

# G4L – The East Midlands NTI Gateway for Learning

## Overview of Project

### 1. Background

G4L includes a consortium of FE and HE partners currently working collaboratively as part of the East Midlands Energy & Environment NTI Network to develop an integrated regional blended and e-learning framework comprising:

- A meta-learner management system which facilitates personal course planning and effective management of student access to the NTI curriculum. Using this approach, students will be able to construct individual learning programmes based upon specific needs (such as job requirements and aptitude) matched against the NTI curriculum.
- A content management framework comprising a repository of learning resources matched to courses within the NTI curriculum, and accessed according to students' course registration profiles.

The design of the G4L framework will be based around the needs of key end user groups, including curriculum developers, trainers/tutors, administrators and of course learners. Where possible, reference will be made to the LearnDirect framework to allow delivery via LD if appropriate, and subsequent easy transition to NTI courses.

### 2. Aims and Objectives

This project aims to explore the delivery of e-learning courses to SMEs, which utilise learning resources and administration that is distributed among a consortium of Universities and FE colleges and delivered often in a WBL context

A key objective is to identify an effective methodology, together with appropriate technology, to present learners with a seamless learning experience in which the back-of-house distribution of courses and materials remains largely hidden.

Whilst true personalisation of the learning experience is not a central objective, the perception of both flexibility and tailorability to personal needs is key. With this in mind, for SME application, the production of clear and simple interfaces for learner and content management and learning administration is key.

### 3. Overall Approach

#### Strategy and/or methodology and how the work will be structured

Our strategy involves the development of practical solutions based on the identified needs of key end-users (including curriculum developers, trainers/tutors, administrators and learners). Therefore, this project will be pedagogy-led rather than technology-led. Where possible we will use existing tools to achieve our aims. Where this is not possible, our approach will involve the development of "lean" fit-for-purpose technology solutions.

To these ends, effective needs analysis will be key. Engagement has already commenced with end users to ascertain requirements, and this will continue throughout the project. Our extensive experience with work-based learners means that we will implement effective blended learning approaches that take into account learners' objectives as well as learning objectives. We anticipate a focussed and lean technology implementation phase, with a key goal being to achieve a working product used for the delivery of a real course, rather than a work-in-progress.

### **Important issues to be addressed**

- Nature and extent of distribution of learning materials and courses among consortium partners
- Interoperability of learning systems and learning management between institutions
- Designing for usability – appropriate/effective interfaces for target user groups
- Re-purposing of legacy materials to comply with standards and fit delivery model
- Extent/functionality of learner and content management components
- Feasibility of utilising existing tools and methods

### **Scope and boundaries of the work, including any issues that will not be covered.**

#### Covered

- Development of web front-end to act as user interface to distributed learning and support – a simple portal
- LCMS/repository
- Admin tools
- Re-purposing of courseware

#### Not covered

- Comprehensive access-management/interoperability tools.
- Advanced portal functionality
- Development of new course materials

### **Critical success factors.**

- Stakeholder engagement
- Effective GUI design
- Lean back-end design
- Effective interoperability model and implementation
- Iterative end-user feedback
- Exemplary internal and external marketing

## **4. Project Outputs**

- Demonstration of a web-based mini-portal providing access to an integrated learner, content and user access management system which interfaces with existing e-learning systems within

the G4L member institutions. The nature of this interface will be determined as a core objective within the project

- The application of a simple LCMS providing managed access to a courseware repository. This repository will contain adapted and quality assured content from across the consortium. This will serve to provide individualised student-centred learning programmes as well as enabling re-use of courseware in future developments. In creating this resource, the group will investigate existing content management and sharing tools (including JORUM and RELOAD)
- An effective methodology for the consistent adaptation of courseware and subsequent delivery models across the institutions involved. Courseware will be configured with reference to the E-Learning Framework to ensure full interoperability of materials as well as “future-proofing” the courses created.
- An effective mechanism for learner progression within and between the institutions. The learner and content management approaches proposed and the single environment in which they will be integrated will be central to supporting such progression. This framework will address aspects of JISC project theme 1 “Facilitating Progression”
- Short briefing papers will be produced on significant developments or issues arising throughout the project. It is anticipated that this will happen on completion of each key design and implementation stage. These papers will be made publicly available via JISC.

## 5. Project Outcomes

- Support the skills development needs of SMEs operating within the Environmental economy of the region.
- Integration of learner and content management systems to constitute a meta-management system
- Sharing of best practice across the NTI partnership
- Demonstrate the value of JISC to key regional stakeholders (including EMDA)
- Apply a bespoke e-learning framework designed around the needs of SMEs across the East Midlands.
- Facilitate seamless access to course portfolios across distributed Institutions

## 6. Stakeholder Analysis

Stakeholder	Interest / stake	Importance
EMDA	Sponsor of NTI	Medium
NTI regional group	Coordinator of regional networks	Medium
NTI institutional curriculum developers & tutors	Delivery of courses via JISC framework	High
NTI manager	Administers course information	High
JISC	Sponsor of project	High
Partner Institutions	Added value to institutional portfolio	Medium
SMEs	Main NTI customers - provide trainees. Quality and effectiveness of training	High
Trainees/learners	Training to meet the needs of their employers and themselves	High

## 7. Risk Analysis

Risk	Probability (1-5)	Severity (1-5)	Score (P x S)	Action to Prevent/Manage Risk
<p><b>Staffing:</b> Failure to recruit/contract suitable technical staff</p> <p>Failure of contractors to deliver to specification and on time</p>	1	4	4	<p>A number of contractors have been identified, all of whom are in a position to provide the work and services required.</p> <p>Small contract sizes and short time-frames for delivery will reduce the impact of unforeseen problems with technical development</p>
<p><b>Organisational:</b></p> <p>Partner organisations failing to engage fully in project</p> <p>Organisational resistance or inability to support distributed access to their learning systems</p> <p>Failure to complete NTI course development</p>	2	3	6	<p>Built on a strong NTI consortium – commitment from partners</p> <p>Working closely with partner ILT teams from the outset to establish the scope and methods of distributed learning</p> <p>Working closely with curriculum developers to ensure course development proceeds as planned (2-3 course modules alone would suffice for G4L proof of concept)</p>
<p><b>Technical:</b></p> <p>Problems with interoperability of components</p> <p>Lack of time to implement contingencies in the event of a major technical failing (in design or implementation)</p>	2	4	8	<p>The overall technical solution will be developed by a single technical contractor to maximise the likelihood of successful interoperability of the component parts</p> <p>Contingency planning is being carried out to scope out the impact of the failure of any component. In the event of such a failure, partial solutions would still provide valuable project outputs</p>
<p><b>External suppliers:</b></p> <p>Failure of contractors and suppliers to deliver</p>	1	4	4	<p>Thorough checking of equipment suppliers and contractors will be carried out, with competitive tendering where contract size requires</p>
<p><b>Legal:</b></p> <p>Issues of IPR, data protection, freedom of information may be relevant</p>	1	3	3	<p>Liaison with JISC and other experts for advice and support</p>

## 8. Standards

Reference to JISC ELF (e.g. SCORM/IMS to facilitate portable content and student data)  
Appropriate standards for portal and tool kit (e.g. course metadata) not yet confirmed.

## 9. Technical Development

An appropriate requirements capture, verification and validation technical framework is being developed. It is envisaged that the toolkit will comprise both browser-based and executable applications. Back-end components are expected to adopt flexible and scaleable solutions such as SQL/PHP. Specific approaches will depend on the outcomes of our initial requirements evaluation and existing JISC and other tools that are fit-for-purpose.

## 10. Intellectual Property Rights

There are some tools in development at Loughborough and other partners that could contribute to aspects of G4L. Permission to use these during G4L is implicit as part of the in-kind contribution to G4L. Permission for use by third parties is subject to subsequent agreements. Existing curriculum content for re-purposing in G4L is owned by individual institutions and permission to re-use by third parties will be required.

## *Project Resources*

### 11. Project Partners

Loughborough University, Lead Partner  
Brooksby Melton College, Project manager  
Tresham Institute, NTI administrator  
De Montfort University, Curriculum partner  
Nottingham Trent University, Curriculum partner  
University College Northampton, Lead Curriculum partner  
LearnDirect (Ufl), Project advisor  
Suitable sub-contractors will be identified as required

A consortium agreement is already in existence as part of the overall NTI agreement. A specific JISC agreement will be produced as a supplement during the project's first phase.

### 12. Project Management

The project management framework, (including organisation, reporting relationships, decision process, and the role of any local management committee) reflects the structure outlined in the relevant JISC guidelines and resources. Responsibility of project steering lies with the NTI management committee (comprising EMDA, EMids NTI and Institutional representatives). The JISC project manager and director report to this team. Financial aspects are the responsibility of the PD. Strategic and tactical decisions are taken by the PD in collaboration with the PM, informed by iterative input from all relevant stakeholders.

1. Ben Williams (Project Manager) [bcwilliams@brooksbymelton.ac.uk](mailto:bcwilliams@brooksbymelton.ac.uk)
2. Paul Rowley (Project Director) [P.N.Rowley@lboro.ac.uk](mailto:P.N.Rowley@lboro.ac.uk)
3. Barri Stirrup (NTI manager – curriculum coordinator) [bstirrup@Tresham.ac.uk](mailto:bstirrup@Tresham.ac.uk)
4. Ruth Copeland (Curriculum Developer) [Ruth.Copeland@northampton.Ac.Uk](mailto:Ruth.Copeland@northampton.Ac.Uk)
5. Design and technical staff to be identified

Project management training was identified and addressed by attending the JISC PM event in Birmingham during early 2005.

### 13. Programme Support

The following support from JISC would be appreciated:

- Help in identification of suitable consultants (including those in other HEIs)
- Advice on the applicability of existing tools for our use.
- PC-based walk-throughs of existing tools

### 14. Budget

See appendix A

## Detailed Project Planning

### 15. Workpackages

See appendix B

### 16. Evaluation Plan

Timing	Factor to Evaluate	Questions to Address	Method(s)	Measure of Success
WP 2+3	System usability	Has the objective of clarity and simplicity of use been achieved?  Can users navigate the system effectively and efficiently?  Is the distributed nature of the underlying materials sufficiently unobtrusive, from the users perspective?	Observational study/basic usability analysis. To include a structured interview. Participants: 5 learners; 2 tutor; 1 administrator	End-users are able to use the system effectively and achieve their goals.
WP 3	Learner experience	Do learners benefit from the systems design and features?  Are their learning objectives met effectively through G4L?  Are they happy with the learning experience provided through G4L?	Two short case studies following 2 types of learner – 2 work-based and 2 not	Majority of features used by users.  Learning outcomes meet objectives  Users' subjective reports are positive
WP 2+3	Distribution of teaching and learning	Has an effective system for the management and delivery of distributed teaching and learning materials and support been achieved?	End user survey (questionnaire-based) Usage analysis	Teaching and learning resources and support delivered effectively via portal from distributed sources

## 17. Quality Assurance Plan

Timing	Compliance With	QA Method(s)	Evidence of Compliance
WP1-3	Fitness for purpose	Stakeholder feedback	Ability to demonstrate high end user feedback scores.
WP 3	Interoperability standards	Reference to UKOLN, CETIS	Complies with UKOLN and CETIS benchmarks
WP 1-3	JISC standards guidelines	Reference to “Working with the DNER”	Qualitative assessment against DNER and related documentation
WP 3	Accessibility legislation	Conforms with SENDA - Web components designed for accessibility. Adherence to W3C, WAI	Basic validation using Bobby or similar tool

## 18. Dissemination Plan

Timing	Dissemination Activity	Audience	Purpose	Key Message
WP 3	NTI website guest access as demonstrator of project outputs	Anyone	Validate design spec as ‘fit for purpose’	Distributed learning opportunities can be simple to access
WP 3	Project progress and outcomes disseminated via JISC conduits	Project partners; Sector organisations	Make available design and implementation overview plus proof-of-concept findings	Challenges met in achieving consortium-based teaching/learning and management
WP 3	Conferences/workshops including HE, FE and JISC events.	HE/FE audience	Formative and summative presentation of project progress and outcomes	Distributed E-Learning addressing teaching, learning and administration needs at the F.E./HE interface

## 19. Exit/Sustainability Plan

Project Outputs	Action for Take-up & Embedding	Action for Exit
Course mini-portal	Will remain available as live demonstrator for at least the duration of the NTI project (currently under review for further sustainability funding)	Used as access point for ongoing access to and management of NTI courses
Application of LCMS	Will support continuation of JISC/NTI and provide evaluation/proof –of-concept for future application	Used as repository of NTI courseware
Courseware adaptation methodology	Demonstration of value in supporting course portfolio	Methodology is used for all new curriculum development

		activities
Learner progression mechanism	Demonstration of value in supporting course portfolio	Mechanism is used to facilitate on-going learner progression across NTI institutions

Long-term project outputs:

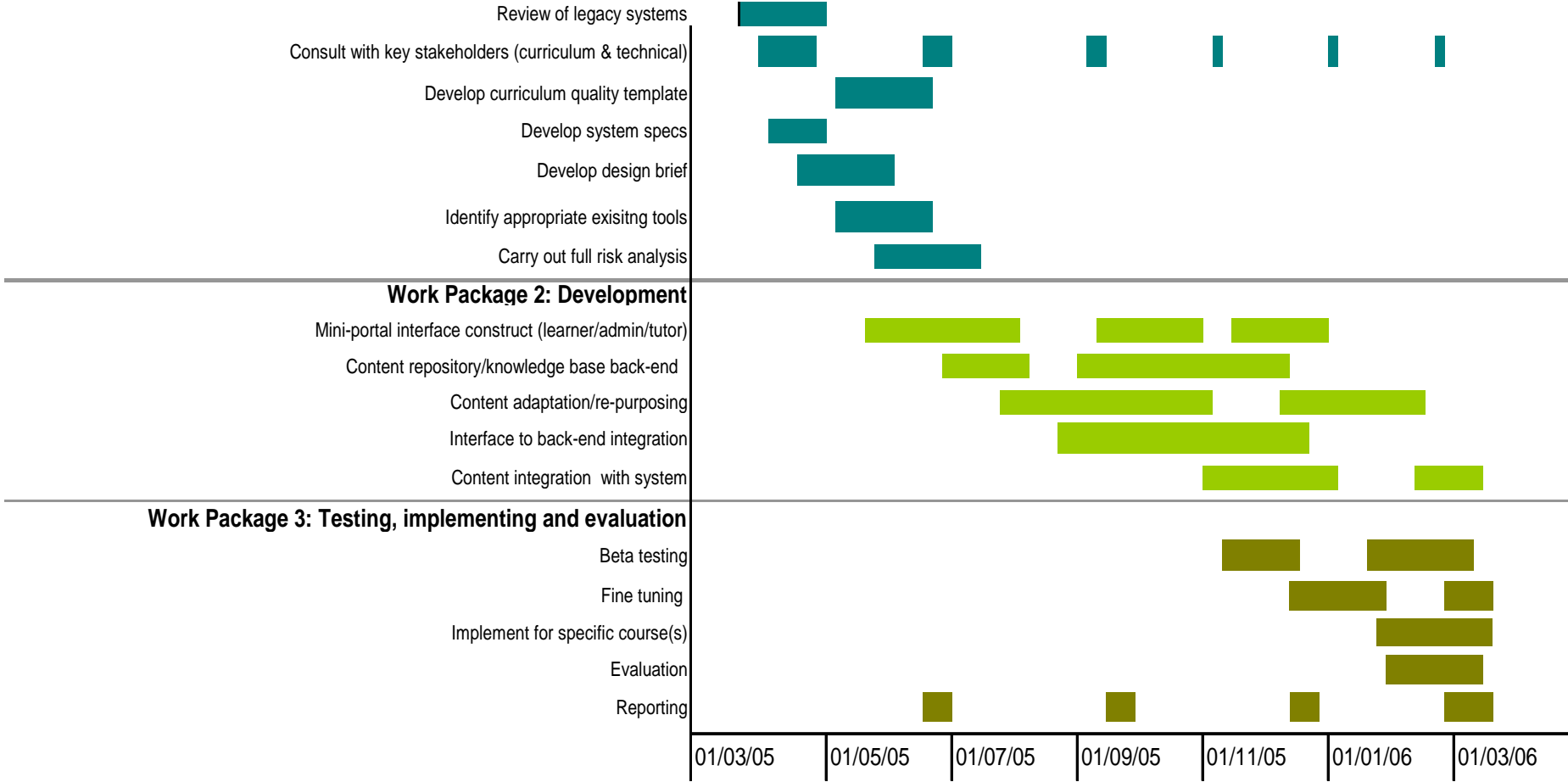
<b>Project Outputs</b>	<b>Why Sustainable</b>	<b>Scenarios for Taking Forward</b>	<b>Issues to Address</b>
All listed above	Of significant value to future NTI curriculum development and delivery	Toolkit is utilised and mainstreamed within our NTI cluster. Then disseminated across all regional clusters	Take-up & handover arising from staff changes Transfer to other clusters.

## ***Appendixes***

### **Appendix A. Project Budget**

Please see separate document.

**Appendix B. Workpackages**



Project start date: 01-04-2005

Project completion date: 31-03-2006

Duration: [12] months

Workpackage and activity	Earliest start date	Latest completion date	Outputs (clearly indicate deliverables & reports in bold)	Milestone	Responsibility
<b>YEAR 1</b>					
<b>WORKPACKAGE 1:</b>					
<b>Objective:</b> Develop baseline technical & design criteria, along with content quality framework					
1. Review of legacy systems	01/04/05	01/05/05	Assessment of technical aspects of MLE interfacing & integration. <b>Working paper.</b>	<b>1</b>	BW
2. Consult with key stakeholders (curriculum & technical)	14/04/05	01/03/06 (multi-phase)	Baseline specification and iterative fine tuning. <b>Ongoing progress papers</b>	<b>1-3</b>	BW/PR
3. Develop curriculum quality template	01/05/05	01/07/05	Quality framework for content conversion. <b>Developers' manual.</b>	<b>1</b>	PR/BW
4. Develop system specs.	10/04/05	01/05/05	Operational criteria for overall system. <b>Spec chart.</b>	<b>1</b>	BW/PR
5. Develop design brief	20/04/05	01/06/05	Working brief for designers and tech staff. <b>Design brief doc.</b>	<b>1</b>	BW/PR
6. Identify appropriate existing tools	04/05/05	20/06/05	Assess suitability of existing tools for use. <b>Working Paper</b>	<b>1</b>	BW
7. Carry out full risk analysis	20/05/05	10/07/05	Identify and avoid 'icebergs'. <b>Risk analysis chart</b>	<b>1</b>	PR

<b>WORKPACKAGE 2:</b>					
<b><i>Objective:</i></b> <b><i>To develop the toolkit in readiness for testing and implementation</i></b>					
8. Mini-portal interface construct (learner/admin/tutor)	20/05/05	01/01/06 (3 phase)	Use design brief to commence GUI construction. <b>Interface dummies</b>	<b>2</b>	BW/PR
9. Content repository/knowledge base back-end	01/07/05	15/12/05 (2 phase)	Database structure and <b>working prototype.</b>	<b>2</b>	BW/PR
10. Content adaptation/re-purposing	20/07/05	15/02/06 (2 phase)	<b>Set of adapted course content</b>	<b>2</b>	PR
11. Interface to back-end integration	25/08/05	25/12/05	<b>Functioning alpha version containing dummy content.</b>	<b>2</b>	BW/PR
12. Content integration with system	01/11/05	01/03/06 (2 phase)	<b>Populated alpha version</b>	<b>2</b>	BW/PR
<b>WORKPACKAGE 3:</b>					
<b><i>Objective:</i></b> <b><i>To test and implement the toolkit</i></b>					
13. Beta testing	01/12/05	07/02/06	<b>Beta tested toolkit.</b>	<b>3</b>	BW/PR
14. Fine tuning	10/12/05	20/02/06	<b>Finished product</b> after end user testing.	<b>3</b>	BW/PR
15. Implement for specific course(s)	25/02/06	25/03/06	Begin use for delivery of course(s).	<b>3</b>	BW/PR
16. Evaluation	01/02/05	10/03/05	<b>Evaluation report</b>	<b>3</b>	BW/PR
17. Reporting	20/06/04	01/07/05 (4 phases)	<b>Progress reports and final report</b>	<b>3</b>	BW/PR

Members of Project Team:

*[e.g. BW =Ben Williams; PR = Paul Rowley. Note that only responsible team members are included here. Not all involved staff have been included]*