


Cover Sheet for Proposals (All sections must be completed)			
Name of Capital Programme:		Users and Innovation	
Next Generation Technologies and Practice Phase 2 Please tick ONE BOX ONLY, as appropriate			
		<input checked="" type="checkbox"/> a) Small-scale pilots <input type="checkbox"/> b) Large-scale institutional demonstrators	
Name of Lead Institution:		University of Sussex	
Name of Proposed Project:		SkillClouds	
Name(s) of Project Partner(s):		none	
Full Contact Details for Primary Contact: Name: Dr John Davies Position: Education Developer Email: j.m.davies@sussex.ac.uk Address: Academic Practice Unit, University of Sussex, Mantell Building, Falmer, BN1 9RF Tel: 01273 873 219 Fax:			
Length of Project:		12 months	
Project Start Date:		1st Jan 2008	Project End Date: 31st December 2008
Total Funding Requested from JISC:			
Funding Broken Down over Financial Years (Apr–Mar):			
Apr07 – Mar08		Apr08 – Mar09	
12,695		37,300	
Total Institutional Contributions:			
Outline Project Description This pilot project will investigate the applicability of social bookmarking and tagging to the HE/FE community in two ways and will address these questions: <ol style="list-style-type: none"> 1. Can social bookmarking tools support the collection of institutional metadata? 2. Do tag clouds offer a method for presenting complex information to students that aids comprehension and engagement? In particular the project will: <ul style="list-style-type: none"> • Investigate the use of social bookmarking tools to support the administrative process of recording and refining the university's data on skills for its course and programme offerings • Explore and evaluate the idea of presenting information on skills to students in the form of a skills cloud, and find out whether it enables students to engage more fully with the material This will contribute to the Users and Innovation (U & I) programme by investigating the use of a Next Generation technology – social bookmarking and tagging – and exploring its applicability for our sector.			
I have looked at the example FOI form at Appendix A and included an FOI form in the attached bid (Tick Box)		YES ✓	NO
I have read the Circular & associated Terms & Conditions of Grant at Appendix B (Tick Box)		YES ✓	NO

SkillClouds project

1.1 Overview of project

Background

The ability of graduates to identify skills they have gained while at university is something that employers rate highly in selecting candidates (Yorke, 2006) and all HE and FE degree programmes, and their associated courses or modules, have outcomes that are skills orientated. However, these skills are not always be transparent to students, often being, in effect, hidden within the curriculum (Fraser et al, 2007). This may be particularly the case for those subjects that are less vocational and consequently students may not be aware of the skills they have acquired as part of their degree.

A key factor underlying this problem is the varieties of taxonomies of 'skills': for example, the Dearing Report emphasises 'key skills'; other terms used in institutional, academic and governmental discourses include 'graduate attributes', 'transferable skills', 'employability skills', 'enterprise skills', 'capabilities', 'personal competences'. One consequence of this variety is that discourse communities can be 'deaf' to one another, or can experience real difficulty in communicating in what seems like a 'foreign language'. The result of these responses is that in the context of university courses and programmes the messages communicated to students about the nature of the skills embedded in their study and the importance of those skills, can be poorly expressed in the first place or can easily get lost. Furthermore, whilst databases have been developed that help course designers to select skills they consider their courses or modules contain, such models mechanisms are non-dynamic and are teacher-driven (Fraser et al, 2007). Such approaches rely on the diligent identification and recording of skills for all the various courses/modules offered within an HEI/FEI and these data can be difficult to collect, partly because the cost of collection is relatively high for the individual and the pay-off for collection is generally delayed and institutional rather than personal. The challenge as we see it is to address this situation in a dynamic imaginative and student-centred way.

The SkillClouds project will address these issues through an exploration of the use of social bookmarking software (e.g. Hammond, 2005) and tagging, and in particular through the tag-cloud data visualisation technique that has become a distinctive feature of web 2.0 sites (e.g. Anderson, 2007). Our hypothesis is that the skills cloud will be an engaging way of visualising this information for students. For this pilot project, the main motivation will be to explore the suitability of this approach with a number of student groups, and develop some tools for building skills clouds and integrating them into our institutional systems.

Tag-clouds are representations of the frequency distribution of a set of tags. The list is presented in a weighted fashion so that frequently occurring skills are depicted in a larger font. A key feature of tag clouds is that each tag in the cloud is a link, and thus the tag cloud affords a very compact way of offering a system's user a large number of hyperlinks for their further exploration. It would be possible to explore issues around optimising information retrieval by modifying the way that tags are presented (Hassan-Montero, 2006).

In the SkillClouds project, tag clouds will be used to represent the transferable skills that students have had the opportunity to acquire. The skills cloud will be dynamically generated for each student, based on the merging or mashing-up of two sets of data. Skills acquired from the student's educational experiences from the skills database will be integrated with skills identified and recorded by the student, for example in PDP systems. These skills may be gained from a wide variety of areas such a employment or University volunteering schemes, thus increasing the value of the cloud for future employment and lifelong learning. The individual skill tags could then link the student into pages from the institutional student intranet, for example showing all the courses taken in which this skill was identified and enabling the student to drill down to view their course performance pages. Alternatively, skills tags could link to pages provided by careers specialists to support students in the development of their CVs.

The project fits well with the U&I programme's remit for exploring emergent technologies. It will be delivered via the web and will foster a culture of participation where students are encouraged to develop their own content, and tag their own activities and courses. Content based on the university's own database of skills will be mixed and mashed-up with content based on the student's own tagging activities. A rich user experience will be created by using the tag cloud metaphor to provide a very easy to use and assimilate guide to skills. Links from the various skill-tags will enhance the experience of students using this system and enable them to easily access documents and reports that they might otherwise not have access to. Staff will also engage with social software to support the collection of skills data

Aims and objectives

The aims of the proposed project are to:

- investigate the use of social bookmarking tools to support the administrative process of recording and refining the university's data on skills for its course and programme offerings
- explore and evaluate the idea of presenting information on skills to students in the form of a skills cloud, and find out whether it enables students to engage more fully with skills
- support the Users and Innovation programme

The objectives of the proposed project are to:

- design and pilot an approach to collecting skills data through the use of social bookmarking tools such as del.icio.us
- build a service that utilises the social bookmarking tool's application protocol interface (API) to harvest the skills data
- build a service that merges/mashes-up skills data with student generated data
- build a service that outputs a skills cloud
- test the value and scope of these skills clouds with a set of student users and key stakeholders within the University
- explore how we might integrate the development with existing online environments (for example, the University VLE, student intranet pages etc)

1.2 Contribution to U & I programme and value to the JISC community

This project will contribute to the desired outcomes of the U & I programme by:

- providing data on the use of social bookmarking interfaces and tagging methodologies as an approach to the collection of institutional metadata (in this case, for skills associated with given courses and programmes)
- providing valuable evidence on the use of tag clouds in an HE context for supporting students in engaging with material that can be difficult to visualise and assimilate **
- creating a mechanism for more effective and efficient delivery of skills information that will increase staff and student awareness
- supporting the development of the e-framework by contributing entries, for example to the Service Usage Models
- working closely with other U & I projects to explore common features associated with the development of emergent technologies
- Contribute to JISC's understanding of how emergent technologies such as social bookmarking and tagging can be adapted and applied in an effective way, through robust evaluation of the development process
- participating in the **emerge** community

1.3 Standards used in technical approach

- the social bookmarking site API is likely to be a REST-based web service. The project will ensure that different web services can be plugged in to provide the underlying core requirement, thereby building in resilience and making the project independent of any one supplier
- W3C compliant web pages will be built, and we will ensure that as far as possible issues of accessibility are addressed
- UML will be used to document the analysis and design of software
- common data formats such as XCRI will be used where possible

2. Proposal and Workplan

2.1 Overall approach and intended project plan

Our project plan is divided into the stages outlined by the U & I development model, and shows only the 12 months for which we are seeking funding. Engagement with the U & I Community of Practice will be fostered throughout the project.

Stage 1, completed prior to the start of funded period

As part of **stage 1**, the *user-engagement cycle*, we have:

- identified stakeholders and engaged them with the project
- worked with the stakeholders to identify and refine the concepts (the tag cloud AND USE OF DELICIOUS) that we wish to pilot using a paper prototyping approach and by showing quickly developed demonstrations of the suggested approach
- identified the key elements that will make the skills cloud a useful tool (the data sources from which information will be drawn, links with other student personal and professional development activities)
- created scenarios illustrating how the tag cloud might be used by staff and students
- developed a draft paper-based model for how administrative information will be gathered and how tag cloud will represent skills

See Appendix B for a summary of activities completed so far, which will continue through to the start of the funded period.

Stage 2, Jan to April 2008

It is very important for stakeholder engagement that our project fits appropriately into the academic year. For **stage 2**, the *transition and decision stage* of the U & I model, a key feature will be working with students who are currently taking a level 2 careers development course. These courses are offered on a department-wide basis for opted-in departments, and run either in the Autumn or Spring terms. We will therefore need to "catch" these students during the Spring term 2008. We will work with paper models and prototypes with these students in order to elicit a wide range of reactions to the proposed skills clouds, and in particular on effective ways of presenting complex data relating to skills acquired from formal university courses and to skills acquired from self-managed activity.

A further activity within **stage 2** will be creating further paper pilots and prototypes for administrative and academic staff to explore the notion of social bookmarking and how it might be deployed to support data collection for metadata such as skills outcomes. Usability sessions with these groups will be carried out by members of the Human Centred Technology Group at Sussex University, under the direction of a consultant with usability expertise. The methodologies adopted will be agreed with a broad group of stakeholders.

In this stage we will also develop simple screens to enable students to record their own self-managed activities and the tags they want to associate with those activities. In a production system, this system would be a fully-fledged PDP or e-portfolio system.

We will very much welcome input and comment from the U & I Community of Practice. This will ensure that the model is informed by expertise within the CoP and that the project will complement other U & I projects.

Stage 3, May to mid-Oct 2008

In **stage 3**, the *technical development cycle stage*, we will further develop and refine the work from earlier stages. Feedback from users will be crucial during this stage. We have included funds in the costings of the bid to cover the payment of students who would be recruited to undertake usability testing with us over the summer vacation. The development language is likely to be PHP. UML techniques will be used to communicate analysis and design of the system, both to improve the robustness of the development process and to make it more useful to other institutions.

Using a rapid development approach, we will iterate around three development cycles of approximately 8 weeks each. The first cycle will produce a pilot system to enable staff to use a social bookmarking site such as del.icio.us to collect skills data and to make that data available for use in skills clouds. Different methods of doing this will be explored and evaluated. Key deliverables will be an open source package based on the published

API of the bookmarking site, using appropriate methods to ensure that it is easy to integrate and adapt at other institutions.

The second cycle will be around delivering a package to render data into skills clouds, with appropriate hyperlinks for each skill tag. Different ways of weighting data will be evaluated, and various methods of improving readability will be explored such as grouping tags semantically.

The third cycle will explore ways of integrating the skills cloud into the various existing technologies at Sussex that support the student learning experience. These technologies will include the University's virtual learning environment and student intranet, and may include the students' 'community' pages (their own mash-up of Web 2.0 technologies) and eportfolio developments that are currently underway at Sussex. The deliverable from this stage will be a prototype Moodle plugin for displaying skills clouds, and documentation of integration issues for other systems.

Further iterations of Stage 1 and Stage 2, mid-Oct to Dec 2008

As recommended in F28 of the Call for Funding, the project will re-visit stages 1 and 2 of the U&I development model for further iterations of usability testing.

This phase of the project coincides with the Autumn term, and will enable the usability team to re-visit a new cohort of students at level 2 taking the Career Development course. The outputs of Stage 3 will be explored carefully with these groups of students in a real learning context and will enable us to evaluate the effectiveness of the tool (this will include use of learning diaries and semi-structured interviews to explore the value of the information that can be generated in the skills cloud).

Stage 4

As this is a pilot project that will be producing prototypes rather than production ready systems, it is not envisaged that we would go to Stage 4 of the U&I development model. Depending on the outcomes of the project, we will position the University to re-enter a new project phase to undertake a large scale institutional demonstrator.

2.2 Timetable

2.2 Timetable

Table 1 Workplan for skills cloud project during its funded phase

Workpackages	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1. Initial funded project set up (including recruitment, launch project steering management, liaison with U & I Emerge Project & CoP).												
2. Work with Career Development students on paper model and prototype (U & I model stage 2).												
3. Work with administrative Staff on paper models and prototypes to explore use of tagging to support metadata collection (U & I model stage 2).												
4. Rapid technical development cycle (U & I model stage 3). - Cycle 1: Pilot social bookmarking with administrative staff - Cycle 2: Render data into skills cloud - Cycle 3: Integration of skills cloud with existing learning technologies					Each cycle lasts approx. eight weeks							
5. Testing in real learning contexts (revisit U & I model stages 1 & 2)												

For detailed workpackages please see Appendix C

2.3 Project management

The project will be managed within the appropriate JISC framework using Prince 2, which we use in-house for all our major projects. The project will be overseen by an experienced project board who will function as a steering group. It will be managed by Amy Walker, an accredited Prince Project Practitioner who worked on our previous JISC-funded projects (Minted, Xmarks, SPLASH). We believe this will enable us to meet the tight timescales required for a project.

2.4 Risks

Description	Category	Probability	Impact	Score (P x I)	Responses
Risk of costs escalating beyond project budget	Economic	1	3	3	We will use PRINCE 2 project methodology to ensure that resources are appropriately managed
Recruitment into project takes longer than expected	Management	1	3	3	The only post for which we need to carry out a formal recruitment process is the developer post. We will combine the post for this project with another fractional FTE, thereby making a 1 FTE post. We will get job scaled and agreed by HR prior to start of the project.
Risk of staff turnover impacting on project	Management	2	2	4	We will draw up contingency plans.
Risk that we will find it hard to recruit students to pilot groups	Management	1	3	3	We have already identified potential pilot groups as part of stakeholder engagement. We have a budget allocation to enable us to pay students for their time.
Risk that we fail to produce key software deliverables	Technical	1	3	3	Team have experience of working to tight deadlines. We will use the SQA and PRINCE 2 methodology to ensure deliverables are produced to a high standard within deadline.
Risk of changes beyond our control such as that social bookmarking site changes its API	Technical	2	3	6	Software development approach will be to build code that supports flexible deployment, so that changing the underlying social bookmarking site for example should not be difficult.

2.5 IPR statement

Consent will be sought from all learner participants and all published materials will be anonymised and agreed with participants. All project collaborators will work on the explicit undertaking that outputs from the project will be freely available to the UK HE and FE community in perpetuity. Project participants will be asked to read and sign a standard form around the collection, storage and publication of their material.

An appropriate open source license will be used for the release of software.

2.6 Sustainability statement

We will maximise sustainability outside the University by making information available through – and

participating in – existing national networks. Within the institution, the project will be sustained by the developing a large-scale institutional demonstrator, if its outcomes are successful. The development work will be well-embedded within the University, owing to its close alignment with University priorities related to the employability strategy and, in particular, Personal Development Planning work. Project artifacts will remain available on University of Sussex web sites for at least 3 years after the end of the project. The University will collaborate with JISC on the archiving of these resources.

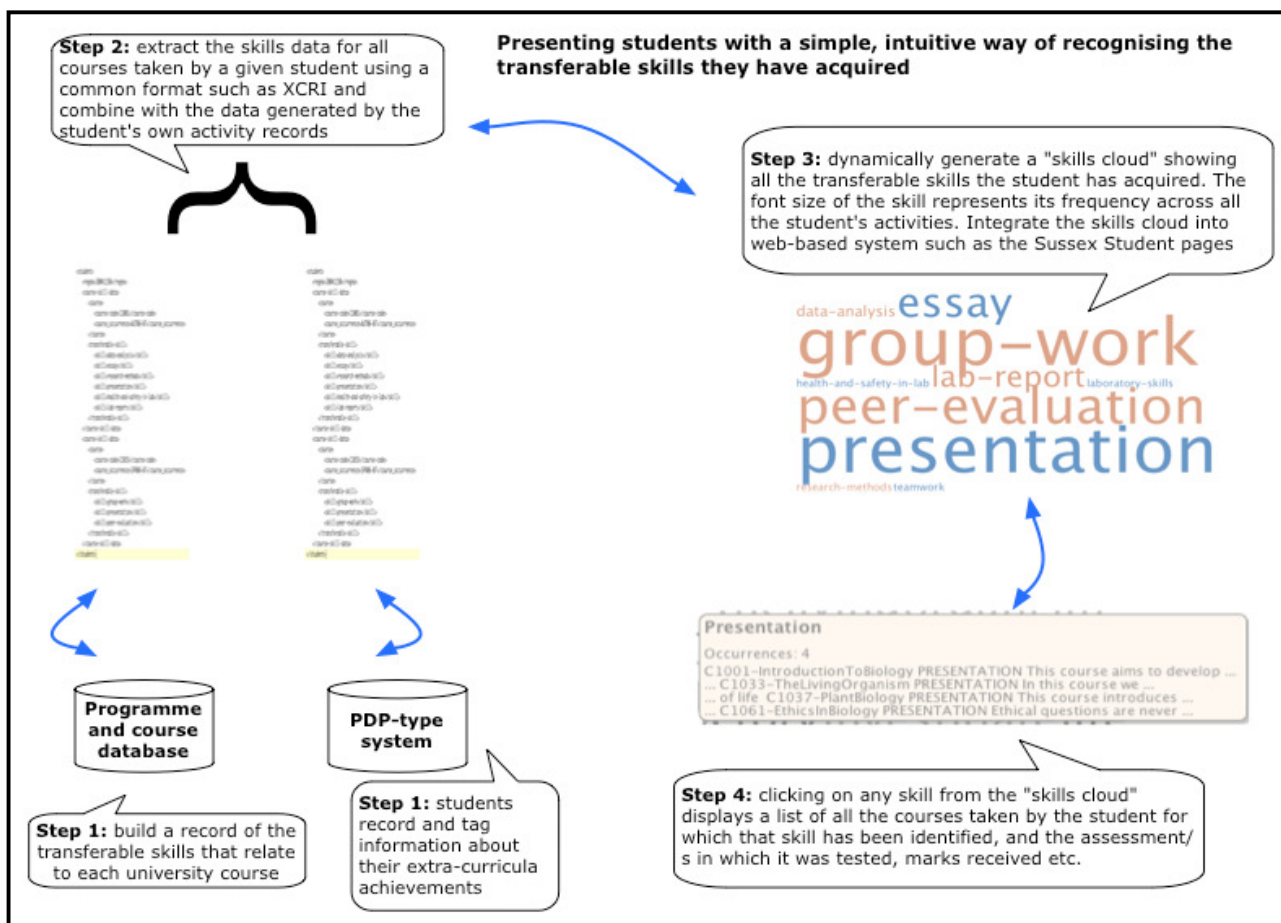
3. Engagement with the Community

3.1 User and stakeholder engagement

Stage 1 activities

Appendix C provides an outline of the activities undertaken as part of stage 1 of the U & I model. As a result of paper walk-through activities with stakeholders, the diagram in Figure 1 was generated. Generated material will be made available on www.sussex.ac.uk/skillclouds

Figure 1 A schematic representation of the process of dynamically generating skills clouds



3.2 Dissemination mechanisms

Dissemination will take place from the start of the project, but activity will increase as the project matures. We anticipate that some dissemination activities will continue after the project funding has come to an end. We realise the importance to JISC of disseminating the outcomes of their projects to its key audiences. We will, therefore, use a range of mechanisms that should maximise the reach of the this project. We will work closely with the Emerge U & I project to ensure that we are aligned with the dissemination strategies of other projects within this strand.

Objective	Audience	Mechanism	Anticipated outcome	Timescale
Ensure alignment with other U & I projects	JISC community	Discussion with Emerge project	Recognition of project with JISC community	January 2008
Increased awareness and promotion of project	Internal stakeholders and external people	Project blog and website	Participation in blog and website traffic	January 2008
Increased awareness at Sussex	University staff, managers with responsible for student experience, student body	Article in university newsletter, presentation to key university committees, e-learning Users Group & student groups	Recognition of the value of project to University	Ongoing through project
Increased awareness in the region	HE and FE in the south-east region	Presentation to members of Sussex Learning Network (SLN)	Recognition of potential value of project to HE and FE institutions in SLN partnership	Spring 2008
Increased awareness, national and international	National HE and FE community	Presentation at relevant conferences and workshops - JISC, ALT, HE Academy, Centre for Recording achievement	Publicity for U & I strand and JISC	Ongoing through project
Increased awareness, national and international	Various	Journal articles	Inform and adoption of practice	Ongoing through project

3.3 Evaluation

The project will be evaluated throughout the various cycles. We will use a range of methods to assess the value of tag clouds to the student experience and administrative process. At the beginning of the project, we determine the awareness level of skills in the curriculum through a questionnaire survey. This will allow us to ascertain, for this cohort, how well skills are foregrounded in their programmes of study. Students and staff will be asked to comment on paper pilots and prototypes through techniques of usability sessions and focus groups. At stage 3, we will seek regular and rapid feedback through an online forum or blog. As we repeat stages 1 and 2 we will once again carry out user testing with our cohorts. We would also like to explore engaging a 'critical friend' for the project from outside our own institution; either another HEI or a colleague from JISC. This would provide a valuable additional perspective and one from which more formal and objective evaluative judgments could be made and disseminated.

4. Budget

Directly Incurred	April 07– March 08 (1st Jan-31st Mar)	April 08– March 09 (1st Apr – 31st Jan)	TOTAL £
Staff			
Systems developer, 0.4 FTE, mid-point grade 7	4,082	12,245	16,327
Research assistant ad hoc consultancy from research students	600	2,400	3,000
Consultancy from usability expert	500	2,500	3,000
Total Directly Incurred Staff (A)			22,327
Non-Staff	April 07– March 08	April 08– March 09	TOTAL £
Travel and expenses (includes attendance at meetings)	400	700	1,100
Hardware/software 1 x laptop plus software	900	0	900
Dissemination (including conference attendance)		1,000	1,000
Evaluation (for student participation in user groups, focus groups etc)	200	300	500
Total Directly Incurred Non-Staff (B)			3,500
Directly Incurred Total (A+B=C)			
(C)			25,827
Directly Allocated			
Staff			
Project manager Amy Walker. 0.1 FTE for 12 months	1,143	3,431	4,574
Two principle co-investigators, Carol Shergold & John Davies @ 0.1 FTE, each, grade 8 point 7	2,534	7,797	10,331
Estates overhead	508	1,523	2,031
Staff Development	120	280	400
Directly Allocated Total (D)			17,336
Indirect Costs (E)			
Administration overhead	1,708	5,124	6,832
Total Project Cost (C+D+E)			49,995
Amount Requested from JISC	12,695	37,300	49,995
Institutional Contributions			
Staffing			
Estates overhead 0.3 FTE for three existing staff members	381	1,143	1,524
Admin overhead 0.3 FTE for three existing staff members	1,281	3,842	5,123
Linda Buckham, Director, CDEC (0.1 FTE)	1,240	4,961	6,201

Andrew Howard, Careers Development Advisor, PDP (0.1 FTE)	1,000	4,000	5,000
Systems and analysis testing. Various staff, 0.4 FTE, mid-point grade 7 for six months	0	8,163	8163
Dissemination (for conference attendance)	0	1,000	1,000
Institutional contributions	2,240	8,961	27,012
Percentage Contributions over the life of the project	JISC 65 %	Partners 35 %	

The University of Sussex expects to receive considerable benefit from the project. Staff will gain considerable expertise from both a technical and learning aspect and new ways of thinking around learning can be developed from the project and its involvement with the JISC community. We have, therefore, included an institutional contribution to the project

5. Previous Experience of the Project Team

Project lead for SkillClouds:

Dr. John Davies

Education Developer with responsibility for pedagogic e-learning development
Member of Minted, XMarks and SPLASH project boards

Technical lead for SkillClouds:

Carol Shergold (ITS)

Programme Director, E-learning

IT Services

Technical lead on JISC-funded MINTED and XMarks projects, Project Board member for JISC-funded SPLASH project

Project manager for SkillClouds:

Amy Walker (ITS)

Senior Project Manager,

IT Services

Project Manager on JISC-funded Minted, Xmarks and SPLASH

Qualified PRINCE2 Practitioner

Linda Buckham

Director of Careers Development and Employment Centre

Role in overseeing the work of the project team with students around the skills cloud, ensuring that required content for web pages etc is supplied

Amy Bryant

University of Sussex Students' Union

Role in ensuring that student experience foregrounded

Paul Cecil

Head of Academic Office

Role in overseeing the work of the project team with administrators and academics around the use of a social bookmarking tool to manage the skills tags

Tony Hudson

Head of Web Team

Technical Lead on JISC-funded SPLASH project. Many years experience of website and e-learning development – expertise in usability and design issues.

Role in linking project to student intranet and outward-facing University web pages.

Systems Developer (to be appointed)

Please note that funding for post will be combined with Teaching Quality Enhancement funding to make a full-time post, thus enhancing the chances of making a suitable appointment.

Usability expert (to be appointed)

6. References

Anderson, P. (2007), 'What is Web 2.0? Ideas, technologies and implications for education', JISC Standards and Technology Watch, <http://www.jisc.ac.uk/media/documents/techwatch/tsw0701b.pdf> [last accessed 26-Sept-2007]

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Fraser, G., Crook, A.C. & Park, J. R. (2007). A tool for mapping research skills in undergraduate curricula. *Bioscience Education Journal* **9-1**. <http://www.bioscience.heacademy.ac.uk/journal/vol9/beej-9-1.htm> [last accessed 31st August 2007]

Holmes, L. (2001), 'Reconsidering Graduate Employability: the 'graduate identity' approach, *Quality in Higher Education*, Vol 2, no 2.

Leitch, S. (2006), Prosperity for all in the global economy – world class skills. At: <http://www.hm-treasury.gov.uk>

O'Reilly and L Cunningham, (1999) 'Graduate Identity', in: *Developing the Capable Practitioner: professional capability through higher education*, Kogan Page.

Yorke, M. (2003) Briefings on Employability 4: Encouraging the Development of Employability, ESECT. At: <http://www.heacademy.ac.uk>

Yorke, M. (2006). Employability in higher education: what it is, what it is not. *Learning and Employability Series 1*. Higher Education Academy Report. <http://www.heacademy.ac.uk/resources/publications/learningandemployability> [last accessed 31st August 2007]

Universities UK report (2006) Higher level learning: universities and employers working together, UUK.

Appendix A

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
none	none	NA

Appendix B

Summary of Stage 1 activities and outputs

Activity	Who	How	Outputs
Observation	Head of TLDU, Director of e-learning Development, Education Developer with responsibility for e-learning	Face-to face meeting	Identified key issues within University Teaching and Learning strategy that Web 2.0 technologies could support. Evidence of the need for improved skills awareness identified through National Student Survey and internal quality enhancement mechanisms (e.g. Periodic Subject Review). Initial concept for using a dynamic tag cloud to represent skills developed.
User needs analysis	Members of the University of Sussex Students' Union (USSU): Education Officer; Manager of Project V (the University's volunteering scheme); Representation & Democracy Manager; Communications Officer.	Face-to-face meetings and virtual discussions.	Enthusiastic support for concept of a skills cloud to assist students. Strong feeling that student should have ability to incorporate non course-based skills into their cloud. These might be drawn from participation in schemes such as student volunteering http://www.ussu.info/projectv and roles as student representatives. We would continue to work closely with USSU throughout stages 2-4 of the project. A member of USSU would be a member of the project board and USSU will help to identify appropriate user groups with whom to test, implement and evaluate our product. Outputs included scenarios about how these users might engage with the skills cloud
Stakeholder analysis and brainstorming	Head of Registry; Head of Academic Office, Head of TLDU; Director of Careers Development and Employment Centre; Head of the University Web Team; a Director of Taught Programmes for an Academic School; a Director of Student Support for an Academic School	Face-to-face meeting, shared online space	Buy-in from key stakeholders and universal acceptance that this would enrich student learning experience, support academic staff in making skills more explicit within the curriculum and link with other related initiatives (Professional Development Planning, the development of a user owned web based portal/mashup service). Outputs also included the development of scenarios that focused on how the different stakeholder groups and users might engage with the skills cloud. Scenarios developed for current students, potential students, course convenor, careers advisor and academic advisor/personal tutor The group also participated in a brainstorming session that helped to clarify issues that had arisen during the observation phase. This included: how the data for the skills cloud might be generated; whether information from the skills cloud should include assessment marks; issues surrounding student-generated content; how the skills cloud might link in to existing student support mechanisms (e.g. the University's academic advisor system).
Paper-based model	Carol Shergold, John Davies, Linda Buckham	Shared online space	Revised version of figure 1

Appendix C

Detailed workpackages showing deliverables

Workpackages	Start and end date	Milestone/deliverable	Responsibility
1. Initial project set up			
Project steering and management	01-Jan to 28-Feb 08	Project documents completed, including project plan	AW
Team participation in blogging and other open access communication	ongoing	Project web-site Project blog	CS/TH
Recruit staff to project team	01-Jan to 28-Feb 08	Staff recruited into project	JD/CS
Build relationships with U & I Community of Practice and the Emerge project	01-Jan to 28-Feb 08		JD/CS
2. Work with Career Development students, U & I stage 2			
Finalise initial artifacts for usability testing of skills cloud, based on existing work undertaken prior to funded phase of the project	01-Jan to 31-Jan 08		CS/team
Stage 2 exploration of skills cloud using focus groups with paper pilot and early prototypes. Pilot groups are selected from departments running Career Development course in Spring term.	01-Jan to 31-Mar 08	Report on stage 2 exploration	JD/team
3. Work with Administrative staff, U & I stage 2			
Finalise initial artifacts for the usability testing of social bookmarking software, based on work undertaken prior to funded phase of the project	01-Feb to 28-Feb 08	Documents designed to engage administrative colleagues and other stakeholders	CS/team
Stage 2 exploration of social bookmarking approach, using prototype based on an existing social bookmarking service such as del.icio.us. Interviews, focus groups and sense-making techniques to explore suitability.	01-Mar to 30-Apr 08	Report on stage 2 exploration	JD/team
4 (cycle 1): Rapid development phase, social bookmarking pilot			

Workpackages	Start and end date	Milestone/deliverable	Responsibility
Develop methods to utilise data created and managed via social bookmarking service and generate skill clouds based on the tags. Approaches to explore include (i) harvesting the data from the social bookmarking service; (ii) using the service API to pull out tags dynamically.	01-May to 30-Jun 08	<ul style="list-style-type: none"> UML analysis and design documentation. Package to manage interaction with social bookmarking service, available as prototype for use by other institutions 	Developer (in each case with support and guidance from CS and other team members)
4 (cycle 2): Rapid development phase, skills cloud pilot			
Develop method to create skills clouds. Pilot with user group iteratively to check that emerging methodology is appropriate.	01-July to 31-Aug 08	<ul style="list-style-type: none"> UML analysis and design documentation. Package to manage development of skills clouds, available as prototype for use by other institutions 	Developer
4 (cycle 3): Integration with existing systems			
Integrate and deploy with existing systems at Sussex.	01-Sep to 31-Oct 08	<ul style="list-style-type: none"> A prototype Moodle skills cloud block, available for release to the Moodle community Documentation on deployment with other systems 	Developer
Explore deployment in other collaborative systems			Developer
5. Testing in real learning contexts, U & I stages 1 and 2 revisited			
Revisit the U & I process with the newly developed prototypes. Pilot groups are selected from departments running Career Development course in Autumn term.	01-Oct to 31-Dec 08	<ul style="list-style-type: none"> Decision on next phase in U & I model and institutional response to the project. Documentation on the use of tag-clouds to present complex data to students, giving analysis of usability and acceptability issues and making recommendations that will be of use to groups designing on-line learning environments for students and others. 	CS/JD
Presentations to teaching staff to raise awareness of feedback tools and data integration			CS/JD
Ensure documentation is present and is accessible for wide audience			
Work with JISC around development of SUMs and other documentation in the e-Framework		Documentation in e-framework available to the community	CS
Dissemination of project findings			CS/JD



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1 October 2007

To whom it may concern,

JISC Users and Innovation Programme – Next Generation Technologies and Practices (Phase 2)

As elected officers and staff members of the University of Sussex Students' Union (USSU) we would like to express our enthusiastic support for this project proposal. We feel that the use of a tag cloud will provide an accessible way for students to view the skills they have gained during their studies. The ability for students to then see where in their degree they acquired these skills and access information on how to evidence them is great.

We think it is very positive that the University is listening to student views about how they would like skills information to be represented. By using the tag cloud, students would also be able to keep track of work experience gained through professional placements during their degree. One example would be the ability for a student representative to track the skill sets that they gain within their role, such as negotiation, communication, team-working, leadership and organisation skills. It will also support other schemes, such as the Project V, the 'Student Community Action' scheme at the University of Sussex. As such the tag cloud will enable students to track the full profile of skills they gain throughout their time at University.

Yours faithfully,

Karen Belton, Volunteering Manager, Project V

Amy Bryant, USSU Representation & Democracy Manager

Kous Couvee, USSU Communications Officer

Saul Reid, USSU Education Officer



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Vice-Chancellor's Office

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Northhavon House
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1st October 2007

To whom it may concern,

JISC Users and Innovation Programme – Next Generation Technologies and Practices (Phase 2)

I am very pleased to endorse this proposal to investigate the use of Web 2.0 technologies to help students identify the skills they have acquired during their time at university. A key theme of our new Teaching and Learning Strategy is to provide opportunities for students to develop skills that will equip them for employment and life-long learning. We are keenly aware that students want to leave university with a clear record of the development that they have undergone during their time in higher education and the proposed project will help us to take forward our response to this. A strength of this proposal is that the skills information is not envisaged as being simply driven by the institution, but that it investigates how to integrate students' own content, generated both from the curriculum and elsewhere.

This project will also benefit the wider HE and FE community. Given that all universities and colleges are considering how to deploy these user-owned technologies in an effective way, particularly in the context of lifelong learning, the outcomes of this project will be highly transferable to many other institutions. Also, the investigation of how Web 2.0 technologies can support administrative processes will provide interesting evidence that will be directly useful to the JISC community.

The team who will investigate these issues has a great deal of experience as practitioners and researchers in the areas of pedagogy, employability, learning and technology and have a successful track record of running projects.

This proposal has my wholehearted support.

Yours

Professor Joanne Wright
Pro-Vice-Chancellor

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