrated into the pilot so that successful educational pathways can be identified, providing a repertoire of possibilities that learners may not otherwise have considered, and positioning successful individuals as role models to inspire confidence and a sense of opportunity amongst those previously excluded.

The L4A// pilot has recently undergone a final phase of evaluation with user groups from FE and HE, and the final version is shortly to be publicly released, including the source code under GNU General Public Licence. It is anticipated that the system will then be adopted by the recently announced **Linking London Lifelong Learning Network (L4N)**, funded by HEFCE and led by Birkbeck. The L4N consortium comprises 14 London HE institutions, 13 London FE institutions, Sector Skills Councils, the Learning and Skills Council, AimHigher, several Adult Education partners, the London Development Agency, and a number of private and public organisations. Funding will be available within the L4N to undertake the embedding of the L4A// pilot within the operational environment of the network during the course of 2006/7.

The L4A// project has developed basic infrastructure to support lifelong learners in exploring learning opportunities in the London region. The L4A// user interface provides screens for user registration and login; entering personal details relating to past and present occupation, skills, qualifications, interests and future learning goals; for creating personal ‘timelines’ incorporating past and future episodes of learning and work; and for searching over courses, over timelines made sharable by other users, and for other users of the system, in each case based on a variety of search criteria. As one of the final workpackages of the L4A// project, we undertook a study of the integration of the L4A// services with **e-portfolio tools** and the outcomes of this study may also be taken up by the L4N in its adoption of L4A//.

Evaluation of the L4A// pilot undertaken with groups of learners from FE and HE has found that learners enjoy using the system, that it helps them take a holistic view of their educational and career prospects, and that it has the potential to provide significant support for making career decisions and educational choices. However, the evaluation has also identified two key areas where further work is required: *personalisation* of the learning planning and recommendation functionalities, and *improved support* for users of the system, particularly for new users. To this end, the **MyPlan** project has the aims presented below.

### 2. Aims and Objectives of the MyPlan Project

- To develop, deploy and evaluate **user models** that reflect the needs of the diverse population of lifelong learners. We will identify learner attributes that need to be modelled and tasks/activities undertaken by lifelong learners, e.g. making career and educational choices, maintaining learning pathways throughout life, sharing information with peers and tutors. This user-related information will be used to develop an ontology for user modelling in a lifelong learning context.
- To develop, deploy and evaluate **personalised functionalities** for the creation, searching and recommendation of learning pathways. This will enhance individual learners’ engagement with the lifelong learning process by offering personalised levels of learner control over their learning

pathways, personalised support in the reflection of where their learning activities may take them, and management of their personal record of progress and attainment. It will also support building communities of learners with similar interests, and information sharing with other members of the community, other users of the MyPlan system, and organisations.

- To evaluate current game-based applications for supporting lifelong learners with view to developing and integrating a **game-based application** into MyPlan. This will allow learners to role-play different learning and career progressions in order to give them better understanding of the possible implications and consequences of different career decisions and educational choices.

### 3. Overall Approach

The L4A// project has developed the basic infrastructure to support lifelong learners in searching and exploring learning opportunities in the London region and a set of tools for visualising, planning and reflecting on their personal learning and lifelong learning activities. It offers a flexible online space that provides advice on learning and personal development pathways, and a forum for learners to share information and collaborate with peers and tutors.

The MyPlan project aims to increase the value of the L4A// pilot by researching, developing, deploying and evaluating (i) user models for lifelong learners, (ii) personalised functionalities for the creation, search and recommendation of learning pathways, and (iii) a game-based application to support learners in exploring the range of educational and career possibilities.

The MyPlan project will run for 27 months, starting on 1<sup>st</sup> September 2006 and ending on 30<sup>th</sup> November 2008. It will deliver freely available open-source software, including two successive versions of the personalised functionalities for lifelong learners, and the game application. The software developed will be in the form of components and services that extend the current L4A// system architecture. These new tools will be incrementally adopted by the L4N during the project, making these facilities directly available to the L4N community of learners. The project will also be providing access to these tools via the UCAS web portal, and this work will be steered by Jill Johnson (UCAS) who will also be one of the project advisors.

The methodology we adopted in developing the L4A// pilot enabled a significant input into the development and evaluation of the system from major stakeholders throughout the lifetime of the project (learners, instructors, institutions, JISC and others). We are adopting a similar approach in the MyPlan project. Additional significant input will be provided now by the 25+ partners of the L4N via its ICT Coordinator, and via the Chair of its Steering Committee, Professor John Annette, who will be one of the advisors to the project.

MyPlan will contribute to the JISC e-Learning programme by developing and evaluating new techniques and tools that allow personalised planning of lifelong learning. A personal space for lifelong learners such as this contrasts with many of the learning environments currently in use, which provide learners with resources and learning management tools that relate to their study at a single institution. The project will bring together stakeholders from a very broad range of institutions all of whom are committed to providing lifelong learning opportunities which enhance career development and widen participation. These stakeholders will have input into the formulation of user and technical requirements and the evaluation of the tools developed by the project. The participation of personnel from the L4N will assure that the needs of the L4N institutions and learners are reflected within the tools being developed and, conversely, will allow MyPlan to serve as a catalyst for the formulation of policies for engaging the interest of lifelong learners and encouraging them to take responsibility for planning and managing their own lifelong learning and continued professional development.

### 4. Project Outputs

The project will produce freely available open-source software, including two successive versions of the personalised functionalities for lifelong learners, and the game application.

It will also produce a series of freely available reports, as listed in the table below: (i) on user models in the context of planning of lifelong learning, a User Modelling ontology, and user data necessary for supporting personalisation (Deliverables D2.1 and D2.2); (ii) specification of personalised functionalities for planning of lifelong learning and of a Personalisation Engine which translates user preferences and characteristics into personalised functionality and interface features (Del. D3.1); (iii) on the development of the two successive versions of the Personalisation Engine, including any evolutions and extensions to the original L4A// components and services that are necessary in order to accommodate the new MyPlan functionality (Dels. D4.1 and D4.3); (iv) on the

integration of the combined MyPlan and L4A// functionality with the UCAS web portal (Del. D4.2); (v) user tasks and activities in the context of lifelong learning, usage scenarios, and evaluation criteria for MyPlan, and analysis of the feedback from its evaluation with different groups of users (Dels. D5.1 and D5.2); and (vi) on the evaluation of game-based applications for supporting lifelong learners, and the specification and development of the MyPlan game application (Del. D6.1).

The project will also produce mid-term and final Project reports (Dels. D1.1 and D1.2). The latter will report on the overall progress of the project, its results and outcomes, challenges faced, impact of the MyPlan system on the L4N community of learners, further directions of research and development identified, and any IPR issues arising.

The project aims presented in Section 2 above will be addressed by 6 Work Packages as listed in the table below and described in greater detail in Section 15. To undertake this programme of work we have requested funding for two developers – DV1 at RA1A pt 12 and DV2 at RA1A pt 7 – and also 20% FTE administrative support at ALC1 pt 6. George Papamarkos has been employed in the role of DV1 during October-November 2006 (he was the lead developer of L4A//) but is not available beyond end November 2006. A new appointee will therefore be employed in the DV1 role for 14 months full-time from April 2007; this person will lead WP4 and WP5, and will also serve as Project Manager during this period. DV2 (Hassan Bajour) will be employed at 50% FTE for two years from 1<sup>st</sup> October 2006. Poulouvassilis and Magoulas are co-Directors of the project, with overall responsibility for the programme of work. Magoulas is in addition leading WP2 and Poulouvassilis WP3. Dr Sara de Freitas will lead WP6. Margaret Andrews (CCH), Professor Diana Laurillard (IoE), Dr Ian Harrison (BBK) and Dr Martin Oliver (IoE) will participate in the Evaluation workpackage – WP5. Prof Laurillard will also participate in WP3. Jill Johnson (UCAS) will participate in WP4 and also as a project advisor.

The software and report outputs of the project will be disseminated via the project web site (WP1), via seminars, articles to conferences and journals, and two dissemination workshops to be held at the mid-point and towards the end of the project. The project will produce a set of Deliverables from each work package as listed below.

<b>WP (team leader; members)</b>	<b>Description</b>	<b>Deliverables/Milestones</b>	<b>Time period</b>
<b>1</b> (leader: Project Manager; member: Project Administrator)	Management, Administration, Dissemination.	D1.1: Interim Project Report, at month 15 D1.2: Final Project Report, at month 27 D1.3: Dissemination activities, throughout the lifetime of the project M1.1: Output of Interim Project Report M1.2: Output of Final Project Report	Sept 2006 – Nov 2008
<b>2</b> (leader: George Magoulas; members: DV2, A.Poulouvassilis)	Development of User Models and a User Modelling Ontology for personalisation.	D2.1: Preliminary report on the User Models and Ontology, at month 12 D2.2: Final report on the User Modelling Ontology and on user data for personalisation, at month 24 M2.1: Preliminary User Models report M2.2: Final User Models report	Sept 2006 – August 2008
<b>3</b> (leader: Alex Poulouvassilis; members: DV1, George Magoulas, Diana Laurillard, Sara de Freitas)	Specification of personalised functionalities for planning of lifelong learning	D3.1: Report on the specification of the Personalisation Engine, at month 7. M3.1: Output of the specification	Sept 2006 – March 2007
<b>4</b> (leader: DV1; members: DV2, Jill Johnson, L4N technical team)	Development and deployment of personalised functionalities for planning of lifelong learning	D4.1: Report on Development of Version 1 of the Personalisation Engine, at month 12 D4.2: Report on the integration with the UCAS web portal, at month 15 D4.3: Report on Development of Version 2 of the Personalisation Engine, at month 21 M4.1: Completion of Version 1 of the Personalisation Engine	April 2007 – August 2007  Sept 2007 – Nov 2007 Dec 2007 – May 2008

		M4.2: Completion of integration with the UCAS web portal M4.3: Completion of Version 2 of the Personalisation Engine	
5 (leader:DV1; members: DV2, L4N Personnel, Margaret Andrews, Martin Oliver, Diana Laurillard, Ian Harrison)	Evaluation	D5.1: Preliminary evaluation report at month 20 D5.2: Final evaluation report at month 25 M5.1: Output of preliminary Evaluation report M5.2: Output of final Evaluation report	Sept 2007 – October 2008
6 (leader: Sara de Freitas; members: external developers)	Game Application	D6.1: Report on the specification and development of the Game Application, at month 21 M6.1: Completion of development of the Game Application	Dec 2007– May 2008

## 5. Project Outcomes

MyPlan will contribute to the JISC e-Learning programme by developing, deploying and evaluating new techniques and tools that allow personalised planning of lifelong learning. A personal space for lifelong learners such as this contrasts with many of the learning environments currently in use, which provide learners with resources and learning management tools that relate to their study at a single institution. MyPlan will offer learners a set of personalised features including control over their learning pathways, reflection on where their learning is taking them, view of their learning and career pathway throughout life, a sense of community building, and information sharing with other individuals and organisations. The project will inform other members of the JISC community of the benefits, challenges and implications of personalised systems for supporting individual learners and differentiated groups of learners in planning and managing their lifelong learning.

MyPlan will also contribute to the JISC community by developing user models that cover user preferences and characteristics in the context of planning of lifelong learning, a User Modelling ontology, an analysis of user tasks and activities, and a set of usage scenarios. The results of deploying the system within the L4N lifelong learning network and of its evaluation with different groups of users will in the longer term be able to inform the formulation of policies for engaging the interest of lifelong learners and encouraging them to take responsibility for planning and managing their own lifelong learning and continued professional development.

Additional value will be through publications, reports and dissemination activities and events (through the JISC, project web site and workshops). The software and report outputs of the project will be disseminated via the project web site, which has recently been set up, and via two dissemination workshops to be held at the London Knowledge Lab at the mid-point and towards the end of the project. The MyPlan services will be piloted within the L4N network of partners, and made freely available to the wider community through open access to the system via the project web site. The project will also publicize its work through JISC-sponsored events and through open day and other events held at the London Knowledge Lab. MyPlan will also utilise the Lab Group, the Kaleidoscope EU network of excellence and other networks in which the project partners are active in order to publicise its outputs to the community.

Other outcomes of the project will include further widening and strengthening the collaboration with students, peers, and the wider educational community; and development of further links within the partner institutions and regional bodies.

## 6. Stakeholder Analysis

Stakeholder	Interest / stake	Importance
JISC	Increase the value of the L4A// system for the region and the wider education community	High

Information system managers of FE/HE institutions	Provide technical expertise, access to relevant services and resources, and feedback on the system's adoption	High
Advisory group members	Advice on the project development. Recruiting users for evaluating the pilot	High
Users evaluating the pilot	Increased opportunities for widening participation and continuing professional development	High
Post-16 Recruitment Departments	Potential of increased recruitment to post-compulsory institutions	High
Previously excluded learners	New opportunities for access to learning	High
Existing lifelong learners	Additional opportunities for access to learning	High
Project team members	Successful completion of the project and evaluation of the system as it is deployed; identifying potential for future services and for integration with other lifelong learning systems and tools	High
Linking London Lifelong Learning Network	Success of the MyPlan project and support for developing the system into a service for members of the L4N	High

## 7. Risk Analysis

Risk	Probability (1-5)	Severity (1-5)	Score (P x S)	Action to Prevent/Manage Risk
Staffing	2	3	6	Management: There is a group of appropriately qualified personnel within the London Knowledge Lab and the project partners who can be deployed on this project in case of the resignation or incapacity of any team member
Organisational	1	5	5	Prevention: Birkbeck and the IoE are constituent Colleges of the University of London. CCH and UCAS are long-established institutions. The L4N is funded by HEFCE and involves 25+ long-established institutions. The London Knowledge Lab is one of London University's designated collaborative research labs.
Technical	2	3	6	Prevention: We will use standard metadata specifications; will use and produce open-source software and JISC ELF-compliant tools and services; and will comply with data protection and IPR regulations. Management: We will be producing a specification, two versions of the software, and will be undertaking extensive deployment and evaluation.
Subcontractors and Advisors	2	3	6	Management: in the event of incapacity of a subcontractor or advisor to continue to participate in the project, we have contacts within a large pool of alternative institutions, and would have support from JISC.
Legal	2	3	6	Prevention: We will be using and producing open-source software; will comply with data protection and IPR regulations; and will obtain user agreement for any use, publication or dissemination of personal data or learning pathways. Management: the Research Grants & Contracts Offices of the partner institutions advise on any legal aspects of externally funded projects.

## 8. Standards

Name of standard or specification	Version	Notes
Java SDK	1.4.2	<a href="http://java.sun.com">http://java.sun.com</a>
Jena	2.1	Framework for providing storage, query and update of RDF metadata over relational databases. Jena 2 includes a rich set of tools for working with RDF data including a Java API, the RDQL and SPARQL query languages, persistent and in-memory RDF storage ( <a href="http://jena.sourceforge.org">http://jena.sourceforge.org</a> ).
MySQL	4.1	Database for storing RDF metadata through the Jena framework ( <a href="http://www.mysql.com">http://www.mysql.com</a> )
Java Servlet Framework (JSR-000053)	2.3	
Apache Jakarta Commons DBCP (DataBase Connection Pooling) framework		<a href="http://jakarta.apache.org/commons/dbcp/">http://jakarta.apache.org/commons/dbcp/</a>
JUnit		Java unit testing
HttpUnit		Automating the website component testing including form submission and user authentication ( <a href="http://httpunit.sourceforge.net/">http://httpunit.sourceforge.net/</a> )
ServletUnit		Testing Java servlets, an extension of HttpUnit ( <a href="http://httpunit.sourceforge.net/doc/servletunit-intro.html">http://httpunit.sourceforge.net/doc/servletunit-intro.html</a> )
RDF		Both the course and the user metadata are encoded in RDF ( <a href="http://www.w3.org/RDF/">http://www.w3.org/RDF/</a> ) using the Dublin Core ( <a href="http://dublincore.org/">http://dublincore.org/</a> ) and IMS ( <a href="http://www.imsglobal.org/">http://www.imsglobal.org/</a> ) standards, extended with additional elements as needed for the project aims.

## 9. Technical Development

The MyPlan project will continue the L4A// service oriented architecture approach, with its basis on the e-Learning Framework ([http://www.jisc.ac.uk/elearning\\_framework.html](http://www.jisc.ac.uk/elearning_framework.html)). We will continue to exploit, as appropriate for the aims of the project, JISC funded tools for Common services and Application services.

The MyPlan project will use and extend the architecture developed in the earlier L4A// project. The final version of the L4A// pilot integrates three external services. Two are provided by other JISC-funded projects: DELTA for searching over the RDF metadata resources and ASSIS/ISIS for providing sequencing over a set of courses according to a set of criteria. A third external service is provided by LearnDirect for searching and retrieving information about the set of courses in the LearnDirect database. These web services are implemented as Java servlets (<http://www.jcp.org/en/jsr/detail?id=154>) over Apache Tomcat 5.0.28 (<http://tomcat.apache.org/>). They accept HTTP GET and POST requests from the user interface components. The results of processing are passed to the called service where they are formatted into XML and then passed back to the calling user interface component. A set of Java classes (Java Beans) provide the core backend functionality. This is where the three external services are integrated with the system and where communication with the metadata repositories is handled, including all actions relating to storing, retrieving and modifying the course and user metadata.

A portal, developed using uPortal ([www.uportal.org](http://www.uportal.org)), serves as the platform for integrating user-system interaction. A Flash Application and Registration Pages make up the user interface. From within this Flash application users are able to visually create and manage their timelines, search for courses, other timelines and other users, and obtain recommendations regarding their future learning choices. The Flash application directly interacts with web services for sending and retrieving information to the backend. The Registration Pages are where a user registers with the L4A// system

and provides personal information to it. They are implemented using HTML and JavaServer Pages (<http://java.sun.com/products/jsp/>) for contacting the necessary service from the backend for the submission and the population of the user metadata. Both the Flash application and the rest of the user interaction pages are embedded in the portal.

The course and user metadata are stored in a MySQL database (<http://www.mysql.com>) using the Jena framework (<http://jena.sourceforge.org>) as a wrapper over the database, providing mechanisms for storing, retrieving and querying the RDF (<http://www.w3.org/RDF/>) metadata. The course and user metadata are encoded using the Dublin Core (<http://dublincore.org/>) and IMS (<http://www.imsglobal.org/>) standards. Due to the user requirements of the L4A// pilot, we had to extend these standards in order to include some additional properties for users and timelines – L4A// Deliverable D6.1 gives details regarding the additional metadata fields needed for L4A//. We expect further extensions to both the user and the course metadata will be necessary in order to meet the aims of the MyPlan project. The new functionality to be provided by MyPlan will be in the form of components and services that extend the current L4A// back-end architecture, and we plan to keep changes to the user interface to the minimum necessary to present the new functionalities to end-users.

The MyPlan development will continue to follow the JISC Software Quality Assurance Policy. The project components, with the exception of the Flash user interface, will be based on open technologies and standards, while the project code, including Flash, will be well documented and open for any usage under the terms of GNU General Public Licence.

The quality assurance guidelines given in the UKOLN quality specifications will continue to be used for designing and deploying the services. As part of this, the technical architecture of the new services will be documented in detail, including the specific technologies used and the service call interfaces for service users' reference. Following the guidelines described in UKOLN's Quality Assurance for Metadata, we will ensure that our metadata conform to the specified quality standards concerning content consistency and interoperability via the use, where possible, of open metadata standards such as IEEE LOM/IMS and Dublin Core.

Throughout the development process, appropriate and comprehensive tests will be designed and applied to successive versions the system. Using the Extreme Software Development methodology, we will ensure that testing is tightly connected with the development process. JUnit will be the platform of choice for defining and applying the tests. A rich set of tests covering different usage scenarios will be applied at all stages of the software development covering the behaviour of single program routines, system modules and services, as well as the user interface

## **10. Intellectual Property Rights**

The MyPlan project will use open source software and tools and will provide its software outputs free as Open Source software under the GNU Public Licence (GPL). The report deliverables will be freely available and will be posted on the project web site, which will be maintained for at least three years after the end of the project in accordance with JISC conditions. The outputs will be made available to the HE/FE community through the JISC development bay and web site for a specified period. Communities who wish to use the software outputs in accordance with open source models will share the costs and support issues surrounding sustainable development of the software.

The core team members will shortly be requested by the institutions to sign an undertaking covering issues such as IPR, confidentiality and publication of results. It is expected that Birkbeck will have the first option to arrange steps for exploitation. Should Birkbeck decide to seek exploitation, discussion between the other partners and other interested parties will be initiated to determine the appropriate action to be taken. Any revenue generated through the exploitation will be shared according to the organisations' internal policy.

The tools that will be developed by the project will be incrementally adopted by the L4N, thereby making these tools available to the extensive community of L4N learners (as well as the original L4A// system which will be adopted by the L4N during the course of 2006/7). The L4N will be taking on the costs of supporting and maintaining both the original L4A// system and the new tools for the use of the L4N institutions and their affiliates. The project will also be enabling access to the new tools from within the UCAS web portal. Beyond the lifetime of the project, it is expected that the L4N will take on the costs of supporting and maintaining these services.

## ***Project Resources***

### **11. Project Partners**

The project will be hosted at the London Knowledge Lab (see <http://www.lonklab.ac.uk/>), which is a recently founded collaboration of social scientists from the Institute of Education and computer scientists from Birkbeck. The School of Computer Science and Information Systems at Birkbeck will coordinate the project. Birkbeck is a leading provider of part-time HE learning and teaching in London. Over 90% of its student population are mature part-time students (modal age 30-39 years) many of whom are employed or have other daytime commitments whilst studying. Birkbeck's mission is inclusive and this is reflected in the wide range of educational, ethnic, cultural and social backgrounds of its students, mirroring the diversity of the London population.

The other consortium members of the project are the Linking London Lifelong Learning Network (L4N), the Institute of Education (IoE), the Community College Hackney (CCH) and UCAS.

### **12. Project Management**

As discussed in Section 4, we have requested funding for two developers – DV1 at RA1A pt 12 and DV2 at RA1A pt 7 – and 20% FTE administrative support at ALC1 pt 6.

Poulovassilis and Magoulas are co-Directors of the project, with overall responsibility for the programme of work. Magoulas is in addition leading WP2 and Poulovassilis WP3. DV1 will lead the Development and Deployment (WP4) and the Evaluation (WP5) work packages, reporting to the co-Directors. In addition to the progress reports to JISC, an interim Project Report will be produced at month 15 and a Final Project Report at month 27 of the project. Poulovassilis, Magoulas and DV1 will be jointly responsible for the production of these reports.

Dr Sara de Freitas will lead WP6, the development of the Game Application. Margaret Andrews (CCH), Professor Diana Laurillard (IoE), Dr Ian Harrison (BBK) and Dr Martin Oliver (IoE) will participate in the Evaluation workpackage – WP5. Prof Laurillard will also participate in WP3. Jill Johnson (UCAS) will participate in WP4 and also as a project advisor.

The project Administrator will maintain the project website, convene and minute meetings, assist in the organisation of dissemination events, and coordinate the production of reports.

Meetings of the core team members (DV1, DV2, administrator, Dr Magoulas, Profs Laurillard and Poulovassilis, and Dr de Freitas) will be held once every two-three weeks to review progress and make detailed plans for the next phases of the work and the production of deliverables. From month 13 of the project (the start of the Evaluation phase), the core team will expand to include also Margaret Andrews and Drs Harrison and Oliver.

The project will have an Advisory group consisting of Professor John Annette (L4N), Dr Graeme Atherton (AimHigher), Paul Welch (Prospects) and Jill Johnson. The Advisory Group will meet with the whole project team four times during the project, in months 6, 12, 18 and 24. It will provide guidance on user and technical requirements, usage scenarios, evaluation, longer-term scalability to additional institutions and to work-based learning environments, and likely impact on increasing uptake of degrees especially amongst groups who have been under-represented in HE.

### **13. Programme Support**

Guidance on potential future evolution and funding of the system, and on its integration with existing and emerging tools in lifelong learning.

### **14. Budget**

See Appendix A

## ***Detailed Project Planning***

### **15. Workpackages**

The project consists of six work packages, described below. A time plan for the life cycle of the project and the work packages is included in Appendix B.

**WP1: Management, administration and dissemination.** Management and Administration of the project were discussed in Section 12 . See Section 18 for discussion of Dissemination.

**WP2: Development of User Models and a User Modelling Ontology for planning of lifelong learning** (Lead: George Magoulas, team members: DV2, Alex Poulouvassilis). The user requirements arising from the L4A// project, from its evaluation and from other lifelong learning applications will inform initial work in this WP to produce a first version of user models covering user preferences and characteristics in planning their lifelong learning, and a first version of a user modelling ontology. Additional user attributes will be identified through the analysis of user tasks and activities that will be undertaken in WP5 (see below), covering both lifelong learners in general and learners who are members of L4N. This information will be used to develop further the user models and user modelling ontology, that will form part of the new MyPlan software services. The final ontology will facilitate the exchange of user data between MyPlan services, and also the interoperability of these services with other applications in the future. *Deliverables: D2.1 Preliminary report on the User Models and Ontology, at Month 12; D2.2 Final report on the User Modelling Ontology and on user data for personalisation, at Month 24.*

**WP3: Specification of personalised functionalities for planning of lifelong learning** (Lead: Alex Poulouvassilis, team members: DV1, George Magoulas, Diana Laurillard, Sara de Freitas). This will be informed by the user requirements arising from the L4A// project, the L4A// evaluation, the general lifelong learning landscape, and the early work on WP2. The core of this WP will be the specification of a Personalisation Engine which translates user preferences and characteristics into personalised functionality and interface features. It is expected that both system-controlled and user-controlled personalisation will be supported. Possible types of personalised functionality to be provided are listed below, as well as examples of the individualisation that will be offered in each case. *Deliverable: D3.1 The Specification, at Month 7.*

<b>Personalised Functionality</b>	<b>Example of Individualisation</b>
Searching for content, pathways or peers in a personalised manner by filtering results based on the user model	Narrowing down or broadening the results depending on a user's preferences and career and learning goals
Personalising the delivery and presentation of content based on the user model	Presenting detailed or brief formats depending on user preferences and characteristics
Supporting users' navigation through the MyPlan information space of courses, pathways, learners, and search results	User annotation of resources; ranking of resources based on user preferences, characteristics and ratings
Personalised recommendations of learning planning	Guidance and feedback to pursue a particular career or learning goal. Automatically identifying 'people like me' and making recommendations based on their choices
Intervening/guiding personalisation decisions	Activating/deactivating features of the system depending on user preferences and career and learning goals

**WP4: Development and deployment of personalised functionalities for planning of lifelong learning** (Lead: DV1, team members: DV2, Jill Johnson, L4N technical team). This will develop and deploy two successive versions of the Personalisation Engine: version 1 to be delivered at month 12 (end August 2007) and version 2 at month 21 (end May 2008). The new components and services will extend the current L4A// system architecture. Our software will continue to be compliant with the JISC e-Learning Framework and service-oriented architecture, and will continue to use and extend as necessary learning object and learner metadata based on the IMS Metadata (<http://www.imsglobal.org/metadata/>), IMS-LIP (<http://www.imsglobal.org/profiles/>) and eduPerson (<http://www.educause.edu/eduperson/>) standards.

During months 8-12 (April 2007-August 2007), version 1 (V1) of the personalisation engine will be developed, taking as input the specification from WP3 and the early phases of work on WP2. Any evolutions and extensions to the original L4A// components and services that are necessary in order to accommodate the new MyPlan functionality will also be designed and implemented. Evaluation of V1 will then commence in WP5 in Sept 2007 (see below) and the system will also be handed over to the L4N technical team for adoption during 2007/8.

During months 13-15 (Sept 2007 – November 2007) work will be undertaken on providing the combined MyPlan and L4A// functionality for access from within the UCAS web portal, and this work will be steered by Jill Johnson. During months 16-20 (December 2007 – April 2008), V1 will be incrementally extended and enhanced, taking as input the more mature outputs from WP2, the results of the ongoing evaluation in WP5, and the feedback from L4N users of V1 during 2007/8. The second, and final, version V2 will be delivered in month 21 (May 2008) and will be made available to the L4N learners and via the UCAS web portal for further evaluation. *Deliverables: D4.1 Report on the development of version 1, at Month 12; D4.2 Report on the integration with the UCAS web portal, at Month 15; D4.3 Report on the development of version 2, at Month 21.*

**WP5: Evaluation** (Lead: DV1, team members: DV2, L4N Personnel, Margaret Andrews, Martin Oliver, Diana Laurillard, Ian Harrison). The evaluation phase will begin with the delivery of V1 in Month 13 (Sept 2007) and will continue until the end of the project. Using V1, lifelong learners' tasks and activities will be identified, both for independent and L4N learners, and usage scenarios will be designed. A workshop with relevant stakeholders will be organised to test these scenarios. The scenarios will then be used as instruments to analyse users' tasks and activities in the context of MyPlan. For this we will undertake an extensive evaluation of tasks and activities involving different groups of users drawn from a variety of L4N institutions: different groups of learners, tutors, careers advisors, widening participation officers and content providers. The feedback from these evaluations will be analysed and the results will inform the incremental enhancement and extension of the MyPlan system during the last year of the project. Evaluation with different user groups will continue as improved/new functionality is delivered in order to analyse the impact of this on the identified tasks and activities, to monitor user acceptance of the system prior to its final release, and to assess the effectiveness of the system in supporting and enhancing lifelong learning processes. *Deliverables: D5.1 Preliminary evaluation report at Month 20 (April 2008), D5.2 Final evaluation report at Month 25 (September 2008).*

**WP6: Game Application** (Lead: Sara de Freitas, team members: external developers). This WP will involve the development and integration of a game application into the system. We will evaluate current game-based applications for supporting lifelong learners. AimHigher is currently leading a project developing teaching materials to complement a suite of game-based applications targeted at learners wishing to enter HE. Working with AimHigher and external developers, we will develop and integrate into MyPlan a games application for supporting lifelong learners in their career decisions and educational choices. This will give opportunities for learners to role-play different careers in collaborative or individual situations allowing them to gain a better understanding of particular jobs, and providing a safe environment within which learning and careers opportunities can be considered and reflected upon with tutorial and peer support. *Deliverable: D6.1 Report on the specification and development of the Game Application, at month 21 (May 2008).*

## 16. Evaluation Plan

The project will focus on formative evaluation to see how selected user groups are using the system, aiming to provide formative feedback to the project team and identifying further improvements and future extensions to the system. This activity has been designed to be timely and will inform both design parameters and usability issues and concerns. The study will evaluate selected learner groups using the extended L4A// system and will draw upon observational and interview-based methods. The purposes of the study aim to evaluate in-depth the entire system, and thus feedback from user groups will inform any necessary improvements and revisions for the system.

Factors that will be evaluated are summarised below.

Timing	Factor to Evaluate	Questions to Address	Method(s)	Measure of Success
WP5	MyPlan personalisation extensions to the L4A// system	What do potential users think of the extended L4A// system? Does the extended system broaden users'	Observational studies, interviews, system logs.	Evidence of choices, reflection, effective support, flexibility.

		educational choices? Are there any usability problems with the new personalised functionalities?		
WP4	Adoption of the L4A// system in organisational context: L4N and UCAS	Is the system accessible to all users? What are user and technical needs in these organisational contexts? What are the factors that influence its adoption?	Interviews, survey.	Identification of stakeholders and of factors that influence adoption

## 17. Quality Plan

In the interests of making the project deliverables functional, widely accessible and reusable to the HE/FE community of practitioners and learners, this project will comply with the UKOLN QA methodology, following QA procedures that will include: documented policies on standards and best practice; documentation of the architecture used; documented exceptions, systematic checking and audit trails. Each deliverable will comply with the QA method in accordance with these procedures.

Timing	Quality criteria	QA Method(s)	Evidence of Compliance	QA tools
WP4/WP6	Fitness for purpose	Test systematically, keep audit trails	Make audit trails available to JISC Programme Team	JUnit, HttpUnit, ServletUnit
WP1/WP4/WP5	Best practice for processes	Keep audit trails	Make audit trails available to JISC Programme Team/user studies/reports	
WP2/WP3/WP4/WP6	Adherence to standards and specifications	Document policies on standards and best practice. Document architectures used	Reports	

## 18. Dissemination Plan

The project team will work closely with the advisory group members, the local London Learning Skills Council, the JISC Regional Support Centre and with the other London-based projects to ensure that the findings of the project are disseminated to the widest possible audience. The project will share outputs, outcomes and information arising from the project with stakeholders and the wider academic community in four main ways:

- **The project web site.** The web site will provide evaluators and the expert community with open source access to the tools developed, documentation, project reports and survey details. The project web site will be maintained for at least three years beyond the end of the project.
- **Networking activities.** We will hold seminars to present our findings throughout the project, to discuss the benefits of our approach and gauge the validity and usefulness of the new personalised functionalities. We plan to hold two dissemination workshops at the London Knowledge Lab at the mid-point and towards the end of the project. We will also use the Lab Group, the Kaleidoscope EU network of excellence and other networks in which the project partners are active in order to publicise the project to the community.

- **Publication activities.** We will write and submit articles to leading national and international conferences to disseminate information about the system, particularly the new personalised functionalities.
- **Formative dissemination through the JISC.** The formative dissemination of outputs, outcomes and information arising from the project will be disseminated to the HE/FE communities of practice through: the JISC development bay, relevant JISC mailing lists and JISC events. This process will be ongoing throughout the project lifecycle. The project team will liaise closely with the JISC team to facilitate broad dissemination of the outputs. The formative dissemination will also include forming close links with other stakeholders and organisations wherever appropriate.

Timing	Dissemination Activity	Audience	Purpose	Key Message
WP1	Project web site	Developers HE/FE community	To disseminate outputs of the project	Formative input into tools and system development
WP1	Networking and Publication Activities	HE/FE community Developers	To disseminate information about the system	Assessment of feedback from the community about the system
WP1	Two dissemination workshops with HE/FE community	HE/FE community	To disseminate information about the adoption of the system	Embedding use of system into organizational practice

## 19. Exit and Sustainability Plans

The software developed by the MyPlan project will be piloted within the L4N network, will be made accessible from the UCAS web portal, and will be made freely available to the wider community through open access to the system via the project web site. The outputs from the project will be made available to the research and academic community as open source products and embedded into the open source community for further use. The project web site will support this process of continuity, and all documentation will be made available there. In addition, it is planned that the software will be made available to the HE/FE community through the JISC development bay and web site for a specified period. Communities who use the L4A//MyPlan software in accordance with open source models will share the costs and support issues surrounding sustainable development of the tools.

The software developed by earlier L4A// and current MyPlan projects will be incrementally adopted by the L4N, thereby making the original and extended system available to the community of L4N learners. The L4N will be taking on the costs of supporting and maintaining the system for the use of the L4N institutions and their affiliates. The MyPlan project will also be enabling access to the system from within the UCAS web portal. Beyond the lifetime of the MyPlan project, it is expected that the L4N will take on the costs of supporting and maintaining these services.

Project Outputs	Action for Take-up & Embedding	Action for Exit
Extended L4A// system	Working with the Linking London Lifelong Learning Network (L4N)	The L4N will provide mechanisms for developing the extended system into a service for the L4N users
Project reports and publications	Promoted through relevant conferences, mailing lists and workshops	Archived on project web site
Knowledge about personalisation of systems for distributed e-learning	Application knowledge through other project work and research publications	Publication and follow-up projects
Knowledge about widening access and	Application knowledge through other project work and research	Publication and follow-up projects

participation	publications	
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The following outputs are expected to be sustained after the project ends.

<b>Project Outputs</b>	<b>Why Sustainable</b>	<b>Scenarios for Taking Forward</b>	<b>Issues to Address</b>
Extended L4A// system	Adoption by Linking London Lifelong Learning Network (L4N)	Future support for further enhancements to the system beyond the current project would be provided by the L4N and/or by additional funding.	Successful piloting of L4A// within the L4N and UCAS web portal. Consider requirements of the L4N and UCAS. Technical and project management support issues.
Project web site	Supportable as part of the London Knowledge Lab	Archived on LKL web site	None





## Appendix B – Workpackages

The work of this continuation project will consist of 6 workpackages. Their durations are summarised in the timetable below, and full details follow subsequently.

Workpackages	Month	1 09/06	8 04/07	13 09/07	16 12/07	22 06/08	25 09/08	26 10/08	27 11/08	
	Duration									
1:Management, Administration, Dissemination	27 months									
2:User Modelling	24 months									
3:Specification	7 months									
4:Development & Deployment	13 months									
5:Evaluation	13 months									
6.Game Application	6 months									

Project start date: 01-09-2006

Project completion date: 30-11-2008

Duration: 27 months



Workpackage and activity	Earliest start date	Latest completion date	Outputs (clearly indicate deliverables & reports in bold)	Milestone	Responsibility
<b>YEARS 1-3</b>					
<b><i>WORKPACKAGE 1: Management, Administration, Dissemination</i></b>					
<u><i>Objective:</i></u>					
1. Monitor project plan	01/09/06	31/11/08			AP/GM
2. Maintain database of bug reports	01/09/06	30/09/08			DV1/DV2
3. Administer budget	01/09/06	31/11/08			AP/GM/BBK-R&C
4. Communication with JISC and progress reports	01/09/06	31/11/08			AP/GM/DV1
5. Produce project plan	01/09/06	31/11/06	<b>FINAL PROJECT PLAN</b>	<b>X</b>	AP/GM
6. Schedule project team and advisory group meetings	01/09/06	31/11/08			PA
7. Organise production of deliverables	01/09/06	31/11/08			PA
8. Produce interim project report	01/09/06	31/11/07	<b>INTERIM PROJECT REPORT</b>	<b>X</b>	AP/GM
9. Produce final project report	01/09/06	31/11/08	<b>FINAL PROJECT REPORT</b>	<b>X</b>	AP/GM
10. Administration of project web site	01/09/06	31/11/08	Ongoing Updating of Web Site Info		PA/LKL WEB TEAM
11. Dissemination and networking activities	01/09/06	31/11/08	<b>PAPERS, DISSEMINATION EVENTS,</b>	<b>X</b>	AP/GM/DV1/PA

			DISSEMINATION THROUGH JISC		+ all other members of the MyPlan project team
<p><b>WORKPACKAGE 2: User Models and Ontology for planning of lifelong learning</b></p> <p><u>Objective:</u> To develop user models and a user modelling ontology that will form part of the new MyPlan software services.</p>					
12. Analyse user requirements arising from L4All project, from its evaluation and from other lifelong learning applications. Produce first version of user models and user modelling ontology.	01/09/06	31/08/07	PRELIMINARY USER MODELS REPORT	X	GM + DV2, AP
13. Identify additional user attributes for personalisation, from analysis of user tasks and activities identified in WP5. Produce enhanced version of user models and user modelling ontology.	01/09/07	31/18/08	FINAL USER MODELS REPORT	X	GM + DV2, AP
<p><b>WORKPACKAGE 3: Specification of Personalised functionalities for planning of lifelong learning</b></p> <p><u>Objective:</u> To specify the personalised functionalities that MyPlan will support, and the new Personalisation Engine.</p>					
14. Specify personalised functionalities for planning of lifelong learning, informed by the general lifelong learning landscape, the user requirements arising from L4All, the L4All evaluation, and the early work on WP2.	01/09/06	31/12/06	First draft specification		AP + GM, DV1, DL, SdF

15. Specify the architecture and design of the Personalisation Engine, to extend the current L4All system with personalised functionalities.	01/01/07	31/03/07	PERSONALISATION SPECIFICATION	X	DV1 + AP, GM
<b>WORKPACKAGE 4: Development and Deployment</b>					
<b>Objective:</b> To develop and deploy the personalised functionalities and Personalisation Engine specified in WP 3.					
16. Development of first version of the Personalisation Engine, from the Specification produced in WP3	01/04/07	31/08/07	REPORT ON DEVELOPMENT OF V1	X	DV1 + DV2
17. Integration of V1 with UCAS Web Portal	01/09/07	31/11/07	REPORT ON INTEGRATION WITH UCAS WEB PORTAL	X	DV1 + JJ
18. Adoption of V1 by Linking London Lifelong Learning Network (L4N)	01/09/07	31/11/07			L4N Technical Team
19. Development of second version of the Personalisation Engine, taking as input the more mature outputs from WP2, the results from WP5, and feedback from L4N users	01/12/07	31/05/08	REPORT ON DEVELOPMENT OF V2	X	DV1 + DV2
20. Integration of V2 with UCAS Web Portal	01/06/08	31/11/08			DV1 + JJ
21. Adoption of V2 by L4N	01/06/08	31/11/08			L4N Technical Team
<b>WORKPACKAGE 5: Evaluation</b>					
<b>Objective:</b> To evaluate and enhance the personalised functionalities with respect to identified user scenarios, tasks and activities.					
22. Using V1, identification of lifelong learners' tasks and activities, and design of usage scenarios.	01/09/07	31/11/07	Interim report		DV1 + DV2, L4N Personnel, MA, MO, DL, IH

23. Evaluation of tasks and activities involving groups of users drawn from a variety of L4N institutions.	01/12/07	30/04/08	PRELIMINARY EVALUTION REPORT	X	DV1 + DV2, L4N Personnel, MA, IH
24. Analysis of evaluation results, to inform development of V2, monitor user acceptance of the system, and assess its effectiveness in supporting lifelong learning.	01/05/08	30/09/08	FINAL EVALUTION REPORT	X	DV1 + DV2, L4N Personnel, MA, MO, DL, IH
25. Continued evaluation of new/improved functionality with groups of users	01/05/08	30/09/08			DV1 + DV2, L4N Personnel, MA, IH
<b>WORKPACKAGE 6: Game Application</b>					
<u>Objective:</u> To evaluate current game-based applications for supporting lifelong learners, and develop and integrate a game application into the system.					
26. Evaluate current game-based applications for supporting lifelong learners	01/12/07	31/01/08	Interim report		SdF
27. Develop a game application for supporting MyPlan users in their career decisions and educational choices.	01/12/07	30/05/08	REPORT ON SPECIFICATION AND DEVELOPMENT OF THE GAME APPLICATION	X	SdF + External Developers

## Members of Project Team:

DV1 = Developer 1  
 DV2 = Developer 2  
 PA = Project Administrator  
 AP = ALEX POULOVASSILIS  
 GM = GEORGE MAGOULAS  
 DL = DIANA LAURILLARD  
 LKL WEB TEAM = LONDON KNOWLEDGE LAB WEB TEAM

SdF = SARA de FREITAS  
 JJ = JILL JOHNSON  
 IH = IAN HARRISON  
 MO = MARTIN OLIVER  
 MA = MARGARET ANDREWS  
 BBK R&C = BIRKBECK RESEARCH AND CONTRACTS DEPARTMENT  
 ED = EXTERNAL DEVELOPERS