

## **Distributed e-Learning in a Regional Context**

### **Final Review of the JISC Distributed e-Learning Regional Pilot Projects**

**February 2008**

#### **Introduction**

This review presents a synthesis of the key reports, products, messages and lessons from the JISC Distributed e-Learning (DeL) Regional Pilots projects. It is intended to inform and be of interest to a wide range of practitioners and managers involved in further and higher education, training and professional development across the UK.

#### **Review Methods**

This report has been produced in consultation with the project teams and JISC Programme Manager, informed by a review of project documentation, reports and technical products.

A final Programme Meeting was arranged for all the projects in March 2007, and used to start the process of the aggregation and assimilation of key outputs and outcomes from the Programme. The main purposes of this meeting were to develop a shared understanding of what the programme as a whole has achieved, and share outcomes and evidence with a view to building a consensus about the key achievements of the programme. The meeting also aimed to articulate a vision or road map for future developments, and agree a dissemination plan for the Programme.

Broad themes were identified as a key focus for the development of consensus and consolidation of Programme findings. These were:

- Institutional developments – how have the projects contributed to strategy and policy, what is the impact on staff development, learner experiences, quality processes and quality enhancement?
- Regionality – what has been learned about regional collaborative developments, and how should this be taken forward?
- Technical developments – what are the key outputs, how valuable are they, [how] do they support the JISC e-Framework, what is the collective technical wisdom from the programme?
- Contribution to e-learning – in the rapidly moving field of technological innovation, what are the key messages from DeL to inform ongoing developments in e-learning?

Following the meeting, summary reports of group discussions on these issues were posted in a wiki<sup>1</sup> that was produced to help with the process of collating outputs and outcomes, encourage further reflection on project achievements and generate evidence.

The scope of this report also included a technical review of the products and outputs from the programme. A summary report of the headline messages and key findings from the projects was presented to the JISC e-Learning Capital Advisory Board (eLCAB) in October 2007.

#### **Programme Overview**

##### **Background and context**

In 2004, the Higher Education Funding Council for England (HEFCE) announced its intention to make IT infrastructure funds available to JISC to develop technologies to underpin the Funding Council's political and strategic agendas and to work with regional and subject communities to use the technologies to support learning and teaching. Within this funding framework, the

---

<sup>1</sup> <http://glenaffric.co.uk/gem/mod/wiki/view.php?id=33>

Distributed e-Learning programme<sup>2</sup> was conceived with the overall vision of facilitating lifelong learning and wider participation by providing:

- better opportunities for learners through the use of better learning tools, easier access to personal learning information such as portfolios, and access to greater quantities of quality assured learning materials;
- guidance for teachers on how to access, plan and use e-learning resources within appropriate e-learning systems;
- benefits to institutions by enabling links between schools, colleges and universities that can be used to encourage progression into higher education for some institutions;
- benefits to funders by providing exemplars of good practice in the use of e-learning systems, exploring how technology can support widening participation and regional partnerships, and by demonstrating how the Academy and the JISC can work fruitfully in partnership.

These aims were addressed through initiatives in the following areas:

- e-Learning infrastructure
- Repositories for e-learning and other resources
- e-Learning tools
- Cultural issues, subject differences and embedding (a particular focus of the HE Academy Subject Centre projects<sup>3</sup>)
- Sharing e-learning content

The sixth key DeL area – Demonstrating impact of the programme – was the specific focus of the Regional Pilot projects<sup>4</sup>. Their aim was to explore the use of e-learning systems and tools across a number of institutions across higher and further education within a region to facilitate wider participation in higher education and provide better opportunities for lifelong learners.

Projects were invited to focus on three themes:

- facilitating progression
- collaborative teaching and sharing of resources across institutions
- supporting the independent lifelong learner.

The projects were not just testing the tools and systems that were developed in other strands of the DeL programme, but were also supporting the HEFCE strategic and policy agenda for regional collaboration, with a specific focus on the work of the HEFCE regional Lifelong Learning Networks. Part of the programme was also supporting the work of the concurrent HE Academy Subject Centre projects, which were designed to encourage collaboration between JISC and the HE Academy by building on existing initiatives and exploring the application of the outputs from development programmes. In this context, the DeL regional pilot projects were an important element in the implementation of the 2005 HEFCE e-Learning Strategy.

### **Timescales**

This was a large-scale programme of activities that required an approach to programme management, monitoring, evaluation and reporting that was both robust and flexible.

In response to a call published in November 2004<sup>5</sup>, a total of twenty-one regional pilot projects were funded across the nine English regions. They were offered flexible starting times between

---

<sup>2</sup> [www.jisc.ac.uk/whatwedo/programmes/programme\\_edistributed.aspx](http://www.jisc.ac.uk/whatwedo/programmes/programme_edistributed.aspx)

<sup>3</sup> [www.heacademy.ac.uk/ourwork/networks/subjectcentres](http://www.heacademy.ac.uk/ourwork/networks/subjectcentres)

<sup>4</sup> [www.jisc.ac.uk/whatwedo/programmes/programme\\_edistributed/pilotsdetail.aspx](http://www.jisc.ac.uk/whatwedo/programmes/programme_edistributed/pilotsdetail.aspx)

<sup>5</sup> Circular 7/04: Regional pilot projects around Distributed e-Learning  
[www.jisc.ac.uk/fundingopportunities/funding\\_calls/2004/11/funding\\_circular7\\_04.aspx](http://www.jisc.ac.uk/fundingopportunities/funding_calls/2004/11/funding_circular7_04.aspx)

January and April 2005, to facilitate the development of regional consortia and project partnerships, and completed their activities as originally planned at the end of March 2006.<sup>6</sup>

In early 2006, the projects were given an opportunity to propose a further phase of activity to support the embedding, transfer and increased impact of products, outcomes and approaches. Again, the approach to managing this further phase was as flexible as possible to accommodate differences in the scope and scale of current project activities and existing regional collaborative networks, and the readiness of project products and outputs for further embedding and technology transfer in a regional context. All but one of the original projects took up the offer of extension activity, and their final reports were submitted between October 2006 and July 2007.

The DeL Regional Pilots span a timeframe from 2004 to 2007, which is a relatively long development trajectory in JISC programme terms. It also covers a period of concerted technological development activity in the sector as a whole. This is reflected in the ongoing refinement and maturity of the projects, the collaborative relationships they helped to establish and maintain, and the tools, systems and other products they developed.

### The Projects

This table summarises the lead partners and main focus of the twenty-one DeL pilots across the nine English regions. The information on project focus is drawn from the final reports of 2007, and reflects some refinements from the summary of project aims in the final evaluation report of 2006.

Region	Project	Focus
East Midlands	G4L (Gateway for Learning) <i>Loughborough University</i>	Provide web-based learning opportunities to support the training needs of SMEs in East Midlands with a particular focus on energy and the environment
	RIPPLL (Regional Interoperability Project on Progression for Lifelong Learning) <i>University of Nottingham</i>	Establish a national model for the use of technology for collaboration between schools, employers, FE and HE in PDP to support widening participation and progression
East of England	EELLS (East of England Lifelong Learning Support) <i>University of Hertfordshire</i>	Develop a pilot service to explore the issues and benefits of setting up a portal-based e-portfolio service for lifelong learners within the region
	EERN (East of England Resource Network) <i>University of Essex</i>	Pilot a system for accessing and sharing learning resources within the region, to benefit practitioners and learners and help to develop a community of practice
	eSWAP <i>Anglia Ruskin University</i>	Create tools for the distribution of reusable learning objects across institutions in the region, and tools for PDP which map and define learning progression and goals
London	eLISA (eLearning Independent Study Award) <i>University of Greenwich</i>	Bring together resources for study skills, support tools and repositories and test the pedagogical effectiveness of e-learning for study skills
	L4ALL (Lifelong Learning in London for All) <i>Birkbeck College</i>	Provide lifelong learners in London with access to information and resources to facilitate progression from school to FE and HE

<sup>6</sup> Glenaffric Ltd undertook an Evaluation of the DeL Regional Pilots and HE Academy Subject Centre projects, submitting an interim report in December 2005 and final synthesis report in July 2006, [www.jisc.ac.uk/uploaded\\_documents/DELFinalevalReport.pdf](http://www.jisc.ac.uk/uploaded_documents/DELFinalevalReport.pdf)

Region	Project	Focus
	REHASH (Re-purposing Existing Healthcare Assets to Share) <i>St George's, University of London</i>	Establish a model for the effective implementation of distributed e-learning in medicine and healthcare education in HE and FE by adapting existing large collections of high-quality health resources for different educational contexts
North East	EPICS <i>University of Newcastle</i>	Develop, test and evaluate existing tools, design of new tools and implement an infrastructure for transferring e-portfolio and PDP information between institutions in the region
North West	FILE-PASS (Facilitating Independent Learning using e-Portfolios and Associated Support Systems) <i>University of Central Lancashire</i>	Develop an e-portfolio service for learners who may in some way be 'isolated' from further or higher education to help them to engage with lifelong learning and gain access to opportunities for personal and work-related development
	MANSLE (Manchester Self-Directed Learning Environments) <i>Bolton University</i>	Evaluate an aggregation of e-portfolio web services from a variety of sources to support learners with PDP and portfolio development, and provide mentoring and guidance
	The Learning Matrix <i>Liverpool John Moores University</i>	Enable non-traditional students considering progression to HE to access appropriate learning opportunities from a partnership of FE and HE providers via a standards-based electronic interface
South East	L <sub>2</sub> O (Sharing Language Learning Objects) <i>University of Southampton</i>	Create e-learning language resources for sharing and resource across institutions and sectors
	myWORLD (Wider Opportunities for Reflection, Learning and Development) <i>Oxford Brookes University</i>	Develop, test and evaluate the use of the OSPI e-portfolio in a range of post-compulsory education settings
	Kent PLPP (Personal Learner Portal Pilot) <i>University of Kent</i>	Pilot a personal learning portal to provide non-traditional learners with simple access to a range of PDP and e-portfolio services in order to help preparation for HE study
South West	PDP4Life (Personal Development Planning for Lifelong Learning) <i>Bournemouth University</i>	Develop PDP frameworks and systems to enable learners to merge formal and informal records of learning into a single database, to transfer records from one institutional learning environment to another, and to access and manipulate their learner records when not registered within a place of study
West Midlands	ePISTLE (e-Portfolios Informing and Supporting Teaching, Learning and Evaluation) <i>University of Wolverhampton</i>	Explore four areas crucial to further understanding of the use of portfolios: integrating an e-portfolio into the curriculum; use of e-portfolios for transition and progression; access and storage; and factors which affect use and non-use of e-portfolios

Region	Project	Focus
	SUNIWE (Staffordshire University, Northern Ireland, Wales) <i>Staffordshire University</i>	Implement a portal to provide access to personalised information for learners, trial this with partner consortia, and develop the portal content to provide personalised links to VLEs, library systems and e-resources
	WM-Share (West Midlands Share) <i>University of Worcester</i>	Explore the issues involved in sharing digital teaching content across the region, and the use of repositories as a mechanism for sharing teaching content
Yorkshire and Humber	ELP (Enhancing Learner Progression) <i>University of Bradford</i>	Explore and evaluate the potential of e-portfolios to engage increasing numbers of learners in more flexible and accessible ways through their lifelong learning journey, delivering support effectively and efficiently, using the student lifecycle model adopted by HEFCE
	P4P (Pathways for Progression) <i>University of Hull</i>	Provide a mapping of the curriculum with progression routes and produce a repository of searchable course opportunities for the region

## Products and Technical Review

### Introduction

The review of the technical products from the Regional Pilots addressed the following questions:

- What technical outputs have been produced through the Programme?
- What technologies have been used?
- Where are the products located and how can they be accessed?
- Who is using these products?
- What sort of quality controls have been used? (eg OSS Watch, JISC Open Source Maturity Model, usability and accessibility criteria)
- To what extent are the products sustainable and scalable?

The technical review also draws on the 2007 Toolkits and Demonstrators Review by Wilbert Kraan and Scott Wilson of JISC CETIS.<sup>7</sup> This report included a categorisation of projects in terms of CETIS domains, based on the underlying technologies that projects were using, and identified as family trees in terms of their direct influence on other projects.

### Background

The DeL Regional Pilots Programme was conceived with the specific aim of making use of outputs from previous JISC programmes, most notably the MLEs for Lifelong Learning Programme and the DeL e-Tools work. The pilots were expected to build on and extend previous JISC development work in collaborative partnerships in a regional context.

The briefing paper that accompanied the programme circular recognised that projects are functioning in the real world and advocated a pragmatic approach, but stressed that projects should aim to work within a service-orientated approach and the e-Learning Framework were

<sup>7</sup> [www.jisc.ac.uk/media/documents/programmes/elearningframework/tanddreport26607wk1.pdf](http://www.jisc.ac.uk/media/documents/programmes/elearningframework/tanddreport26607wk1.pdf)

The review was requested by JISC as one of the activities of the e-Learning Framework support project, and was undertaken between September 2006 and March 2007 alongside the Toolkits and Demonstrators programme.

this is practicable. The background paper lists a number of key areas where toolkits and specific tools are being developed, and specifically details JORUM, RELOAD and TOIA.

This technical review is based on the notion of precursors and successors – earlier developments that were perceived by the DeL projects as having potential value for exploration and implementation in a regional context, and further developments arising directly or indirectly from the work of the regional pilots with these technologies.

The table at Appendix A summarises the key technical precursors which the projects used, and the successors on which project activities had a direct influence. The precursors and successors in the table refer mainly to JISC projects and programmes and some HE Academy initiatives, and do not include other funding streams. The table also summarises the specific tools and technologies with which projects were working and the relevant technical standards.

In the summary table, projects are also mapped to the CETIS domain clusters identified by Kraan and Wilson. In order to maintain consistency with JISC technical reviews and reports, this report maintains that overall categorisation: projects are clustered for technical review in terms of their underlying technologies in the Content, Enterprise and Portfolio domains.

An earlier version of the diagram at Appendix B was used to introduce the overview of technical precursors and successors to the JISC eLCAB. The diagram has subsequently been amended to include reference to the HE Academy Benchmarking and Pathfinder institutions.

In 2006, work for the QAA in Scotland's Flexible Delivery Enhancement Theme developed a controlled vocabulary from an agreed typology, and produced an online toolkit in an attempt to collate and synthesise resources derived from the JISC e-Learning Programme and the HE Academy Subject Centres.<sup>8</sup>

More recently, the JISC Design for Learning Programme<sup>9</sup> has employed a similar technique where projects are encouraged to tag a range of learning designs in order to create a simple resource of exemplar learning design types. This resource used a vocabulary originally developed by LTSN. Given the range of resources available and their sometimes obscure locations, it was decided to explore a similar approach for the synthesis of the DeL Regional Pilot project outputs.

A del.icio.us site has been established<sup>10</sup> and a tag list created with tag bundles for CETIS cluster, the interoperability standards, technologies, individual projects, regions and resource types. In addition, two unbundled tags for 'precursor' and 'successor' have been used. The full tag list is at Appendix C. It is anticipated that this resource will be of use to current and future projects. For example, it enables the easy identification of resources relating to a particular standard, such as UK LeaP, or technology, such as ioNodes.

## **Educational Content**

Six of the projects focused on collaboration through shared content development, reuse and repurposing (eSWAP, L4All, EERN, L2O, REHASH and WM-Share). All of these were building to some extent on earlier work. Kraan and Wilson categorised five of these projects in the educational content domain. They placed L4All in the CETIS Assessment cluster, because the project was making use of the ASSIS learning object sequencing tool for sophisticated adaptive assessment. ASSIS is built on ISIS, a sequencing engine used for choosing courses of study. L4All is primarily concerned with providing access to information in support of progression from school to FE and HE. The project focus is therefore on facilitating lifelong learning through the provision of information linked to course content. The project also made use of Delta. In the interest of programme coherence, and because technologies from different clusters were used in the project, this review places L4All in the Content cluster.

The overview of technical precursors and successors indicates that three of the projects in particular (EERN, L4All and L2O) are part of a much bigger body of work that built on e-tools

<sup>8</sup> [www.jiscinfonet.ac.uk/Resources/flexible-delivery](http://www.jiscinfonet.ac.uk/Resources/flexible-delivery)

<sup>9</sup> [www.jisc.ac.uk/whatwedo/programmes/elearning\\_pedagogy/elp\\_designlearn.aspx](http://www.jisc.ac.uk/whatwedo/programmes/elearning_pedagogy/elp_designlearn.aspx)

<sup>10</sup> <http://del.icio.us/jiscdel>

activity and has carried on through subsequent JISC-funded programmes. The myPlan project in the Cross-institutional use of e-learning to support lifelong learning Programme <sup>11</sup> explicitly aims to provide additional functionality for the L4All regional pilot system to offer improved support for personalised progression planning. The EERN project explored the use of semantic web technologies in a regional context using DELTA, work which informed the parallel development of DELTA 2 and continues with the Resource Browser. The L2O project marked a stage on a continuum of e-language developments. The focus on contextual metadata, felt to be essential for the effective use of modern language resources, continues in the MURLLO and CLAReT projects.

Two other content-related projects do not appear to have specific links in terms of building on previous tools developments, but are of significance in their own context. REHASH was concerned with repurposing content that had been developed for medical students to be relevant to a wider constituency of learners in the area of professions allied to medicine. The WM-Share project explored regional repository development, working in parallel and conjunction with the developing JORUM service. The initial WM-Share project manager moved to manage programmes within the JISC Repositories and Preservation area, a significant project outcome in the wider development context.

WM-Share and eSWAP both explored the practicalities of sharing resources in a regional as opposed to a subject context. Their outputs include case studies, advice and guidance about regional repository development, content development and sharing.

Some interesting perspectives and themes emerge from the technical review of the projects in the content domain. Two of the projects focused on regional content sharing (eSWAP and WM-Share), two on subject-based collaborative content development (REHASH and L2O) and two on technical integration in a regional context (EERN and L4All). The remit of the programme was sufficiently broad to enable projects and teams to make sense of regional collaboration in terms of technical developments, subject communities, inter-institutional partnerships, and focus on socio-economic development in their local environment.

### **Enterprise**

Kraan and Wilson categorise one of the DeL regional pilots (SUNIWE) in the Enterprise cluster. They note that the project looked broadly at service-oriented architectures, with Enterprise as only one of a set of services, and contrast the apparently 'top-down' approach to developing organisational capability from first principles with the 'bottom-up' development from small projects to working services in other SOA projects. SUNIWE used Rational Unified Process (RUP) as its project management and software development approach. This is a software development process framework which enables adopters to select process elements to generate a process customized to their needs. This approach is of continuing interest to JISC in the context of development models for innovation based on user engagement.

A direct successor of SUNIWE is the cross-institutional SURF WBL-WAY project which aims to provide a cross-institutional gateway through web services in uPortal for work-based learners and those who support them.

### **Portfolio**

Kraan and Wilson noted that portfolio development was a dominant focus for the regional pilot projects and the DeL tools, with fourteen projects categorised in the Portfolio cluster. They also note that developments in this area showed less cohesion than enterprise and assessment clusters. Projects were largely concentrating on general IT issues like data integration, and pedagogic issues relating to PDP. Kraan and Wilson comment that the main success story in this space has been the ioNode set of infrastructure components for assisting the data integration between organisations. They also note that ioNodes is not specifically a portfolio-related technology, but simply provides an efficient way of managing data transfer and transformation.

---

<sup>11</sup> [www.jisc.ac.uk/whatwedo/programmes/programme\\_elearning\\_capital/el\\_xinstit.aspx](http://www.jisc.ac.uk/whatwedo/programmes/programme_elearning_capital/el_xinstit.aspx)

The programme has enabled further development and refinement of ioNodes and continues to demonstrate interoperability in practical contexts with a user base benefiting from the development and refinement of services.

Web services provide a powerful and rapidly implementable approach to a diverse range of learning and teaching contexts. A number of issues relating to the definition of web services in general, and the definition and implementation of portfolio services in particular, have been highlighted for further development within the sector.

EELLS, the Learning Matrix and PDP4Life form a particular cluster of portfolio development around the ioNodes technology. This work is informing further developments in regional lifelong learning, and continues to be important in the JISC development community. Both the ioNW2 and SOLVS projects in the Cross-institutional Programme are building directly on the work of the Learning Matrix and the ioNodes technology. A number of projects including EELLS, the Learning Matrix and SUNIWE contributed to the ongoing work of XCRI.

Another cluster of data transfer activity in the portfolio domain developed around the ePET tool, particularly through the work of EPICS and ePISTLE (ePISTLE was also exploring the use of PebblePad).

EPICS, having explored the potential of ioNodes, concluded that this presented no advantage for them over ePET. They believed that the underlying data structure of ePET provided the project with robust data transfer, and therefore negated the key reason for using ioNodes. They considered that using the advanced features of ioNodes required for data transfer in the region was outside current staff capacity and that upskilling staff to use ioNodes was not an appropriate use of project resources. EPICS was part of a large development initiative at Newcastle relating to CPD in medicine and dentistry.

PDP4Life was building on the previous work of the MLEs for Lifelong Learning SHELL project. As a direct successor, PDP4XL2 is evaluating student use of the ioPortal PDP system for creative industries. This is one of a cluster of seven of the thirteen projects in Phase 1 of the JISC Cross-institutional use of e-learning to support lifelong learning programme that derive directly from the regional pilots.

At the architecture and design end of the technical spectrum, RIPPLL was part of the wider landscape of integration, exploring data transfer in a particular context. This project arose directly from work in the MLEs for Lifelong Learning programme and continues to make a significant contribution to e-portfolio interoperability standards, and the admissions domain map through the ADoM project. Along with other projects in Nottinghamshire, RIPPLL was successful in developing a model of e-portfolio implementation that has been of value not only to the project partners but to both the DfES and Becta, who have been charged with developing guidelines and standards for schools and FE in England. It has been a prime test bed for the implementation of the BSI UK Leap standard for transferring personal data. Experience from the project will influence the production of the next generation of standards.

At the softer end of the technical spectrum, moving towards a more pedagogical focus, a further grouping of three projects (PLPP, FILE-PASS and myWORLD) were building on previous work with Petal, which was initially developed by group as a branch of OSPI. PLPP took Petal and explored its implementation for PDP by integrating Petal into uPortal. The project reports positive outcomes from their work with uPortal, highlighting the important role of the uPortal support community in this success. In comparison, the limited support community around Petal posed some difficulties for the project team. PLPP also worked with an in-house PDP tool (Progress). FILE-PASS took OSPI and developed some interesting pedagogic approaches to working with isolated learners. The main aim of myWORLD project was to trial Petal in a variety of contexts. The project produced a number of technical reports outlining the development challenges that arose from the lack of a Petal user and support community, and the transfer of OSPI to the Sakai framework.

Two other projects in the portfolio cluster were exploring softer, more diffuse pedagogical issues. ELP has continued as ELP2 in the Cross-institutional Programme, focusing on a range of social software. eLISA worked with LAMS and Moodle, exploring PDP and trialling tools for

pedagogic effectiveness with a large consortium of local institutions and agencies. The eLIDA CAMEL project in the Design for Learning Programme builds on this work.

Twelve of the 22 lead institutions in the Regional Pilots have engaged with the HE Academy's e-Learning Benchmarking and Pathfinder Programme, ten as Pathfinder projects.

### **Other projects**

Two of the regional pilots are not discussed in any detail in this technical review. One (P4P) did not request continuation funding for dissemination and embedding activities. The other (G4L) did receive further funding and submitted a final report in 2007. Both of these projects appear to be isolated developments for a specialist community, and both seem to lack alignment with other institutional initiatives that appear to be more embedded and sustainable. At Hull, the P4P lead institution, the e-Services Integration Group is co-ordinating the development of online services for the University. This group has a number of JISC projects, is involved in international developments in portals and institutional services, and is providing support for the VRE Programme. The P4P project has made no apparent connection with this work. However, the project's commercial partner Kainao was involved with the XCRI project from the outset and continues to inform professional skills and competency mapping.

The substantive output from G4L is a user guide for their gateway for learning. Kraan and Wilson categorised G4L in the portfolio cluster, but ostensibly the project produced a content management system, using portfolio in the sense of a kind of bookmarking tool to develop a portfolio of learning objects. G4L did not obviously build on any previous JISC work, and does not seem to have provided a basis for any further JISC developments. Loughborough University, the lead institution for G4L, has been involved in collaborative e-learning developments building on partnership projects going back to 1998 and before.

Some projects reported problems with using open source products in short term development timeframes. They were keen that JISC should be cautious when directing projects to open source applications, especially in such a dynamic environment where new products are frequently introduced to the marketplace without the protocols or depth of testing associated with commercial alternatives.

However good pedagogically, open source applications depend on having good documentation and can be resource intensive. They increase the difficulty inherent in any project with a technical aspect of estimating a realistic resource for time to be spent.

Improving the accessibility and usability of open source systems in general has proved to be time consuming. Projects report that accessibility is often left until last in software projects, where this should be a prime objective from the outset.

## **Key Findings**

### **Regional Collaboration**

One of the distinguishing features of the DeL regional pilots in the context of JISC developments was the wide range of institutions and agencies that were involved, many of whom were new to JISC at the start of the programme. Of these, several have gone on to develop and consolidate development partnerships in a range of other projects and programmes. In this way, DeL was instrumental in extending active participation in e-learning research and development across FE and HE in England.

Almost all of the DeL regional pilots have commented on the positive impact of the programme in establishing, maintaining and enhancing collaborative relationships between institutions in a region. This includes partnerships of HEIs with little previous history of collaboration, and consortia involving HEIs and FE colleges. Understanding and approaches to challenges posed by cultural and contextual differences between institutions have been raised and addressed. Partnership have highlighted the value of establishing unified regional teams with significant combined strengths and expertise in support of widening participation, access, transition and lifelong learning opportunities.

The regional pilot projects have also had, and continue to have, a significant influence on the further development of collaborative partnerships and communities of practice involving HE and FE institutions with Lifelong Learning Networks, Local Education Authorities, Regional Development Initiatives, and some national agencies. Several have identified and scoped scalable models for cross-institutional, multi-agency regional collaboration, and following on from DeL there are many instances of continuing partnership working on a regional basis.

In the **East Midlands** region, the cross-institutional team collaboration modelled by the RIPPLL project is being implemented on a larger scale by Leap-Ahead, the Derbyshire/Nottinghamshire Lifelong Learning Network. Locally, the work of the project is supporting widening participation and retention by making possible an electronic FE applications process within Nottinghamshire and allowing communication between pre-HE and HE systems. A further project, JOSEPH, is consolidating the relationship with Connexions<sup>12</sup>, the government information, advice and guidance service for young people. What has become known as the 'RIPPLL effect' has significant implications for lifelong learning developments in the region and beyond.

In the **East of England**, agreement has been reached with MOVE (the Lifelong Learning Network) to continue the e-portfolio service developed by EELLS, with the intention of providing a free service to the region.

In the **London** region, the systems developed by the L4All are being adopted within the Linking London Lifelong Learning Network, a partnership of 14 HE partners and 13 FE college partners, Sector Skills Councils, the Learning and Skills Council, AimHigher<sup>13</sup>, several Adult Education partners, the London Development Agency, and a number of private and public organisations, led by Birkbeck College, the project lead institution. The work of eLISA has a continuing role in the long-term programme planning in Greenwich with AimHigher and Greenwich Children's Services. This work is being further developed with other regional partnerships across England through the Lifelong Learning Networks.

In the **North East**, the consortium established by EPICS involved all four HEIs in the region as well as a number of FE colleges, a significant collaborative achievement in itself. The project aimed at developing a scalable and sustainable regional model for personal development planning to support learners at all levels of post-16 education.

In the **North West**, the work of MANSLE directly impacted on the development and implementation of the business development plan for the Greater Manchester Strategic Alliance (GMSA) Lifelong Learning Network. Key GMSA objectives included the provision of PDP, a system for tracking and recording the formal achievements of learners on GMSA 'badged' awards, and developing an electronic system that links into institutional information management systems. This work was complemented by the focus of the Learning Matrix in the Cheshire and Merseyside sub-region, and continues through other JISC-funded projects involving GMSA.

In the **South East**, the PLPP project built on previous work with HE and FE partners as part of the Kent Technology Institute initiative. The project was able to extend the scope and range of partnership working and involve new partners from both sectors in the provision of lifelong learning opportunities.

In the **South West**, the work of the PDP4Life project has supported the work of the regional Lifelong Learning Network by enabling the I partners to review their PDP systems and contribute to the development of a learner record specification that has the potential to underpin their local requirements without the need to impose a one-size-fits-all template on individual institutions.

The SUNIWE project in the **West Midlands** demonstrated a particularly broad and interesting approach to regional collaboration, being effectively a meta-consortium of regional partnerships in Staffordshire and Shropshire, Wales and Northern Ireland.<sup>14</sup>

---

<sup>12</sup> [www.connexions-direct.com](http://www.connexions-direct.com)

<sup>13</sup> [www.aimhigher.ac.uk](http://www.aimhigher.ac.uk)

<sup>14</sup> This included the Staffordshire University Regional Federation (SURF), a 'HEFCE Recognised Funding Consortium' comprising Staffordshire University and nine Staffordshire and two Shropshire FE

In the **Yorkshire and Humber** region, ELP brought together three large HEIs in West Yorkshire with a focus on supporting transition between HE providers on a regional basis.

### **e-Portfolio and Lifelong Learning**

#### *Conceptual maturity*

As the technical review has shown, e-portfolio was a major a focus of activity for the regional pilot projects. A key area for the programme was exploring technical data transfer processes, conceptual issues and contexts for using e-portfolios in a regional setting.

There is a general acceptance in the project final reports of the pedagogical effectiveness of e-portfolios in principle. Projects have proved the concept and value of e-portfolios, and demonstrated evidence of benefit to learners and their organisations. These benefits are particularly recognised when underpinned by concepts of PDP, CDP and widening participation.

The Programme has also helped to develop conceptual maturity about the differences between PDP as a set of processes and the e-portfolio as a collection of artefacts. Projects also achieved an enhanced understanding of the value of e-portfolios in selected areas, for example the recording of reflection as part of teacher education and clinical skills development.

#### *Institutional and organisational contexts for use*

Several projects emphasised that the diversity of approaches to PDP, portfolio development and mentoring identified makes a simple, single software solution inappropriate. They stressed that for PDP and e-portfolio tools to support student achievement effectively, they must fully support the pedagogic model and curriculum approach inherent within an overall programme. This assumes that a unified pedagogical approach exists throughout a programme, which raises cultural and organisational issues relating to curriculum planning and management. Projects have also identified this need for a consistent approach to PDP and e-portfolio implementation as an issue for course redesign.

A key message from the projects working in this area was that institutions adopting e-portfolios should not underestimate the amount of institutional support needed for learners in their use of the chosen tool.

Projects have reflected on the general organisational issues that pervade the whole teaching and learning situation at all levels, from institutional processes and workflows to individual work-learning-life balance, and the management of technology itself. They have highlighted activities such as project work where poor organisation and management of learning can be a key causal factor in failure. In this context, projects emphasise the need to consider technological, pedagogical and institutional issues as a whole. Supporting genuinely efficacious lifelong learning requires a clear interlinking of institutional provision with extra-institutional services.

#### *Further developments in e-portfolio provision*

Projects have recommended that further work on e-portfolio development for lifelong learning should be informed by the extensive existing network of practitioner expertise. They have encountered and addressed specific challenges in engaging staff and students in e-portfolio and PDP activity and highlighting the benefits in terms of pedagogical effectiveness. They emphasise that users need to have a clear demonstration of the longer term benefits of using an e-portfolio. Some of the projects have demonstrated a key driver for widescale e-portfolio in employer engagement and adoption of e-portfolios for recruitment and CPD.

Projects also highlight mentoring as a support process that is key to embedding the concept of e-portfolio at a number of levels in the institution. Significant and observable enhancements to the student experience occur where academic staff have a clear understanding of the ways in which PDP and e-portfolio can be used to support and enhance student learning, and these are communicated effectively to the learner alongside effective approaches to mentoring,

---

Institutions, the Welsh e-Training Network (which includes all HE and FE institutions in Wales) and the Northern Ireland Integrated MLE project (NIIMLE).

Some projects have also highlighted the need for a deeper contextualisation of some of the technological issues associated with e-portfolios in the context of the growing significance of social software in learning, and a concomitant questioning of the efficacy of centralised e-portfolio systems.

Projects have also identified the need for a further exploration of the use of e-portfolios to support admission, progression and transition. This can be facilitated by building on regional and local partnerships of HEIs and FE colleges with schools and employers and on the experience and expertise developed through this programme.

In this context, an important part of this experience is the growing recognition of the importance of specification and definition, the setting of boundaries of what a portfolio is and does, and consequently what an e-portfolio may be and may help to achieve. Some projects have reflected on the extent to which a misconceived portfolio structure will inevitably hamper any attempt to turn it into an e-portfolio, and suggest that greater attempts should be made to distinguish between the classes of relationship that exist between users and portfolio systems (whether electronic or not).

Projects have also raised awareness of the potential for utilising e-portfolios to facilitate the continuation of postgraduate studies, for services to alumni, and for continuing professional development for academic staff.

## **Content Development**

### *Contexts for use*

The programme has highlighted and explored some of the key conceptual issues associated with sharing, depositing, accessing and reusing materials and resources. These included an enhanced understanding of pedagogical approaches and assumptions, as well as practical issues such as repository use, contextual metadata and curriculum mapping.

EERN was designed to embed and pilot the DELTA system, a web service that allows searching using semantic web technology, and points to relevant learning resources in other web accessible repositories. By making the pedagogical approach one way of searching for resources, DELTA also helps practitioners reflect on the pedagogical assumptions underpinning their choices.

The L2O project established and developed a research community among modern language academics which claimed nearly 100 members UK-wide by the end of the project. Within this community a clear desire was identified to share, re-use and re-purpose existing materials through access to a digital repository. One of the key messages from this project was the successful development of a community of practice arising organically using existing networks, rather than in a formally structured or prescribed way.

### *Sharing and reusing materials*

Several projects highlighted practitioner challenges with the concept of 'sharing'. EERN in particular identified a poor culture of sharing within HE and FE. However, most projects reported genuine enthusiasm on the part of many teachers and most students in both FE and HE to utilise high-quality resources, regardless of where these are made.

It was also apparent that both teachers and students required easy access to resources, and some level of continuing encouragement or support to maintain momentum from one student intake to the next. A further critical success factor for re-use and re-purposing is the need for the materials to be 'attractive' to the end-user (teacher and/or learner) and relevant in terms of their context.

Projects also confirmed that effective sharing requires the creation of appropriate metadata to assist in resource discovery and materials selection. The creation of effective metadata was particularly challenging for some projects with a range of cross-sectoral partners. They identified a need for user-friendly, quick-to-use tools to use in the editing, selection and creation of content packages and the attaching of metadata. Projects also highlighted a need for proactive

support mechanisms to assist practitioners in the creation of quality-assured and accessible RLOs.

In common with many JISC development programmes at the time, the DeL regional pilots experienced, addressed and reported on a number of challenges relating to the sharing of materials through Jorum.

Intellectual Property Rights also continue to be a significant barrier to sharing materials in some contexts. These include the unwitting use of copyright material by practitioners, but also the effective barriers to sharing that can be imposed by institutional policy. The PLPP project reports that IPR has been waived at a regional level to enable the resources created for this project to be shared.

#### *Regional repository development*

The experiences of the WM-Share project in developing a repository strategy for the West Midlands have wider relevance for other regions and context. This project noted the potential for collaboration and support at a regional level to aid institutions in improving their services, to help build the volume of content held in institutional repositories, provide multi-institution spaces, and to share expertise and resources. However, the team pointed out the need to evaluate existing provision within the region and assess the volume and types of demand, before identifying opportunities for improvement. They also identified policy decisions that need to be made about central and distributed provision, so that appropriate technical solutions can be developed.

This project concludes that institutions in a regional context should give careful consideration to the extent to which they are prepared to support the content management requirements of teaching staff. A number of activities should be undertaken within the region, including auditing existing activity and brokering the sharing of practice to providing training opportunities. Where there are current barriers and unclear drivers for the provision of a regional repository, the situation is likely to change over time as practices and technologies mature.

### **Conclusions and Implications for Future Developments**

This was an ambitious programme demonstrating and further testing the viability of a range of tools, toolkits and other resources in support of lifelong learning in a regional, collaborative context. Almost without exception, each of the regional pilot projects embarked on long and complex development path. The resulting work has been important in informing the continuing development of institutional partnerships, socio-economic-cultural understanding and technical solutions to support regional lifelong learning.

The main technical issues that emerged relate to the maturity of development processes and the resulting tools. There is little evidence of process development documentation. A keyword search for 'quality' in the final reports revealed very little evidence of an explicit appreciation of quality issues in either development processes or products. Some notable exceptions to this include the quality assurance process adopted by the REHASH project for the development of learning objects, the use of the RUP development methodology by the SUNIWE project because of its focus on quality, and the EERN project's identification and use of quality characteristics: validity, reliability, usability and acceptability.

The programme timeline of three years throws into sharp focus the contention that development from proof of concept to a production level tool cannot readily be accommodated in a JISC development programme, and it is not realistic to attempt this. Some early unrealistic expectations and overblown claims led to the potentially counter-productive trialling of immature products in a wider context. However, where projects have been most successful is in making a contribution to a longer and wider suite of developments in a regional and national context.

There are some areas of continued development interest that are not necessarily as engaged as might be useful with other possibly complementary JISC developments. Other learning resource developments may find some benefit from reviewing the EERN project's use of the semantic web. L4All's continuing work in MyPlan is about surfacing a personal learning path as opposed to one imposed by an institution (in GPS terms, this is the difference between a route that is planned, and a track – or trail – that is made).

The impetus of the funding for the JISC Capital Programme has resulted in JISC being much more explicit about its development plans and context, and encouraging projects to situate their projects within a coherent and recognised development roadmap. This review has confirmed a number of features of JISC development programmes that are essential to the furtherance of JISC's mission to provide world-class leadership in the use of ICT to support education and research. These features are:

- Individual developments and key elements in a wider landscape that must be continually exposed and described for the benefit of those entering the field.
- Development paths are generally longer than project teams realise, for example a realistic timeframe from prototype to production-ready technology is probably close to ten years.
- Everyone engaged in development programmes has a duty to recognise this timeframe and not encourage unrealistic expectations or make unreasonable demands on staff and learners in institutions.
- Review of projects in terms of their precursors and successors well illustrates the enhanced capacity and capability in technical expertise that exists and continues to develop in the sector.
- The quality of technical developments continue to be an issue, and although some progress has been made in this area, further work is required to produce a more stable and consistent approach to the quality of the tools and systems that are produced.

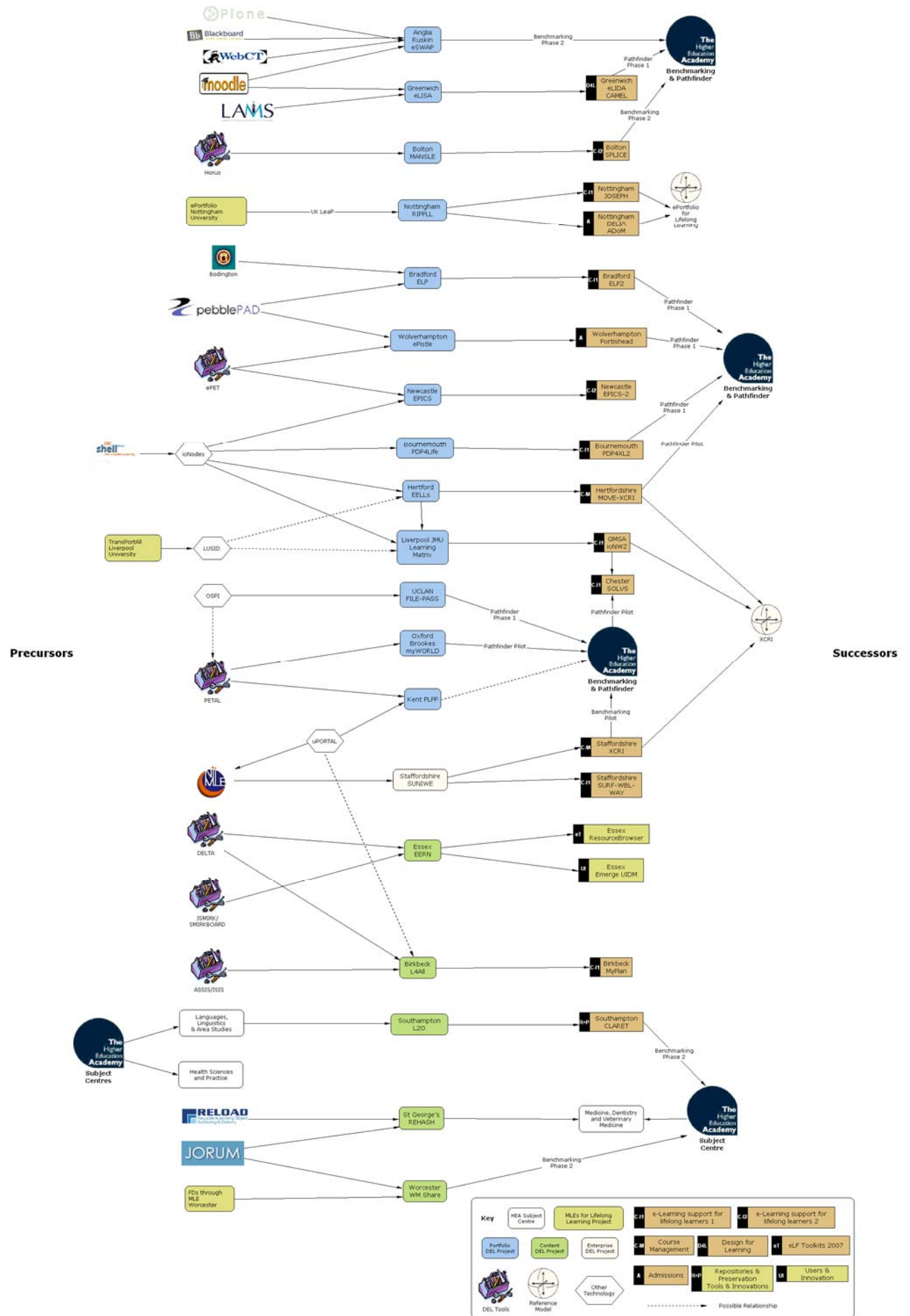
**Abbreviations and Acronyms**

BSI	British Standards Institute
CETIS	JISC Centre for Educational Technology Interoperability Standards
CETL	Centre for Excellence in Teaching and Learning
DeL	Distributed e-Learning
GMSA	Greater Manchester Strategic Alliance
HEFCE	Higher Education Funding Council for England
HEI	Higher Education Institutions
JISC	Joint Information Systems Committee
JORUM	JISC Online Repository for Learning and Teaching Materials
JOSEPH	Joining up Organisations to Support
LAMS	Learning Activity Management System
LTSN	Learning and Teaching Support Network
MLE	Managed Learning Environment
NIIMLE	Northern Ireland Integrated MLE (MLEs for Lifelong Learning project)
NTI	National Training Initiative
PLE	Personal Learning Environment
ReLOAD	Reusable e-Learning Object Authoring and Delivery
RLO	Reusable Learning Object
RUP	Rational Unified Process
SHELL	South-East Hosts Enhanced Lifelong Learning (MLEs for Lifelong Learning project)
SME	Small to medium-sized enterprise
SOA	Service-oriented architecture
TOIA	Tools for Online Interoperable Assessment
UKLeaP	UK Lifelong Learner Information Profile
XCRI	Exchanging Course-Related Information

## Appendix A: Technical Review Summary

Lead	Project	Precursors	Successors	Mapping	Standards	Technologies
Anglia Ruskin	eSWAP	-	-	Content	SCORM	Moodle, Plone, Blackboard, WebCT
Birkbeck	L4All	ASSIS	myPlan	Content	IMS Metadata, IMS LIP, eduPerson	ISIS, Delta, JENA2, JavaBeans, Flash, uPortal
Essex	EERN	Delta	Delta2, Resource Browser	Content	RDF, UK-LOM	Delta, SMIRK, SMIRKBOARD
Southampton	L2O	eLanguages	MURLLO, CLAReT, FAEROES, DeTCOLM	Content	UK-LOM, RLLOMAP, FREMA	Telcert, RELOAD, Schemaprof
St George's	REHASH	RELOAD, JORUM	HEA Subject Centre	Content	XHTML, CSS, SCORM, UK-LOM	RELOAD, JORUM
Worcester	wm share	FDs thru MLEs, ARCHES, CoRE	DRAW	Content	UK-LOM	Perl, LAMP
Staffs	SUNIWE	NIMLE	XCRI, SURF-WBL-WAY	Enterprise	IMS Enterprise	uPortal, COSE
Bolton	MANSLE	Horus	SPLICE	Portfolio	IMS LIP, UK LeaP	Elipse, RELOAD
Bournemouth	PDP4Life	SHELL	PDP4XL2	Portfolio	IMS LIP, UK LeaP	ioNode, ioPortal, PebblePAD
Bradford	ELP		ELP2	Portfolio		Bodington, PebblePAD
Greenwich	eLISA	-	eLIDA CAMEL	Portfolio	-	LAMS, Moodle, VUE
Herts	EELLS	SHELL, Learning Matrix	MOVE-XCRI	Portfolio	IMS LIP, UK LeaP, XCRI	ioNode, ioAgent, ioNetwork, LAMP
Kent	PLPP	PETAL	-	Portfolio	UK-LOM, IMS ePortfolio	uPortal, LAMP, JORUM
Liverpool John Moores	Learning Matrix	SHELL, LUSID	ioNW2, SOLVS	Portfolio	IMS LIP, UK LeaP, XCRI	ioNode, ioAgent
Newcastle	EPICS	FDTL-4, ePET	EPICS-2	Portfolio	IMS LIP, XML-RPC	Zope, MySQL
Nottingham	RIPPLL	ePortfolio Reference Model	JOSEPH, DELIA, ADoM	Portfolio	UK LeaP	SOAP, C#.NET
Oxford Brookes	myWORLD	WS4RL, PETAL	PETAL 2	Portfolio	IMS LIP, UK LeaP	OSPI, LAMP, REST, Moodle
UCLAN	FILE-PASS	-	-	Portfolio	-	OSPI, LAMP
Wolverhampton	ePistle	ePET, pebblePAD	Portishead	Portfolio	IMS LIP, UK LeaP, ACCLIP	FLASH

# Appendix B: Technical Precursors and Successors



Appendix C: Del.icio.us Tags for jiscdel

<b>Cluster</b>	<b>Technologies</b>	<b>Project</b>	<b>del_resources</b>
Content	Moodle	eSWAP	arch_design
Enterprise	Plone	L4All	article
Portfolio	Blackboard	EERN	case_study
	WebCT	L2O	end-user
<b>Standards</b>	ISIS	REHASH	evaluation
SCORM	JavaBeans	wm share	marketing
IMS Metadata	Flash	SUNIWE	project_doc
eduPerson	uPortal	MANSLE	technical
RDF	Delta	PDP4Life	
UK-LOM	JENA2	ELP	precursors
RLLMAP	SMIRK	eLISA	
FREMA	SMIRKBOARD	EELs	successors
XHTML	Telcert	PLPP	
CSS	RELOAD	Learning Matrix	
SCORM	Schemaprof	EPICS	
IMS Enterprise	JORUM	RIPPLL	
IMS LIP	Perl	myWORLD	
UK LeaP	LAMP	FILE-PASS	
XCRI	COSE	ePistle	
IMS ePortfolio	Elipse		
XML-RPC	ioNode, ioPortal, ioAgent	<b>del_regions</b>	
	Bodington	Eastern	
	PebblePAD	EastMidlands	
	LAMS	London	
	VUE	NorthEast	
	Zope	NorthWest	
	MySQL	SouthEast	
	SOAP	SouthWest	
	C#.NET	WestMidlands	
	OSPI	YorkshireHumberside	
	REST		

Bundles are in bold text