


Appendix A - Proposal Cover Sheet

Cover Sheet for Proposals <i>(All sections must be completed)</i>			
Name of Initiative:		Institutional innovation projects in lifelong learning and workforce development	
Name of Lead Institution:		University of Nottingham	
Name of Proposed Project:		Distributed architecture sharing services to promote collaboration between stakeholders in workplace learning	
Name(s) of Project Partner(s):		<p>University of Nottingham departments: Centre for International ePortfolio Development Graduate School Business School Ingenuity Centre Engineering Faculty</p> <p>Nottingham Trent University departments: Units partnering ERDF and Ingenuity Centre projects Information Services</p> <p>Employer partners – SMEs and a corporate partner in the Engineering sector with a supply chain of SMEs to be identified and introduced to the project if funded, by the Business School Ingenuity Centre; Research and Innovation Services; Engineering Faculty</p>	
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Length of Project:		2 years	
Project Start Date:		March 2009	Project End Date: March 2011
Total Funding Requested from JISC: £250000			
Funding Broken Down over Financial Years (April-March):			
Mar 09	Apr 09 – Mar 10	Apr 10 – Mar 11	
£8000	£107000	£135000	
Total Institutional Contributions:		£98008	

Outline Project Description

Outline Project Description

Central concept:

- To develop a modular web services infrastructure to support workplace learning and enable flexible exchanges of data between HEIs and employers, mainly SMEs – focusing on a comparison of learning experiences and processes for students and employees moving between the two: work placements for postgraduate students and CPD for employees
- Designed to maximise both employability and more efficient sharing of more widely usable formal and informal data between learners/employees, businesses and different departments in HEIs involved in employer engagement
- Also to explore the learning from the EU TAS3 project and integrate more secure services for increased trust in data sharing
- Contributing to partnership building and the expansion of HEIs’ capacity to support lifelong learning and workforce development.
- Delivering an implementation of a generic, scalable system, enabling sharing of data with services provided by third parties and providing demonstrations of transferability and scalability.

Project activities will include employer engagement in defining learning outcomes and collaborative work on ontologies in one area (probably Engineering) to mediate an accessible language of competences to bridge the cultures of academia and employment, language being a major barrier inhibiting SMEs from engaging with HE. This will enable sharing of protocols for matching of learners to skills and competency requirements in both sectors and provide an automated way of integrating data between systems using ontologies in semantic web services.

The outcome of the work will provide an IT infrastructure to support services essential to the further development of the University’s regional development strategy in the areas of lifelong learning and workforce development. The infrastructure will support both secure and dynamic collaboration. It will be supported in its turn by a security architecture built on a federated approach along the lines of existing work in the HE community using Shibboleth, an area in which Nottingham Trent University has expertise, enhanced by using policy management technology informed by research carried out for the EU TAS3 project, in which the University of Nottingham is running the only UK demonstrators. Workplaces and universities will access data via web service gateways and web based portals; employers and mentors will interact using portals while learners will use ePortfolios.

The infrastructure model will be generic and scalable and will support the continued evolution and multiplication of processes and services. It will be capable of drawing in a wider range of stakeholders across institutions and generating increasingly rich information and connections, enabling full communication between currently disparate employer engagement initiatives within individual HEIs and between learners, HEIs and the employers they are partnering in workforce development. It is likely that a potential pilot area will be the construction sector which is currently under pressure from the recession, is a preferred area of focus within the RDA’s Regional Economic Strategy and already has some awareness of eportfolio-related learning from similar approaches in apprenticeship training.

I have looked at the example FOI form at Appendix B and included an FOI form in the attached bid (Tick Box)

X YES

NO

I have read the Circular and associated Terms and Conditions of Grant at Appendix D (Tick Box)	X YES	NO
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Appendix B

FOI Withheld Information Form

We would like JISC to consider withholding the following sections or paragraphs from disclosure, should the contents of this proposal be requested under the Freedom of Information Act, or if we are successful in our bid for funding and our project proposal is made available on JISC's website.

We acknowledge that the FOI Withheld Information Form is of indicative value only and that JISC may nevertheless be obliged to disclose this information in accordance with the requirements of the Act. We acknowledge that the final decision on disclosure rests with JISC.

Section / Paragraph No.	Relevant exemption from disclosure under FOI	Justification
Budget		Contains information about staff salaries

c. Fit to programme objectives and overall value to the JISC community

C1: Institutional context and business case

Lifelong Learning and workforce development activities at the University of Nottingham (UoN) form part of a wide spectrum of business and community engagement programmes which stand high in the list of institutional priorities, traditionally, because there are strong links into the University's research activities. The imperatives flowing from the Leitch Report and its implementation by HEFCE are causing the University to review how it can enhance and co-ordinate the full range of current activities. These in fact extend from the high-profile research with large corporations through masters-level CPD courses, collaborative programmes organised by the careers service and placements for postgraduates and undergraduates, to unaccredited CPD provision and a host of one-off interventions.

C2: University's level of activity in employer engagement: strengths and limitations

The level of the University's engagement with employers is high, as was shown by a recent audit, conducted by external consultants. Drawing on HE-BCI statistics for 2007-08, their report states that the University is delivering revenues from CPD courses above the national and regional averages; and, within the Russell Group, the University ranks 9th on this measure, while having the highest revenue total from SMEs. For the involvement of employers in curriculum development and review, the University is one of the highest scoring in the Russell Group. However, a significant proportion of the current CPD provision is not accredited.

C3: Local arrangements based on personal relationships are a key feature of the current University culture of employer engagement, both where research is the focus and where the need is to build understanding with SMEs to encourage take-up of CPD opportunities. Currently very effective and seen as essential, this emphasis on personal treatment also reveals weaknesses:

- high-risk dependence on the continuance in post of the individual staff member
- limited visibility for the activities, equating to untapped opportunities for the University
- protectiveness of company contacts inhibiting the sharing of information and efficiency gains across the institution and restricting potential benefits to businesses
- lack of scalability, although the potential market for significant scaling-up of employer engagement has been established (recent commissioned reports).

C4: Proposed development to meet the strategic need

The proposed project would support data-sharing and communications between the University and employers and learners in SMEs, for relationship-building and workforce development, focused on two-way exchanges: work experience/placement for students and CPD for employees. Student placements are already recognised as one of the most practical ways in which the world of HE is made accessible to SMEs and therefore a key lever in extending the University's reach into the SME community.

C5: We propose to address this key question: how far might the infrastructure needed to support some of the relationship-building and learning processes around work placements for students work 'in reverse' for work-based learners taking up CPD with the University – and not just traditional CPD provision, but more agile, demand-led CPD? How would the two types of learner need to interact with e-guidance? What feedback from HE does the employer want? What records might the University keep – in that the CPD could turn into more, for that specific individual who might want to study further, or for the employer who might want to send more employees on the same route, or for the University who might be able to develop the relationship with the company in further directions.

C6: Aligning with institutional strategies for extensive impact

Our proposal includes a specific focus at the postgraduate level; the development work will be informed by, and add value to, the planned expansion of work placements in SMEs for postgraduates in both Nottingham universities, connecting with the implementation of the Leitch and Roberts agendas for the recognition and transfer of higher level skills, extending institution-wide through the Graduate Schools and going into depth on competency matching between academia and business in one area, the UoN Engineering Faculty, with its Graduate Centre and major resource of active SME contacts.

C7: The infrastructure developed will have large-scale potential take-up, as it will transfer to a range of other application areas in both universities and the HE sector generally, given the impetus for the wide expansion of work experience programmes for undergraduates supported by the careers service, the new widening participation Access agreements in preparation which may well link with employer engagement and CPD, Active Communities and employability initiatives such as UoN's new student award scheme for extra-curricular learning which is potentially open to all undergraduates. One of the next developments for this large undergraduate scheme will be a module for work placement.

C8: There is also potential for take-up by the RDA, emda, who could use this mechanism to support skills development. The system would enable more rapid roll-out of innovations from their four priority sectors into the region, with the resultant economic benefit. Early indications from emda are of strong interest.

C9: Project objectives serving aspects of the vision in all three areas

The # numbers refer to paragraphs in the call.

(i) Learning and teaching practice

#14. IAG and CPD course development objective: To support adult work-based learners in one specific sector (Engineering) to assess their own skills levels and gaps, using ePortfolios, to self-match to existing CPD provision in HE and present evidence of demand for further CPD provision to inform new curriculum development in the Faculty.

#16. To support ePortfolio-based secure sharing of learning plans, competency targets and information on learner progress for employer/work-based mentor, plus providing feedback and enhancing communications and relationship-building between employer, learner and HE-based tutor

#17. To integrate institutional records of interactions with employers for CPD offerings and postgraduate work placements between hitherto unconnected data stores; e.g, in the UoN Graduate School, the Ingenuity Centre and the Engineering Faculty

(ii) Technology and standards

#19. Data sharing and standards. To use international standards and also draw upon high-granularity web service policy development, using emerging standards such as XACML, to provide learners with secure control of permission levels for granting access to personal achievement data to employers and admissions staff.

#20. To enable different groups to aggregate information on learning opportunities and to make it interoperable and available to all types of learners within the scope of the project, using XCRI. This will further explore the range and application of the standard.

#21. As CRM systems are currently perceived by staff at UoN as under trial and probably limited in their usefulness, to focus upon more flexible and confidential means of data sharing and specific data integrations with legacy systems, so as to provide more appropriate support and better value for money.

(iii) Strategy and Policy

#23. To build on the UoN's existing consortium partnerships with Nottingham Trent University (NTU) involving the Ingenuity Centre and the Graduate School, providing technology to

underpin and enhance related initiatives to promote student employability and HEIs' input to regional workforce development

#25. As a major feature of the UoN Strategy for BCE is to mainstream SME interactions through major corporate partners with SME supply chains, the project would aim to model a skills ontology to promote CPD take-up for one such sector cluster (major company to be introduced by RIS if this proposal is funded). In addition, the proposal provides a technology dimension to the commitment made by the University in its HEIF 4 Institutional Strategy document 2008-2011 *'to coordinate initiatives for employer engagement ... add value to what are already extensive portfolios of activity through more effective coordination and joint working between different areas of the University.'* (Response to Q11)

C10: Further evidence of investment in related initiatives, existing collaborations and commitments embedded in institutional strategies, which indicate firm capability and purpose to deliver and disseminate this project, are identified in the appended letters of support from NTU and from further major sections of UoN: the Graduate School, the Engineering Faculty, the Ingenuity Centre, Research and Innovation Services, Information Services and the Directorate of Learning and Teaching. For example, the Ingenuity Centre is located in the UoN's new Gateway Building, a huge investment in physical resource dedicated to the interface with business and a focus for regional business engagement. Its Director, Steve Upcraft, is committed to this project and will provide expert brokerage with the extensive SME community he has built up over many years.

C11: Contribution of this project to outcomes of the programme

- The very discussion of this project proposal at high levels in the University has already had impact on senior management's perceptions of the role of technology in its contribution to workforce development and triggered important discussions of potential for impact at regional level with the rda, emda (letter of support from Roger Brooks refers)
- Contributions to the technical infrastructure:
 - a reusable model of portal architecture combining (i) access to services provided by others, (ii) use of Shibboleth and (iii) advanced trust and security informed by the TAS3 work in which UoN is a partner
 - Support for scaling-up HEIs' engagement with SMEs and appreciable efficiency gains for both employers and HEIs, through enhanced access to better and fuller information about work-related learning and opportunities for upskilling and knowledge transfer

C12: Explanation of terms

- RPL: We are using the term RPL to cover the wide range of evidencing terms as described in the NIACE APeL report.
- Workplace learning: References to any work-based activity cover both work-placements and CPD, as the processes involved will be addressed using the same technology services and architecture.
- TAS³ (*Trusted Architecture for Securely Shared Services*) is an 18-partner EU FP7 integration project working on security and trust systems for transfer of personal information, initially in the employability and healthcare domains
- ERDF: a project led by the University of Nottingham in partnership with NTU to employ a Postgraduate Placements Manager to develop short-term postgraduate placements with SMEs in the Greater Nottingham region, to improve economic productivity and postgraduate retention.

C13: Description of proposed innovation

A dynamic web service infrastructure (WSI) presenting a platform for users and service providers to collaborate securely and dynamically through hosted services supporting a cycle of workforce activity including support for processes required by an array of users/stakeholders. Scalability is integral to the WSI with opportunities for further

development as policies, services and applications can be added according to user need. The project will provide a lightweight, scalable model of a fully distributed system catering for a range of scenarios.

C14: Business advantage: Use of dynamic services to present and integrate applications will change the current business models associated with the distribution of learning data in HE and also impact on the management of learning data in SMEs. Compared to technologies like CRM, the reduced need for on-site infrastructure will reduce costs and provide better value for money. Both the application-specific web services developed and the technology to support integration and security will be transferable across the JISC community.

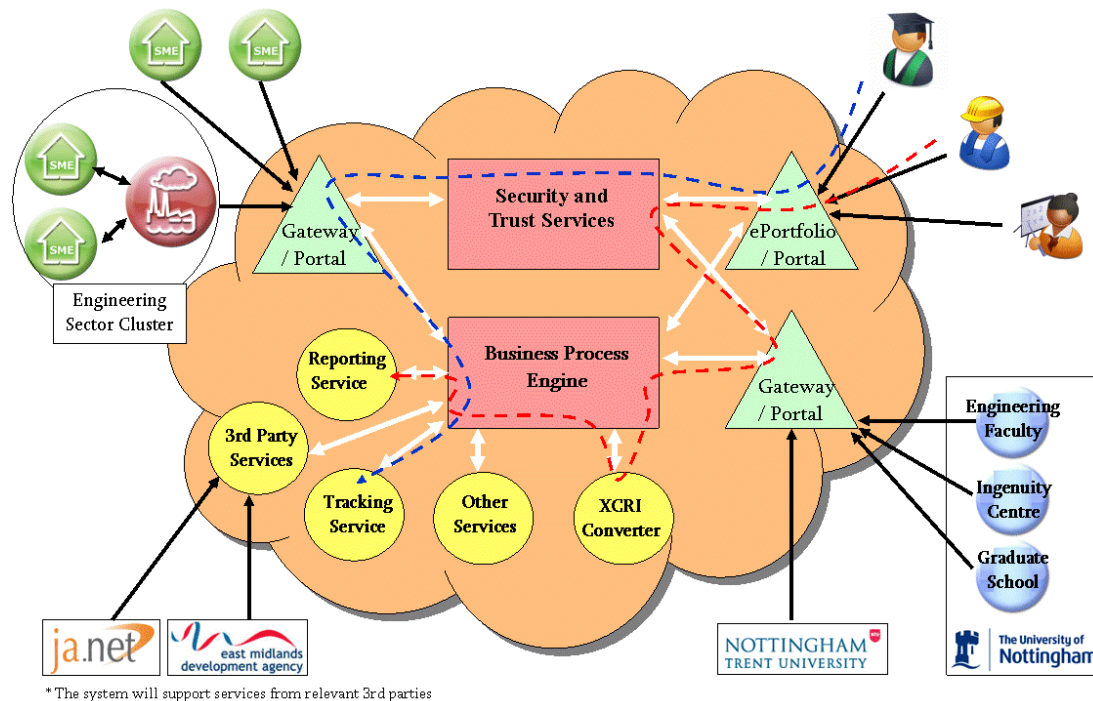


Figure 1 – Service Infrastructure supporting work placement and CPD processes

C15: CPD and work placement data flow from the main stakeholders is represented by the coloured lines, the source can be from inside or outside of the WSI. Data is linked to services provided via specific gateways/portal services built to facilitate the flow of data, e.g. SME may not have its own repository of learning related records so may make use of a web based portal that is used to manage and store the data, or where data exists, web service gateways will extract and distribute the data. User authentication will employ a trusted security infrastructure accessing data using specific application services (ePortfolio or portal). Access to elements of the services depend on rules of access (policies) as defined by the stakeholders, and services developed will be transferable via the WSI to other agencies through re-use in other contexts and applications (as trialled in JOSEPH) such as resituating the competency services within the NTU ePortfolio.

C16: Applications and services planned within the project and how they will draw on the team's relevant experience and knowledge of relevant developments elsewhere in the UK and internationally:

- ePortfolio application: managing learner-owned data, hosting learning activities and facilitating communication and formative feedback between stakeholders. Learning services will focus on RPL processes for skills self-audits, evidencing competence and informal learning outcomes using the competency service, which will feed the reporting services. Data transfer and service usage with similar NTU systems will also take place using an ePortfolio standard such as LEAP2A (UoN is involved in this development for

JISC). Technical teams in both HEIs have experience of their own and others' developments in the ePortfolio domain, nationally and internationally.

- Data/knowledge management services will track and record interaction with employers and learners presenting the data to authorised parties such as existing HE business relationship processes. Reports will inform planning for future employer engagements.
- Reporting services; supporting a demand-led approach to CPD provision, by recognising patterns in employers' CPD requirements to assist course planning. Data for reports will be used as a self-assessment tool for CPD within the ePortfolio.
- XCRI workplace opportunity service; aggregation of CPD offerings in HE and work placement opportunities (linked to RPL) functions. The ClePD is currently coordinating and managing one of the largest XCRI projects, which links the UoN LLN work with FE/HEIs and the JISC 14-19 XCRI project.
- Competency service in Engineering to explore the use of an ontology engine to provide user specific descriptions of learning outcomes and processes. This service will draw from the iCoper project's work on competency description, previous JISC work such as IONW2, the ClePD's LLN and JISC JOSEPH work as well as referencing the JISC eAPEL project. Ontology services are an important contribution towards addressing issues surrounding the barriers of communication between HE and employers.

C17: Brief scenarios outlining use of the system by the main stakeholders/users:

All users will log into a gateway (either an ePortfolio, or a portal, depending on the user) and relevant services will be activated according to role. Requirements for each type of user will be presented in terminology relevant to them (ontology service). Data requests will encounter services such security, data transition, learning and tracking related services.

<p>HEI Identifying suitable work placements/employers Feedback/communication with student/employer Reporting service (CPD requirements, student progress) Track employer engagement</p>	<p>Student Work-placement opportunities Application for work placement ePortfolio/CVBuilder Competency service Skills audits Feedback/communication with employer/mentor</p>
<p>Employer Match student to placement project Feedback/communication with student/employer Reporting (CPD requirements, student progress) CPD opportunities for staff Track projects Talent management</p>	<p>Employee CPD opportunities Application for CPD (CVBuilder, ePortfolio) Skills self-audits ePortfolio Competency service Feedback/communication with employer and academic mentor Appraisal</p>

d. Workplan

D1: For institutional context please see the opening of section c. above. Broadly, the processes which this project will seek to integrate are currently supported across both HEIs in numerous, separate pockets of activity, mostly with low levels of use of technology.

Project methodology

D2: Initially, relationships and plans will be cemented with the project stakeholders and use cases and scenarios will be produced by the operational group working with employer partners to inform technical developments.

D3: A major task in this project will be to build good working relationships with appropriate companies to implement technology and services. The ClePD will start attending meetings of the Ingenuity Centre’s Business Club and Associates group during January, to begin to gauge interest. Brokers within the Ingenuity team, RIS and the Engineering Faculty would guide and support the selection and preparation of employer partners to take part in the scoping and planning work at the start of the project.

D4: We appreciate, on the basis of our LLN developments, that undertaking technical work with employers is likely to present a diversity of circumstances and a range of practical and cultural challenges. Success has come in the past through applying two basic methods: (i) drafting use cases and consulting on them helps ensure that the technology is seen as relevant and meaningful to the employer’s current business process; (ii) implementation needs to be done gradually, beginning with one or two receptive employers to work out basic solutions which offered for use and modification to further employers.

D5: Regular contact with all types of user of the services, initial testing with focus groups and cycles of evaluation via agile working practices, as well as hands-on training, provision of training materials and support for users will take place with a particular focus on the learning activities, thus ensuring that the system is desirable, usable and sustainable for all involved.

D6: Process models will be developed from both stakeholder analyses and user requirements, and will underpin services within the infrastructure. These processes and services will be tested iteratively, initially with small groups of users, then augmented via staged pilot groups using an agile modular approach to technical modifications.

D7: During the initial planning period, the technical team will carry out a detailed technical audit on existing systems to identify where services and applications are to be incorporated or created.

A suitable ePortfolio system, to use and adapt for the project, so as to be able to integrate data seamlessly with other services, will also be identified. Learners will be linked to the system via the ePortfolio which will use the ‘thin service-based ePortfolio’ approach.

D8: Integration will follow the Service Orientated Architecture model. The security framework will use existing federation techniques from Shibboleth and web service security standards, informed by TAS3. Wherever possible the project will reuse services documented in the International e-Framework for Education and Research. New services developed will be documented and submitted to the e-Framework knowledge base to support take-up in other institutions.

D9: Detailed technical documentation to include UML process diagrams will ensure that the project work is sustainable and scalable within the institutions involved, as well as reusable by the wider community. Processes used within the infrastructure will be captured using a workflow language such as BPEL or ontology based web service. These processes will be determined through initial investigations in the project and will ground the learning application services capturing both the student placement process and CPD collaborations between the University and specific work places.

D10: Data transfer and standards work will draw on expertise available at the Centre gained through previous and current Centre JISC and EU projects (EP4LL, RIPPLL, TAS3, LLN, XCRI, LEAP2A, JOSEPH) implementing and developing standards for security, ePortfolio, learning opportunities using web services within distributed environments. The project will also build upon JISC work at NTU in federated data access in terms of projects such as CVBuilder by merging the Shibboleth approach with TAS3 technology.

Activity Plan showing deliverables as milestones – please see numbered list below

Year	2009										2010										2011			
Project Month PM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Month (starting March 2009)	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F

D14: There would be an operational management board which would meet monthly, chaired by the ClePD Director and bringing together representatives of both universities' teams and further core staff, shown as committed in the project budget, as appropriate for each phase of the project work. Project management would include weekly face to face or telephone conversations with key team members to discuss progress and identify and address any problems. As lead partner, UoN would hold the funding and NTU would invoice UoN for its share according to JISC's preferred procedure.

D15: Sustainability issues

It is a particular benefit of the strategic nature of the ClePD's Advisory Board that direct consideration can be given regularly to sustainability and continuation strategies and key players can be engaged in suggesting if not offering ways forward. In addition, as the letter of support from Roger Brooks, RIS, indicates, the potential value to the region of a project as strategic as this, beyond the funded period, is already under discussion with the rda, emda. Within the UoN, there are a number of contexts where the technology would be of great help (see para.C7 above) and the likelihood of take-up and mainstreaming is high. A further example is provided by the UoN careers service whose Director anticipates hosting a part-time employment agency matching our students to regional opportunities while they are studying.

D16: IPR issues

We do not anticipate any IPR issues directly connected with the project. Any web services created will be open source for contribution to the JISC eFramework and use cases will belong to the community. IPR for any bespoke code contributed by private vendors in order to integrate systems will sit with the vendors, however, technical methods and documentation for these integrations will be open source. This will be made clear at the outset of such work.

Risk Analysis

Risk	Probab-ility (1-5)	Severity (1-5)	Score (P x S)	Action to prevent/manage risk
Loss of key staff	2	3	6	Regular project team meetings and communications to minimise impact; clear documentation at each stage of the process
Lack of communication between project partners	1	3	3	Regular team meetings and prompt sharing/distribution of documentation; key project outcomes and documents stored in central online facility available to all partners; regular reviews of progress and objectives against plan; project manager to be copied into all correspondence
Excessive diversity of practice between HEIs	2	3	6	Mitigated by modular, SOA approach; early and regular dialogue to ensure early specifications take diversity into account
Project creep	2	4	8	Clear statement of intentions at outset; regular progress meetings; clear communication
Project slippage	2	4	8	Regular review of outputs against timeline; regular communication with Project Manager; clear communication between partners and with JISC programme manager
Closed systems encountered	1	4	4	Development staff are in communication with IS systems at both HEIs
Poor community engagement	3	4	12	Work to engage community interest from the outset; exploit opportunities to promote project work at variety of internal and external events and in internal publications; regularly maintain

				and update website
SMEs not technologically ready	4	4	16	Project staff have experience working with private sector; staff will work in situ to provide training and support for in-house development
Unavailability of 'ePortfolio ready' pilot groups	1	5	5	Target pilot groups to be set up and trained in ePortfolio use early in the project so that cohorts will be ready to take part once piloting phase begins
Budget overspend	1	2	2	Maintain effective records of spending and correlate regularly with budget
Lack of understanding of standards and their application	1	2	1	Project team are experienced in use of standards and in communication with standards bodies and communities of practice, so able to seek early support and advice

D17: Deliverables

- PD 1: Public website
- PD 2: Website for internal partner use, including file sharing, community forum and wiki facilities
- PD 3: Baseline report documenting 'as is' situation for UoN practice, covering systems in place, learning processes and an initial assessment of internal training requirements (including ePortfolio training)
- PD 4: 'State of the Art' report on work in this area by other projects, including those funded by JISC, EU FP7 and other funding sources
- PD 5: Stakeholder analysis, including user requirements
- PD 6: Internal training workshops and associated training materials
- PD 7: Scoping report and outline specification ('to be')
- PD 8: Two phases of use cases: V1 internal integration, V2 including partners
- PD 9: Application-specific services specification
- PD 10: Learning process and ontology use document
- PD 11: Legacy system integration and requirements report
- PD 12: Staged series of demonstrations of working systems: desk testing, initial integration, second iteration, final working system
- PD 13: Models of existing and new processes as either workflows or ontologies
- PD 14: SUM for submission to the e-Framework
- PD 15: Code for services developed, including supporting documentation and training materials
- PD 16: Evaluation reports (interim and final)
- PD 17: Dissemination: internal via workshops, newsletters, online Community; external via presentations and demonstrations at JISC-CETIS SIG events, CETIS conference, JISC programme meetings and at least 4 national and international conferences
- PD 18: Regular reporting to JISC

Staff resources available

D18: All the staff who will work on the project and the time to be given by each to the project, are shown clearly on the budget – please see section f. Further details are available in the staff descriptions in section g. In both Universities all the staff are in place and there will be no recruitment process, so work would start promptly and in full.

D19: The strong support of major sections of the UoN for the delivery and dissemination of this project has already been mentioned in paragraph C10 above, with reference to the letters of support from senior figures within each.

e. Engagement with the community

E1: Stakeholder analysis

A thorough stakeholder needs analysis, fundamental to the development of the project, would take place in the scoping and planning period; it would be on a cross-institutional, multi-sector basis, through work carried out both with, and mediated by, the Graduate School, the Engineering Faculty and the Ingenuity Centre at the UoN and equivalent units at NTU. It is potentially vast and the selective decisions which would need to be taken at the start of the project to define the scope would be helpful in focusing the analysis. The negotiations within the University to have this bid adopted as the single submission from UoN have already identified a wide range of stakeholders within the institution, indicated in para C7-8 above by the list of envisaged opportunities to transfer the technology to a number of further contexts. We have begun some stakeholder analysis by thinking about the needs of four key actors in our central scenario, as set out in the chart in para C17. above.

E2: Engaging stakeholders, dissemination and evaluation

The task of engaging the stakeholders lies at the heart of this programme, and as such is reflected in our discussion of project methodology above, where we talk about the challenges of engaging project partners when they are employers and the methods we have developed. We will be able to reach the wider community through our website and through presentations in our universities, at regional and national meetings, seminars and conferences. We think it is vital to plug into other people’s events rather than create new events ourselves when the purpose is mainly ‘standard’ dissemination. We have found the most powerful tools of engagement to be the consultative conferences/workshops where we show our pilot systems and processes and these would be organised by invitation to ensure key stakeholders and experts have input into the development of the work. Here formative feedback, evaluation and dissemination come close together. For information about evaluation plans specifically, please see above.

E3: In making the project outputs available beyond the end of the project, the website would contain all appropriate deliverables and would be sustained by the UoN for at least three years, or as JISC requires.

E4: The ethos of the ClePD team is highly collaborative and outward-facing and, in terms of the JISC FE/HE community, both Angela Smallwood, Sandra Winfield and Kirstie Coolin all have strong records in contributing to JISC activities of different kinds over some years now and would expect and support all project colleagues to participate as much as is appropriate. In the calculation of staff time, due allowance has been made for the 25 days required by JISC for participation in programme meetings and the synthesis project, distributed across the team. Similarly the availability of technical staff for at least 4 days has also been noted and taken into account.

f. Budget

Directly Incurred Staff	Mar 09	Apr 09–Mar 10	Apr 10–Mar 11	TOTAL £
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and business support systems. She has skills in web and database applications in .NET, XML and SQL Server with experience in PHP and MySQL. Her role will be: System integration consultation, mediation between project partners, establishment of working groups, analysis of user requirements, and driving the training and roll-out for full implementation.

Stuart Wood (MSc) is Applications Developer for the Centre for International ePortfolio Development, working on the ePortfolio and technical strand for LEAP AHEAD and the JOSEPH project (involving innovative technical work using XCRI and web services and working directly with IAG, FE and HE practitioners), and on the LEAP2A ePortfolio interoperability project. He has a background in Financial and CRM systems using the .NET framework to create web-based applications. He has skills in XML, VB.NET, ASP.NET, SQL Server, JavaScript and CSS. His role will be user analysis, application and interface development, testing, data integration and technical support for project partners, as well as involvement in roll-out for full implementation and technical documentation.

Tom Kirkham (PhD) is Applications Developer for the Centre for International ePortfolio Development working on the EU Framework 7 project TAS³. In the past 5 years he has worked on projects applying SOA solutions in the eScience, Manufacturing and eBusiness communities. His main skills are in Enterprise Integration (particularly SMEs), Web Service Security, Workflow Management and Virtual Organisations. He has experience with a wide range of Web Service Technologies in both Java and .Net and an extensive knowledge of web service tools and standards. His role will be to develop the baseline infrastructure and integration of services, particularly with regard to the security and trust elements of the project, testing and technical documentation.

Sandra Winfield (MusB MSc) has a successful track record managing JISC projects, including RIPPLL, eP4LL, ADoM, DELIA and JOSEPH. She is currently managing the UoN contribution to the TAS³ project and will act as project manager and JISC liaison for this project.

Tessa Payne (BSc MBA) is Head of the Graduate School at the University of Nottingham. She has experience of managing large-scale technology implementations in the dairy industry and in HE. She is leading the ERDF project and will be responsible for articulating the relationship between that work and this project

Steve Upcraft is Head of Business Development at the UoN Institute for Enterprise and Innovation, working to develop relationships between academics and local/regional businesses to contribute to knowledge exchange and raise local economic performance. He will be advising on and supporting employer partnerships for the project, especially with SMEs.

Professor Nick Miles is Associate Dean for External Relations and Internationalisation in the Faculty of Engineering at the University of Nottingham. He works closely with a number of local and national engineering organisations. He will select and direct collaborative work with the University's Faculty of Engineering.

Ian Griffiths is Director of Strategic Partnerships at NTU and direct NTU involvement in the project. **Francis Lowry** is Strategic Architect, Information Systems at NTU. He managed the NTU contribution to the RIPPLL project, including the Shibboleth element, and was manager of the CV Builder project. He will manage the work of the NTU development team, which will consist of : **Wayne Vaughan** and **John Spence** (Senior Software Engineers, Information Systems); **Paul Ashton** (Software Engineer, Information Systems) and **David Morris** (Senior Educational Developer, Library and Knowledge Resources)

All team members will be involved in the initial scoping and user requirements.



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Head of School:
Professor Nick Miles BSc PhD MIMM
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9 January 2009

Dear Sir/Madam

**Ref. JISC Grant Funding Call 11/08
Proposal from the University of Nottingham**

I am writing as Associate Dean for External Relations for the Faculty of Engineering to express the Faculty's support for the proposal submitted by the University's Centre for International ePortfolio Development (CIEPD).

The Faculty of Engineering is especially active in a number of fields relevant to this project, including widening participation, curriculum development for new types of learners, student placements in all kinds of companies from international corporates to local SMEs, the full range of employer engagement activities from top-flight research collaborations to roadshows.

The potential for this project to add value to our current initiatives and for the Faculty to furnish rich and varied case studies for the project is extensive and exciting.

I would be happy to help select and direct collaborative work in the Faculty of Engineering as a contribution to this project and I very much hope it will be successful in attracting JISC funding.

Yours sincerely,

Professor Nick Miles
Associate Dean (External Relations and Internationalisation)
Faculty of Engineering





The University of
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Dean of the Graduate School:
Professor Claire O'Malley
Professor of Learning Science

07 January 2009

**Ref. JISC Grant Funding Call 11/08
Proposal from the University of Nottingham**

I am writing to express the support of the University of Nottingham Graduate School for the proposal submitted by the University's Centre for International ePortfolio Development (CIePD).

The proposal fits very well with the Graduate School's strategies and plans for continuing to implement the Roberts agenda by developing the employability skills of postgraduate students and contributing to regional workforce development, through student placements transferring higher level skills and through innovative CPD offerings.

The Graduate School has already begun to place postgraduates successfully with local authority employers and plans to expand this programme. While the technical implementation in the CIePD proposal would be relevant and useful to the Graduate School, and an additional resource, the Graduate School would make its expertise available to the CIePD project, providing input on user requirements and giving access to engaged client groups.

An exciting development is that, in partnership with Nottingham Trent University and our own University's Ingenuity Centre, who are both also partners in this proposal, we have collaborated to apply for ERDF funding to develop a programme placing over 300 postgraduates into regional SMEs over the next couple of years. The synergies with the CIePD proposal would be immediate and very productive.

I am happy to confirm the full co-operation of the Graduate School with the work proposed by the CIePD and very much hope that the bid will be successful.

Yours sincerely,



Our Reference

Your reference

Direct line / e-mail steve.upcraft@nottingham.ac.uk



ingenuity programme

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Date: Thursday 8th January 2009

Ref: JISC Grant Funding Call 11/08
Proposal from the University of Nottingham

Dear Sir,

I have met with Prof. Angela Smallwood and colleagues on a number of occasions in the last month or so to discuss a JISC application which has the overall objective of developing a web service infrastructure to support workplace learning and enable two-way exchanges between HE and SME's. This is an interesting concept and one that aligns very closely with our existing Ingenuity Programme.

In outline the Ingenuity Programme is a fully funded, collaborative programme of HE and SME engagement; I manage the project on behalf of the three delivery partners namely the University of Nottingham, Nottingham Trent University and the University of Derby. All our collective activities are business facing and focus on three specific areas:

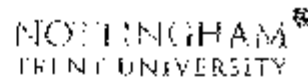
- Technology showcase events – HEI resources which could benefit businesses
- Skills development workshops – HEI expertise which could improve individual skills
- 1:1 Business Engagements – students/academics placements within a business

Nottingham University Business School use the Ingenuity Programme as their primary SME engagement vehicle; we consistently have direct involvement with at least 350 businesses per annum across the counties of Nottinghamshire and Derbyshire.

In my view this JISC proposal would not only complement our Ingenuity activities, it has the potential to add additional value to our current offer; therefore, in order to maximise the potential benefits (assuming the proposal is approved) we will provide a sustained, high level of cooperation with Angela and her team and work directly with the Nottingham Business Club to identify an appropriate set of SME's that want to become embedded partners in the proposed work packages. I therefore have no hesitation in providing this letter of support for the proposal. If you require any further details or clarification please do not hesitate to contact me.

Yours sincerely

Steve Upcraft
Head of Business Development – UNIEI
www.ingenuitygateway.com



Information Systems
Director of Strategic Partnerships
Tim Griffiths
Strategic Marketing
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15 January 2008

RE: JISC Grant funding call 11/08

Institutional Innovation Project In Lifelong Learning And Workforce Development.

Bid submitted by University of Nottingham with Nottingham Trent University as project partner.

Nottingham Trent University supports this project to develop information services to support exchange of information between HE SME's and learners. The project aligns with Nottingham Trent University's institutional strategies and in particular:

- Implementation of appropriate technical architecture to support better integration of data from disparate systems using SOA principles.
- Extending the universities online service portfolio to provide gold standard customer service to students.
- Maintain and develop employer engagement.
- Continue to ensure that NTU remains a national leader in graduate employability.

Nottingham Trent University has worked in partnership with the University of Nottingham in this general area for some time including successful bids with JISC under RIFE and Shibboleth.

The Ingenuity Project that is operated by the University of Nottingham, Nottingham Trent University and the University of Derby provides linkages to SME's and will allow a good route to employer engagement.

A number of different areas of the University will be involved in this project including Information Systems, Library & Knowledge Resources and Business Innovation & Creation. The University feels there is real synergy between this project and its strategic aims.

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9 January 2009

**Ref. JISC Grant Funding Call 11/08
Proposal from the University of Nottingham**

Dear Sir/Madam

This project is supported by Research Innovation Services within the University of Nottingham because of its excellent fit with our activities. Specifically:

- Regional strategy and potential take up and funding by embed our regional development agency under the skills agenda at a later stage. This could impact four key areas of their regional economic strategy of transport, healthcare, construction and food and drink. It could be a key facilitator of their innovation strategy.
- Actual collaboration with NTU and its fit with Nottingham Science City.
- Our corporate partnership programme and its associated SME supply chain particularly collaboration with the engineering faculty.
- Coherence with our Ingenuity Centre and its connectivity into the SME community
- We have high expectations of success for the EKDF application which provides a test bed in the Graduate School.

Whilst we do not at this stage have specified employer partners we consider the project to have sufficient gravitas for it to be a compelling project for some of them to take up. We do not envisage at this stage for it to be problematical to identify a partner. It is likely that sustainability with the correct employer partnerships will be achieved.

Yours Sincerely,

R.F. Dr R.F. Brooks
Deputy Director
Research and Innovation Services





Information Services
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www.nottingham.ac.uk/is
Chief Information Officer:
Stephen Pinfield

9 January 2009

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Dear Sirs

**Ref. JISC Grant Funding Call 11/08
Proposal from the University of Nottingham**

I wish to express the full support of the University of Nottingham Information Services (IS) for the above proposal

This project sits well within IS's strategic aims towards a service-based, integrated architecture for university systems, as well as with our current Identity and access management initiatives.

The project staff in the Centre for International ePortfolio Development have a well-established, close working relationship with the IS Learning Team and an excellent track record of collaboration and knowledge transfer with them. I am confident that the outcomes of this project will help to inform technical developments throughout the University in integrating systems to support the University's strategic objectives around employability and employer engagement.

Yours faithfully

Stephen Pinfield
Chief Information Officer

Appendix A: table of abbreviations

BCE – Business & Community Engagement	KTP – Knowledge Transfer Partnership
BPEL – Business Process Execution Language	LEAP2A – Emerging ePortfolio standard (not an acronym)
CIEPD – Centre for International ePortfolio Development	LLN – Lifelong Learning Network
CPD – Continued Professional Development	MIS – Management Information System
CRM – Customer Relationship Management	NTU – Nottingham Trent University
emda – East Midlands Development Agency	OWL-S – Semantic Mark-up for Web Services
EP4LL – ePortfolio for Lifelong Learning	RIPPLL – Regional Interoperability Project to Promote Lifelong Learning
ERDF – European Regional Development Fund	RIS – Research Innovation Services (University of Nottingham)
ePF – ePortfolio	RPL – Recognition of Prior Learning
ESRC – Economic and Social Research Council	SMEs – Small and Medium Enterprises
HE-BCI – Higher Education – Business and Community Interaction	SOA – Service Orientated Architecture
HEIF – Higher Education Innovation Fund	TAS3 – Trusted Architecture for Securely Shared Services
IAG – Information, Advice and Guidance	UML – Unified Modelling Language
IONW2 – Interoperability North West 2	UoN – University of Nottingham
IS – Information Services (University of Nottingham)	XACML – Extensible Access Control Mark-up Language
JOSEPH – Joining Organisations to Support new Engineering Pathways into Higher Education	XCRI – eXchanging Course Related Information