PROJECT DOCUMENTATION

University of Bristol

Web Publishing Board

TERMS OF REFERENCE
FOR THE DEVELOPMENT OF
A CONTENT MANAGEMENT SYSTEM
AND ASSOCIATED TOOLS AND POLICIES

Date: July 2004

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Summary

This document provides the terms of reference for a Web publishing project whose primary aim is to provide a framework and common set of tools for use by all University staff and departments for the managed publishing of less-structured content to the Web.

An explanation of structured and unstructured data is provided at Appendix B.

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Approvals

This document requires approval from those listed below.
(Signed approval forms are filed in the Management section of the project files.)

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| Roles               | Name                      | Faculty                      | Signature                  |
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Web Publishing Project Board Responsibilities

To ensure the objectives of the project are achieved within agreed quality specifications, on time and within the approved budget, and that the project is managed in a manner consistent with the approved University of Bristol project management methodology (PRINCE 2).

Project Board Authority

The Project Board has been established with the approval of the University Planning and Resources Committee and has been mandated by the Vice-Chancellor to:

1. Identify and agree the scope of the project.
2. Agree priorities for the development of the Web publishing project.
3. Contribute to the development of an overall University Web strategy to reflect projected requirements over the next four years.
4. Develop a project plan.
5. Agree the likely costs and benefits of delivering the Web publishing project.
6. Agree an implementation plan that delivers the benefits within agreed costs.
7. Ensure delivery is achieved on time, within budget and in accordance with agreed plans.

The limits of the Board’s decision-making authority and accountability are:

- **Financial**
  Authority to approve expenditure within authorised project budget.

- **Functional**
  Ensuring that
  - any changes recommended and approved are consistent with the University of Bristol’s strategic plans and policies
  - the project meets the functional requirements of internal and external users
  - the project is developed within agreed timescales and approved budgets

- **Technical**
  Ensuring that technology-related changes are compliant with University strategy and policy.

Project Background

The University’s vision for the future states that by 2006 the University will be defined by the characteristics below (items in bold are areas which will be supported by this project):

- A clear vision in which academic ambition is the cornerstone of all planning.
- Research-intensive – combining individual scholarship with focus, critical mass and thematic areas of activity.
- A diverse, socially representative and able student population experiencing an education which is intellectually demanding and provides relevant skills for the 21st century.
• Internationally competitive.
• Collaborative – locally, nationally and internationally.
• A mutually supportive and equal working environment in which all staff feel their needs are recognised, valued and rewarded.
• No two tribes – support services are responsive to customer needs, academics value the importance and role of support services.
• Working with students to provide the best environment for their education and well being.
• Growth in postgraduate students.
• Increased financial independence.
• Decision making which is consultative, transparent, inclusive and well communicated.
• An organisational structure that collocates decision making, financial control, administration and accountability.
• Acknowledged contributor economically, socially and culturally to the city and region.

The University has agreed to the development and implementation of an Information Processes and Systems Strategy to support this vision. Also of relevance are the “Guiding Principles” of the Information Strategy.

The Web is arguably already the University’s prime means of external communication and its competitiveness nationally and internationally depends to a significant extent on the quality of its Web site(s) and their content.

The top-level areas of the University Web have already been the subject of a radical upgrade of structure, appearance, navigability, accessibility, usability and content. This phase was completed in April 2003 and ensures the University’s top-level site is of a high quality: it has a consistent, professional look and feel, it conforms to best practice and disability legislation, and greatly improves the availability of information and the ease with which it can be found. In addition, University of Bristol branded templates have been made available for departments to use on local sites and the rate of adoption has been very encouraging to date.

However, the resources, technical tools and procedures that are currently available are barely adequate to support the top-level site, let alone to underpin a University-wide Web environment that matches the institution’s strategic vision. While the continuing enhancement of the top-level areas of the Web should remain a priority, it is the content management and web publishing systems available across the University that will render the whole site competitive in the long term.

Whilst the University Web has an important externally-facing role, to date the Portal project has been exclusively inward-facing. The Portal might be unimaginatively described as “just another Intranet”. The University has a plethora of intranets; many of them, like the University Web, are also Zope-hosted.

The Portal, however, is crucially different – it offers a personalised information environment. Moreover, via single-sign on (SSO) technology, the portal also offers a “one shop stop” – users can pass seamlessly into other applications such as Blackboard and Oracle Calendar without having to login again. SSO has now been extended to Zope – so we now have an opportunity to join our principal source of structured information (the Portal) with a major source of unstructured data (the Zope-hosted Web) and to move towards a unified and personalised information for users.

To do this successfully, and to realise all the benefits, requires holistic thinking and joined-up management. It is for this reason that this project is being taken forward under the auspices of the Portal project board.

The “University Web” and “the Portal” are ultimately the same thing – just different views of the same body of information but geared for different users having different roles at different times. The example at Appendix G should make this concept clear.
Project Vision

University of Bristol staff should be able to publish content quickly, easily and without extensive training in an environment that ensures the reputation of the University is maintained and that Web content adheres as much as possible to the requirements of the Special Educational Needs and Disability Act (SENDA), the Disability Discrimination Act (DDA) and the Freedom of Information (FOI) Act.

The Web will be seen as the natural medium for publication of unstructured content (see Appendix B) and this will support key elements of the University vision as highlighted above. The project aspires to deliver a new environment in which:

a) Staff will have ready access to easy-to-use tools which facilitate the controlled creation, description, publication, review and disposal of largely unstructured content via the Web (text, Word documents, PDFs and the like; see Appendix B for further details).
b) These tools will make the update of content easier and more efficient. Content editors will need the ability to use a Word processor or Desktop package rather than the skills of a computer programmer.
c) Maintenance of content will be devolved to the true authors rather than just those who look after Web sites.
d) Improved management and reporting plus easier editing will help ensure out-of-date content is identified and acted upon far more quickly than at present.
e) Search mechanisms will allow site users to search all unstructured content in the site(s) using single words or phrases (phrase searching is not currently available on the University Web).
f) The tools, while initially applied to the existing top-level elements of the University Web (see Appendix C), will scale to allow adoption by all departments in the University.
g) Departments should have controlled access to the key files controlling interface (site “look and feel”). This will allow departments to make their public-facing sites distinctive but should ensure a University of Bristol theme and professional image is retained.
h) A Web publishing policy will exist and be used in all departments – this will set out the University’s expectations of the quality of content published and associated legal responsibilities.
i) Compliance with legal requirements (SENDA, DDA) on accessibility should be achieved at all times at least to W3C Double A standard.
j) The University’s unstructured content (see Appendix B) will be better classified through the consistent application of metadata. The metadata will be drawn from an agreed, University-wide taxonomy of terms.
k) The University should be able to make documents available easily to reduce the administrative burden of complying with FOI Act requests and to demonstrate transparency to the outside world.
l) The degree of content overlap and duplication with that at department level should be greatly reduced.
m) The site(s) will be underpinned by a robust server technology to ensure any technical solution is scalable and that downtime is negligible.
n) Through training and development, content authors will become more aware of the specific skills needed in writing for the Web.
o) The University’s Web will be an increasingly effective method of attracting and supporting undergraduate and postgraduate applications.

Project deliverables

Within a pilot project (see Scope section), we will need to deliver:

a) Analysis of detailed requirements and processes, including definition of the workflow and controls within a Content Management System (CMS)
b) A Content Management System – see Appendix A for features and capabilities
c) Server architecture to provide robust, scalable solutions
d) More flexible and extensive search mechanism for the University Web
e) Training programme and supporting documentation to ensure content providers can use the CMS and are aware of the issues in writing to an acceptable standard for Web publication
f) At least a first draft of a Web Publishing policy to define procedures, expectations and requirements in producing consistently high quality content
g) Procedures and processes (the “workflow”) to be followed in content preparation
h) Definition of any classification schemes needed for content metadata (see Project Risk log No 5 and Appendix B)
i) Publicity and information documents to make University staff and external contacts aware of developments
j) Ongoing support arrangements
k) Transfer of existing content plus documented methods and metrics for possible application to departmental data
l) Redefinition of files controlling user interface (Cascading Style Sheets – CSS)
m) Agreed interaction/interface with Portal project and other relevant projects

Scope

As outlined in the Project Vision, the eventual scope of this project should encompass all parts of the University Web. However, this eventual scope (or, at least, the speed with which aspects of the vision are delivered) is a key issue for the Project Board.

In order to make the project manageable, the implementation of a CMS will begin with the high-level areas of the University Web and, once proved, will be rolled-out to academic and/or Support Services departments. A definition of the initial area for implementation is made in Appendix C.

Appendix A provides a generic description of a CMS and also outlines what a University CMS will, and will not, do.

With the resources available, the project team will only be able to undertake a phased implementation across departments and divisions. It will be the responsibility of the Project Board to determine priorities for implementation. The suggested criteria for the selection of departments and divisions are:

a) Does the current departmental/divisional Web site meet the demands of accessibility legislation?
b) What is the profile of the current site? Could it adversely affect the University’s reputation for quality?
c) Will site redesign have a positive impact on student recruitment?
d) Does the department or division have the resources and commitment to implement the Web publishing model that will be devised?

For those sites identified as priority, a combination of technical support from Information Services (IS) and general advice from the Public Relations Office (PRO) will be available.

It is recommended that the Project Risk log is consulted for other issues relating to project scope.

Constraints

The technology for the CMS will be Zope plus the Plone content management framework tool (both are based on the Python programming language). The reasons are set out in more detail in Appendix E.

Interfaces

Section to be updated

To the University Planning and Resources Committee.
To the ISSC.
To the Registrar and his Divisional Heads.
To the IPS and ICT Programmes.
To other University of Bristol projects, including the Portal Project.
Outline Business Case

Tangible benefits

a) Cost savings and increased revenue – conservative estimate of £150,000 over five years (See Appendix D)
b) Allowing decentralised content creation whilst retaining control of review and publication
c) Being able to locate, date and ‘roll back’ to previously published content. This is particularly useful in legal challenges, perhaps under FOI legislation
d) More content being made available from a single, accessible source rather than being held on departmental Intranets or as email attachments.
e) Faster turnaround of material, thereby producing content that is more up-to-date and relevant.
f) Reports to help identify out-of-date content
g) Templates, guidelines and documentation to help ensure that faculty and departmental Web sites are consistently professional in appearance, containing high-quality content and managed in a timely manner
h) Being able to adopt emerging technologies more easily than with the current ‘static' Web publishing set up.
i) Improved technical platform in which to implement other projects, e.g. re-implementation of online prospectus, FOI public enquiry system.

Intangible benefits

While it is necessary to specify measurable inputs and outputs for this project, it is also important to be clear about the less easily quantifiable benefits. As mentioned under 'Project Background', the web is crucially important to the reputation of the University and to its competitive position in the UK and internationally. Any part of our web can have a positive or negative impact on current or potential students and staff, on businesses and partner organisations, on funding bodies, on the media and so forth. This includes the University-wide part of the web - i.e., the shared, cross-cutting information resource and set of services that are relevant to the institution as a whole. This and the parts of the web that are owned by departments and divisions must be accurate, up-to-date, accessible, well presented and consistent if the University's reputation for quality is to be safeguarded and its aspirations to be a global player are to seem credible. Our standards of 'customer care' will impact directly on the status of the University in the eyes of visitors to our site.

Additional intangible benefits include:

a) Increased user satisfaction, as more consistent and professional sites makes the user experience more effective.
b) Decreased likelihood of legal action as result of not complying with DDA or FOI legislation.
c) Staff having to focus less on technical knowledge and more on using the Web creatively to support the University's learning, discovery and enterprise mission.

Associated Documents and Products

1. Project Communications Plan (to be developed)
2. Project Plan (to be developed)
3. Project Risk Log.

Executive and Board Members

Chair          Prof. Angela McFarlane
Senior User(s)  Dr. John Alcock
                Dr. Frank Taylor
                John Sims Williams
                Dr. David Cahill/Dr Jane Williams
                Helen Norman
                Gill Clarke
                Dr Roger Middleton
                Tim Phillips
Customer(s), User(s) other Interested Parties

The customers for this project are the Deans, Heads of Academic Departments, the Registrar, Divisional Heads and departmental Web maintainers of the University of Bristol.

The users of the University Web include all members of staff, potential students, current students, alumni and external bodies that are interested in, associated with or have relationships with the University of Bristol.
Appendix A: Definition of a Content Management System

What is a content management system?
James Robertson¹ gives a good, succinct definition of a CMS:

“A content management system supports the creation, management, distribution, publishing, and discovery of corporate information. It covers the complete lifecycle of the pages on your site, from providing simple tools to create the content, through to publishing, and finally to archiving. It also provides the ability to manage the structure of the site, the appearance of the published pages, and the navigation provided to users.”

It is perhaps as useful to define a CMS by what it does rather than what it is. Paul Browning and Mike Lowndes² describe this as:

“A [CMS] is not really a product or a technology. It is a catch-all term that covers a wide set of processes that will underpin the ‘Next Generation’ large-scale Web site”.

As such, a CMS serves to impose consistency and robust Web publishing processes.

What a content management system is not
CMSs are highly flexible and extensible systems. Over time a University CMS could possibly be extended to enable it to manage other digital University assets as well as Web content. When systems have this scope, they are referred to as Enterprise Content Management Systems. However, for the most part, such systems are relatively immature and we are not proposing such a system in this document. Initially, the University CMS will not handle all the University’s document and digital asset management requirements. The CMS is designed to support publishing and managing of Web content, to ensure the University’s Web presence is professional, consistent, timely and dynamic. It will not be:

1. a Digital Asset Management system. It does not have sufficiently sophisticated or specialist functionality to act as an intelligent image, video or audio bank.
2. a Document or Records Management System (D/RMS). A D/RMS exists to manage an organisation’s documents and records robustly. D/RMS focuses on storing documents, often in their original format, and organisations often rely on a D/RMS to ensure they have automated management rules in place to comply with their internal business processes, audit, Data Protection and other legal obligations. A CMS is more concerned with publishing content and allowing that content to have some flexibility, than documents, and so it is not a suitable system to store records robustly.
3. an email management tool. It is not expected that a module to integrate or manage email within the CMS will be developed during the pilot. This should be noted as it may be relevant to handling FOI-related requests that come into the University via a site that is being driven by the CMS.
4. a Virtual or Managed Learning or Research Environment.

A short, useful summary of some of these and other systems, and their differences, can be read at http://www.steptwo.com.au/papers/cmb_definition/

Capabilities of a content management system
The CMS envisaged for the University of Bristol will provide:

• Password-controlled access to the administration screens (note that this will be single-login, CAS technology so a user who has, say, already logged into the Portal will not be re-prompted for their password).
• Ability for a non-technical “superuser(s)” to set-up new users to create and/or review and/or publish content (Web pages, documents, etc).
• Means to devolve authority for areas of the site to other users, e.g. an administrator, Jane, might be given “review and publish” privileges to all content within a particular section of the site. Jane would then have full freedom to publish what she likes in that section.
• Email notification that content changes have been made and are awaiting review/approval before they become visible (live) on the public site, e.g. if James edits Page ABC then Jane receives an email asking her to review and authorise publication of that page.

• In addition to email notification, a “pending tray” of required actions, i.e. when Jane logs in to the site she sees a list of content awaiting her approval.

• Recording of user name and data against content modifications, i.e. it will be possible to identify who makes an inappropriate amendment to the site!

• The ability to “roll back” changes, i.e. restore the previous version of a published content.

• A choice of tools by which users can edit Web content, either using an existing editing package with which they are comfortable (e.g. Dreamweaver, Hot Metal), or inbuilt WYSIWYG (What You See Is What You Get) editor that acts in the same way as most commonly-used word processing packages. The WYSIWYG editor produces valid XHTML and requires no technical knowledge.

• Means to review how a page will look on the public site prior to publication.

• Ability to set expiry dates on content, i.e. after 30th May 2006, Page ABC will no longer appear on the public site.

• Reports on how “fresh” content is, i.e. a list of content that has not been amended in, say, the last six months, year and so on.

• Ability to add “metadata” (data about data) to denote categorisation, ownership, dates, author, etc. The CMS’s workflow rules can be set to make completion of metadata mandatory or optional. Metadata meets standard Dublin Core schema or can be extended.

• The ability to check that links to other Web sites remain current.

• Content automatically indexed for in-built phrase searching.

• Statistical reports on site usage.

• Automatic creation of site index.

• Ability to amend the interface, i.e. the look and feel, of sub-sections of the site.

• Output to public site produces pages that meet W3C accessibility guidelines and load quickly across all browsers.

References

1 ‘So, what is a content management system?’ Robertson, James. 2003. Step Two Designs Pty ltd. http://www.steptwo.com.au/papers/kmc_what/pdf/KMC_What.pdf

2 ‘JISC TechWatch report: Content management systems’ Browning, Paul and Lowndes, M. 2001. Techwatch report TSW 01-02. JISC. http://www.jisc.ac.uk/index.cfm?name=techwatch_report_0102
Appendix B - What is unstructured data?

Unstructured data, or data traditionally stored outside a relational database, is information that exists in a format that is comparatively difficult to manage, re-purpose and/or search. Items such as emails, faxes, Word documents, presentations, Web pages and images are classic examples of this data-type.

Unstructured data can be further broken down into two different groups, active and fixed content. Active content will be items such as legal documents, policies, job descriptions, prospectuses and the like – the content of these may change frequently and be worked on collaboratively. Fixed content is found in items such as email or images when it is perhaps only metadata (see below for definition) about the content that changes. Active and fixed content usually have different demands when it comes to managing the life cycle of creation, review, publication and disposal.

The financial management and advisory company Merrill Lynch has estimated that 80-85% of an organisation’s data is unstructured. The Gartner Group research puts this figure as high as 93% for business-critical material and claims that the management and re-purposing of unstructured data now consumes up to 40% of an office worker’s time, or twice as much as it did just five years ago.

It is easy to view unstructured and structured data as two mutually exclusive groups but Joseph Martins warns of the dangers of this and argues that it is vital to see data-types forming a continuum where boundaries are almost impossible to define. For example, an Excel spreadsheet may prove to be more structured than a poorly designed Oracle database or a well-put together Word document can be converted to XML and therefore may prove to be more structured than, say, a particular instance of an Access database.

Fig 1: “The Structured-Unstructured Information Continuum” – Joseph Martins (http://www.cmswatch.com/News/Article/?289).

![Structured-Unstructured Information Continuum](http://www.cmswatch.com/News/Article/?289)
Building a structure - taxonomies and metadata

Despite the lack of a clear boundary of where structure begins and ends, a reasonable generalisation is that the more structure that exists the easier data is to manage, re-purpose and search.

Applying structure to unstructured content can be achieved through rewriting or re-implementing in a different format but this is often impractical in terms of time and cost. The other solution is to better describe and classify data by adding metadata (data that describes data).

Metadata can range from relatively simple attributes such as date created, title, creator, author and the like to more complex and subjective items such abstract, purpose, subject, business area and the like.

Real value is achieved if the subject metadata is taken from a controlled hierarchy of terms — a taxonomy (or, in complex environments, multiple taxonomies).

Taxonomies are difficult to create and maintain. They require in-depth understanding of an organisation's business and activities and the technical/library skills needed to organise and define data. A full taxonomy can often run to 8 to 10 levels deep and may contain hundreds or thousands of categories. Taxonomies also need to grow and evolve over time.

Some automated classification systems exist to create taxonomies but their accuracy and value is questionable.

At the present time, there is no taxonomy or taxonomies that describes the groups of related information within the University of Bristol or UK higher education as whole.
Appendix C – Definition of initial project scope

In order to make the project manageable, the first phase will be an implementation of a CMS within the area sometimes referred to as the “Corporate Web”. This is somewhat misleading phrase and difficult to define but it refers to the ‘overarching’ parts of the University Web – the homepage, corporate information (including that held on Support Services sites that is of institution-wide relevance), key online functions and common design elements. These are aspects of the University Web that are fundamental to the way the University presents itself and is perceived externally (and internally), to its reputation and to its relationships with potential students, staff, partners and collaborators.

The initial phase of the project will not address all aspects of the Corporate Web but those high-level areas largely (but not exclusively) under the control of the Public Relations Office and contained with the contents of the Zope info directory on the INFO server. A listing of this directory runs to 48 pages so has not been included here but is available on request. A listing of directory headings is included below.

Within this project the team will not seek to re-implement “corporate” publications and services such as the prospectus or the Contacts Directory. These will remain as they are now for the time being.

It is **very important** to stress that the first phase described above should be seen as a **pilot** implementation, allowing for issues to be identified and resolved before the system is made available across the University. It is not intended to be a central system that is applicable only to the “Corporate” web. From the outset of the project, consultation will take place with departmental representatives to ensure technology, policies and procedures are of generic value.

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**Zope.INFO directory headings**
alerts
alumni (Alumni and graduates)
business (Business and industry)
citybristol (City of Bristol)
commercial (Commercial services)
currentstudents
discovery
events
faculties (Faculties and departments)
help
index (a-z index)
international (International students)
jobs (Job opportunities)
learning
media (Media)
news (News and events)
prospective (Prospective students)
search (Search)
staff (Staff)
support services (Support Services)
university (The University)
Appendix D – Cost savings and increased revenue

| Figures in £k | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 |
|--------------|----------|----------|----------|----------|----------|
| Redirection of resources within ISYS | £90      | £93      | £95      | £98      | £101     |
| Hardware/consultancy | £5       | £5       | £5       | £5       | £5       |
| Staff time – preparing and searching content | £0       | £0       | £0       | £0       | £0       |
| Postgraduate income | £0       | £-50     | £-100    | £-100    | £-100    |
| Department/Faculty site redevelopment savings | £-10     | £-20     | £-30     | £-30     | £-30     |
| Staff training savings | £0       | £-2      | £-4      | £-4      | £-4      |
| Dept’/Fac’ IT staff employment savings | £0       | £-30     | £-45     | £-50     | £-50     |
| **Total saving/income generated over 5 years** | **£85**     | **£-4**     | **£-79**     | **£-81**     | **£-78**     |

**Total saving/income generated over 5 years = £156,000**

**Redirect of resources within ISYS** – No new money is being requested from the University in order to finance this project. ILRT is being financed from within existing resources. Project time will be needed from ISYS staff and the Web training team but this will not need additional financing. The cost line assumes an annual increase of approximately 3%.

**Hardware/consultancy** – existing hardware may be sufficient for the project but this line has been included for contingency or to cover possible consultancy in server and database configuration.

**Staff time - preparing and searching content** – it is expected that a CMS will produce a considerable time saving for those who currently maintain content and overall will result in content being produced in a more effective and efficient manner. However, if one errs on the side of caution, it is probably safer to assume a neutral impact on staff time across the University, as the devolution of content development and adoption of easy-to-use editing tools is likely to result in increased numbers producing content. It is expected that improved search facilities will result in time-savings but this is very difficult to quantify.

**Postgraduate income** –
- Interviews undertaken as part of the analysis for the Portal project plus a recent online survey (See extract in Appendix F) have highlighted the crucial importance of the Web in attracting postgraduate students, particularly those from overseas.
- The Postgraduate process review outlines the University’s strategic plan to increase Post-grad numbers by between 27% and 35% by 2007, i.e. yearly intake numbers to grow by between 700 and 1,300 post-grad students.
- The Postgraduate review estimated each postgraduate generates £5.6K per annum
- If a higher-quality web were to directly result in attracting just ten more students per annum and it is assumed a Postgraduate stays for two years then this would result in at least £50K in the first full year and £100K in each subsequent year.

**Department/Faculty site redevelopment savings** – the savings identified in this line are based on relatively modest assumptions of savings due to faculties and departments not (re)developing their own Web sites. ILRT metrics show that site developments can range from £5,000 simply for the graphic design work to over £20,000 for more complex applications. These sorts of development costs are confirmed by experiences in other faculties. There is an assumed saving of £10K in Year 1 as one or two departments defer or cancel spending plans in anticipation of being able to adopt the CMS tools.

**Staff training savings** – This line assumes some modest savings as departments will not spend on training staff in how to code in XHTML.

**Dept’/Fac’ IT staff employment savings** – This line assumes that by Year 4 the CMS results in two less IT staff being recruited than might otherwise have been the case. £30K per person may be more accurate rather than £25K, but the lower figure has been used to again err on the side of caution.
Appendix E – Development Options

In-house development using Zope/Plone
This solution has been proposed for the following reasons
   a) Zope and Plone are open-source software offerings and therefore have no cost of acquisition.
   b) Zope has become the de-facto standard for deployment of centrally-hosted University departmental sites and other applications.
   c) The ILRT has six staff with Python skills (the language that underpins Zope/Plone) and ISYS have three.
   d) We have a good working relationship (including code sharing) with a Bristol-based company called Netsight <http://www.netsight.co.uk/>. Netsight have developed CMS solutions for Warwickshire Police and the University of Leicester.
   e) ILRT have implemented Zope/Plone CMS solutions for LTSN-BEST and the Church of England
   f) We are confident that University-specific development requirements can be implemented.
   g) We are able to easily transfer content for departments who have adopted the University of Bristol Zope environment in the last 12 to 18 months.
   h) A UCISA poll showed that Zope is the most widely adopted open-source CMS tool in UK HE institutions.

Buying a commercial solution
The University could purchase a commercial CMS solution. Some commentators put the number of options as being over 400. The respected site CMS Review <http://www.cmsreview.com/> has a directory of 350 options and a detailed review of 75.

Perhaps the most immediately useful site is CMS Watch <http://www.cmswatch.com/ContentManagement/Products/>.

CMS Watch has a CMS “Top 40”, broken-down in to lower, medium, upper-price, and enterprise ranges. The medium to upper-price range might provide functionality comparable with that proposed elsewhere in this document and therefore prices might range from £30,000-£150,000 with perhaps at least 20% annual costs. The enterprise solutions are likely to be in the region of £200,000 plus annual costs.

These costs in themselves might be enough to discount the option on buying a commercial solution but added costs would include:
   a) Analysis, review and comparison of product options.
   b) Training, consultancy and hardware for installation.
   c) Consultancy charges for amendments and fit to University of Bristol requirements.
   d) Higher chance of “lock-in” to a particular solution.
   e) Increased difficulty in transferring existing University Zope sites.
   f) Longer project.

Implementing an alternative open-source product
There are alternatives to the Zope/Plone solutions proposed in this document. However, further examination of these has been discounted for the following reasons:
   a) Analysis, review and comparison of open-source options.
   b) ILRT and ISYS may not have such in-depth skills in the product and/or would need to transfer staff from other projects.
   c) Zope/Plone is the open-source market leader.
   d) Increased difficulty in transferring existing University Zope sites.
   e) Longer project.

Do nothing
If the implementation of a CMS and associated developments were not undertake then the benefits outlined in this document would not materialise and the University would incur higher long-term costs.
Appendix F - Survey of Postgraduate Students – 19th Jan 2004-30th Jan 2004

Number of respondents: 506  
Potential number of respondents: 2152  
Response rate: 23.5%

| 15. What were your sources of information when choosing the University of Bristol? (select all that apply) |   |
|---------------------------------------------------------------------------------------------------------|---|
| Postgraduate prospectus (in paper form):                                                              | 178 |
| Postgraduate prospectus (internet/web-based version):                                                   | 337 |
| The rest of the University website:                                                                    | 221 |
| Department/course brochure:                                                                            | 180 |
| Newspaper and magazine features:                                                                       | 22  |
| Parents’ or relatives’ advice:                                                                        | 38  |
| Advice from current postgraduates at the University                                                    | 75  |
| Advice from alumni of the University                                                                  | 23  |
| Advice from academic staff at the University                                                            | 117 |
| Other universities’ academic staff:                                                                    | 57  |
| League tables (e.g. the Times, Sunday Times, Financial Times and Guardian newspapers):                  | 96  |
| Official research quality ratings:                                                                     | 114 |
| Official teaching quality ratings:                                                                     | 77  |
| Information from commercial agents or representatives:                                                 | 14  |
| Information from the British Council                                                                   | 24  |
| Visits overseas from University of Bristol members                                                      | 9   |
| Advice to international students from sponsors                                                         | 4   |
| Experiences as an undergraduate here                                                                   | 73  |
| Don’t remember:                                                                                        | 2   |
| Other (please specify):                                                                                 | 41  |
| **Total Responses**                                                                                    | **1717** |
Appendix G – The link between the University Web and the Portal

The prospective international student types “garden history MA” into Google somewhere on the planet.

The fourth hit in the search list takes her to http://www.bris.ac.uk/prospectus/postgraduate/2004/prog_details/ARTF/360 the University of Bristol prospectus page.

She likes what she sees and clicks on the “Register My Interest” button. She is taken into a simple Web form that asks for her first name, last name and e-mail address. The form has a link to our Privacy Policy.

She submits the form: it is replaced by a page saying that her password to the University Portal has been sent to her e-mail address. At the same time her details have been entered into the Student Admissions System. An e-mail has also been set to the Executive Assistant in the Department of History of Art.

The prospective student later reads her e-mail. A welcoming message from the University of Bristol invites her to click on a URL and then login into the Portal using the password provided in the e-mail. She logs in using her e-mail address as her userid. Before she can do anything else she has to reset her password to something known only to her.

Having done this she is now able to monitor the progress of her application via the My Application channel. She is invited to provide a little more personal information (a process that is repeated on each visit).

In the Notify channel she sees a new message from the Executive Assistant in the Department of History of Art. This message is also sent to the prospective student’s e-mail address – but it won’t be deleted from the portal channel until her application is completed. In this way the Notify channel preserves a complete record of correspondence – later on in the application process other University staff will interact with her (and will have sight of the earlier correspondence).

And so the information life cycle unfolds via the portal – from initial interest, to offer, to acceptance, to registration, to fee payment, to induction until she is a fully fledged Master’s student. Our student interacts with many complex systems and different people but in a simplified and unified way via the portal.

During her stay at the University she also accesses the information and services she needs via the Portal. On graduation there is no escape – she keeps her portal account as an alumnus and the University sustains its relationship with her for many years via the Portal.

The portal has not replaced telephone calls and face-to-face personal interactions – but it has reduced them. It has saved time all round.