

Computing Subject Group
Thames Valley University
Wellington St
Slough
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21st November 2006

Alice Colban
JISC Executive
Northavon House
Coldharbour Lane
Bristol
BS16 1QD

**RE: JISC Circular 4/06: Capital Call
e-Learning: Call VI: Course Validation**

Dear Alice Colban and Heather Williamson

I am pleased to submit a proposal entitled “**Course Validation Arranger (COVa)**” to the above call. The proposal documents submitted with this letter include:

- a) Completed cover sheet;
- b) The proposal document (10 pages);
- c) Letters of support from Thames Valley University, University of Manchester, and UKOLN;
- d) Supporting appendices.

The project represents a unique opportunity for the team from TVU and Manchester to substantially enhance the work on the COVARM project by exploring emerging technologies around Business Process Modelling.

Please do not hesitate to contact me for further information if required.

Yours sincerely



Professor Balbir S. Barn

balbir.barn@tvu.ac.uk

Cover Sheet for Proposals (All sections must be completed)	JISC Capital Programme
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Name of Capital Programme: e-Learning				
Bid for Call: (Please tick ONE BOX ONLY, as appropriate)				
Supporting lifelong learning				
<input type="checkbox"/>	Call I – HE in FE			
Technical developments to support learning and teaching				
	Call II – Assessment <input type="checkbox"/> a) Item Authoring Tool <input type="checkbox"/> b) Item Bank Software <input type="checkbox"/> c) Assessment Delivery Tool	<input type="checkbox"/>	Call IV – Admissions demonstrators <input type="checkbox"/> a) structured personal profiles, course entry profiles and pre-assessment; <input type="checkbox"/> b) improving applicant feedback; <input type="checkbox"/> c) accreditation of prior experiential learning; <input type="checkbox"/> d) e-portfolio based admissions.	<input checked="" type="checkbox"/>
				Call VI – Course validation
<input type="checkbox"/>	Call III – Technology supported learning environments	<input type="checkbox"/>	Call V – Course description and discovery	<input type="checkbox"/> Call VII – Domain maps
Name of Lead Institution: Thames Valley University				
Name of Proposed Project: Course Validation Arranger (COVa)				
Name(s) of Project Partner(s): University of Manchester				
Full Contact Details for Primary Contact:				
Name:	Dr Balbir S. Barn			
Position:	Professor of Information Systems			
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Address:	Computing Subject Group Thames Valley University Wellington St Slough, SL1 1YG			
Tel:	+44 1753 697699			
Fax:	+44 1753 697651			
Length of Project: 1 years				
Project Start Date: March 07		Project End Date: March 08		
Total Funding Requested from JISC:				
Funding Broken Down over Financial Years (April – March):				
Apr06 – Mar07	Apr07 – Mar08	Apr08 – Mar09		
£0	£49833	£0		

Total Institutional Contributions:	£38918	
Percentage Contributions over the Life of the Project:	JISC 56%	PARTNERS 44%
Outline Project Description		
<p>Business process modelling (BPM) has considerable scope for understanding core domain level functions in higher education. The COVARM project explored process modelling in depth and implemented two scenarios embedded within the course validation process using service oriented architecture technology. Services were specified using WSDL/SOAP technology, implemented in JAVA and then choreographed using BPEL and related technologies. Some of the lessons learnt from that project focused on the integration and use of a range of technologies. Results from the project indicated that many of these technologies are not sufficiently robust, nor is the integration between technologies seamless, suggesting that there may be alternate approaches to business process modelling and support that should be explored.</p> <p>One important set of alternate technologies that are gaining credibility is the use of the OMG standard – Business Process Modeling Notation (BPMN) and software tools that manage the specification, creation and management of business processes – the so called BPM toolsets..</p> <p>This project will review the two scenarios described in the COVARM project (“Prepare Programme Proposal” and “Run Validation Event”) from a process specification, implemented services perspective. These scenarios will be encoded in BPMN using a selected BPM toolset (We envisage using Intalio, subject to preliminary evaluation results) and then provisioned using existing services such as ICalendar and services from COVARM. Integration with other services such as a Repository service that supports document management and export of documents to XCRI formats using XML interchange formats will also be explored. The project will identify and justify the selection of an appropriate toolset and explore the “just enough” notation requirements for business process modelling in the HE Sector. Draft workshop material for business process modelling will be produced and delivered to the JISC community. The project will also report on the evaluation and usage of outputs from other JISC funded projects such as COVARM and XCRI.</p>		
I have looked at the example FOI form at Appendix A and included an FOI form in the attached bid (Tick Box)	YES ✓ (App D)	NO
I have read the Circular and associated Terms and Conditions of Grant at Appendix B (Tick Box)	YES ✓	NO

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.

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.

NB: We do NOT wish to withhold information for this project.

Section / Paragraph No.	Relevant exemption from disclosure under FOI	Justification
NB: We do NOT wish to withhold information for this project.		

Please see <http://www.ico.gov.uk> for further information on the Freedom of Information Act and the exemptions to disclosure it contains.

Course Validation Arranger (COVa)

1 Introduction

1.1 Background and Rationale

1. Higher education is looking increasingly towards business practice as it seeks to review and improve existing practice. One particular approach that has considerable scope is the application of business process modelling (BPM) for understanding core domain level functions. For example, activities centred on Course Validation form a core business process that requires a significant level of inter and intra-institution collaboration¹. Further, this process is knowledge centric and is strongly focused on the production and management of documents. Given the activities that are affected or depend upon an efficient course validation process any automation or computer based support of the business process will have a significant impact on a higher education institution (HEI).
2. The COVARM project² produced detailed reference models describing the business process for course validation and its accompanying information model. The project implemented two scenarios embedded within the process using service oriented architecture technology, that is, services specified using WSDL/SOAP technology, implemented in JAVA and then choreographed using BPEL and related technologies. Some of the lessons learnt from that project focused on the integration and use of a range of technologies and indicated that many of these technologies are not sufficiently robust, nor is the integration between technologies seamless, suggesting that there may be alternate approaches to business process modelling and support that should be explored. Many of these issues are explored in detail in the COVARM final report to JISC and elsewhere on the COVARM website.
3. One important set of alternate technologies that are gaining credibility is the use of the OMG standard – Business Process Modeling Notation (BPMN) and software tools that manage the specification, creation and management of business processes – the so called BPM toolsets. The key to BPM toolsets is that they provide a converged view of business processes and service oriented architecture³ and could become the industry standard way of approaching service oriented architecture. Such potential has implications for JISC and E-Framework strategy. The OMG BPMN Notation provides a standardized way of capturing business processes which retains the usability of business process modelling but provides sufficient semantic richness to support complex articulation of business rules forming a business process. However, early indications from the use of the notation and related toolsets suggest that there is room for identification of a small subset of notation and functionality that is appropriate for most business users. This subset is yet to be articulated or explained to the industry at large. Clearly, this needs to be balanced by assessing the risk of oversimplification by vendors wanting to convince people that BP management can be made simple.
4. There are several tools (both open source and commercially available products) that purport to support the standard BPMN notation. However the guidance and best practice use of these tools is not widely available and is restricted largely to training provided by the tool builders. Given the potential importance of such tools for supporting and implementing efficiencies to business processes in HE sector there is clearly a need for detailed exploration of the applicability of such tools to the HE sector. In particular this need is focused on interoperability between BPM toolsets and existing services; use of structured data entry (XForms, InfoPath etc) and document management. This need has been recognized by JISC and this proposal aims to meet that need.

1.2 Proposed Work

5. This project will review the two scenarios described in the COVARM project (“Prepare Programme Proposal” and “Run Validation Event”) from a process specification, implemented services perspective. These scenarios will be encoded in BPMN using a selected BPM toolset (We envisage using Intalio, subject to preliminary evaluation results) and then provisioned using existing services such as ICalendar and services from COVARM. Integration with other services such as a Repository service that supports document management and export of documents to XCRI formats using XML interchange formats will also be explored. The project will identify and justify the selection of an appropriate toolset and explore the “just enough” notation requirements for business process modelling in the HE Sector. We already have experience of needs of stakeholders with respect to modelling notations from workshops delivered

¹ <http://www.elearning.ac.uk/features/covarmbriefing>

² <http://covarm.tvu.ac.uk/covarm>

³ Swabey, P (2006) “Protean Business”; Information Age, July 2006. <http://www.information-age.com/soa>

to the JISC community focused on a narrow subset of UML suitable for business users. The project will also report on the evaluation and usage of outputs from other JISC funded projects such as COVARM and XCRI.

1.3 Project Dates

Start Date: March 2007

End Date: March 2008

1.4 Contribution to the Programme

6. The project will make the following contributions to the programme.
- This project will provide substantive experience of business process modelling techniques to implement applications in the HE Sector. Business process modelling is expected to become increasingly more important to the sector so this knowledge will be especially pertinent.
 - An area where the e-Framework requires further elaboration is in business process modelling support for planning service provision and aligning services. The project expects to collaborate with the e-Framework architects to develop candidate structures to support BPM within the e-Framework.
 - The project will introduce engagement with the tool vendor community for BPM using substantive case studies to drive requirements. Support from the vendor community has already emerged during the preparation of this proposal (See Appendix A).
 - The project will deliver draft 1-day workshop materials for supporting training of JISC project staff in the areas of Business Process Modelling – we anticipate that the Repositories and e-Research programmes would also want to utilize these training materials.

2 Project Description

2.1 Research Questions

7. The project team's previous experience with the COVARM project informs the two questions that this project is investigating.

“Can open source business process management solutions offer a viable approach to the support of common administrative processes in HE?”

8. The COVARM project as outlined in section 1.1 indicated that bespoke service development and orchestration using BPEL technology required the integration and use of several different technologies. This raised technical issues which have the potential to be solved by a BPM solution (toolset).

“What are the issues and challenges round the coordination and orchestration of web services needed to support a service oriented approach to the administration of learning and teaching?”

9. A BPM solution will require collaboration/provisioning from a number of external services which are not part of the main product. This question will allow us to provide evaluatory evidence of coordination and integration issues (at varying levels: data, functional and semantic) as we experiment in provisioning of the process using external processes.

2.2 Project Objectives and Deliverables

Objectives and Deliverables

10. The project will deliver:
1. A Demonstration Implementation of the two workflows produced as part of the COVARM reference model. The scenarios will be implemented using a selected BPM toolset such as Intalio.
 - COVARM Process Scenarios described using BPMN notation – independent of any BPM toolset.
 - Two scenarios implemented in a BPM toolset
 - Provisioning of services using an established JISC toolkit or other scheduling service.
 - Export of programme/course specifications in XCRI format.
 2. Implementations of additional services to support the scenarios. These services will be implemented in JAVA and conform to WSDL requirements. Such services will be documented as per e-Framework requirements and submitted to the e-Framework. The project will explore the wrapping of a 'room resource allocation system' as a service for consumption by the BPM process.

- Documentation as Service Usage Models
 - Documentation as Service Genres
 - Implementation conforming to JISC and Project quality standards and made available by open source license
 - e-Framework submission
3. A Contribution to the e-Framework – a proposal on how the e-Framework can be adapted to explicitly manage process models will be submitted to e-Framework architects for review and discussion.
 4. Workshop Collateral on Process and Workflow modelling using BPMN and delivery of one workshop to the JISC e-Research and Repositories community
 - The focus of the material will be to identify the subset of BPMN that is well suited to specific communities from the Repositories and e-Research programmes.
 - The delivery of the workshop will allow an evaluation of BPMN and its accessibility / suitability
 5. A Final Report
 - Evaluation of organizational and technical issues arising during the development of the two scenarios using BPMN in a BPM toolset;
 - Criteria used to select and evaluate a BPM toolset
 - Discussion of the viability of such tools to support HE business processes
 - Recommendations to JISC on tool selection; methodology requirements (subset of notations and semantics for BPMN for example) and wider implications.

2.3 Methodology

11. This section describes in detail, the methodology we will be adopting to address the deliver the aims and objectives stated above. The method framework is illustrated by the figure below and explained in detail as follows:

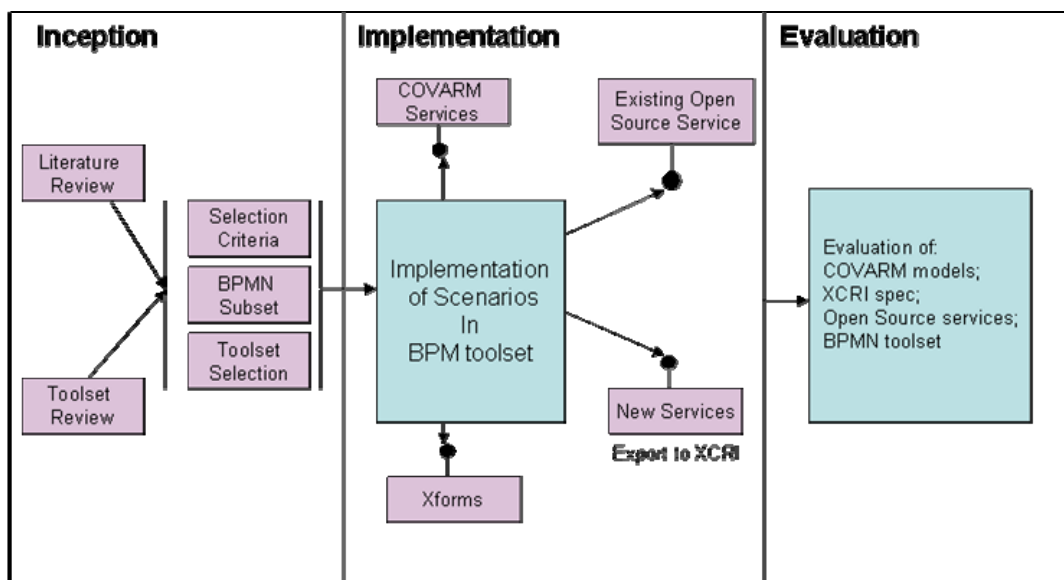


Figure 1 Method Framework

12. The method / approach are informed by the following considerations.
 - While the project is in essence an evaluation of a particular type of technology – it is still an implementation project and as such we expect the project to be conducted within the RUP for SOA framework.

- A literature and tool review to establish a critical understanding of the extent of usage of the Business Process Modelling Notation (BPMN) and BPM toolsets that support the notation.
- Service identification and development will follow the methodology specified and exemplified as part of the COVARM project and described in detail in papers available from the website. Our method is derived from elements of RUP (Rational Unified Process) and is strongly tailored to the delivery of our main artefact, the prototype implementation. The method takes a model based approach using the Unified Modelling Language (UML) a notational and semantically precise vehicle for capturing the necessary business process models at a domain level. This stage requires the capture of roles/responsibilities (including teams), activities in the process, routes through the process, triggers, information consumed and produced by activities, constraints and interfaces with other information systems. The essence of our approach was a) to recognize and define the conceptual mappings between Component Based Development (CBD) and SOA, b) to extend and modify CBD methods to support SOA specific requirements and finally c) to ensure that a model based or model driven architectural perspective was rigorously applied from business process modelling through to service modelling.
- Use of tools: The project team has extensive experience of using model based toolsets and development environments: So the Service Descriptions and implementation will use UML Definitions used to generate WSDL/REST Services. Services will be defined using UML and IBM Rational Architect. Transformation tools within Rational Architect will be used to generate WSDL and or REST based Services ready for adding of business logic code.

Methodology Steps

13. The Methodology will deploy the following steps which have a strong correspondence to the work packages.

INCEPTION

- 1) Review existing literature and available toolset for BPMN – here the focus will be on establishing existing knowledge of usage of BPMN, its strengths and weaknesses; tools that have some level of support for BPMN and the usability of those tools.
- 2) Based on a critical evaluation of the literature – and experience of the course validation business process – a restricted definition set of the BPMN notation will be defined. The viability of this restricted set will be tested using elements of the COVARM scenarios.
- 3) Develop a set of criteria by which to review a number of open source tools informed by the literature and tool review. Use these criteria to make a selection of an appropriate BPM toolset.
- 4) Commission Toolset – the selected toolset will be installed and tested on a MS platform – the dominant operating system used by stakeholders from the University Admin domain. Previous experience of using BPM toolsets by the project team (from the COVARM project) have indicated that it is advisable to receive vendor supplied training so appropriate product specific training will be scheduled prior to implementation.

IMPLEMENTATION

14. The implementation will be carried out as two iterations – one for each COVARM scenario.
15. Scenario 1: Prepare Programme Proposal: This particular scenario will be focused on the use of Xforms or other data directed form entry from the MS platform – it will result in the preparation of a document that contains sufficient information for generation into XCRI format. The implementation will thus be data focused and will likely result in the development of supporting web services. The scenario will also allow the exploration of repository based services and the use of a repository.
- 5) Re-code the COVARM scenario as a BPMN specification within the selected BPM toolset. Where new services are identified, stubs will be developed in preparation of identification of existing provisioned services. We anticipate issues in use of information models in BPMN where there is a known weakness. The COVARM approach used detailed information models (data models) to underpin the process specifications whereas BPMN places less emphasis on a data perspective.
 - 6) Provision the scenario using existing WSDL/SOAP services developed from the COVARM project or where new services have been identified – provision services from other JISC toolkits or open source software. Where existing toolkits or existing software will not meet requirements, it will be necessary to create mock services based on the stub specifications.

- 7) Refine the COVARM information model and process models as a result of re-interpretation of the process from a BPMN perspective and update the COVARM website. It is also expected that XCRI requirements will also require further refinements of the COVARM information model elements.
 - 8) Implement stubbed services as SOAP/WSDL services using the COVARM development methodology
 - 9) Deploy and test the BPM specification using the BPM toolset.
16. Scenario 2: Run Validation Event: This scenario focuses on the coordination requirements of setting up an event – a committee meeting that will decide on the outcomes of a course design.
17. The steps listed for scenario 1: 5-9 are repeated for this iteration.

RESULTS and EVALUATION

18. The final stages in the project will review the experiences of the team in the use of BPMN, the associated toolsets and the outputs from the COVARM project.

The JISC E-Framework and engaging with the Community

19. The project approach and outputs have been defined with a view to close collaboration with the e-Framework architects since we see the e-Framework strategy for utilizing a service oriented architecture to deliver e-learning and other HEI technology based solutions as central to HEI future planning.
20. The engagement with the vendor community is increasingly important for JISC and the HEI sector in general. The principal investigator of this project is already part of a world wide community of academics exploring the use of one of the leading BPM toolsets – Intalio. Membership of this community is via invitation only and arises out of existing collaborative activities with Intalio. As part of this community, the PI is sharing experiences of using BPM toolsets to automate key business processes in HE.

2.4 Project Plan

21. The project will be managed as a structured set of **work packages**.

WP	Description	2007											2008				
		M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	
1	Project Management																
2	Project Website / WIKI																
3	Prepare Literature and Tool Review																
4	Select and Commission BPM Toolset																
5	Iter 1: Prepare Programme Proposal																
6	Iter 2: Run Validation Event																
7	Prepare Draft BPM workshop material																
8	Produce Final Report																

Figure 2: Project Plan

22. Workpackage 1: Project management: This will involve management and administration – ongoing throughout the life of the project. Communication with JISC and other bodies; This will include project kick off meetings; development and instigation of documentation, project management and technical infrastructure standards (such as software configuration and version management).
23. Workpackage 2: Project Website/Wiki: This will explore the use of the Semantic Wiki technical platform from FREMA and then develop an appropriate website for communication and dissemination with the wider community. The Workpackage will involve the constant updating of the website and support of external links such as RSS feeds. The final state of the website will contribute to the end of project report.
24. Workpackage 3: Review of existing literature and available toolsets: Establish existing knowledge in the broad areas of the project to inform tool selection.
25. Workpackage 4: Select and Commission BPM Toolset: Develop tool selection criteria, select toolset, commission and attend appropriate vendor specific training.
26. Workpackage 5: Iteration 1: This Workpackage will develop a BPM toolset implementation of the “Prepare Programme Proposal” scenario. It will include the following activities:

- I. Expression of the scenario using BPMN within the toolset;
- II. Provisioning of services using: existing COVARM services; available open source services; development of new services as SOAP/ WSDL services.
- III. Submission of new services to the e-Framework (Service Genres and Service Usage Models).
- IV. Deployment of the process scenario using the BPM toolset;
- V. Refinement of COVARM process and information models.

27. Workpackage 6: Iteration 2: As per the first iteration but for a second scenario: "Run Validation Event"
28. Workpackage 7: Draft BPMN workshop material: Preparation of content / tutorial notes for a one day workshop on Business Process Modeling using BPMN and example toolsets. Depending upon schedules – it is envisaged that a one day workshop will be offered to the JISC community. Suitable audiences could include the Repositories and E-Research Programmes.
29. Workpackage 8: Produce Final Report: This will involve the production of the final report and will include details: evaluation of our approach; organizational issues; use of the BPM toolset and commentary on various JISC project outputs. It will also include recommendations to JISC about the e-Framework.

2.5 Project Management

30. The project team will meet regularly to monitor progress across work packages, monitor and manage risks, agree changes and address major issues. Day to day project management will be coordinated by the project lead. The Project management Board will use a set of instruments for documentation and management that will be set out in the Project Plan but will include a Risk Register, a Quality Assurance Plan and an Issues Log.
31. Internal and external communications will be managed by a dedicated (external facing) website with an integrated Blog and Wiki to support internal requirements. This structure is based on the experience gained from the JISC funded COVARM project.

2.6 Standards

32. The software developed in this project will be Java based. The project will take a Service Oriented Architecture (SOA) approach. The services developed will be written in JAVA. Coding standards will be adopted to ensure readability, testability and installability. Code will be unit tested using Junit. The project will build upon existing specifications and standards from JISC, and other projects. In particular, it is expected to reference agreed standards such as SOAP and WSDL of the W3C. The outputs of this project will conform to published standards and guidelines.

2.7 Quality Management

33. The team already has experience of compliance with the JISC Software Quality Assurance Policy from the COVARM and experience and practical techniques from earlier work will be transferred to this project to address issues of methodology, version and configuration management, and documentation guidelines. Quality management in this project will be addressed by focusing on three aspects: Quality assurance; Quality Planning and Quality Control. This project will use the JISC guidelines on quality assurance and enhance them as appropriate.
34. The Quality Planning on this project will develop a quality plan at the start of the project. This plan will describe standards for document production (e.g. requirements specifications, the use of a project glossary; non-functional requirements). In addition, the plan will describe standards for process management such as: Version and configuration management for software development activities; Change management control; Requirements tracking; and guidance on use of specific tools (e.g. IBM Rational Rose XDE, IBM Requisite Pro, MS Project).
35. Quality Control on this project will include the use of quality reviews where the software, models and documentation will be reviewed by a subset of the team. Examples of such reviews will include design model reviews, code walkthroughs (when necessary) and elements of Xtreme programming (Peer review). Other elements of quality control will include the regular maintenance of a risk register and issues log.

2.8 Sustainability

36. We anticipate that use of the FREMA style WIKI will provide an opportunity to sustain and enhance the knowledge and experience of the use of BPM toolsets beyond the lifetime of the project.

37. Sustainability of the code is produced by ensuring that other institutions have access to the code through appropriate open source licensing arrangements. Close collaboration with the e-Framework will ensure that specifications are readily available in a standard format. Finally the code will be given further life by being available for use by students at TVU through a mechanism already set up to allow students to engage in dissertations in service oriented architecture using services developed from JISC projects.
38. The use of the toolset, and the draft workshop material will directly lead to the development of a new Masters Module on Business Process Management for delivery on MSc Information Systems Programme and possible the MBA available at the TVU.

2.9 Dissemination

39. Dissemination of information and outcomes from the project activities will be achieved using a number of methods. Project findings and the developed system will be promoted through national and international forums, workshops, and conferences, and JISC meetings. A Project Web site will be created at the start of the project and will contain current information on activities (a blog with Atom and RSS feeds), reports on the infrastructure, toolkit architecture and tools, and evaluation reports. Links to relevant articles and projects relating to the project will be added. Presentations and publications derived from project work will also be available on the site. The project consortium has excellent experience of dissemination via these routes as exemplified by the partners' involvement in previous JISC projects such as COVARM.

2.10 Project Risks

Risk	Prob. (1-5)	Severity (1..5)	Score	Action to Prevent/Manage Risk
Project schedules slippage	4	2	8	Regular project management meetings and plan update; Use of virtual meetings (Skype) There is ample project management experience to mitigate this successfully
Selection of the wrong technology	2	1	2	A substantial portion of the project is independent of technology – and there is much common knowledge required across toolsets so a switch to an alternative toolset should not be a problem
Loss of key personnel	1	4	4	Ensure that there is overlap between roles. There is high level of project team collaboration experience to mitigate this risk
Project Team availability	3	2	6	Ensure that line managers of project team are aware of the project and the resource requirements throughout the project lifecycle.

2.11 Statement on IPR

40. The code will be published via the project website and made available under an appropriate open source agreement and may be used within any educational establishment in line with JISC's requirements, as per the terms and conditions of JISC grants. The University and its partners will retain shared IPR on the learning content, the software artefacts, and associated documentation. This will be confirmed via a Consortium agreement for defining IPR arrangements that conforms to JISC requirements.

2.12 Value to JISC and the HE Community

41. This project has the potential to make a significant impact in terms of value and strategy to JISC and to HE community at large.
42. This project leverages experience and outputs from previously funded projects to provide significant value to JISC. COVARM and XCRI have already as part of their previous outputs began work on a unifying information model that went across the two domains. This project formalizes that work and provides a singular opportunity to develop and substantiate knowledge of the curriculum domain from curriculum inception (COVARM) to deployment and usage (XCRI). The BPMN subset and application produced will make explicit additional areas that impact the already known areas of interaction.

43. This project will provide further substantive experience of applying the JISC e-Framework strategy for understanding new domains and determining service specifications and requirements between domains. The process of interacting with the e-Framework will provide strong evidence on the usability and applicability of the e-Framework. This consideration of e-Framework within workplace environments is of interest to JISC members across the educational spectrum. The e-Framework is expected to have a significant impact of HEI IT strategy – our contribution will enable HEIs evaluate the benefits of the e-Framework from the perspective of the HEI community.

3 Budget

Directly Incurred Staff	Mar-07	April 07– March 08	April 08– March 09	TOTAL £
[REDACTED]				
[REDACTED]				
[REDACTED]				
[REDACTED]				
Total Directly Incurred Staff (A)	0	36933	0	36933
Non-Staff				
	Mar-07	April 07– March 08	April 08– March 09	TOTAL £
Travel and expenses: 7 meetings at £200	0	1400	0	1400
Hardware/software: 1 Server; 1 Project Laptop	0	4000	0	4000
Dissemination: 5 conferences - 3 UK, 2 International	0	5000	0	5000
Vendor Specific Product Training (for two)	0	2500	0	2500
Other	0	0	0	0
Total Directly Incurred Non-Staff (B)	0	12900	0	12900
Directly Incurred Total (A+B=C) (C)	0	49833	0	49833
Directly Allocated				
	Mar-07	April 07– March 08	April 08– March 09	TOTAL £
[REDACTED]				
[REDACTED]				

Estates	0	6852	0	6852
Other	£	£	£	£
Directly Allocated Total (D)	0	18362	0	18362
Indirect Costs (E)	0	20556	0	20556
Total Project Cost (C+D+E)	0	88751	0	88751
Amount Requested from JISC	0	49833	0	49833
Institutional Contributions	0	38918	0	38918
Percentage Contributions over the life of the project		JISC	Partners	Total
		56%	44%	100%

Benefits to the Institutional Partners

44. The project is expected to benefits to TVU and in the following manner: It is clear that business process driven support of University administration functions will become increasingly important. A study such as this that explores the use of BPM tools and their integration with existing services will provide valuable information the organization. TVU for example, is already engaged in a review of administration functions supporting academic requirements and this work can directly contribute to those activities.
45. The project scope and activities have a high level of correspondence to the research and professional interests of the team members. While this is difficult to quantify – it is clearly beneficial and is one of the reasons why the project proposal has been submitted.

4 Why Us? - Key Personnel

46. The key to a successful project is a strong team with right blend of skills, knowledge and experience. This team is characterized by:
- **In-depth domain knowledge of the problem area:** Team members have played key roles at their respective institutions in the design and management of course curricula as heads of department; programme leaders and module leaders.
 - **Technical skills:** A range of business and technical skills are important. This team has extensive commercial and academic project experience in business analysis from an enterprise perspective. From a technical perspective, the team has detailed systematic knowledge of technical architecture, software development for service oriented architectures (both WSDL Services and REST based services), modelling (including the use of UML and BPMN). This is evidenced by the software services that were implemented as part of the XCRI and COVARM projects. This team includes members that have been one of early users and developers of BPEL based processes and as a consequence the team has potentially critical knowledge of model based process definition. We anticipate making a significant contribution to the community in the area of Business Process Modelling and notations (BPMN).
 - **Extensive experience of JISC and other projects:** All members of the team have previous experience of JISC projects (as project leaders and team members) that have included: COVARM (TVU) and HORUS(Manchester). These projects have produced outputs which have had a strong

influence on the current JISC Programme Call. We anticipate that this bid would have a similar impact.

47. When these attributes are combined with large scale project management experience (in both commercial and academic research contexts) and relevant Information Systems research skills, the quality and depth of the project team should provide JISC with an appropriate level of reassurance on the capability of the this team to deliver the outputs as stated.
48. The team comprises the following individuals:
49. **TVU: Prof. Balbir S Barn (Project Management and Process Design and Implementation):** Balbir is currently the project lead on a JISC funded project – COVARM which explored processes and systems requirements for course validation. His research interests are in large scale systems development using service oriented architectures. Balbir has extensive industry consulting experience where he has led the development of a CRM strategy for a leading travel agent; re-engineered operational systems for BT amongst other major projects and also been the UK project lead on \$5M US NIST project.
50. **TVU: Dr Samia Oussena (Design, Analysis and implementation):** Samia is a member of COVARM team, a JISC funded project where she led the BPEL specification and development of the two scenarios that are to be implemented in this project. Samia has an extensive industrial experience in software development. She has lead and been involved in a number of application development projects for the insurance and oil& gas sector.
51. **TVU: Dan Sparks (development):** Dan is a member of the COVARM team and was responsible for the development of the Java services; the business process definition and the application assembly using various toolsets (Eclipse, Rational Architect, Oracle Db, Oracle BPEL Designer). He has over a year's experience of in-depth technical knowledge of relevant technologies to support this bid.
52. **UoM: Dr Hilary Dexter (Business Consultant):** Hilary is currently a distributed learning advisor in the Teaching, Learning and Assessment Office of the University of Manchester. Hilary's research and development work focuses on supporting change management for process and practice improvement and the scaling up of e-learning service provision, employing a model driven approach.

