

Title Page

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David Baume

External Consultant for the project review and project evaluation

Executive Summary

The project set out to be a collaboration of representatives of North East (NE) educational sectors (within and between FE/HE) to develop a scalable and sustainable regional pilot project, building on local excellent practice in personal development planning (PDP) and e-portfolios to support learners at all levels of post-16 education.

The EPICS project became a collaborative and extended regional project providing a formative and summative study designed to develop, test and evaluate existing tools, designing of new tools and the implementation of a small infrastructure for the transfer of ePortfolio and PDP information.

The activities that were right:-¹

The overall approach was collaboration, collaboration, collaboration among the regional Universities and FE Colleges, and within these groups among learning technologists, educationalists, administrators, executives, managers and by paying close attention to what was actually happening in the project, re-prioritising quickly and decisively when it became clear that the original plan was no longer the most appropriate.

Identifying that there are a range of PDP systems/products being used throughout the region, including paper based systems. From this analysis it is clear that the main issues were not just technical, but were about pedagogy, organisation and governance.

The technical developments, the insights into the issues in both pedagogy and governance, and the excellent working relationships developed across the region, identified and suggested new developments in areas such as the brokerage of the student's personal information across educational Institutions which could be built. As such the EPICS team would be well placed to contribute to such future developments.

We have demonstrated that ePortfolio data can be transferred between systems and institutions and there is more work required to ensure that no data is lost in the process, and to ensure the processes are compatible with other ePortfolio tools, both open source and commercial.

Things that was less right with EPICS?¹

The project was much too short to bring all the necessary negotiations and relationship-building required to deliver a project of this magnitude.

There was insufficient, and insufficiently effective, engagement with FE partners, with their very different needs and worldviews.

There was a partial leadership vacuum at the topic of the project, between the PI (committed and expert, but too busy) and the PM (technically able and enthusiastic, but lacking expertise in the subject of the project), which may have exacerbated the difficulties experienced especially in the early days while establishing the project management methodology.

A clear message:¹

e-learning projects aren't just about e, or even just about e-student-learning. At their most effective, they are (in very good ways) highly disruptive. They throw up needs for organisational change; changes to governance; changes in the roles of many staff, and the consequent need for staff development, changes to pedagogy, and hence to the nature and shape and form of courses, and the consequent need for educational development support; changes to the student's 'contract' with their HEI or FEC; even changes to architecture (build another lecture room or more quiet and noisy study spaces, or install wifi everywhere or more servers, or etc?) If they are to deliver maximum effect, e-learning calls and projects must accept and embrace all of these areas of implication, and no doubt others.

Building effective regional collaboration needs time and a particular project or focus, or (perhaps better) an evolving sequence of projects and foci / infrastructure / services over time. Projects (e.g. EPICS) provide a jolt of energy and resources, and sweep in new people, and achieve valuable short-to medium-term progress. Foci (e.g. NorMAN) underpin regional projects and give sustainability. We are not sure that we yet have the most productive relationships between 'projects' and 'foci / infrastructure / services'

¹ Comments taken from Dr David Baume – Project review; Project Evaluation and the Project Managers report

Background

Summarise the background to the project (and how it builds on previous work) and the need it for it (and why it's important).

The project was a collaboration of representatives of North East (NE) educational sectors (within and between FE/HE) to develop a scalable and sustainable regional pilot project building on local excellent practice in personal development planning (PDP) and e-portfolios to support learners at all levels of post-16 education. Enhancing the learning experience by supporting the individual needs of each learner is at the heart of this development, along with permanently embedding collaboration in regional activity.

The project used a methodology designed to develop, test and evaluate a practical approach, building on existing tools, to implement a region-wide infrastructure for the easy transfer of individual progress file, ePortfolio and PDP information across a range of agencies and institutions.

Excellent practice in PDP for supporting learning and use of e-portfolios already exists in the region, including the e-PET project to make tools available to the sector as a whole. NorMAN is a region-wide collaboration involving Universities of the North East who have collaborated in major projects. NorMAN contributes significantly to the JANET (Joint Academic Network) strategy of providing a national multi-service broadband communications backbone, and provides regional communications linkage that interconnects the five universities.

Crucially, the region is also leading in the development of Shibboleth and core middleware technologies with particular emphasis on supporting students in clinical or work based learning. The partners plan to raise the quality of the learning experience by establishing PDP tools to facilitate an individual's educational progression, assuring that investment in reflection is preserved between agencies thus removing a significant barrier to uptake. This pilot will identify the base requirements needed to transfer a minimum data set, based on good practice in the rapid and efficient transfer of student data established within the SHELL project. Shibboleth will be used for authorisation and authentication.

The sharing and extending the use of robust tools and services across regional educational sectors maximised investment and local ownership, with commitment to succeed. Crucially, the use and integration of Shibboleth and core middleware technologies to authorise and authenticate access to content across participating institutions was a major objective of the project.

There is still considerable effort required in order to enable institutions to efficiently and effectively roll out good practice across subject areas. Additionally, there are few standards or legal, political and social structures, to support the transition from school to FE and HE, and into work and CPD.

The partners, who have a history of working closely together and, following extensive dialogue, have chosen to prioritise learner needs as a key area of work, acknowledging other collaborative work, and complementary proposals in response to this project.

Aims and Objectives

List the aim and objectives agreed at the start of the project, and note if they changed during the project.

The aim was for collaboration between representative institutions of North East (NE) educational sectors (within and between FE/HE), to extend the regional partnership through active engagement and dissemination of illustrative case studies, and to learn from parallel activities elsewhere.

The project objectives are identified to:

- Establish a regional collaboration pilot project pledged to deliver a critical level of uptake of connected services
- Identify existing pedagogical and developmental activity including support for PDP, portfolios and/or e-portfolios for a range of regionally based post-14 educational institutions across all subject areas/disciplines. At each stage of the learner experience to identify the range and variety of uses made of the PDP/portfolio/ePortfolio and the likely material to be carried forward at transition points by the learner. To use the material collected to undertake initial identification of preferred routes for the movement of learner information.

This objective became the main focus of the project as it became clear that not all institutions were in a position to provide a clear view of their institutional PDP development. It was clear that the language used was different across institutions and this needed to be resolved in order to provide the foundations to allow for the development of a technical framework to attempt and deliver the transfer of student and ePortfolio data. From this analysis, and part of work package 3, a regional PDP forum was established to help identify and resolve these issues that were impacting the EPICS project.

- Develop a suitable technical framework to deliver the transfer of learner ePortfolio information (which may be different in each institution) between a range of educational institutions, and by using web based interfaces, enable access from learners' homes and a variety of educational establishments, including FE, HE and Postgraduate institutions.

This objective was limited to just three partners. This was due to the changes identified from the project review and the pedagogical and governance investigations and developments.

- Implement an agreed base-level technical schema to test the portability of learner e portfolios.
- Examine the regional, legal, political and cultural issues which need to be addressed in order to offer a full progression pathway

This objective also became a critical element in the investigations, and while the approach did not change, it was clear that many unforeseen issues, such as data ownership, institutional politics and rules played a major part in re-prioritising the project activities.

- Evaluate the integrated use of e portfolio tools to support widening participation and lifelong learning, by developing 5 model case studies to illustrate how local, regional and national systems will work together to provide coherent access across educational institutions to learner portfolio information.
- Utilise Shibboleth technologies to control authorisation and authentication to learner record information, and investigate the opportunities for attribute data (from ePortfolios) to enhance Shibboleth flexibility.

It was clear from the start that most institutions were not in a position to participate in this activity. This was due to several reasons, such as IT Services were outsourced, Shibboleth and access management were not in the institutions service development plans.

It was agreed that this activity be sub-project managed by the lead institution as part of the IAMSECT project. A separate report is included in Appendix 4.

- Disseminate the practical outputs of the project to other regional partnerships and the JISC via the website, documentation (including a handbook and case studies), and events

From the project continuation

- Further enhance and develop the data model and metadata schema to enhance and embed interoperability facilities
- Address issues arising from the PDP Forum to create a solid foundation for future work
- Have meaningful engagement with institutional management throughout the region to begin to embed the governance, legal and institutional requirements

Methodology

Summarise the overall approach taken and why this approach was chosen over other options considered. Then describe the methodology in more detail. Depending on the project, this might include the methodology for research you carried out, technical design or development, evaluation, etc. Finally, note any specific issues that had to be addressed by the methodology, e.g. standards, interoperability, scalability, etc.

The EPICS project was a collaborative project providing a formative and summative pilot study designed to develop, test and evaluate a practical approach, building on existing tools, to implement a region-wide infrastructure for the easy transfer of individual progress file, ePortfolio and PDP information across a range of agencies and institutions.

By using the JISC recommended project management methodology along with some elements of PRINCE 2[®] project management methodology, the project was broken down into four stages.

These stages formed the work breakdown structure (Appendix 11) within which each work package (WP) was defined in detail and revised as the project progressed. Using these tools provided the project team with sufficient time to learn as we progressed and allowed the project team members to build on the skills and experiences being learnt throughout the project lifecycle.

- Stage 1: Project start-up, planning and project controls
 - WP1: Project Start-up and Controls
 - WP2: Communication Strategy
 - Stage 2: Definition of design and technical elements of the project
 - WP3: Review and mapping exercise
 - WP4: Develop and establish use cases
 - WP5: Establishment of Regional Governance Framework
 - WP6: Implement/establish ePortfolio Servers
 - Stage 3: Systems and application build and deployment
 - WP7: Implementation of technology interpretation/transfer negotiation layer
 - WP8: Shibboleth servers and component infrastructure
 - WP9: (combined with WP8)
 - WP10: Testing and documenting of real data transfer
 - WP12: Evaluation and Review
 - WP13: Project Evaluation
 - Stage 4: Dissemination and Events.
 - WP11: Development of detailed dissemination and evaluation plan
- The continuation project was treated as a 5th stage with attached work packages
- WP11: Dissemination (continued from Stage 4)
 - WP13: Evaluation (continued from Stage 3)
 - WP14: Sustaining Pedagogy and Life Long Learner activities
 - WP15: Sustaining, fine tuning, and embedding ePortfolio interoperability
 - WP16: Engagement of Institutional Policy Makers

The project was overseen by an Advisory Board who provided guidance and support throughout the lifespan of the project. The collaborative nature of the project meant all the project partners contributed to the overall project processes from their respective institutions, identifying current systems, processes & procedures; rules, regulations, governance and legal requirements. Within specific partners the project officers contributed to and supported the review and mapping; systems development & implementation; and systems build.

All members of the project team contributed to the production of project documentation, and collaborated on providing material for the dissemination stage.

Throughout the project the Work Packages (WPs) were designed to build on each other. The WBS Flow diagram [Appendix 11] illustrates the incremental nature of the work more clearly.

² PRINCE is a registered trademark of OGC and is an independent office of the UK Treasury <http://www.ogc.gov.uk/prince2/> (accessed June 2006)

Stage 1

Stage 1 consists of:

- Project Start-up
- Planning
- Project Controls

Initially all regional institutions were contacted for their participation and or support for the project. A range of interested parties were asked to become official stakeholders of EPICS and were invited to take part in as many of the work package activities as possible.

Once all stakeholders were identified, all major stakeholder were invited to join the advisory board

Project Communications and Collaboration

Closed project management Facility (MEDEV)

The MEDEV site is a facility provided by Basecamp^{TM 3}, this facility provides a unique project collaboration tool which simplifies communication and collaboration on projects.

It also provided a project management tool for informing the stakeholders and partners about work packages, to do lists, Milestones and progress, and it allowed and encouraged all partners to monitor progress, make comments and ask question at any time throughout the project lifecycle.

Open discussion list

EPICS also opened a JISCMail list which was used as an open discussion board and a means to disseminate progress to the wider community.

EPICS Web site

The site is the focal point for dissemination. All project documentation is available via the site. In addition project members have posted related information and documentation such as conference papers, links to related information etc. The web site has been widely publicised throughout the JISC, PDP and academic communities. Finally the site hosts the project archive.

Dissemination throughout the project Lifecycle

EPICS continue to be proactive in dissemination of the project's aims, deliverables and achievements. This includes press releases, articles, presentations, and conference papers. These are all available from, or referenced on the web site. <http://www.epics.ac.uk/EPICS/?pid=168>

Project Team Meetings

The project management team meet once a month to address current work schedules, progress, and to discuss and resolve project issues. Minutes and actions plans were developed where necessary and assigned to individuals for resolution.

Advisory Board

The Advisory Board met quarterly and provided an important, independent view of issues and advice.

Stage 2

Review Mapping and Analysis

The initial project analysis started through the project meetings with an emphasis on the technical requirements and the social and organisational issues which emerged in the debates surrounding e-portfolios. From these discussions, the project team recognised that the original project plan needed to be reviewed in light of the experiences and lessons being learnt.

Following the project analysis the outputs and deliverables of some of the work packages were changed, in particular WP 3, 4, 6, 7 and the shibboleth component WP 8 & 9.

It was agreed that the shibboleth component would be passed to members of the IAMSECT (<http://iamsect.ncl.ac.uk/>) project who were well placed to manage these tasks and work with the EPICS project.

³ a trademark of 37signals

A major change to work package 3 was the introduction of the portfolio questionnaire, based on work previously undertaken by the Centre for Recording Achievement (CRA) and further developed to meet the needs of the EPICS project. (Richardson 2005) The questionnaire also included some legal questions, developed by Dr Anna Home and Andrew Charlesworth, both School of Law, University of Bristol. The results of the information gathered were fed into WP 5.

Modification to WP 4 moved the output 'conduct structured interviews and questionnaires with partner stakeholders in order to identify current practice' to WP 3. WP 4 would then analyse the findings from the interviews, present them in a report and then pass this information to WP 6.

Identifying appropriate case studies proved difficult at the beginning of the project, mainly due to the delays in re-defining the PDP and e-portfolio requirements. Finally, five case studies were identified and are described in the outputs section in more detail.

WP 5 investigated two key strands of SBI's (<http://www.campus.ncl.ac.uk/unbs/sbi/>) research, firstly the e-university and the work examining the implementation of a large ERP system within a HE institution and secondly is multi-agency working in the public sector and the various factors that come into play when sharing information (of which EPICS is a good example). Through engagement in project meetings, with an emphasis on the social and organisational issues which emerged in the debates surrounding e-portfolios, the main aim was to create a governance toolkit which would support people in organisations tasked with developing and implementing e-portfolio/PDP. The toolkit is a starting point/reflective framework by which to think about the interdependencies both internal and external which can support a successful project.

Stage 3

As part of WPs 6 & 7 the project provided all partner organisations the opportunity to have ePET implemented at their institution. ePET would be managed and maintained by FMSC for the duration of the project. This would give the development team at FMSC

(<http://www.ncl.ac.uk/medev/research/portfolio/>) further the development of ePET to allow the e-portfolios to meet their specific pedagogical requirements of the partners. ePET was not expected to be the only portfolio used by EPICS partners, but was offered to ensure that those partners who did not have a portfolio system of their own could participate fully in the technical aspects of the project.

As part of the analysis and development, each partner would identify the learner data transference requirements, define hypothetical student examples and undertake a small number of real student data transfers between participating institutions. These examples then became the Use Case studies for the project.

The initial project plan called for using the "IoNodes" <http://www.phosphorix.co.uk/around/ioNode/> system from "Phosphorix" <http://www.phosphorix.co.uk> as a mechanism for moving disparate transcript and ePortfolio data between institutions. Specifically, the requirement was to 'Implement a technology interpretation/transfer negotiation layer', for which the IoNodes system, described as 'a black box interoperability solution for collaboration networks and lifelong learning network infrastructure' seemed ideal, as at that time the project was expecting to use several types of learner profiles and transcript data.

IoNodes has been in use at the "SHELL" <http://www.educationaldevelopment.net/shellfinal/default.htm> project, where it's advanced messaging system was used to facilitate the transport of learner data between the initial 5 partner sites, as well as converting that data between the institutions, and so there was no concern that the system would not perform as required if those circumstances were present in the EPICS project.

As the EPICS project progressed, those partners who had not already made a strategic choice of ePortfolio (such as those using BlackBoard) were focussing more on variants of the ePET electronic portfolio, as this seemed to meet the requirements of those partners.

It should be noted that when these decisions were made in early 2005, there were few ePortfolio systems available that fit with the pedagogic and technical requirements of existing partner sites, and variants of the ePET system had at that time been used in anger with several thousand students from Newcastle and external sites.

Therefore, most partners started to use the ePET system, and where it was required, the system was extended and modified. However, the underlying data structures remained the same, and this, alongside proven and secure methods of sending data to other sites, such as "XML-RPC":<http://www.xmlrpc.com/> over "SSL":http://en.wikipedia.org/wiki/Secure_Sockets_Layer provided the project with a robust and lightweight method of moving ePortfolio and transcript data between institutions. This then negated a key reason for using ioNodes, that of transparent data transfer.

This then led the project team to investigate whether the advanced features of ioNodes, such as guaranteed message delivery (in this case, the movement of ePortfolio data) were required within the project. To test this, the ioNodes system required an installation of software and hardware, which was outside the experience-base of the systems administration people at the lead site. The partner sites would also require some ioNodes hardware at their own site to handle the messaging and data translation, and as all the ePET servers were being hosted at Newcastle, this was seen as an added complication, as no real transfer of messages would be taking place.

Therefore it was decided that as the data transfer and translation aspects of the project were being taken care of by the existing EPET systems, it was felt that including the ioNodes system would only complicate matters and not be a responsible use of funds.

For WPs 8 & 9 (the shibboleth component) it was originally planned that all partners would be involved in the deployment of the required hardware and software infrastructure. During initial discussions it was recognised that most partner institutions were not currently in a position to contribute or commit resource to the shibboleth component and these investigations would continue at a later date in the project schedule.

WP 10 would define a master set of suitable records for test data exchange between institutions, containing agreed real or fictional student 'use case' data for each partner based on information gathered from WPs 3, 4 and 7. A series of data transfers exchange from the region institutions would then take place, this would include: FE to HE, HE – HE, HE – FE; from these studies the partners would review the learner experience through 'talk aloud' protocols and reflection.

To ensure that the WPs produced meaningful outputs, WP 13 would evaluate the project for the benefit of stakeholders and project partners by reviewing project documentation, face to face meetings and discussions, collating and analysing responses and delivering the evaluation / review report.

As the project developed it was necessary to add a new work package, WP 12.

Stage 4

The dissemination stage was to inform, document, publish the findings, disseminate and share all developments with JISC, national and regional institutions and interested colleagues.

WP 11 would develop the dissemination strategy and provide useable methods for dissemination, such as, but not limited to:

- Web Site;
- Project management communication system;
- Dissemination event (Regional);
- Dissemination event (National);
- Workshops with the partner sites (embedding)
- raising understanding/awareness within and outside the region;
- Focus groups; etc.

The final output would be a set of electronic and paper based documentation presented in the form of a 'handbook' of good practice, toolkit, technical solutions, and the use case studies.

Stage 5

Stage 5, the continuation project, provided an opportunity to take the outputs and outcomes from stages 1-4 and use them to refine and embed the use of ePortfolios systems in EPICS partner institutions and engage other regional colleagues in dialogue. In particular the themes of regional engagement via the PDP Forum, governance and technical development were addressed.

Implementation

Describe how you planned and implemented the project work and the activities it involved. Depending on the project, this might cover technical development, processes, how you conducted user studies, etc. Include any problems or issues that arose and how you handled them, where readers can learn from your experience. Tell the story of what you did rather than listing work packages.

After notification of from JISC of the project approval, the original project manager had to withdraw and his place was taken by Lawrence Taylor of Northumbria University on a part time basis from February 2005.

Due to the short lead time for the project it became clear there was a need to align the aims and objectives of the partners and stakeholders more effectively. This was particularly important as not all partners had been able to obtain the full support of their senior management for the teaching and learning or technical aspects of the project. Negotiating and gaining this support meant delays and significant problems for some partners in being able to follow the project schedules.

In particular issues around theories, accountabilities, roles, responsibilities and control of the EPICS project and particularly PDP, pedagogy and the technical aspects of e-portfolios came to the foreground of the project management group.

The initial discussions also highlighted the two main groups of staff involved in the projects: technical and teaching and learning. Each group brought different perspectives to the project and it was clear we needed to revisit the project aims in the light of this diversity.

In particular partners had to come to terms with the revised project and what was possible within their own institutions. For example one partner was not able to participate in the technical aspects of the project though they were fully involved in the teaching and learning activities.

As a result the project became as much about the management and pedagogy of e-portfolios as the technology. This early period in the project lifecycle was a formative one for the project and the growing understandings about what a regional project looked like, what it meant for partners, what it entailed and how the institutions in the region could work together became a **key learning point** from the EPICS project and should not be underestimated.

A project review was instigated with the full support of the JISC programme manager. The review was instrumental in reengaging partner institutions and individuals in the project as was responsible for a number of institutions staying with the project.

In addition the advisory board requested that an independent project review be undertaken to identify the lessons to be learnt from the issues that impacted the initial stages of the EPICS project. (<http://www.epics.ac.uk/EPICS?pid=171>) this became work package 12 and was incorporated into stage 3 of the project.

During the review period, action plans were developed to address the issues identified, and changes to the project plan, work packages and budget allocations were implemented. (See <http://www.epics.ac.uk/EPICS> for more detail.) It was clear that the recruitment of the project officers was taking much longer than originally planned.

As the requirements for wider engagement with EPICS became clear, the WP 5 team organised a regional discovery workshop to explore issues about e-portfolios and what institutions were doing in terms of their e-portfolio development.

The workshop was a success in two ways; firstly it was well attended drawing in representatives of FE and secondly, participants were animated, engaged and expressed satisfaction with the event and a shared sense of a way forward.

Through the process of review and the workshop the two groups of staff in the project discovered their common interest in the challenges of using their existing e-learning platforms for PDP and concerns about the engagement of students and teaching staff (http://www.epics.ac.uk/epics_docs/EPICSworkshopreportWP5.pdf).

As a result of the workshop a clear case was established for setting up the Regional PDP forum. (http://www.epics.ac.uk/epics_docs/PDP_Forum_Report.doc) The recommendation from the discovery workshop report was; *' . . . to establish a 'process and practice' forum / group to explore the broader issues involved in PDP / e-portfolio activities at a regional level.'*

The Objectives for the Forum were:

- To identify the range of different approaches to PDP delivery across the HE and FE sectors in the region
- To understand the differences and to learn from other approaches and experiences
- To identify any shared understanding and practice and ways of sharing and / or working together to develop and evaluate best practice
- To include and consult with a range of students about the relevance of the processes and products of PDP
- To support the EPICS project and any other relevant initiatives; in providing a critical friend in relation to practice in FE and HE, in facilitating access where possible to students and PDP practitioners and in particular to support the successful delivery of Work Package 5
- To disseminate understanding about the role of PDP and it's relationships with issues/policies such as learning and teaching, widening participation, employability and e-portfolios
- To provide a forum where regional discussions can take place about the design and implementation of products and approaches which may be required in order to deliver greater understanding and co-operation between individual institutions

Northumbria University has taken lead responsibility in moving the forum forward. Following the Discovery Workshop, the Forum had a natural impetus and sense of purpose and it was important it was able to work productively within the timeframes of the EPICS project and make a constructive contribution to it. Three meetings were planned to look at regional practice and how the institutions could move forwards. The Forum report is attached to this document as Appendix 5.

The subsequent activities of WP 5 were iterative and included the input into to WP 3, the development of the CRA questionnaire tool, organising the visit from the JISC e-portfolio legal issues focus group and development of the EPICS governance. The Governance Toolkit is available from the EPICS website <http://www.epics.ac.uk/?pid=158>

In order to maximise regional involvement, in particular FE institutions, it was agreed that it would be advantageous to involve the OWL Consortium⁴.

The involvement of the OWL Consortium of Colleges brought with it the participation of five FE Colleges, which presented an opportunity to analyse the data transfer process between FE and HE institutions. However because of time constraints and logistical issues, the involvement was mainly restricted to the City of Sunderland College (COSC, the institution which at the time housed the OWL offices) and Stockton Riverside College. A subsequent move of the OWL offices to the Tyne Metropolitan College (Tynemet) brought them onboard as well, and Tynemet made a valuable contribution to the project by providing statistics of student destinations as well as logistical support for most of the duration of the project.

Due to these constraints an early decision was taken to narrow down the OWL data transfer participation to a single FE college (COSC) and focus on the design of suitable test cases. This strategy was very successful in that COSC were very committed in their support to EPICS, and the project was able to develop smoothly once the decision was taken. It should also be noted that COSC were in the process of trialling the use of Blackboard for their e-portfolio needs, and this provided a good opportunity to look at how data could flow between different software packages.

As soon as the project officers were appointed, the actual requirements analysis got underway. Partner institutions were visited and interviewed with regards to their current and intended practices with PDP. This helped to clearly identify the stakeholders involved in the project; identified the established the PDP systems involved around the region and the identification of those used for further analysis and development for the EPICS project.

⁴ OWL is a collaborative e-learning project involving the colleges ('G6') and 3 universities of Tyne and Wear www.owl-elearning.ac.uk

This analysis began to reveal the complexity of the flow of data between systems within the individual institutions. Interviewees were asked to provide as much information as possible about the organisational issues of the individual institutions, such as Freedom of Information documentation, data protection, disability data and institutional policies for portfolios. This information was then fed back into WP 5.

The outputs from WP 3 were used as the inputs to WP 4. However, the technical development of the e-portfolio system ePet had already been established, and some regional institutions were able to move ahead with independent analysis and development, before the results of WP 3 had been finalised.

WP 4 was the analysis, development and implementation of the requirements mapping questionnaires, each partner institution would provide a detailed breakdown of their current systems and working practices. These questionnaires were analysed in order to seek out the commonalities in PDP, e-portfolio and legal practice between the institutions. It was realised there was ambiguity in some of the questions, making it more difficult to correlate across the institutions in some cases.

From this analysis, partner institutions were asked to provide hypothetical learner cases. These were mainly based on the courses identified as part of the PDP investigation diagram from WP 3. The learner cases were designed to ensure that the transference of data would be tested across all platforms being utilised in the project i.e. Blackboard, e-pet and Pebblepad, and to ensure that data flowed both ways, e.g. ePet to ePet, ePet to Blackboard, Blackboard to ePet.

As WPs 3 and 4 involved all of the regional institutions, each institution managed the activities in different ways.

Teesside

At Teesside University, activity was overseen by a local steering group comprising the local project manager (partners on the EPICS project team), the EPICS project officer and representatives of various stakeholder groups (e.g. academic schools, information systems, etc.)

This group oversaw the work with a view to insuring that it fed into the wider University process. Teesside has trialled other tools and the information gathered from EPICS and those trials will contribute to Teesside's final decision about what tools are ultimately implemented.

The EPICS project took place in a context of previously completed work establishing minimum standards for progress files (see Rough Guide to Progress files (http://www.epics.ac.uk/epics_docs/Progress_Files_Rough_Guide_2004.doc) and an ePortfolio specification (Appendix 3) designed by a cross university working group.

The process was to:

- Evaluate ePet and PebblePad against the locally established criteria for Progress Files and ePortfolios.
- Interview relevant staff and set up informal trial instances of ePet for staff to test in University's Schools of Computing, Science and Technology, and Health and Social Care.
- Set up formal trials for students of ePet consisting of:
 - two pilots in the University's School of Health and Social Care
 - a trial in the University's School of Social Sciences and Law of ePet (but see below) with two analogous groups students using ePet and PebblePad. This is intended to get end-user feedback along side staff views.
- Establish 'dummy' courses in ePet and PebblePad to test data transferability (see WP 4).

Additionally, the local project manager undertook data gathering and reporting work with respect to legal and other issues (see WP 3 and 5).

Although the initial implementation strategy seemed straight-forward enough – i.e. create several instances of ePet (and possibly other) eProgress files/ePortfolios for staff in different schools, pilot them with a few students, and evaluate user-satisfaction and data transferability (possible using dummy data for reasons of data protection) – this actually proved much less straightforward. It did so for several reasons:

- Staff were, generally speaking, more interested in implementing ePortfolios in the context of academic assessment than in the context of PDP. This meant that a lot of time was spent trying to repurpose ePet to meet these needs and ultimately it proved impossible to do this in time for the systems to be used in this academic year.
- Similarly, PDP/Progress Files proved to be less well-tested than had been supposed. In most cases, the academic year 2005/6 was the first run through of these systems. Consequently, staff had little experience on which to base decisions about how such systems could be electronically enhanced.
- Partly as a result of these issues PDP-based trials did not begin until very late in the year and the results of those trials will be available later.

During July and August 2006 ePortfolios were implemented for each of three cohorts. These include groups in our schools of: Health and Social Care, Computing, Science and Technology. Additionally, a system is being implemented to support staff PDP for the Library and we have been asked to develop a pilot a system to support post-graduate research students. Altogether several hundred staff and students are involved in these ongoing pilots. We plan to evaluate these pilots in January/February 2007 and again in May/June 07 with a view to making the system available to any staff who wish to use of it from the beginning of the 2007-8 academic year. We will also be introducing it our FE colleagues in our Higher Education Business Partnership some of whom may also choose to adopt it.

Teesside has chosen to implement ePortfolios using Windows SharePoint technology; and to emulate and, in some cases, extend ePet functionality because this technology maps better on to the University's longer-term ICT Strategy. The actual programming was undertaken out with the project funding, but all the related development and implementation work was done with project funding and the ongoing work is being and will continue to be funded by the University.

Without the EPICS experience it would not have been possible to create such an implementation in such a short timeframe (about 3 months). The project provided an opportunity to better understand the University's needs in this area both with respect to local usage and with respect to regional data sharing. As regards the latter, the system implemented at Teesside has been developed to be compliant with the data exchange requirements developed by EPICS. Actual inter-institutional data transfer remains to be tested, but we are confident that there won't be any significant obstacles.

Sunderland

Sunderland's involvement has consisted primarily of the dissemination of EPICS general awareness-raising on e-portfolios within the University, and discussion of issues connected with e-portfolios through different internal groups. In addition, Sunderland is the host institution for the JISC RSC Northern, and EPICS activity has been disseminated to FE customers of the RSC through established RSC channels.

Stockton Riverside College

At Stockton Riverside College, their involvement was initially limited to the pedagogy aspect; due to their external facilities managed IT systems which hampered the deployment of any EPICS hardware.

Use Cases <http://www.epics.ac.uk/EPICS/?pid=168>

After gathering information from the partners and project officers, the next step was the analysis and design of the Use cases. Initially this involved careful analysis of the type of use and the type of data that was envisaged for the implementation of e-portfolios.

This was highly exploratory in nature due to the differences between regional institutions, schools, and systems. To move forward a preliminary metadata list was designed (defining the individual data fields that would be used during a data transfer) and a set of test cases was developed by each institution who planned to transfer learner data.

The project had initially discounted the use of real data because of the legal complexities this entailed. However it has been possible to engaged real students and live data which had been cleared for use as part of the EPICS pilot project.

The case studies involve moving real student data from CoSC to Newcastle University and the possibility of Teesside University transferring real learner data to Newcastle University. The proposal is that students would upload their Blackboard information into ePET. Once it was demonstrated this process worked reasonably well, they would store the entire contents of the archive within the ePET file repository.

Unfortunately, no text data was passed from the Blackboard HTML. Instead the student was relied upon to 'copy and paste' the data from their web pages into the relevant areas of ePET.

This is not an ideal scenario, but the project is seriously hindered by the limitations of Blackboard's data export. It is certainly possible to write a program that reads and interprets the Blackboard database, but time constraints have made this not feasible to do.

The test cases were then completed by the design of a test case which would consist of a transfer from an HE institution (the University of Newcastle Upon Tyne, using ePET) to an FE one (COSC, using Blackboard 6.0). <http://www.epics.ac.uk/EPICS?pid=135>

The data generated will be invaluable in terms of rooting the project in real-life needs.

Outputs and Results

Explain the end result of the project work in an objective way. Depending on the project, it might include research results, findings, evaluation results, data, etc. If the project created something tangible like content, a portal, or software, describe it. Engage the reader, and avoid a long list of deliverables.

The project defined 7 outputs it was committed to delivering

- i. Use cases and scenarios
- ii. Regional collaboration strategy
- iii. Learner & implementation case studies
- iv. Learning enhancement and student outcomes
- v. Portfolio transfer infrastructure
- vi. Individual reports
- vii. Documentation handbook

These have been delivered over the course of the project and the continuation stage.

For clarity, the outputs and results are documented by the project stages rather than by outputs. This is because many of our outputs and results grew out of our activities in ways we did not necessarily expect at the beginning of the project. Details of each output can be found on the http://www.epics.ac.uk/epics_docs/.

Stage 1

A major result from the EPICS project is one of collaboration and working together as a team. The project faced many obstacles and significant issues that needed to be resolved. By using the project management methodology, these issues were addressed by all participants of the EPICS project and the end result is a project that delivers the majority of what it set out to do through the work and commitment of all partners.

Stage 1 ensured that the project was well managed, documented and disseminated to all stakeholders using the tools identified in the communications strategy.

A significant output of this stage is the result of the independent review, which identifies many lessons learnt during the time when the project was faced with many issues and provides number of recommendations that could be used by anyone who attempts to work on educational large-scale coloration projects.

Stage 2

Stage 2 consisted of several work packages, which produced a number of outputs and results.

The first requirements and a significant result was the identification of stakeholders at partner institutions. This was a major requirement in order to determine the intricacy with regards to identifying the PDP and e-portfolio involved at each of the institutions and to look at commonality across the institutions.

One of a number of significant outputs of this stage was the PDP investigation diagram that was produced for each institution. This reflects on the range of PDP systems/products to be considered by the EPICS project and to ascertain the final choices for inclusion to the actual learner data transference.

Each institution's current and planned usage of PDP was documented using a mapping questionnaire, available from the <http://www.epics.ac.uk/EPICS?pid=140>; the results of which fed forward into work packages 4 and 5.

A significant observation from the questionnaires is that there is a diverse use of PDP in the region and more important that the PDP terminology also varied greatly.

Data flow diagrams for the individual systems used at the partner institutions were developed. These encompassed: student record systems, VLEs, portfolio systems, and in some cases other systems such as timetabling. It is recognised that the complexity of the data flows was a significant constraint to some of the partner's institutions. Where partner's agreed to participate in the transfer of learner data, a number of diagrams included top-level information passing between the systems.

The mapping questionnaire analysis report was made available to all partner institutions via the MEDEV site, as was the list of hypothetical learner cases. All representative partners were encouraged to provide learner cases even if their institutions were not participating in the actual transference of data. Destination data was established where possible to help to build further potential learner cases.

A report <http://www.epics.ac.uk/EPICS?pid=114> on EPICS interoperability data was also produced which outlined the operability specifications in place for those systems where data transference can take place.

Once the partners had committed to developing their data transference strategy, the e-portfolio servers were purchased, installed and configured for three of the seven institutions. Work is continuing on implementing an e-portfolio server for Stockton Riverside College.

In addition, other stage outcomes include: a clearer understanding of institutional and trans-institutional data flows, administrative processes and ownership of data, technical requirements, institutional IT strategies, legal interpretations and pedagogic issues.

In parallel to these outputs and as part of the governance and legal requirements of the project, the following outputs and results were also produced:

- A contribution to a more in-depth understanding of e-portfolios in a regional context including issues of governance (<http://www.epics.ac.uk/EPICS?pid=124>)
- A discovery workshop and report (http://www.epics.ac.uk/epics_docs/EPICSworkshopreportWP5.pdf)
- A first version of an e-portfolio governance toolkit for iterative development by the wider community <http://www.epics.ac.uk/?pid=158>
- A significant contribution to a practitioner orientated dissemination conference (http://www.epics.ac.uk/epics_docs/PDP_Forum_Report.doc)

One result from this stage which was not expected or planned was the creation of a regional PDP Forum. This work should not be underrated; the institutional, educational and pedagogic context of PDP and e-portfolio is highly complex and the unpicking of a regional position (albeit complex again) is a considerable achievement. This provides the solid basis fundamentally necessary for future partnership and joint work.

A key output of this strand of work has been the Forum itself that has brought together a range of people with similar agendas at their different institutions but in a role that in many cases leaves them rather isolated.

The forum has offered mutual learning and personal and professional support. The work undertaken has been invaluable; it has grounded the technical aspects of the EPICS project in a working and pedagogic context, it has informed the development of the governance toolkit and has engaged a wider community in the HE and FE sector. The timescale of EPICS has allowed for a systematic review of policy and practice across the region and is moving into a more dynamic phase as illustrated by the regional conference in May 2006.

At this event the Forum and guests, including students came together to discuss its own future and specific ways in which it can lead regional development through partnership and support. Clearly part of this future agenda includes planning for partnership engagement with e-portfolio technology.

The establishment of the Forum has been successful and support from the EPICS project was an important part of this. Other parts of the process that have been important are communication, cascading contacts and agendas that allow all to contribute and learn.

Stage 3

The decision not to use the IoNodes technology, as described in the methodology was a significant result. This allowed for further analysis and enhancement of existing tools to provide additional ways to transfer learner data.

The development and implementation of several tools to allow learner data transfer between e-pet and blackboard, blackboard to e-pet and e-pet to e-pet has been successful.

Transfer of learner data from ePET to ePET

From a student's point of view, the transferring of their data between two institutions who are using ePET is very straightforward – the student has a choice of either downloading their original portfolio, then uploading it at their new institution, or remembering their username and password and requesting the data to be transferred. This makes life very simple for the student and institution.

Work is continuing on the implementation of the Shibboleth component. This part of the project has been delayed, but it is expected that once operational, the student will not have to remember their last institution's username or password; this is based on the fact that the institutions involved will be members of a Shibboleth federation.

Transfer of learner data from Blackboard to ePET

Three different case studies were exported from Blackboard. First there were two real data portfolios, both of which had been designed using the WYSIWYG editor in Blackboard. One of them also contained extra resources, namely a picture and a CV written in Microsoft Word. The final case study was effectively used to test the transfer of a more complex portfolio and was created from data imported into Blackboard, modified, and re-exported.

The two real data case studies

As previously mentioned, the transfer involved exporting a zip archive from Blackboard and its subsequent import into ePET. This meant that the original data would always be safely archived, a feature which is deemed highly valuable. The next step however involved a cut and paste procedure, but happily this actually proved quick and straightforward. It was certainly not a problem, particularly as this was a one-off procedure. In this way the entire portfolios were copied to the new format (even the data from the CV in a Microsoft Word document), and as previously mentioned virtually all the data was easily housed in the new system.

The only comment that ought to be made at this point is that because of the unstructured nature of the Blackboard e-portfolios, they are able to blend very effectively format, resources and text.

Although the results of the trials at Teesside are not yet complete, the needs analysis suggested that none of the tools available seemed likely to fully meet the needs identified by Teesside staff.

Accordingly, an alternative strategy and proof of concept application was developed. This sought to create a system that was flexible enough to meet the needs of 'student-owned' eProgress files and the needs of 'institution-owned' assessable ePortfolios.

It is possible that following on from the EPICS Project, Teesside may decide to implement such a system as an alternative to any of the tools tested.

Further technical details can be found in Appendix 8

Stage 4

An important part of EPICS was the communications strategy, which defined how EPICS would evaluate and disseminate the project outputs and deliverables.

The communications strategy has been very successful, with the implementation and deployment of a number of communications tools.

- Monthly Project Team Meetings
- MEDEV (Basecamp™)
- The EPICS Web Site <http://www.epics.ac.uk/EPICS>
- Over 15 dissemination events (<http://www.epics.ac.uk/EPICS?pid=136>)
- Numerous reports, papers and PowerPoint presentations
- Governance Toolkit <http://www.epics.ac.uk/?pid=158>

Work continues on the development and publication of a handbook which will bring together all of the project's findings with a deliverable of best practice.

Stage 5

In stage 5 the project undertook to run a programme of regional workshops and events to promote outputs from the project and to look for feedback and continuation strategies.

Following the Regional Symposium where the results of the Forum workshops were disseminated to a wider audience⁵, the Forum was given a clear steer for its future activities. Three key proposals emerged from the symposium;

- The Forum should include and embrace the student voice as an integral part of its activity
- The Forum should reach out to the wider stake-holding community and into its member institutions to involve and engage a wider range of people
- Building on the useful foundations established the Forum should undertake a specific project; to identify portfolio templates acceptable to each institution to be used to pilot large scale transfer of ePortfolio between institutions and systems

It had been difficult for the Forum to reconvene to begin addressing the first two proposals until such time as the future funding and legitimacy of the group can be secured. However partners from within the Forum have begun to progress the issue of the portfolio templates and at the PDP Evaluation Conference in Oxford in October (where the EPICS Project is also being presented), those partners will present a model of situated evaluation of ePortfolio / PDP that builds on the notion of three such templates reflecting three different purposes for e-Portfolio / PDP.⁶

In the final weeks of the project responses from members led to the suggestion that the Forum could reconvene as a collaborative evaluation and research group exploring different perspectives of impact of these portfolio types. In particular there has been considerable interest from a number of Forum members in evaluation and action research about the impact of PDP / ePortfolio on development of robust (lifelong) learning qualities. Discussions have begun with the ELLI⁷ project at Bristol University to explore how regional and national partners might work collaboratively with ELLI around such research and the question of funding and resource needs will be addressed.

On the technical front work has been undertaken with the international "Europass CV" standard (<http://europass.cedefop.europa.eu/>) as an additional way of transferring portfolio data in the region and wider European context. ePET can now export and import XML data in the Europass-CV standard. This was demonstrated at the Plugfest at the "ePortfolios 2006" conference in Oxford 11th – 13th October and involved the export of CV data from ePET in Europass-CV xml, which was uploaded in the Europass Website.

Overview of Europass

<http://europass.cedefop.europa.eu/>

Europass has been established by the Decision No 2241/2004/EC of the European Parliament and the Council of 15 December 2004 on a single transparency framework for qualifications and competences. It provides a standardised way to make their skills and qualifications clearly and easily understood in Europe (European Union, EFTA/EEA and candidate countries);

There are two self-completed documents:

- 1/ Europass curriculum vitae (CV)
- 2/ Europass Language Passport

And three other documents issued by competent organisations:

- 3/ Europass Certificate Supplement
- 4/ Europass Diploma Supplement
- 5/ Europass Mobility

The 2 self-completed documents can be created online at the Europass site. The data isn't stored centrally but the CV can be saved in a range of formats - including xml and pdf with an embedded xml file, these can then be uploaded for further editing.

⁵ See EPICS Final Report www.epics.ac.uk for a summary of these results

⁶ Cotterill, Gill and Thompson (2006) Evaluating Portfolios: Mirrors, Maps and Sonnets. Paper to the HEA / JISC International Conference, Oxford, October 2006

⁷ Extended Lifelong Learning Inventory see www.ellionline.co.uk

There is a network of national Europass centres. The UK one provides a basic description and links to the main Europass sites while some of the other countries have login and ability to save Europass data centrally. <http://www.uknec.org.uk/>

As part of the work on governance the continuation project has:-

- Identified the main player(s) in institutions and other potentially important staff
- arranged dissemination meetings
- compiled dissemination pack
- published agreements, templates

The main players in the institutions have been identified as :

- PVCs Teaching and Learning in HE and their equivalents in FE.
- Data Protection/FOI Officers,
- Heads of ICT
- Heads of e-learning
- Teaching and Learning facilitators

V1.6 of the toolkit has been widely distributed within the region via the PVCs (and their FE equivalents), JISC RSC, NORMAN and the EPICS Regional PDP forum. National Dissemination will occur through the wider dissemination of the EPICS project by JISC as well as via the EPICS website, final report, project team and their networks.

A final EPICS project version of the toolkit has been produced following the Regional Forum/WP 16 Toolkit Workshop on the 28th of November 2006 which gathered and recorded examples of the products (including agreements and templates) from EPICS Governance Toolkit in use. The final version from EPICS is available via the project website and JISC.

Outcomes

In this section, assess the value of the project work. List project achievements against the aims and objectives set. Summarise project outcomes and their impact on the teaching, learning, or research communities. Indicate who will benefit from the work, how, and why. Also comment on what you learned that may be applicable to other projects, e.g. whether the methodology worked.

The first and probably the most important aim for the EPICS project was to establish collaboration with all involved partners. This was deemed essential so that the project could deliver a critical level of uptake of connected services.

As a result the project became as much about the management and pedagogy of e-portfolios as the technology. This early period in the project lifecycle was a formative one for the project and the growing understandings about what a regional project looked like, what it meant for partners, what it entailed and how the institutions in the region could work together became a **key learning point** from the EPICS project and should not be underestimated.

Using the communications strategy and the tools available has been very successful and of great value to the project and to those interested in joint collaboration.

While identifying the existing pedagogical and support for PDP, portfolios and/or e-portfolios, it is clear that other institutions considering transferring data will benefit from the work undertaken by EPICS. This work has clearly shown, that despite being complex in nature, institutions can work together to overcome the complexities to a large extent.

Extensive differences in terms of PDP in practice have not been fully resolved and this could be explored as part of a future project. However, the regional PDP forum is hoping to continue its work beyond the life of the EPICS project. It is clear that any future integration or interoperability will have to resolve, or, more likely, accommodate these real differences.

The methodology of a project officer going out to visit project members in their own institutions helped move the project forward more quickly than the original suggestion of project members each completing a questionnaire. This is probably due to the fact that team members were able to put aside dedicated time for the meetings. Having one project officer responsible for each work package was also an advantage as they were able to build up a clear picture of PDP practices within the institutions.

While not all partners were involved in the development of a technical framework to deliver the transfer of learner ePortfolio information, a cross selection of FE and HE were involved.

The implementation of the technical framework uses standard web based interfaces. This implementation has proved to be a success making access to these systems possible from any web browser device connected to the internet.

The project has developed and produced an agreed base-level technical schema to test the portability of learner e portfolios between several e-portfolio tools, these applications are:

- Blackboard a commercial VLE
- e-PET an open source e-portfolio tool developed at Newcastle University
- PebblePad an ePortfolio tool from PebblePAD Ltd.

The EPICS project was not fully aware of the complexities that it would encounter during the analysis of regional governance, legal, political and cultural issues. In addressing these issues, the project has contributed to the following outcomes

- An e-portfolio governance toolkit which offers a set of concepts for those attempting to implement e-portfolios/PDP to take a more informed approach to the design and deployment of such innovations within and between institutions
- A sustainable regional community of interest in the context of e-portfolio/PDP
- A re-balancing of the notion of e-portfolios around issues of management and pedagogy as well as technology

The governance toolkit, developed during the EPICS project has been made available to a number of institutions, both involved in the project and others in the region through the regional dissemination event.

While evaluating the integrated use of the identified e-portfolio tools, there were many possible outcomes that project could focus on. Such as: organisational outcomes, knowledge, or products such as the software applications and data transformation tools.

Organisational Outcomes

From the point of view of organisational outcomes, activities such as the discovery workshop and the Regional PDP Forums are very successful in collaborating across various institutions which a shared common interest in e-portfolios and personal development planning.

The EPICS project is also successful in generating a team of individuals from all across the region which worked very well towards the common goal of making EPICS work. Given the diversity and geographical extent of the project and institution, it was felt that this was a great success.

As a result of the collaboration set up for the EPICS project, the Regional Forum is looking to take forward collaborative activity to evaluate portfolios through links with the ELLI project <http://www.ellionline.co.uk/>.

Knowledge Outcomes

Firstly there is the greater understanding of what e-portfolios were and what they were capable of, related to this was the highlighting of the importance of data transfers between institutions. At the time when EPICS started, various FE colleges were beginning to trial different methods of implementing e portfolios (for example Blackboard at COSC and PebblePAD at Tynemet). However it could be said that the concept of data transfers had not been given enough consideration, as the more pressing problems of how to implement e-portfolios (and the logistics of how to use them most effectively) has taken precedence.

In this area EPICS is able to make a valuable contribution by exploring the data transfer hurdles. For example it highlighted the legal issues (such as those related to the Data Protection Act) and prompted the actions at many of the partner institutions. It also highlighted the difficulties of Blackboard when dealing with data transfers, and identified a few key issues that would impede such transfers unless certain steps were taken in the portfolio design as well as the transfer itself.

Additionally the project prompted the search for solutions to Blackboard's portfolio import and export difficulties. As a result greater understanding of the built-in WYSIWYG editor was achieved, and a set of XSL transforms was developed.

One key finding for Teesside during the process was the discovery that the data transfer needs of such systems were simpler than we first believed. Initially, we thought that it would be necessary to transfer all the information in an ePortfolio from one system to another (e.g. meeting records, documents, student work etc.). In reality, most of the material like meeting records and learning diaries is course specific and doesn't need to be transferred. What needs to be transferred is student work, evidence of achievement, etc.; and this is actually much easier to do.

Software development

As previously mentioned, the development of software solutions was beyond the scope of the project. However it was felt that basic XSL transforms could be developed in an exploratory fashion so as to ascertain what would be entailed in the creation of a product capable of bridging the Blackboard – IMS LIP XML gap.

These transforms were suitably developed and tested, and it was felt that the knowledge gained and the transforms themselves were very valuable and could definitely address the issues of importing IMS LIP data into Blackboard. The transforms also achieved an almost perfect separation of data from format (in the XHTML pages) and hence performed excellently from the point of view of accessibility, cross-browser compatibility, and thanks to the pertinent use of tagging in the XHTML pages, the ability to extract relevant data from the resulting files.

All of these features point the way to how to develop excellent future solutions to the data transfer problem.

The plan to utilise Shibboleth technologies was not able to be implemented. It is clear that some regional institutions are at a very early stage in looking at the technology and they will need to spend time and effort to ensure their service departments are informed of the benefits and costs when implementing this technology.

Most of the regional partners, with the exception of one, are now starting their investigations; however these investigations will be part of another regional JISC project IAMSECT.

EPICS has continued to disseminate the practical outputs of the project of the project to other regional partnerships using the tools identified from the communications strategy.

The number of enquires has been encouraging, with partners giving presentations to both regional and national audiences.

Conclusions

Briefly summarise any conclusions that can be drawn from the project work.

The overall approach was collaboration, collaboration, collaboration among regional Universities and FE Colleges, and within these groups among learning technologists, educationalists, administrators, executives, managers and....

Paying close attention to what was actually happening in the project, and then re-prioritising, quickly and decisively, when it became clear that the original plan was no longer the most appropriate

Realising that the main issues were not technical, but were about pedagogy, organisation and governance. The technical developments, the insights into issues in both pedagogy and governance, and the excellent working relationships developed across the region, they identified and proposed new developments in areas such as the brokerage of the student's where personal Information across educational Institutions could be built and as such the EPICS team would be well placed to contribute to such future developments.

Data flow concerning PDP is complex and involves many systems across regional institutions.

The use of PDP within the region is diverse and the terminology used varies greatly. It would be helpful to be able to align terminology across the region as PDP progresses.

Institutions are using a range of PDP systems/products; some are using paper systems.

While the initial project was perhaps originally too technically biased, the emergence of the PDP Forum has helped to redress the balance and has provided a firm basis on which to provide future support and to establish and share 'best practice' across the region.

The establishment of the Forum was an elaborate version of a process that might have occurred before the project started, perhaps at the stage of making the bid. The Forum certainly might have contributed even more to the EPICS project if it had been established sooner.

There are two broad ways in which a group like the Forum might be seen as an integral part of a project like EPICS:

First it allows for individuals and institutions involved to contextualise the work being done both for themselves and to the other partners. They are able to describe to and for themselves and articulate to others:

Why they are involved.

What do they hope to get out of it?

How does it fit into the broader context of their institution?

What knowledge, expertise and experience does their institution bring?

What do they bring as individuals?

To what extent can the project agenda be shaped?

Who wants / needs what from the project?

Without a forum for this kind of debate and discussion real partnerships outside of very tight constraints is very difficult and will tend to be defined by resources (money) and other sources of power.

Second in deliberately shaping itself around application and practice in the workplace the Forum makes available to the project an ideal reference group; this is not a separate customer reference group but one that it's possible to be part of and one characterised by opportunity for exchange of views.

There is a significant body of work which clearly identifies the social and organisational problems of design and implementation of information systems – this does not appear to be visible to key communities designing, delivering and deploying JISC programmes. Explicitly attending to such issues within programmes is likely to lead to more successful projects.

Based on the EPICS work and SBI's experiences the inter-institutional and inter-sector deployment of educational technologies has profound implications for the management and governance of student information (including e-portfolios and identity management).

EPICS and other JISC funded work in this area (e.g. the e-portfolio legal study) have only scratched the surface in this regard. The EPICS toolkit provides a starting point in offering practical steps forward for the JISC (and wider) e-portfolio community to begin to incorporate ideas about socio-technical approaches to information systems and organisational change in the design and deployment of such e-learning technologies

One successful conclusion of EPICS is that we have discovered that organisations who have historically had very diverse needs and desires have been able to work together to produce something of value. Originally we expected the portfolios to be so different that an interpretation layer would be essential to allow the portfolios to talk to one another. During the project it became clear that by simply working together to determine the small differences in how standards were being understood by the different institutions, we could remove the need for this complex 'middle' layer.

Although EPICS found a solution outside of IoNodes, it is still important to investigate further the technology interpretation and transfer negotiation solutions available. The number of XML standards available is growing, and it is unlikely that any portfolio solution could be mapped to all standards without diluting the effectiveness of that portfolio. IoNodes, or a similar technology, might be the solution to this by allowing XML standards, and the different interpretations of these standards, to be mapped to one another.

We have demonstrated that ePortfolio data can be transferred between systems and institutions. There is some more work required to ensure that no data is lost in the process, and to make the process compatible with additional ePortfolio tools.

It is very important to be creative when looking at ways and means of transferring data between two or more portfolio systems. Until very close to the project end, we were unsure as to whether any relevant data could be extracted from, or uploaded to Blackboard. Creative solutions were found to both of these problems, neither of which detracted from the work that had already been conducted on making the ePET portfolio compatible with the IMS-LIP standards.

Implications

Consider the future implications of your work and how others can build on it. What are the implications for other professionals in the field, for users, or for the community? What new development work could be undertaken to build on your work or carry it further?

It would be interesting to revisit how PDP develops in the region over the next two to three years. The mapping questionnaire could be re-used as part of that process, but would need to be developed further and be split into current and future practices as it is felt that some of the questions are too ambiguous.

From the work on WP 5 we have drawn the following implications from the project

Socio-technical problems of design and implementation of information systems this should be made more explicit to the key communities designing, delivering and deploying JISC programmes

The EPICS project has shown that increasingly inter-institutional and inter-sector deployment of educational technologies has profound implications for the management and governance of student information (including e-portfolios and identity management). There are also significant pedagogical questions to be asked about the appropriate relationships between institutions and other agencies. There is significant further work to be conducted in this area.

The EPICS toolkit provides a starting point in offering practical steps forward for the JISC community to begin to incorporate ideas about socio-technical approaches to information systems, organisational governance and organisational change.

Regionally based approaches to issues such as e-portfolios offer some network benefits above and beyond the project.

If the intention of JISC is to stimulate implementation of its' strategic goals and project outputs then the regional dimension could be key to spreading innovation in sustainable regional networks.

If one were to analyse the implications of the findings of the EPICS project, one would have to consider what the intended use of e portfolios was. This issue was highlighted in the WP 5 workshop and the various PDP forums, and the answer ought to be that there probably isn't a definite answer as such yet. This is mainly because the system is just being introduced, and both students and staff have yet to identify how best to make use of such tools. In a sense it is too early to judge how useful ePortfolio will be, and how important their transfer between institutions will be deemed.

That being said, it was clear that given the current variability of systems, data loss was likely when exchanging data across different e portfolio packages (be it because of the shortcomings of the format used for data transfers, the way in which it is adhered to, or simply because not all of the exported data is necessarily likely find a suitable container for it in the importing system). Further to this, it was clear that automatic data transfers might not necessarily be fully successful (or feasible in some cases). Nonetheless, on the flip side of things, it was found that manual transfers (via cut and paste) were not necessarily a substantial inconvenience. This was largely because manual transfers would fully empower the individual user, would allow for careful editing and data control, and did not necessarily imply an intolerably lengthy procedure (as long as the exporting and importing packages have similar data structures, missing data is not mandatory, and the amount of old data that is difficult to place within the new e portfolio is not too great).

Recommendations (optional)

List any specific recommendations for the teaching, learning, or research communities.

From the work done in WP5 we have made the following recommendations:

Sustain the development of the regional forum and initial support for developments of the EPICS toolkit

Explicitly recognise the importance and range of socio-technical issues including the technologies aimed at supporting teaching and learning domains

Analysis and experience with Data exchange formats

From the point of view of automated data exchanges, it was found that the IMS LIP XML data exchange format has severe shortcomings. It is possible that the UK LEAP or IMS ePortfolio formats provide vast improvements on this. However it should be recommended that once a standard is agreed upon, it be thoroughly documented, and strictly followed and enforced. It is likely that a mechanism for variations would be needed, but this mechanism should also be well regulated and documented.

Project and JISC Dissemination

Many insights were gained from the project, but particularly it was clear that at least for FE institutions, the issues to do with data transfers once the students leaves the institution had not been fully considered.

There were also lots of issues to do with discovering the full potential of eportfolios (something which really needs further exploration). As a result, it was felt that it would be very beneficial to have a good period of dissemination of the current findings, something which will hopefully be achieved by the proposed dissemination strategies of the EPICS project.

Technical developments, the insights into issues in both pedagogy and governance, and the excellent working relationships developed across the region through EPICS, together provide a firm basis on which proposed new developments in areas such as the brokerage of the student's Personal Information across educational Institutions could be built.

The EPICS team would be well placed to contribute to such developments

A clear message:

Comments taken from Dr David Baume's Project Review, Project Evaluation and the Project Managers report

e-learning projects aren't just about e, or even just about e-student-learning. At their most effective, they are (in very good ways) highly disruptive. They throw up needs for organisational change; changes to governance; changes in the roles of many staff, and the consequent need for staff development, changes to pedagogy, and hence to the nature and shape and form of courses, and the consequent need for educational development support; changes to the student's 'contract' with their HEI or FEC; even changes to architecture (build another lecture room or more quiet and noisy study spaces, or install wifi everywhere or more servers, or etc?) If they are to deliver maximum effect, e-learning calls and projects must accept and embrace all of these areas of implication, and no doubt others.

Building effective regional collaboration needs time and a particular project or focus, or (perhaps better) an evolving sequence of projects and foci / infrastructure / services over time. Projects (e.g. EPICS) provide a jolt of energy and resources, and sweep in new people, and achieve valuable short- to medium-term progress. Foci (e.g. NorMAN) underpin regional projects and give sustainability. We are not sure that we yet have the most productive relationships between 'projects' and 'foci / infrastructure / services'

References

List any references to the work of others you have cited (e.g. articles, reports, studies, standards), and any explanatory notes. Provide URLs for any materials available on the web.

PDP mapping questionnaire, based on the original developed by Helen Richardson for CRA "Getting what you want: Fostering conversations to plan quality into PDPs 25th May 2005

This document was used as the basis for developing the questionnaires for the analysis requirements for work packages 3 & 4

IoNodes "SHELL" <http://www.educationaldevelopment.net/shellfinal/default.htm>

Information obtained help with the analysis and decisions to develop in-house solutions to data transfer between institutional ePortfolio systems

Extended Lifelong Learning Inventory see <http://www.ellionline.co.uk>

Work continues within the PDP Forum, and a project has been proposed which includes the use of Extended Lifelong Learning Inventory tools

Overview of Europass: <http://europass.cedefop.europa.eu/>

As part of the continuation project, developments to include data transfers using the standard defined as part of the Europass system.

Rough Guide To Teaching and Learning – Progress Files ISBN: 0-9548734-5-9

http://www.epics.ac.uk/epics_docs/Progress_Files_Rough_Guide_2004.doc

Information gained form this document and the authors as part of the regional investigations to PDP and progress files.

Appendixes

Appendix 1 Advisory Board Members

Paul Hopkins	PI of EPICS and Director of ISS, University of Newcastle
Lawrence Taylor	Chair, Project Manager, Northumbria University
Sarah Davies	Programme Manager, JISC
Merv Stapleton	City of Sunderland College
Paul Drummond	ePet and FMSC, School of Medical Education Development, University of Newcastle
Rick Smith (RS)	Stockton Riverside College
Kirsten Black	University of Sunderland
Janet Wheeler	IAMSECT (JISC project), University of Newcastle
Kathy Wiles	University of Newcastle
Paul Lambert	University of Teesside
Alan Sanderson	Unis4NE
Gareth Davies	JISC Regional Support Centre Northern
Scott Miller	University of Durham

Appendix 2 Project Partners and Participants

Dr Tony McDonald	University of Newcastle
Mr Bruce Ingraham	University of Teesside
Mr Dave Webster	University of Sunderland and JISC RSC Northern
Ms Janet Wheeler	University of Newcastle
Mr Jamie Thompson	Northumbria University
Mr Rob Wilson	Centre for Social and Business Informatics Institute for Policy and Practice Claremont Bridge University of Newcastle-upon-Tyne Newcastle-upon-Tyne, UK University of Newcastle
Dr Susan Baines	Centre for Social and Business Informatics Institute for Policy and Practice Claremont Bridge University of Newcastle-upon-Tyne Newcastle-upon-Tyne, UK
Mr James Cornford	Centre for Social and Business Informatics Institute for Policy and Practice Claremont Bridge University of Newcastle-upon-Tyne Newcastle-upon-Tyne, UK
Mr Simon Cotterill	University of Newcastle
Mr Paul Horner	University of Newcastle
Mr Gary Davison	University of Newcastle
Ms Liz Smith	University of Newcastle
Ms Diane Nutt	University of Teesside
Mr Horacio Ayestaran	OWL & TyneMet College
Mr Matthew Duncanson-Hunter	University of Sunderland
Mr Gareth Davies	University of Sunderland
Mr Merv Stapleton	City of Sunderland College
Ms Moira Thirlaway	City of Sunderland College
Ms Beatrice Ollerenshaw	University of Durham
Dr Malcolm Murray	University of Durham
Mr Rick Smith	Stockton Riverside College
Ms Sue Gill	University of Newcastle
Dr Megan Quentin-Baxter	Academy subject centre
Ms Suzanne Hardy	Academy subject centre
Ms Susan Hakim	RSC
Mr Paul Drummond	University of Newcastle
John Snowdon	University of Newcastle
Paul Hollands	University of Newcastle
Ms Kate Boardman	University of Teesside
Mr Bob White	University of Teesside
Ms Doreen Shannon	Northumbria University
Mr Henry McLaughlin	COSC
Mrs Janice Coulson	University of Newcastle
Ms Sue Bruce	University of Newcastle
Ms Roz Cooper	Northumbria University

Appendix 3 Teesside generic portfolio spec

E-Portfolio Specifications

An E-Portfolio needs to be compatible with our minimum standard requirements which are:

Students must be given the opportunity to:

- undertake a self-audit and goal-setting activity at the start of each level/stage of the programme
- reflect on assessment activities and feedback received (both summative and formative activities and assessment) at each level/stage of their programme
- have regular progress reviews with a tutor (check the minimum standard for Student Support and Guidance)
- produce a CV or relevant document for employment purposes (e.g. an evaluation of the impact of learning on professional practice)

The opportunities must:

- link clearly to the learning outcomes of each level/stage of the programme
- link clearly to specific core modules of the programme
- be made explicit to the students (e.g. through the Student Handbook)
- allow for the inclusion of extra-curricular development activities/learning
- involve the summative assessment of some or all of the components of the 'progress file' (but this should draw upon existing assessment opportunities in core elements of the programme).

It is recommended that:

- personal development planning is based in (rather than just linked to) specific core modules of the programme (for example, in an undergraduate programme it could be based in first year skills modules, second year research modules, third year dissertation/project module).
- students are provided with a mapping of key transferable skills to their modules so that they understand where and how these skills are to be developed and assessed. They can then review their development of these skills through the programme. (The University has clearly identified the key transferable skills in its revised Level Descriptors which should be reflected in programme learning outcomes).
- A brief record of tutorials be maintained by the tutor and the student.

The e-Portfolio also needs to be:

- Able to work within or alongside Blackboard and the University MLE/Portal
- Student friendly:
 - attractive and engaging interface
 - easy to learn how to use
- Primarily student driven but with a clear and defined structure which incorporates:
 - support for action planning, feedback and reflection (on academic, personal and work [paid and voluntary] activities and achievements)
 - CV building support
- Compatible with a variety of ways of supporting PDP - so for example will work with personal tutoring model, and with embedded model of PDP (see Rough Guide to Progress Files)
- Equipped with space for hard data, which is safe and transferable, e.g. transcripts, module specs, feedback – (possibly as read only?)
- Suitable for students on a variety of types and levels of programme
 - so suitable for traditional theoretical degrees (e.g. English, History), as well as on practice based programmes (e.g. Nursing, MBA), and suitable for arts, sciences, health, social sciences, business, and computing programmes and students.
 - has level differences to support progress
- Compatible with programmes where PDP, or aspects of PDP are assessed
- Be commercially robust and/or easily upgradeable

- Transferable between institutions:
 - from here to further study, or employment, or personal PDP for lifelong learning, etc
 - to here from partner FE Colleges and Schools

Appendix 4 Shibboleth Component Completion Report

EPICS Shibboleth Component Completion Report

1. Project Outputs

The Shibboleth Component Final Report, detailing Shibboleth IdP installations at the 5 EPICS partners who participated, was submitted to JISC on 30 Aug 2006. No outstanding issues have been raised.

2. Intellectual Property Rights

Not applicable.

3. Project Staff

Staff participating at the end of the project were:

Gillian Brown (Higher Education Academy Subject Centre for Medicine, Dentistry and Veterinary Medicine and iamsect).

Gary Davison (Information Systems & Services, Newcastle University)

Janet Wheeler (Information Systems & Services, Newcastle University and iamsect)

Technical assistance and advice in the course of the project was given by Cal Racey and Jon Dowland (Information Systems & Services, Newcastle University and iamsect)

No FTEs were assigned as such in the project plan.

4. Dissemination Plan

Not applicable; all dissemination as regards the Shibboleth Component was done via the iamsect Core Middleware Development project.

5. Exit Plan

Not applicable (see also under Sustainability below). The project web site falls under the remit of the main project.

6. Sustainability Plan

It is hoped that the outcomes of this project will assist and inform JISC in the rollout of the UK HE Shibboleth Federation, in terms of the problems and pitfalls encountered and by the creation of a nucleus of Shibboleth users within the North East of England.

7. Budget

The budget is included with this report in the file EPiCS_shib_finalBudget.xls. The project has been much more labour-intensive than was originally envisaged as reflected in the overspend re staff costs.

The surplus reflects that fact that Stockton Riverside College were ultimately unable to install the Shibboleth infrastructure.

No funds were sought or received from other sources.

Lessons Learned

8. Aims and Objectives

The objectives set at the beginning of the project were as follows:

- To scope the feasibility of installation at each institution.
- To install Shibboleth infrastructure at partner sites
- That partners should join a UK Federation as an identity provider
- To identify a source of authorisation attributes at each partner site
- To identify and agree a set of attributes to be used to authorise access to e-Portfolios
- To scope the establishment of a regional managerial and legal framework for inter-institutional access.

As the project progressed, it became evident that these were somewhat ambitious both in the context of the time frame and the funding available, with only the first two being achieved. Nonetheless, awareness of Shibboleth within the North East was raised and a nucleus of early adopters within the region was produced. Although it was not possible to scope the use of Shibboleth to authorise access to e-portfolio systems, the project outcomes should be useful in informing any further work undertaken in this area.

9. Overall Approach

With hindsight, more would have been achieved if the Shibboleth component had been set up as a separate sub-project in the first instance as the EPICS project team were, in general, not IT-oriented.

It was only when Gillian Brown was co-opted to manage the component that significant progress was made; as the then administrator for NorMAN, her contacts and knowledge of the IT services at the partner institutions were invaluable.

10. Project Outcomes

In summary, outcomes were as follows.

Shibboleth IdPs installed at City of Sunderland College and Sunderland University;
Production IdP installed at Durham University; Teesside University experimenting with Microsoft's ADFS rather than Shibboleth.

Awareness and knowledge of Shibboleth raised at all EPICS partners.

Feedback to the Core Middleware Programme on the difficulties encountered in the adoption of Shibboleth.

The main lesson learned was that pedagogy and (relatively) leading edge technology do not always sit comfortably together. In addition, the sheer diversity of IT services, their policies and operation amongst the partners was something of an eye-opener.

11. Stakeholders

The partners who engaged in installing Shibboleth will benefit in that they should be in a position to take early advantage of Shibboleth following the formation of the UK HE Federation.

The JISC Core Middleware Programme has benefited by the addition of Early Adopters, and by the feedback received.

12. Project Partners

Collaboration was only with the partners in EPICS.

13. Project Management

See Section 9.

14. Programme Support

The managers of both DEL and Core MiddleWare programmes have been most supportive in what has sometimes been a difficult undertaking.

15. Future Work

The work of which the Shibboleth component is part is already being taken forward by JISC.

Appendix 5 Forum Report

The report is also available from the EPICS website [PDP Forum Report](#)

North East PDP Forum (EPICS) Report

Introduction

On the 26th July 2005 Newcastle University hosted and led a Discovery Workshop at the Beehive Centre. The workshop engaged a wide range of stakeholders in EPICS and in e-portfolio / PDP, considered the current scope and progress of the EPICS project and began to explore the range of understandings about PDP and e-portfolio across institutions and sectors. The workshop was a success in two ways; first it was well attended and in particular drew in representatives of FE and second, participants were animated, engaged and expressed satisfaction with the event and a shared sense of a way forward. Significantly, there was a consensus around the need for EPICS to develop a practice reference group. In the subsequent workshop report the first of three recommendations was;

'The need to establish a 'process and practice' forum / group to explore the broader issues involved in PDP / e-portfolio activities at a regional level.'

The other important outcome from this event was the establishment of relationships of shared interest in the EPICS project from across a range of the partners.

On the 27th September 2005 the EPICS management team accepted a proposal from Northumbria University to establish a Regional PDP Forum (Appendix 1).

The Objectives described in the proposal were:

- To identify the range of different approaches to PDP delivery across the HE and FE sectors in the region
- To understand the differences and to learn from other approaches and experiences
- To identify any shared understanding and practice and ways of sharing and / or working together to develop and evaluate best practice
- To include and consult with a range of students about the relevance of the processes and products of PDP
- To support the EPICS project and any other relevant initiatives; in providing a critical friend in relation to practice in FE and HE, in facilitating access where possible to students and PDP practitioners and in particular to support the successful delivery of Work Package 5
- To disseminate understanding about the role of PDP and it's relationships with issues/policies such as learning and teaching, widening participation, employability and e-portfolios
- To provide a forum where regional discussions can take place about the design and implementation of products and approaches which may be required in order to deliver greater understanding and co-operation between individual institutions

The main constraint for the forum was time. The Forum had a natural impetus and sense of purpose following the Discovery Workshop but it was important that it was able to work productively within the timeframes of the EPICS project and be able to make a constructive contribution to it.

A Forum Planning meeting was held on the 27th September and was well attended. Terms of reference and a clear strategy for the Forum were agreed. The Forum was to meet three times around three key themes (Philosophy, Practice and Evaluation) and following this would host a larger regional event to disseminate its work, to broaden the network of regional relationships involved and to explore issues of sustainability. It was quickly recognised by those involved that there was potential value in a continuing Forum beyond the EPICS project. Underpinning this core plan for the Forum has been the notion that the processes and summary of the Forum's work would contribute to the essential contextualising (and applicability) of the more technical outcomes of the EPICS.

The three themed Forum meeting took place on the 1st December, the 2nd February and the 23rd March. All were well attended and productive with partners producing a range of material in preparation for and during those meetings. This material is summarised below. Following these meetings the Forum has organised a Regional Conference to be held at the Manor House in Newcastle upon Tyne on 23rd May to disseminate and discuss findings.

The Philosophy and Meaning of PDP (Durham University 1/12/05)

In preparation for this meeting partners each produced a short synopsis of the Philosophy and Meaning of PDP at their institution and this was the basis of discussion at the forum. This is summarised below in terms of common ground and contrasts in understanding and approach to PDP

Common Ground.

- PDP is essentially a process
- PDP is a student opportunity to reflect plan and review learning
- PDP is related to the development of transferable skills
- PDP can and should result in a range of useful products
- e-portfolios can play a part in the process and be a medium for products

Contrasts

- *Student ownership.* Although there is broad agreement about the notion of student ownership of PDP there are significant differences in emphasis. There are three discernible models: For some PDP is entirely optional; resources, guidance, support and encouragement are made available to both staff and students in departments but take up and enthusiasm are low and PDP is not widely seen as complementary to institutional processes. A second model emphasises student entitlement; here PDP is perceived as a core learning and teaching process and the focus is on how rather than if it is made available to students. Here there is some emphasis on working with academic staff to introduce and develop PDP delivery. In the third model notwithstanding debate and discussion about the PDP it is seen primarily as an institutional requirement and institutional approaches are sought to deliver it. These three models don't represent a neat fit across the different HE and FE establishments in the Forum. To some extent all the institutions experience some tension between the models.
- *Type of institution.* The Forum brings together partners from old universities, new universities and FE colleges. Broadly speaking the old universities experience particular difficulty in winning the hearts and minds of academic staff in relation to PDP. In the old universities the notion of supporting student development is more contested; the purpose of the university is to promote scholarship, excellence and research and the role of staff is primarily focussed on this. The new universities are increasingly concerned with excellence in teaching and learning although there are still tensions around the maintenance of a scholarly role. In the new universities there has been some enthusiasm to embrace PDP essentially as a learning and teaching issue. In the FE institutions, notwithstanding some history and tradition of PDP-like processes, an important driver for PDP is the growth of partnerships and collaborations with HE to deliver Foundation Degrees and therefore the need to try and find compatible processes for the validation and approval of programmes and for the transfer of students between institutions.
- *E-portfolios.* Here the contrasts are less between than within institutions. Is the e-portfolio a central, flexible and timely hub around which PDP can be defined and developed? Or is PDP the central process, delivered in a range of ways largely related to particular learning and teaching strategies, out of which a range of products and records can and should emerge for which a flexible and timely vehicle is the e-portfolio? Although on the surface this debate seems to be mostly concerned with starting points it is also a debate that reflects a fundamental and current debate about the relationship between technology and learning in FE and HE.
- *Transferability.* Again this contrast reflects debate within and across the partner institutions. At its technological heart the EPICS project is concerned with demonstrating how electronic data can be transported between institutions, in particular how student e-portfolios can be transferred. The Forum has been keen to address the question of what needs to be transported and why. Student owned electronic data, including portfolios can easily be stored and transported independently. The complexity seems to arise around two factors; first, is the portfolio being collected around a particular institutional template and is that template compatible with templates in other institutions? The second issue is about authenticated material. Essentially, can portfolios containing authenticated accounts of individual academic achievement be securely transferred between institutions? These are both fundamental questions. The first is firmly premised on discussion, common understanding and agreement

between institutions in the first instance not about the range of products used to facilitate student portfolio building but about the core purposes, processes and potential content of portfolios. The second question is about the development of student transcripts rather than e-portfolio. Clearly some types of portfolio could be enhanced by the inclusion of authenticated programme material, transcript material. However, national and European lead on the shape of transcripts is still developing and the transferability or sharing of such data will involve complex discussions between particular institutional central departments which currently control access to this data. Commonly these are registrars departments. Since the EPICS project is not generally engaged with these central departments the issue of transferability revolves largely around the first issue of common understanding etc.

PDP Practice (2/2/06, Newcastle University)

Partners brought examples of PDP practice and these were the basis of discussion and debate.

Implementation strategies

Strategies varied widely. The new universities all had a substantial history of engagement in PDP and strategies included staff and student consultation, institutional policy development, institutional guidance and strategic programmes of staff awareness raising, support and guidance. The old universities also work to raise awareness and offer support and guidance but within a context of a more fragile institutional and academic ownership of PDP. All the HE strategies allowed for a range of approaches to PDP reflecting the needs of different subject areas, levels of study and modes of delivery. The nascent FE strategies appear to be attempts to develop PDP tools that are applicable across the whole institution. All strategies have included the development of a range of delivery mechanisms, PDP records and PDP products. Access to e-portfolio facilities has become a part of all institutions' strategies for PDP.

Integration

Perhaps the fundamental difference in PDP practice both within and across institutions is between PDP as integral to academic programmes and PDP as a resource and as support made available to students. Where PDP is integral there are different levels of integration but there is some programme, course, teaching staff ownership of the process. The integration is at the level of teaching and learning. PDP is recognised, enhanced or even developed as part of the process of delivering academic programmes. Where less integrated with academic programmes PDP is offered to staff and students as a resource. As a result it is more difficult to engage directly with the notion of PDP as a process and the emphasis is on making available PDP tools such as frameworks for portfolios, transferable skills assessment and development resources, tools for reflection etc

Guidance Tutoring

The tensions in HE and FE between the notions of learning for achievement (knowledge, skills, understanding and accreditation) and learning for development (sense of location and direction, self-knowledge, motivation, values, thinking skills, qualities to be a robust, lifelong learner etc) are apparent in the role of the guidance tutor. This role variously straddles the academic and the pastoral and is often where PDP finds itself centrally located. The guidance tutor is sometimes the main vehicle for PDP, engaging with a variety of PDP tools e.g. Progress Files and / or encouraging processes of reflection, planning and review. Guidance tutoring is delivered in very many ways within and between partner institutions with the result that the quality of such approaches to PDP varies considerably.

Progress Files, PDP Modules and CVs

There are many different examples of attempts to capture PDP processes and often they are based on the idea of trying to identify signal moments in the student journey. Typically the long standing Progress File is built around such moments and the attempt to generate student reflective processes; at the beginning of a programme, at the end of each academic year, before and after practice placement or sandwich year. A range of such documents are used across the region and with a focus that varies between or includes; reviewing academic progress, identifying learning needs, strengths and weaknesses, learning from non-academic activity and CV development.

In some institutions there are examples of trying to capture PDP within particular modules or a particular module of a programme of study. Commonly these are study skills modules and are delivered in the first year of study but attempt to kick off the PDP process in students and provide frameworks for ongoing reflection and development. As with the Progress File, at the heart of these is the notion of encouraging students to develop a living portfolio of material that reflects their learning both in terms of achievement and development and from which for example, future learning needs can be identified or powerful CVs generated.

Portfolios and e-portfolio

Much of the debate about PDP practice is reflected in portfolio and e-portfolio practice across the institutions. Student access to electronic portfolio facilities varies in type and sophistication. The way the e-portfolio is used ranges from an integral tool for learning and assessment delivery, as a principle tool for the collection of PDP products, as a facility made available for a range of activities and outputs, through to an as yet largely unused facility for staff and students. We have been shown exciting examples demonstrated of specific use of e-portfolios to gather evidence against specific learning outcomes, to generate reflective activity, to gather and arrange material for presentation and to generate CVs.

The analogy has been used that portfolios can be used as mirror, map or sonnet⁸; as a mirror they are essentially repositories for reflection and can be framed in a number of ways that can allow for secure private reflection and / or to be shared with peers and tutors. As a map the portfolio becomes a tool for planning learning and for recording learning achievements and identifying learning needs towards specific objectives and outcomes. The portfolio as sonnet is used as a vehicle for positive presentation of the author most typically in the form of a CV. It would be fair to say that all three such types of e-portfolio are represented amongst the partners. However none of the e-portfolios are being used to collect validated transcript data i.e are being used in conjunction with what are commonly academic registry processes to gather authenticated and detailed statements of academic achievement.

Evaluating PDP (24/3/06, Teesside University)

This meeting was held as a World Café in which ideas were generated around the question, 'What do we want to know?'

Discussions drew on previous meetings and generated a number of key themes and questions seen as central to future relevant research and evaluation of PDP.

Evaluation or research?

Evaluation is about monitoring and accountability. Normally it involves measurement and the notion of established criteria of success (or purpose) e.g. how or when does it work? Is there a strong enough consensus about such criteria for PDP? What is the relative value of student focused studies, institutional evaluations, regional evaluations, national evaluations etc? Research questions sometimes arise out of evaluation but should the evidence base for PDP address questions of why some things work and some don't?

The Forum took the view that it was important to contribute to PDP evidence and that this means evaluating / researching elements of PDP rather than the broader and contested notion of PDP itself. The key issue in selecting such elements is shared notion of relevance.

Does PDP improve learning?

Is this what PDP is for?

What do we mean by learning? Learning for what? Achievement in terms of knowledge, skills and understanding or development? Or development as robust, lifelong learner and all the qualities that implies? There was a consensus that we needed to avoid taking a simplistic and largely achievement-based view of the learning that PDP might improve.

Whose view of improvement? Are we taking into account what students expect / want?

⁸ Diez, M. (1994) *The Portfolio: Sonnet, Mirror and Map* in Burke, K. (1996) *Professional Portfolios*. Arlington Heights: IRI Skylight

'Improve' is a complex notion. Are we interested in progressions through levels of learning? Some notion of improved quality of learning? Or again are we trying to grapple with the lexicon of developmental improvement? Reflective learning, imagination, creativity, problem solving, thinking skills etc)

Is improved learning about curriculum development to improve the level of student planning and student involvement in planning their own learning?

In addressing this question do we think of PDP as an external factor that may impact on learning that we might investigate through clinical trials methods? Or do we think of PDP as an integral part of the learning process. There was again a broad consensus around the latter view although much more difficult to evaluate.

Is the concept of employability the key to this question? Is this such a commonly held desired outcome from learning in HE and FE that it can be harnessed as a key performance measure?

Is it helpful when addressing this question to think of the stages of PDP process?

What do I want to achieve? What do I need to do? In what order?

Review, evaluate, begin again, repeat as an ongoing (lifelong) process

Would it be possible to research PDP around two contrasting models; PDP as a strategy to improve learning (achievement) versus PDP as a radical educational strategy concerned with transforming the ownership of learning?

Student expectations

There was strong agreement that PDP development should be led by a much clearer sense of what students expect, would want and aspire to in relation to their experience of tertiary education. These are complex questions and there are unlikely to be simple answers but across subject areas and institutions and levels of study there was a strong feeling that we need to know far more about this area. There is a need to start work to develop our knowledge here, involve students in developmental work wherever possible and to work with colleagues and students to both explore how PDP can support these expectations and aspirations and how as sectors and institutions we can where appropriate raise student expectations and aspirations.

Teacher identity

PDP has been perceived as a threat by some academic staff. It has been perceived as extra unresourced work, a distraction from a variety of key tasks (e.g. research, teaching, scholarly activity etc) and sometimes more fundamentally as a direct threat to previous understandings of the role of academic staff. Sometimes these perceptions are related to subject areas, to the cultures of particular disciplines. It may well be that PDP does need to shape itself to meet the different purposes and indeed cultures of different disciplines. It may well be that this already happens more or less formally. Meanwhile there is much to find out about the identity of different academic staff and different academic disciplines. An important context for such identities is of course student aspirations, experience and outcomes.

How do we get engagement by staff and students?

How has PDP affected staff both in terms of their teaching practice and their personal development? How many staff and which staff / where consider themselves actively engaged in delivering PDP? Institutionally and regionally where are the gaps?

Does student engagement with PDP impact on staff and staff time?

What strategies have been used to engage colleagues? Which strategies have been successful? How has PDP been embedded and integrated programmes?

Alignment

It is clear that there is a wide variety of understandings about PDP within and across key stakeholders in FE and HE (ie students, academic staff, student support services, institutions, specialist education staff, different disciplines etc). Although the forum had begun the process of unpicking different institutional and individual positions there was still a lot of work to do not just to clarify different emphases and interpretations but also to understand them. In particular work needs to be done to raise awareness about the expectations and aspirations of different stakeholders and engagement with dissonance where it exists. In terms of research and evaluation this might be effectively addressed through some detailed case study evaluation and analysis. The Forum would be an effective venue to shape and monitor such an exercise at the same time as offering the added value of large scope and support.

How do we measure the key skill of reflection?

A core element of PDP is the notion of reflection and self-reflection. How can we collect and evaluate evidence of reflective skills? There is a need to look specifically at the relative success of strategies to develop reflective skills. e.g.

- Ask a question on self-reflection in year 1
- Another (the same) question in year 3
- Compare programmes that have active self-reflection training and support and programmes that don't
- Is there a difference?

Separating it out

PDP brings together different worlds; the academic, the personal and the work / employment based. Do we need to separate these worlds out to evaluate PDP impact or rather do we need to find ways of evaluating the value of bringing them together as a holistic and interrelated system.

'Basic' evaluation

There is need to undertake a range of basic evaluation of our PDP practice. What are we trying to do? What goes well? What goes less well? What have students gained from it? What else?

e-portfolio

e-portfolio is now an established part of the discourse about PDP. It is also a central theme in a relatively new central drive and discourse about individualised learning. Here e-portfolio is the medium for planning, delivering and recording ongoing lifelong learning for all. This vision raises interesting and difficult questions about ownership, governance and technology as well as involving a spectrum of involvement well beyond HE and FE. However the experience of HE and FE remains highly pertinent. For us the questions are still about alignment. In an ongoing process of sharing and analysing the processes, structures and frameworks through which e-portfolios are variously encouraged and generated we need to go beyond common principles and begin to identifying shared ideas of good practice. An excellent way of developing such ideas would be collaborative e-portfolio / PDP action research projects between subject areas, institutions, types of institution and ideally across technologies.

Next Steps

At the Forum's last scheduled event at the Manor House in Newcastle on the 23rd May 2006, a wider representation from all the participating institutions and significantly including student representatives, will consider the work of the EPICS project and in particular of the Regional PDP Forum and use it as a context for agreeing an agenda for the future. The focus will be the questions raised in terms of future evaluation and research. What are the priorities? Can the region identify the key questions to be addressed? Through the EPICS project the North East region has established a unique set of relationships, a sound foundation of mutual understanding in relation to a complex and important current issue and a shared desire to embark on a programme of collaborative evaluation and practice development. The vision for the future inspired by experience to date is of a community of practice and scholarship through which knowledge and understanding is shared, hypotheses are formed and tested and good practice articulated.

It is hoped that the conclusions of the Mansion House Conference can describe a future agenda for the EPICS project and be the basis of a collaborative effort to secure the continuation of the work described in this report.

May 2006

Addendum to report. June 2006.

At the Mansion House Regional Conference in May the work of the EPICS project was presented, a Governance Toolkit was introduced and discussed and the work of the Regional Forum was summarised and future agenda and priorities were debated.

The debate and discussion was wide ranging and very constructive and from it four clear messages emerged.

- The North East PDP Forum had proved a useful vehicle for PDP and e-portfolio development for all who had participated and every effort should be made to continue the work of the Forum
- The Forum should include and embrace the student voice as an integral part of its activity.
- The Forum should reach out to the wider stake-holding community and into its member institutions to involve and engage a wider range of people.
- Building on the useful foundations established the Forum should undertake a specific project; to identify portfolio templates acceptable to each institution to be used to pilot large scale transfer of e-portfolio between institutions and systems. There will be at least three such templates identified (perhaps addressing portfolio respectively as mirror, map and sonnet, see above)

These key messages from the day will inform the shape of initiatives in the immediate future to secure the continuation of the Regional Forum.

June 2006

Proposal to establish a Regional PDP Forum (September 2005)

Proposal to EPICS Steering Group

Aim:

To provide a forum for PDP practitioners in the HE and FE community in the North East Region (a PDP Forum)

Objectives:

- To identify the range of different approaches to PDP delivery across the HE and FE sectors in the region
- To understand the differences and to learn from other approaches and experiences
- To identify any shared understanding and practice and ways of sharing and / or working together to develop and evaluate best practice
- To include and consult with a range of students about the relevance of the processes and products of PDP
- To support the EPICS project and any other relevant initiatives; in providing a critical friend in relation to practice in FE and HE, in facilitating access where possible to students and PDP practitioners and in particular to support the successful delivery of Work Package 5
- To disseminate understanding about the role of PDP and it's relationships with issues/policies such as learning and teaching, widening participation, employability and e-portfolios
- To provide a forum where regional discussions can take place about the design and implementation of products and approaches which may be required in order to deliver greater understanding and co-operation between individual institutions

Process:

Following on from the workshop at Newcastle University where there was considerable and widespread interest expressed in the formation of a regional PDP forum, nominations will be invited for a small steering group for the forum, meeting in October, developing a draft strategy and planning a first forum event before Christmas 2005.

The forum will facilitate exchanges and visits and other forms of dialogue and exchange of information, will report its activities to the EPICS steering committee and will host an event as part of a dissemination of its work in the spring of 2006 and at which a continuation strategy will be discussed.

All EPICS partners to be invited partake in steering group

1st steering group meeting to take place week commencing 10 Oct 2005

2nd meeting before Christmas

2 further steering group meetings to take place before March culminating in a regional event to take place in March 2006

Resources:

JT will coordinate the development of the forum largely in his role at Northumbria University.

A small budget will meet the costs of running and attending meetings, administration support and the spring event.

Appendix 6 Dissemination Activities

The partners produced a detailed paper on the EPICS project:

- 20 November 06 Rob Wilson & Jamie Thompson gave a presentation at the regional HE forum Uni4NE
- 20 November 06 Presentation of EPICS EUROPASS work to JISC InfoNet (Paul Horner)
- 18 October 06 Additional EPICS/ Regional Forum event at Northumbria University “ePortfolios in Action”
- 11-13 October 06 the “ePortfolios 2006” conference in Oxford had a demonstration from Paul Horner of ePET exporting and importing XML data in the Europass-CV standard for editing in the Europass Website.
- 13 October 06 ePortfolios 2006 – Project presented to an International audience (Paul Horner)
- 11 October 06 ePortfolios plugfest – interoperability demonstrations (Paul Horner / Simon Cottrill)
- 10 October 06 workshop at HEA/JISC PDP & ePortfolios research meeting (Simon Cotterill, Sue Gill, Jamie Thompson)
- 9-11 October 06 1st International conference on Researching and Evaluating Personal Development Planning and e-Portfolios, “Evaluating Portfolios: Mirrors, Maps and Sonnets” (Simon Cotterill, Sue Gill, Jamie Thompson)
- Horner AP, Cotterill SJ, Ingraham B, Gill S, Thompson J, Ayestaran H, Webster D, Ollerenshaw B, McDonald AM, Taylor L Wilson R, Quentin-Baxter M, Hopkins P. “EPICS – outcomes of a regional ePortfolio initiative to support life-long learning.” Proc. ePortfolios 2006
- September 06 An abstract “EPICS – outcomes of a regional ePortfolio initiative to support life-long learning” has been submitted to the ePortfolios 2006 conference being held in Cambridge in September 2006.
- A conference paper produced for the ePortfolios 2005 conference included a description of EPICS and one of the ePET implementations at Teesside developed for the EPICS case studies:
- Cotterill SJ, Horner P, Hammond GR, McDonald AM, Drummond P, Teasdale D, Aiton J, Orr G, Bradley PM, Jowett T, Heseltine L, Ingraham B, Scougall K. “Implementing ePortfolios: adapting technology to suit pedagogy and not vice versa !” Proc. ePortfolio 2005
<http://www.eportfolios.ac.uk/docs>
- The project was publicised in the October 05 Newsletter of the subject centre for Medicine, Dentistry and Veterinary Medicine, Print ISSN 1740-8768, Online ISSN 1479-523X
- 19 July 06 ePortfolios meeting, Newcastle University (Simon Cotterill)
- 26 June 06 Newcastle University Teaching and Learning Conference, 2006 (Simon Cotterill, Sue Gill)
- 8 June 06 CETL4HealthNE Meeting (Simon Cotterill)
- 5 June 06 CETL4HealthNE Away Day, Durham (Simon Cotterill)
- June 06 Internal dissemination meeting held at Teesside University for all academic schools and some central departments
- 23rd May: PDP Forum Regional Dissemination event at the Mansion House
- 28th April: CETIS joint portfolios and lifelong learning SIG meeting, University of Liverpool. Simon gave a presentation on EPICS/portfolios.
- 24 Mar 06 – third meeting of the Forum at Teesside University – ‘Evaluating PDP’
- 15-17th March: ALT-SURF portfolios event, Nottingham University: Simon gave a presentation on EPICS/portfolios.
- 3 Mar 06 – Presentation by Lawrence Taylor and Paul Horner to the RSC Northern Content and Curriculum Group at Gateshead College.

- 13 Feb 06 – 17 Feb 06: Several presentations and discussions related to EPICS to staff at the University of Sydney (PVC Teaching and Learning, Dean of Medicine, various groups within the Faculty of Medicine) and University of Woolongong (Dean of Medicine, staff involved with postgraduate degree courses).
- 2 Feb 06 – second meeting of the Forum at Newcastle University – ‘PDP Practice’
- 25 Jan 06 – Presentation to Dr Micheal Thomas, Sub-Dean of Faculty of Dentistry at the University of Sydney.
- 18 Jan 06 – Presentation to Paul Campbell, CEO of the Amazing Group.
- 17 Jan 06 – Presentation to library staff at University of Northumbria, Coach Lane.
- 11 Jan 06 – General discussions with staff from University of Newcastle at the [University Teaching and Learning Event](#).
- 15 Dec 05 – General discussion of EPICS at Tees Valley SHA.
- 6-7 Dec 06 JISC Programme meeting at York, attended by Lawrence Taylor on behalf of project
- 2 Dec 05 – Simon Cotterill represented the EPICS project and gave an invited presentation at a PDP Conference organised by the HE Academy Subject Centre for Business Subject Centre held at Teesside University.
- 1 Dec 05 – first meeting of the Forum at Durham University - ‘The Philosophy and Meaning of PDP’
- 30 Nov 05 – Simon Cotterill gave in invited presentation at a PDP conference organised by the HE Academy Subject Centre for Social Work and Social Care. This included a discussion of the EPICS project.
- 9-10 Nov 05 – Breaking Boundaries Conference, Edinburgh. A handout detailing the EPICS Project was included in the delegate packs for Breaking Boundaries’. There was a major session on “Reflection, progress files, ePortfolios and life long learning” led by Simon which included reference to the EPICS project.
- 26-29 Oct 05 – ePortfolios 2005 Conference, Cambridge. Paul Horner and Simon Cotterill were involved in a ‘plugfest’ to demonstrate interoperability between different portfolio systems. A paper was presented by Simon Cotterill that included references to the EPICS project and to the technical work with Teesside University.
- 6-8 Sep 05 – Simon Cotterill presented at the Association for Learning Technology (ALT) conference in Manchester. The presentation included references to the EPICS project.
- 26 July 05 – Discovery Workshop held at Newcastle University for regional colleagues interested in ePortfolios and PDP hosted by WP5
- 6-7 Jul 06 JISC Programme meeting at Cambridge, attended by Lawrence Taylor on behalf of project
- 5-6 Apr 06 JISC Programme meeting at Birmingham, attended by Lawrence Taylor on behalf of project

Appendix 7 Evaluation

A summary of the Evaluators report

The full report can be found on the EPICS web site [EPICS Evaluation Report](#).

What three main things were right with EPICS?

- Collaboration, collaboration, collaboration – collaboration among regional Universities and Colleges, and within these groups among learning technologists and educationalists and administrators and managers and
- Paying close attention to what was actually happening in the project, and then re-prioritizing, quickly and decisively, when it became clear that the original plan was no longer the most appropriate.
- Realising that the main issues were not technical, but rather were about pedagogy, organisation and governance.

What three main things were less right with EPICS?

- The project was much too short to bring all the necessary negotiations and relationship-building, indeed the first and third of the 'three things right' above, to full fruition, although a lot was achieved. (A JISC problem, I know.)
- There was insufficient, and insufficiently effective, engagement with FE partners, with their very different needs and worldviews.
- There was a partial leadership vacuum at the topic of the project, between the PI (committed and expert, but too busy) and the PM (technically able and enthusiastic, but lacking expertise in the subject of the project), which may have exacerbated the difficulties experienced especially in the early days with the project management methodology.

What are the three main learning's from EPICS?

- e-learning projects aren't just about e, or even just about e-student-learning. At their most effective, they are (in very good ways) highly disruptive. They throw up needs for organisational change; changes to governance; changes in the roles of many staff, and the consequent need for staff development support; changes to pedagogy, and hence to the nature and shape and form of courses, and the consequent need for educational development support; changes to the student's 'contract' with their HEI or FEC; even changes to architecture (build another lecture room or more quiet and noisy study spaces, or install wifi everywhere or more servers, or...?) If they are to deliver maximum effect, e-learning calls and projects must accept and embrace all of these areas of implication, and no doubt others. No more calls and projects that are 'just technical'! They aren't.
- Building effective regional collaboration needs time and a particular project or focus, or (perhaps better) an evolving sequence of projects and foci / infrastructure / services over time. Projects (e.g. EPICS) provide a jolt of energy and resources, and sweep in new people, and achieve valuable short- to medium-term progress. Foci (e.g. NorMAN) underpin projects and give sustainability. I'm not sure that we yet have the most productive relationships between what I am here calling 'projects' and 'foci / infrastructure / services'
- A region - OK, the North East Region - is a good size for effective collaboration among HEIs and (probably, though not yet proven) FECs and HEIs.

Appendix 8 Technical overview and noted issues

Due to the fact that we now only had two portfolio systems in use, the focus became how to get data from one ePET portfolio into another in the most seamless way possible, and how to get data to move between ePET and Blackboard, two seemingly incongruous systems.

As part of the test cases, data had to be exported to and from these systems. In practice, these are very different problems, and in the case of Blackboard the difficulties are compounded by Blackboard's approach to e-portfolios. In effect Blackboard stores its e-portfolio data as a series of web pages. As a result, the individual data fields are not labelled, and can take any format and appear anywhere in the documents.

After various unsuccessful attempts to tag the data within the web pages in a robust manner (which would survive editing within Blackboard), it was realised that the use of metadata fields envisaged in the initial data transfer plans would not be possible. Instead the metadata was relegated to being a guide as to the type of data that could be transferred (nonetheless a more complete set of fields was subsequently developed from the IMS LIP format obtained from IMS Global).

Unfortunately the lack of tagged data in the Blackboard e-portfolio pages made it virtually impossible to automate the data extraction process when exporting to other packages. It also meant that Blackboard was not readily able to import and display raw XML data (such as the IMS LIP XML formatted data used by various e-portfolio packages as an interchange format) without some form of added transform (i.e. there was no ready transform for IMS LIP XML data, and hence at most all that would be achieved by a direct import would be raw unformatted data being displayed, which for the majority of users would be virtually useless. These issues led to two different approaches being taken.

For the export, it was felt that no solution existed at present which could automate the data extraction process from such an unstructured source. The only viable solution seemed one of 'cut and paste' performed by the individual user – effectively a manual transfer. This may sound appalling, particularly if viewed from the point of view of automation and batch processing, but one should remember that data transfer will often need a fair amount of post-transfer editing, to reflect new circumstances, new priorities, outlooks, etc. Hence the cut and paste step would not necessarily imply an insurmountable task, but rather could be viewed, at least partly, as part of the editing process.

Another point to consider is that this form of transfer further empowers the user, and addresses some of the misgiving arising from the legal aspects of the transfer – the user is very clearly in control of the data and its processing.

It should also be noted that the issue of a more automated data export could be largely addressed by having Blackboard use a more structured format for its e-portfolio pages, such as that achieved by our solution to the data import process.

For clarity, one should mention that the Blackboard system was configured by COSC to use the WYSIWYG editor (and changing this would have needed administrator privileges as currently set up by COSC, privileges which were not available for this test since we were trying to replicate typical settings for a normal user). As a result, some of the inconveniences encountered might have been circumvented by turning the WYSIWYG editor off, but it was not possible to test this. Hence there were two types of web page that could be used in the portfolio: those created via the built-in editor, and those imported from elsewhere (created via a third party package for example, such as Dreamweaver, FrontPage, Notepad or a simple import from another e-portfolio system) and then uploaded via the content system.

At this point, although both types of web page display in the same way, only those previously created by the WYSIWYG editor are editable from within Blackboard (using the WYSIWYG editor). This, although annoying, is tolerable for most cases (although not necessarily practical for imports from other systems, which would often need post-import editing). However, when the non WYSIWYG editor pages were exported, **Blackboard did not export any of the resources referenced by those pages**. This is critical; as such pages may often link CSS pages for formatting, and more importantly, a host of other resources such as further pages, images, multimedia files, and an array of documents in various formats (PDF, Microsoft Word, Microsoft Excel, etc).

The loss of such resources during the transfer process would be highly detrimental to the portfolio. Fortunately, a simple solution was found which was deemed acceptable, but the fact that such an issue arose is seen as a shortcoming from Blackboard. The user could always export the portfolio

contents from the content system, and then reconstitute the portfolio, but this would be cumbersome and require a bit of know how. The solution found instead was to temporarily add an extra link to the Content System folder containing the e-portfolio resources.

The most common e-portfolio data interchange format is IMS LIP XML (others waiting in the wings are UK LEAP and IMS ePortfolio, both of which use XML as well). Unfortunately Blackboard is not readily able to import XML data into a meaningful and easily displayable/editable format.

To view such data requires the data being transformed into XHTML, and such transforms do not exist within Blackboard (particularly for the IMS LIP XML format), and would need to be added. Thus at present, in a typical Blackboard installation, very little data could have been automatically imported into Blackboard, and it would have been a matter of resorting to a manual transfer once again. Because of this, and in order to obviate the trivial solution of cut and paste, better solutions were sought and identified.

One such solution was the creation of a few routines capable of transforming the raw XML data into formatted XHTML, as described in what follows.

The XML format lends itself to manipulation by XSL transforms, and at this point two approaches can be taken, either the original XML data is kept, and is viewed via XSL transforms, or the data is permanently converted to XHTML pages via XSL transforms.

The first approach is probably the most pure, in that all the data is kept untouched, but at the same time it is also the most difficult to edit (an XML editor package is needed, and various skill levels are required from the user depending on the quality of the XML editor used). The alternative generates XHTML pages which if properly crafted can keep most of the information held in the IMS LIP XML data, pages which users would find easier to edit than raw XML code. On the down side data loss can ensue, as it would be very difficult to convert all the information held in the raw data format into something that is visually appealing once displayed.

The important issue perhaps is that the XSL transforms would be virtually identical in both cases – the difference would be in how they are used. Because of this, and for expediency, it was decided to use the transforms to convert the data to XHTML pages prior to import. It should be noted however that the transforms as such did not exist, and had to be created from scratch. Furthermore, because of the variability in how the data format is adhered to by different e-portfolio packages, the task was far from easy. On the other hand, once such transforms were created, they could be used for a variety of other uses, giving various other packages the ability to export XHTML pages, and also making it easy for users to interpret and display the content of their IMS LIP XML data files in a normal internet browser (without having to resort to specialised software).

It was felt that creating the XSL transforms would largely fall outside the scope of this project, particularly the creation of a 'finished product', as the project set out to assess how data can be transferred with current systems, and not to create a software package. However it was felt that the creation of such transforms would greatly improve the ability of packages to interact with Blackboard (one of the major players in the e-portfolio market) and could point to better ways of dealing with e-portfolio data.

It was decided to proceed with the development of the XSL transforms, albeit in an exploratory fashion (as a proof of concept) rather than as a definitive answer.

Finally, because the transforms would effectively output very structured XHTML, if this was properly implemented the XHTML could also potentially be transformed back into an IMS LIP XML format, and used for data exchange once again.

This was in fact tried: data was exported from ePET in IMS LIP XML format, it was then transformed into XHTML by the XSL transforms, imported into Blackboard and incorporated into an e-portfolio, and subsequently the entire e-portfolio was exported and imported back into ePET (where a tool developed by Paul Horner successfully imported the data into the relevant fields in the ePET system).

Although this is still early days, the results were very promising (particularly as the XHTML format produced by the XSL transforms showed some degree of robustness when edited in Blackboard – something that tested by pasting the code using the WYSIWYG editor in Blackboard, and the results of which were surprising).

E-Portfolio Infrastructure

The development and implementation of the e-portfolio infrastructure as defined in WP 6 provided all partner organisations the opportunity to have an ePET implementation available at their institution.

ePET was not expected to be the only portfolio used by EPICS partners, but was offered to ensure that the partners who did not have a portfolio system of their own could participate fully in the technical aspects of the project.

University of Teesside and City of Sunderland College (CoSC) were quick to take up FMSC's offer, and fully functioning ePET servers were set up within the first few months of the project. Due to technical constraints, FMSC, CoSC and Teesside were the only partners who were in a position to participate in the technical aspects.

Over the course of the project FMSC has worked very closely with representatives of Teesside and CoSC, who have provided a series of fictional and live students, which has been invaluable to the project.

Technology Implementation Layer - IoNodes

During the course of the development of WP 6, the need for IoNodes functionally (WP 7) was effectively removed once it was revealed that each portfolio being used or investigated was able to use IMS-LIP.

The main concern was one of interpretation of these schemas – one portfolio could interpret a particular tag differently to another portfolio. It was felt that using the IoNodes facilities would be too much for the slight differences in the various interpretations of the schema. This was re-enforced by the two portfolios being used in the EPICS technical data transfer being ePET and Blackboard.

Transferring data from ePET to ePET removed the need for IoNodes because data from the same system could only really be interpreted in one way – putting IoNodes in between would be an additional step that would ultimately do nothing. Blackboard does not have an XML transfer facility, which meant that IoNodes could not be used between ePET and Blackboard.

With this decision the funding allocated for this part of the project has been offered back the JISC.

Import into ePET

ePET is still very much an evolving package, with lots of new features being added on a regular basis. One such feature is the ability to import zip files, such as the ones generated by Blackboard when a portfolio is exported (downloaded).

This would prove very useful for the data transfer, as it allowed the entire data file to be imported into ePET, which was a real bonus from an archival perspective (i.e. the entire previous portfolio could be archived) and also allowed all the imported resources to be incorporated into the new portfolio (although this is still being improved upon by the ePET development team).

On the other hand, unfortunately the bulk of the data had to be transferred via cut and paste. Luckily ePET seemed to be fairly capable of housing all the new data, which considering the unstructured nature of the original Blackboard data, it did a remarkable job. Only very few fields posed any problems (in that there was no obvious field in ePET to house their content), such as information about the place of birth. Also, there were minor issues to do with missing data, such as when current work experience was ongoing (and thus had no end dates). But these details were very minor, and further exploration of the ePET system (as an administrator) revealed that it would have been trivial to address most of these issues by providing extra fields to house the relevant incoming data.

Hence all in all it was a fairly smooth process. We were unable to link a photograph to the new portfolio, but were able to link an imported CV in Microsoft Word format. Also we have been informed that the ability to link all imported documents is currently being implemented in ePET.

FMSC has worked closely with Teesside throughout the project to ensure that their ePET server met their specific pedagogical requirements, and the key technical staff at Teesside were trained on developing portfolio tools from within Zope.

At Teesside they are actively using ePET for a small number of pilot courses with real students.

In addition, Teesside are also testing several other portfolio products including PebblePad and Blackboard.

The ePET-ePET transfer was solved using XML-RPC. The student chooses their previous institution from a dropdown list and enters their username and password for that institution. It is intended that authentication would take place using Shibboleth. An XML request is sent via HTTP to the previous institution's ePET server. If this request is authenticated and validated, the data from their old ePortfolio is transferred into a valid LIP v1.0 XML document, which is then returned to the local server.

A separate ePET-specific XML schema is in development because a proportion of ePET data cannot be adequately mapped to the IMS-LIP schema. This ePET schema will ensure that no data is lost in the transfer. A script on the local server parses the contents of the XML document and enters the data into the database, replicating the original ePET instance. The XML document contains details of the full file path of any non-textual data stored in the old portfolio (i.e. Word documents, images etc). The new portfolio opens each document and makes a copy of that file locally. Multiple integrity checks were made to ensure that data could only be transferred once, so that there was no duplication.

The transfer of data between different versions of ePET will take place in two of the five case studies. The transfer of ePET data into Blackboard was used on one Case Study, and was more complicated, as the project has no control over Blackboard. The case study involved a fictional student created at Newcastle University. A facility has been added to ePET to allow data to be exported into zip archives for easier movement of the data. These can be stored locally, or on CD-ROM ready for when the student requires this data to be transferred into their ePortfolio. This zip file contains a valid IMS-LIP XML document, which stores the text data from the ePortfolio. ePET zip files can be uploaded seamlessly into any instance of ePET, but to facilitate the import of ePET data into Blackboard, the IMS-LIP document must be transferred into a number of separate component HTML files. A set of XSLT transforms have been developed that read the contents of the IMS-LIP export and creates HTML records that can be uploaded into Blackboard. These HTML documents, along with any additional files stored in the ePET zip export are uploaded into Blackboard to create the Blackboard portfolio.

This transfer works very much better than initially expected, and with Blackboard themselves declaring this as being almost impossible; we have achieved an almost seamless transfer between two very different ePortfolio. The XSLT transforms used have great application in that they could be used for creating a series of relevant web pages from any valid IMS-LIP document.

Two of the five case studies involve transferring data from Blackboard into ePET, which proved to be slightly more difficult than moving data the other way. Blackboard data is not stored in any meaningful format, and the only way in which data can be exported is in a zip archive containing the files stored in the portfolio, along with a set of predetermined HTML files. By creating HTML documents rather than XML it is very difficult to associate any meaningful metadata with the contents, as any existing semantic content has disappeared.

Appendix 9 Progress Files: Minimum Standard

Development of Progress Files: Minimum Standards

January 2004

Introduction

QAA requires that by September 2005 all HE programmes will provide students with opportunities to plan and reflect upon their own learning and development and that these opportunities be made explicit to students.

It is intended that this will benefit students by:

- making clear links between different parts of programmes and providing a clear overview of their studies
- helping them to reflect critically
- enabling them to become more independent
- encouraging them to be more pro-active in their academic study and career planning

Tutors will also benefit if students can take greater responsibility for managing their own learning.

Development and Implementation

A pilot progress file was developed and implemented by a sabbatical project in the School of Arts and Media in 2002/03 and alternative mechanisms have been developed in some programmes in other Schools.

The Programme Design Guidelines produced for academic restructuring require all programmes to incorporate an appropriate form of progress file and a guidance note and draft 'minimum requirements' were discussed and agreed by the University's Learning and Teaching Committee in January 2004. These are being supplemented by a series of central and School-based workshops on developing and implementing progress files which started in December 2003.

It is intended that over the next two years the practices developed in different Schools and programmes will be evaluated to inform future developments. It will also be necessary to monitor carefully the resource requirements of supporting personal development planning and the potential implications for the Careers Service.

Minimum Requirements

- *Students must be given the opportunity to:*
- undertake a self-audit and goal-setting activity at the start of each level/stage of the programme
- reflect on assessment activities and feedback received (both summative and formative activities and assessment) at each level/stage of their programme
- have regular progress reviews with a tutor (check the minimum standard for Student Support and Guidance)
- produce a CV or relevant document for employment purposes (e.g. an evaluation of the impact of learning on professional practice)

The opportunities must:

- link clearly to the learning outcomes of each level/stage of the programme
- link clearly to specific core modules of the programme
- be made explicit to the students (e.g. through the Student Handbook)
- allow for the inclusion of extra-curricular development activities/learning
- involve the summative assessment of some or all of the components of the 'progress file' (but this should draw upon existing assessment opportunities in core elements of the programme).

It is recommended that:

- personal development planning is based in (rather than just linked to) specific core modules of the programme (for example, in an undergraduate programme it could be based in first year skills modules, second year research modules, third year dissertation/project module).
- students are provided with a mapping of key transferable skills to their modules so that they understand where and how these skills are to be developed and assessed. They can then review their development of these skills through the programme. (The University has clearly identified the key transferable skills in its revised Level Descriptors which should be reflected in programme learning outcomes).
- a brief record of tutorials be maintained by the tutor and the student.

Appendix 10 Glossary

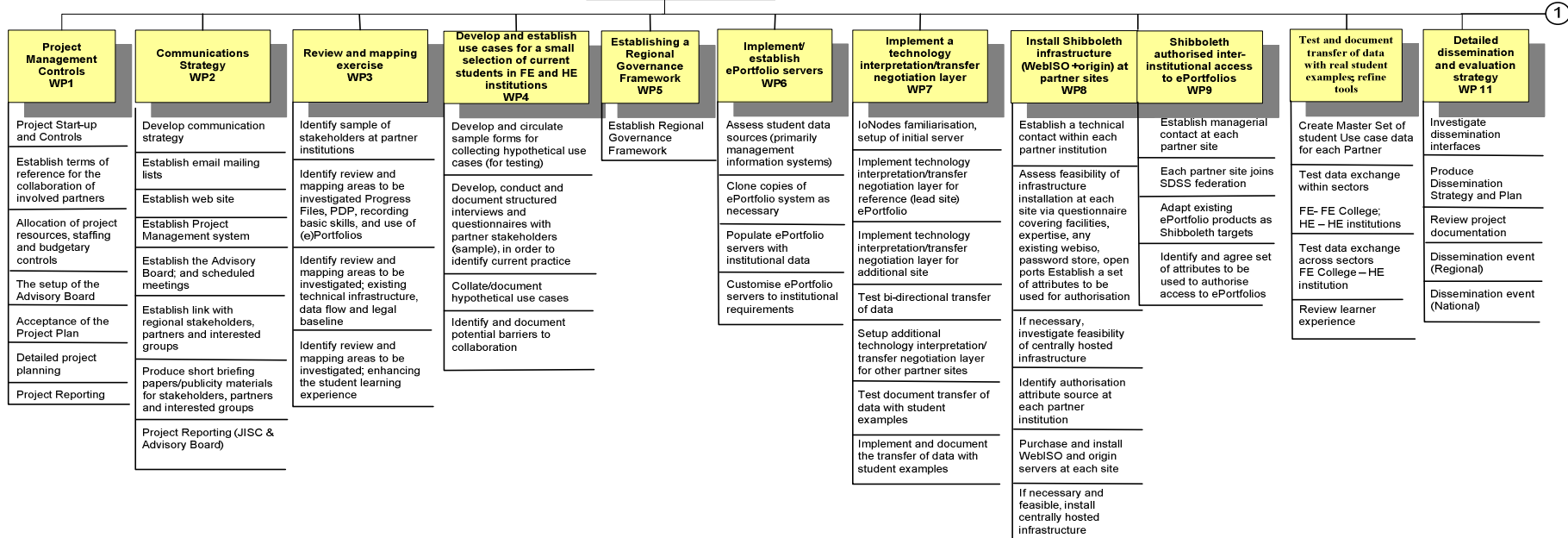
- **ePortfolio** – An electronic repository of learner information. This may be used as a tool used to aid PDP, or it may be used for purposes of assessment. If the former ownership would ultimately lie with the student, if the latter, with the institution.
- **PDP** – Personal Development Planning – Tools or processes used to facilitate or enhance reflective learning.
- **Progress File** – a record (paper or electronic) of student achievement. Normally this will consist of two parts: a record of PDP activity (often a portfolio) and a transcript (now called a diploma supplement). The PDP portion will normally be owned by the student and the diploma supplement by the institution.
- **eProgress File** – as above but electronically mediated.

Technical terms

- **ePET** – The ePortfolio system developed by Faculty of Medical Sciences Computing at the University of Newcastle upon Tyne
- **IMS Global** – The organisation responsible for the development of IMS-LIP. They have developed a number of other global and European standards for transferring data aimed to support the use of learning technologies.
- **IMS-LIP** – IMS Learner Information Profile. This is a structured XML schema used as a *lingua franca* between differing groups. For more information, please see [the IMS Global website](#)
- **IONodes** – This is described as a 'technology interpretation/transfer negotiation layer', which in simple terms means that it is a technology which allows data from two different systems to be mapped to one another to ease the transfer of data between those systems.
- **Shibboleth** – In very simple terms, Shibboleth is a technology that allows student data to be verified by their own institutions, thereby removing the need for additional usernames and passwords (i.e. Athens).
- **XML** – eXtensible Markup Language. A structured method of storing text-based data. It is extensible in that it allows users to determine their own structure.
- **XML-RPC** – XML-Remote Procedure Call – A method of transferring data from one server to another using XML.

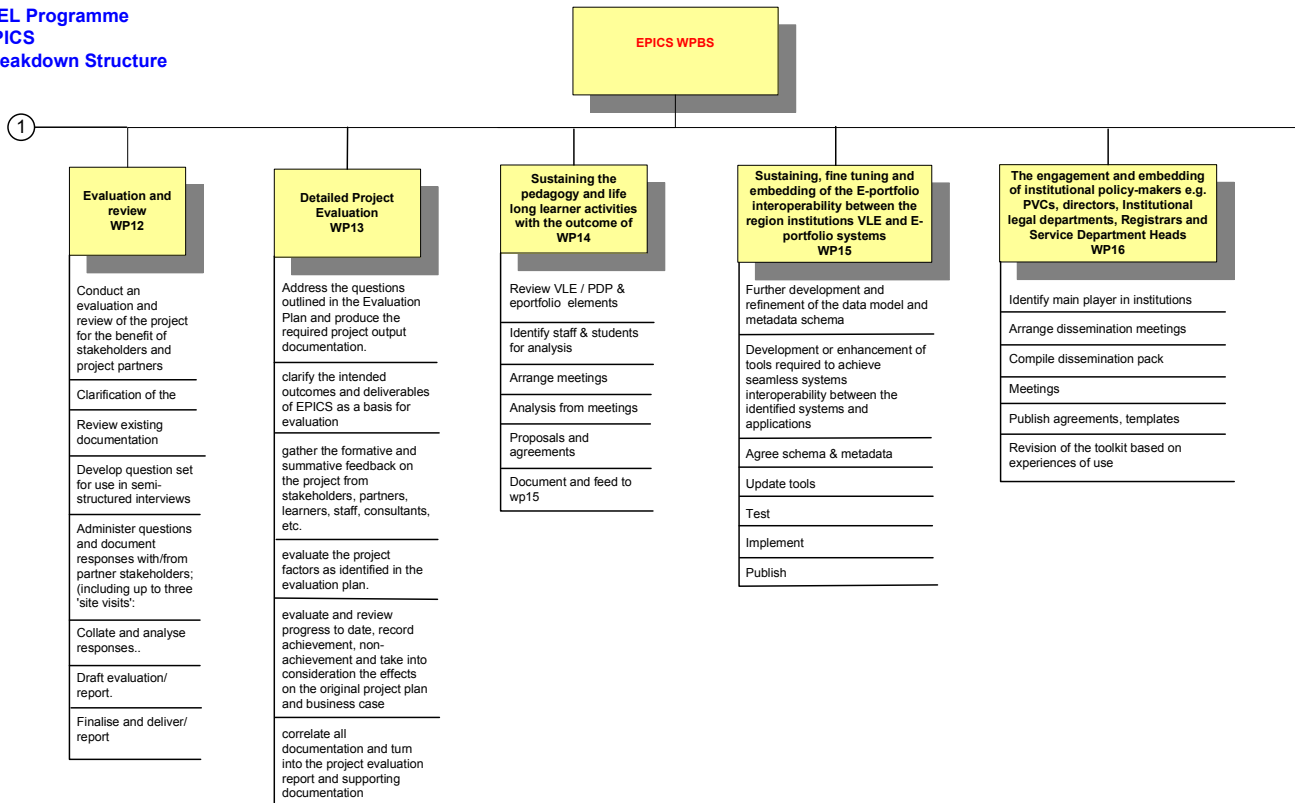
Appendix 11 Project Work Package Breakdown Structures

JISC 07/04 DEL Programme
EPICS
Work Package Breakdown Structure



Produced by: L Taylor
Ver1.6
29/06/06

JISC 07/04 DEL Programme
 EPICS
 Work Package Breakdown Structure



JISC 07/04 DEL Programme
 EPICS
 WBS Flow Diagram

