JISC Project Plan

Overview of Project

1. Background

Existing software developed by this consortium currently provides students with an interactive web-based simulation of an organisation that they can investigate. The students are able to question staff, and customers using pre-defined questions. They can examine company procedures, standards, minutes, newsletters etc. The software is data driven and the simulation can consequently be modified at any time. A number of features have been introduced to increase the fidelity of the student investigation experience.

This software was developed jointly by MMU and MyKnowledgeMap and has been trialled with two cohorts during the 03-04 academic year. The evaluation revealed how the functionality could be improved and highlighted the need for careful integration with other teaching and learning components. Overall the evaluation highlighted how well it was received by students, who felt it provided a realistic simulation that removed the constraints of conducting traditional interviews, provided greater consistency and equality and allowed for much more flexible use of their time. Tutors appreciated the savings in time, a more controlled use of their time and the consistency of answers that students received. When compared with marks from previous years the simulation showed that students achieved similar results on all learning outcomes. The software has been trialled with Business IT students but the potential audience could include other areas of business education and IT disciplines.

The current software provides very limited support for tutors to define new cases and has no facilities for running multiple cases or for sharing and distribution of case material. Also, the current software uses few open standards

This project proposes to extend the functionality of the software to provide authoring tools for the tutor, to modify identified aspects of the student interaction, to embed a small number of tutorials on analytic techniques and to develop and evaluate a case for a different discipline. It proposes to standardise database access, to make the implementation platform independent and to package the content to allow convenient sharing and distribution using new and evolving technologies.

2. Aims and Objectives

The overall project aim is to develop an open architecture and a set of tools to support the development, sharing, distribution and use of interactive case studies to support student investigation of organisational simulations.

The specific project objectives include:

1. Extend the existing case shell to support tutor definition of new cases and improved student interaction
2. Test and evaluate the new shell with cases developed for different disciplines
3. Develop and evaluate web-based tutorials on analysis techniques
4. Define and prototype a new architecture for case development, storage, distribution and use based on open standards (ODBC, XML, web services (where available) IMS standards, and existing XML definitions)
5. Implement tools to support new architecture, case shell extensions, and analysis tutorials

3. Overall Approach

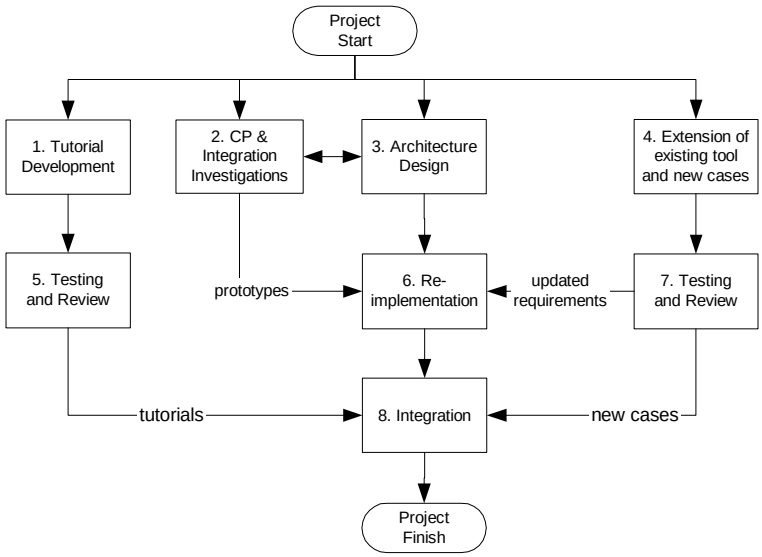
The overall approach will be based on an evolutionary prototyping methodology. That said, the work falls into defined streams, see diagram below, which will vary in their approach. Streams (1 & 4) will follow a more traditional structured development because the requirements are well understood in advance. The architecture design (3) and the CP and Integration investigations (2) will inform each other and must therefore work closely together. The re-implementation of the software tools will involve implementing the new architecture and will be informed by existing prototypes (which may be re-used) and by the refined case tool that has been evaluated. The last phase of work involves integration of new cases, analysis tutorials and the new architecture.

Important issues this project will address include:

- the investigation of new open standards, including the packaging of case content
- the integration of new forms of learning interaction with MLE and portals.

These will be addressed in the following ways. Firstly, the project will investigate and implement ways to package and distribute the simulation content. The project will attempt to use XML standards in ways that were not necessarily intended. For instance the project will explore use of HRXML to define organisational structures for the cases, and investigate the suitability of LIP and IMS Q&T to log learner engagement and IMS SS as a way of defining question sequencing and the release of case materials. It is anticipated that these non-standard applications of XML standards will provide valuable insights for the JISC community. Secondly, the project will investigate deployment as a standalone web application and a portlet. By using uPortal to integrate standalone tutorials with the case study, the project seeks to explore issues of passing authentication information between components and develop knowledge about integration of uPortal that will inform future projects. LDAP will provide the primary focus for authentication, although the team also hope to investigate the possible use of Shibboleth. Thirdly, the project will use existing tools, such as RELOAD to minimise development effort. Experience of using such tools in a new context will provide valuable feedback to other projects. Lastly, the project will investigate use of relevant web services (existing and evolving) such as authentication, authorisation, learner profile management, archiving, etc to integrate itself with existing JISC/HE infrastructure. Where possible web services will be used. Where web service definitions are not fully implemented direct XML sources will be used.

Streams 1 & 4 will produce robust tools capable of being tested and used with tutors and students. Streams 2 & 3 will produce working prototypes that will demonstrate proof of concept and range of functionality but they may not be robust enough to be used with tutors and students. This project will not attempt to implement a case repository that is available to the HE and FE sector and it will not attempt to distribute software tools to other institutions (this work will form the basis of a future project).



Critical success factors are:

1. usability of tutor and learner tools
2. re-usability of case content
3. interoperability with different hardware and software infrastructures.

4. Project Outputs

Deliverables

Deliverable No.	Deliverable Title	Partner
1.1	Definition of Requirements for Extended Case Tool	MMU
1.2	Evaluation report and recommendations for Extension of Requirements	MMU
2.1	Scope Definition for Analysis Tutorials	UoY
2.2	Standalone Web-based Tutorials	MKM
3.1	Integration Recommendations Report	MKM
4.1	Integrated Case Tool utilizing XML sources, Web Services and Analysis Tutorials	MKM
5.1	Project Report	MMU

Knowledge and Experience
This project will attempt to use existing XML definitions in new and innovative ways. This will lead to new insights about how the XML standards can be used and extended. The project expects to share this with other JISC projects via online discussions and programme meetings. Direct experience will also be passed on to the keepers/owners of the standards, e.g. IMS, HR-XML consortium etc.

Core Project Documents
These will be made available via the project web site.

5. Project Outcomes

The first important outcome will be an improved case tool that will be freely available. This tool will not utilise the new architecture and will not therefore support full sharing and distribution of cases. It will come with at least 2 complete case studies and a set of organisational analysis tools. Together these will constitute a useful and timesaving resource for any tutor teaching about organisational analysis.

The second outcome will be a new architecture for storing, sharing, distributing and executing interactive case studies. Although this may require extra work in order to establish it as a robust and useable resource it will be proven by a set of prototype tools that can be inspected and downloaded.

The last outcome will be greater knowledge and experience within the wider community regarding the scope and potential for using XML definitions to store a simulation of a complex organisational structure.

6. Stakeholder Analysis

Stakeholder	Interest / stake	Importance
Tutors teaching organisational analysis	Use of software to support students	high
Other Tutors interested in E-Learning	Novel use of web to support learning and investigation	med
Managers of VLE and MLE	Novel use of web to support learning and investigation Potential to integrate new kind of resource into MLE	low
VC, Pro VC, Deans, Administrators	Potential to deliver course units more efficiently	high

Educational Technologists	New forms of learning interaction (learner:learner and learner:computer)	low
Learner	Greater control over when, where and how learning/investigations take place	med
Technologists/Standards Organisations	New knowledge about use of XML definitions	med
Publishers	New model for distributing learning material	high

7. Risk Analysis

Risk	Probability (1-5)	Severity (1-5)	Score (P x S)	Action to Prevent/Manage Risk
Staffing – important staff leave or go sick	1	1	1	Covering staff exist in MKM, limited standby cover is available at MMU and UoY.
Organisational	1	3	3	MMU strongly support this project as does the MD of MKM. The software is not strategic to the University and will therefore not require an institutional decision in order for it to be adopted.
Technical - Problems with architecture and integration with JISC framework	2	4	8	Take advice from other JISC projects. We have two technical consultants with wide infrastructure experience and knowledge of the JISC framework (Steve Jeyes, Mark Stubbs). Close project management.
Technical - Web services aren't ready to deliver the functionality that the project needs	4	2	8	Design the tools to utilise XML with stubs ready for upgrade to a web services approach as their definitions become available.
Technical - Run out of time and don't complete re-implementation using new architecture	2	2	4	Have parallel strands that involve extension of original software so that an improved working case tool will be produced independently of new architecture. Investigations will make clearer what final re-implementation needs to achieve Intermediate deliverables will provide useful input to future projects.
External suppliers	0	1	0	No external suppliers.
Legal	0	1	0	No perceived risks.

8. Standards

Standard to be adopted	Reason
XML/HTTP	International Standard
uPortal	MMU adopted portal
JAVA	Open standard, compatible with UPortal
IMS	Widely used standards for CP, SS, LIP and Q&T that have not

	yet been used to define interactive simulations
HRXML	Commercially used standard for defining organisations
LDAP/Shibboleth	The consortium has experience of LDAP but is keen to experiment with Shibboleth as its services become available

9. Technical Development

The project will use a rapid prototyping approach to development with regular reviews of progress within the team. Coding standards based on MKM quality documents will be adopted (see appendix B for example checklists). Code reviews will be conducted according to MKM QA procedures. Formal testing will be planned and documented. Change control will be strictly managed within the context of detailed work package plans. Version control will be managed using a manual log and central repository for code, administered by the project manager/assistant.

10. Intellectual Property Rights

There is no intellectual property owned by third parties that will be used in this project. The project will make use of software developed by MMU and MKM when developing the initial prototype. Both MMU and MKM are happy for this software to be made freely available to UK educational institutions in the same way that the main outputs of this project will be.

Project Resources

11. Project Partners

Partner	Role	Contact details
Manchester Metropolitan University	Project leadership, project management, architectural design, software design and review. Case specification, trialling and evaluation.	Robin Johnson 0161 247 3812 r.johnson@mmu.ac.uk
MyKnowledgeMap Ltd	Architectural design, software design, coding and review	Rob Arntsen 01904 659465 rob@myknowledgemap.com
York University	Tutorial content specification. Case specification, trialling and evaluation.	John Ramsden 01904 434645 mjr7@york.ac.uk

It is planned that the consortium agreement will be signed on Sept 8th at the kick-off meeting.

12. Project Management

The Project leader will act as project manager with assistance from a Research Assistant.
The project will use a Steering Group /Project Board to guide the project. The role and members of the Steering Group /Project Board are documented in the consortium agreement. The steering group will meet three times, September 04, January 05 and March 05.
Day to day project management will be based on a fortnightly reporting cycle, gathering data about time spent, progress made, estimates of time to complete current work package and issues encountered. The project manager will report to the Programme manager monthly or as required.
A detailed plan will be produced for each of the 5 work packages.
A risk log will be reviewed and updated monthly.
An issue log will be maintained.
All project management documentation and project output such as products and deliverables, will be collated and stored by MMU.
Any changes to the detailed plan, issues arising, or any other problem will be considered by the relevant partners and the project manager. Any significant changes will be reported to the Project Board chair who will decide if the project board needs to be involved in resolving the issue.

Project members and Roles

Name and Affiliation	Role	Contact details
Robin Johnson (MMU)	Project leader and project manager. Software Designer. Evaluation Design. Case Design.	0161 247 3812
Johnny Hall (MMU)	Project Management Assistant, Case collection and creation. Trialling. Evaluation.	0161 247 3812
Jon Martin (MKM)	Programmer	01904 659465
Robert Fraile (MKM)	Systems design, programmer	01904 659465
Rob Arntsen (MKM)	Systems design	01904 659465
Research Fellow (UoY)	Tutorial content specification, Case collection and creation. Trialling. Evaluation.	01904 434645

The total amount of time spent on Project management will be 6 man months

The project has no training needs although there will be several new technologies that project members will need to become familiar with. This will be achieved as required using books, web resources, discussion boards and peer support.

13. Programme Support

No specific requirements at present.

14. Budget (see appendix A)

Notes

1. The dissemination activities have been removed as recommended.
2. The cost of the placement student has been adjusted on the basis of better information.
3. The cost of the servers has reduced - based on preferential rates achieved by IS department.
4. The project understands that it is not normal to fund equipment such as servers. However the existing work on the case study tool has used servers owned and run by our IS department and dedicated to other tasks, e.g. we use the MMUBS Intranet server as a web server and the University inventory machine for our database. This is not ideal and is not tenable in the longer term. Additionally, this project, and any follow-on projects, will develop a centralised resource to support tutors across the UK education sector. For this reason we are requesting a development server, a production server for evaluation and a failover server to provide backup delivery of the evaluation software that students will be using. The failover server will act as a distribution server when the case software is made available to other institutions. In the event of the project not proceeding to full deployment of a case service then the servers would be returned to JISC.
5. The overall budget is very close to the £80,000 recommended.

Appendixes

Appendix A. Project Budget

Staff	Role	FTE	Salary	JISC Contribution Requested	Total
Staff					
Robin Johnson (MMU)	Project Manager	0.4167	£42,000	£17,500	
Johnny Hall (MMU)	Project Assistant	0.5833	£14,142	£8,250	
Jon Martin (MKM)	Developer	0.5833	£30,000	£17,500	
Robert Fraile (MKM)	Developer	0.5	£30,000	£15,000	
Rob Arntsen (MKM)	Designer	0.0416	£48,000	£2,000	
Research Fellow (UoY)	Research Assistant	0.4167	£30,000	£12,500	
					£72,750
Dissemination					
Other *(please specify)*					
3 Compaq Proliant ML350 servers (development, production, failover)[1]				£6,059	
MS SQL (2 copies)				£320	
MS SQL Client Access Licenses) (30)				£180	
Windows 2003 std server (3 copies)				£210	
					£6,769
Travel and Subsistence	No of trips	Cost of trip			
Manchester to York	14	£35		£490	
Programme Meetings	4	£70		£280	
					£770
Total					80,289

1 See section 14, note 4 for justification of servers in budget

Effort over course of Project

FTE by month

	MM	Total FTE per member	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Robin Johnson (MMU)	5	0.4167	0.083	0.042	0.042	0.083	0.042	0.042	0.083
Johnny Hall (MMU)	7	0.5833	0.083	0.083	0.083	0.083	0.083	0.083	0.083
Jon Martin (MKM)	7	0.5833	0.083	0.083	0.083	0.083	0.083	0.083	0.083
Robert Fraile (MKM)	6	0.5	0.083	0.083	0.083	0.042	0.042	0.083	0.083
Rob Arntsen (MKM)	0.5	0.0416	0.017	0.000	0.008	0.000	0.008	0.000	0.008
Research Fellow (UoY)	5	0.4167	0.083	0.083	0.083	0.042	0.042	0.083	0.000

Cost over course of project

Cost by month

	Salary	Total FTE per member	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Robin Johnson (MMU)	£42,000	0.4167	£3,500	£1,750	£1,750	£3,500	£1,750	£1,750	£3,500
Johnny Hall (MMU)	£14,142	0.5833	£1,179	£1,179	£1,179	£1,179	£1,179	£1,179	£1,179
Jon Martin (MKM)	£30,000	0.5833	£2,500	£2,500	£2,500	£2,500	£2,500	£2,500	£2,500
Robert Fraile (MKM)	£30,000	0.5	£2,500	£2,500	£2,500	£1,250	£1,250	£2,500	£2,500
Rob Arntsen (MKM)	£48,000	0.0416	£800	£0	£400	£0	£400	£0	£400
Research Fellow (UoY)	£30,000	0.4167	£2,500	£2,500	£2,500	£1,250	£1,250	£2,500	£0
Total			£12,979	£10,429	£10,829	£9,679	£8,329	£10,429	£10,079

JISC Project Management Framework
22 December 2003

Appendix B

Q&A CHECKLIST TEMPLATE (completed projects, modules or units)

Project Title: _____
Module, unit or section (if relevant): _____
Team leader: _____
Module, unit or section deadline date: _____
Project deadline date: _____
Current date: _____
*(**NB.** Ideally Q&A checks should commence at least 10 working days before project (or module) deadline)*

Checks to complete - Q&A	Initial check	Corrected	Final check	Corrected
Web pages - clarity				
Web pages - spelling				
Web pages - grammar				
Links (destinations and function)				
Functionality (technical)				
Uploaded pages (all complete and working)				
Documentation (clarity, spelling and grammar)				
Other:				
Other:				

Modifications lists attached	Yes (initial)	No	Yes (final)	No
List attached? (Technical, Spelling and Grammar)				

Approval	Signature	Date
Q&A		
Team leader		
Project manager		

Guidance notes:

1. The completed project (or project module) should be passed to Q&A at least 10 working days prior to any deadline.
2. At the same time the Team leader should pass this sheet to Q&A with completed title and deadline date.
3. Q&A will carry out the initial check and hand back the sheet along with a list of any modifications required within 3 working days.
4. The team leader (or team) should then modify the pages to correct any errors and notify Q&A within 5 working days.
(there will be some flexibility with these timings for smaller modules or sites).
5. Final checks will then be carried out on the project and any errors remaining corrected.
6. Graphics, Q&A, Team leader and Project Manager should then sign off the project as completed and approved.

Checklist – specifying your website

This checklist can be used by web managers to assist in planning a website and to ensure that the HTML presented on the site is as accessible as possible to the largest possible audience.

Project Planning		
Done	Description	
	What does the website need to do?	
	What is the timescale of the development process?	
	Will the website development be stepped in order to evaluate progress and make alterations?	
	If so, what change control processes will be used?	
	Who will be in control of this change control procedure?	
	How will the communication channels be controlled?	
	Plan and register URL and any supporting URL(s)	
	If private sector developers are employed what guarantees will be put in place to ensure that the price quoted will be the final price?	
	Arrange where your website will sit within your Department's electronic records management policy/system	
	Are all parties clear as to the requirements and expectations of the project?	
Audience Targeting		
Done	Description	
	What is the target audience of the website?	
	How will this target audience access the website?	
	Do certain sections of the target audience have special requirements (ie blind, deaf, motor disability)?	
	How will these special requirements be best met?	
	If planning a Content Management System – are you undertaking internal user testing?	
	Will the completed website be tested on as many browser applications (including disability browsers) and as many operating systems as is reasonably practical, throughout the entire design and population of the website?	
Standards		
Done	Description	
	How will you ensure that the website conforms to the requirements of the Guidelines? Specifically, will your website achieve at least the minimum level of accessibility	

	specified in the W3C's Web Accessibility Initiative?	
	Will you provide an ALT attribute for each individual image?	
	Will all the HTML files contained within the organisation's website conform and validate to the open standards of HTML and CSS?	
	Will all the pages incorporate the appropriate DTD?	
	Will all new documents include metadata?	
	Which standard file extension will be used throughout your website, either htm or html?	
Design Standards		
Done	Description	
	Does your organisation already have a corporate design style?	
	If so, how will this translate on to your website?	
	If this is to be ignored, why?	
	What are the websafe colours for use on the website?	
	What are the Red, Green, Blue, Pantone and hexadecimal values for these colours?	
	If your colours are not websafe how do you propose to make them so?	
	What typeface is required?	
	If the organisation's typeface is not a standard web font, what is the closest available?	
	Will your website's font and colour styles be formatted using an external Cascading Stylesheet file?	
	Are frames to be used in any part of the website?	
	If so, what will be put in place for users who cannot utilise frames?	
	Will your website avoid the use proprietary formatting techniques (ie browser specific)?	
	Will your organisation's website be organised through a set of templates?	
Images		
Done	Description	
	What images are to be used throughout the site?	
	Who will write and supply the 'ALT' attributes for every image?	
	Are you going to supply these images?	
	If so, does the organisation have copyright ownership of these images?	
	If not, how are they going to be found by the web design company, and how much will copyright free images cost?	
Content		
Done	Description	
	What are the basic content elements required within the website?	

	Has a navigational model been constructed?	
	How flexible is this navigational model?	
	Is this navigational model expandable and future proof?	
	Does the organisation have the appropriate Copyright cover for all of the intended content for the website?	
	Who will populate the website with the organisation's information?	
	What control mechanisms will be in place to ensure the information is correct and typos etc are removed?	
	Who will edit the content for grammar, style and consistency of message and style?	
Documentation		
Done	Description	
	Will the website design be fully documented?	
	Will the website construction be fully documented?	
	Once delivered, can your web manager alter, delete and add new information to the website simply and easily?	
	Will training be required for your organisation's staff to allow editing and maintaining of the website?	
	If you do not have ownership of the source code, do you have a full licence to use this code and what is the duration of the license and its geographical scope?	
	Who will register the domain name(s)?	
	Who will be responsible for the renewal of the domain name(s)?	
Scripting techniques		
Done	Description	
	Will any scripts be used on any of the pages of the website?	
	If so what is the essential reason for this technology being used?	
	Are these scripts essential to the running of the website or are they just being used for presentational reasons?	
	If they are to be used, will they work on all browser applications?	
	If they fail to work on specific browser applications, can the pages still be used without loss of content, functionality or usability?	
Specific references		
Done	Description	
	Will your website use cookies? Have you a planned cookie regime?	
	Is there a requirement for discussion groups?	
	Discussion groups -- how will these be moderated?	
	What content of the website will be presented in such a way that a plug-in will be	

	required? (ie flash, audio streaming, video streaming, video players etc)	
	If a plug-in is required will the same information be presented in standard HTML format?	
	Will all or part of the website be delivered through a dynamic application?	
	If so, will the complete pages be accessible to all browser applications and available URLs?	
	Is there a requirement for a mailing list server?	
	Advertising – are any commercial credits being used, including within the markup?	
	If you need to use a text only/EasyAccess version on your site, document why?	