The Open University

OPEN CONTENT INITIATIVE

Application to The William and Flora Hewlett Foundation

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PUBLIC DESCRIPTION OF YOUR PROJECT

Please provide a brief statement that best describes your proposed work. This description will appear on our website and in our annual report. It can be no longer than 250 characters; words and spaces.

The Supported Open Content Initiative of The Open University (UK) makes freely available on the internet a selection of higher education learning resources, and provides on-line tools to manage learning and support the development of collaborative learning communities.

PROPOSAL SUMMARY

Give a brief summary of your proposed work using no more than 300 words. Please write this description in plain English (no jargon). Assume the people reading it are knowledgeable, but are not educators. Describe the purpose of the proposal, including its importance; the way you plan to achieve your aims; expected outcomes; and the way you will evaluate your success.

As part of a global community of open content providers learning from and supporting one another, The Open University is preparing to launch a major Open Content Initiative. The University is currently undertaking preparatory activities as part of Stage 1 with support from The William and Flora Hewlett Foundation. This application seeks further support for Stage 2, the pilot stage, during which the institution will undertake a range of open content development activities with a view to assessing the potential for a Stage 3, when open content provision will be fully embedded within The Open University systems and processes. It is anticipated that Stage 2 will start on 1 May 2006, with the live launch scheduled for October 2006, and will be completed by 30 April 2008.

The University has an extensive reservoir of high-quality learning materials available in a variety of formats. It proposes to explore how best to make some of these freely accessible in an international web-based open content environment and, in so doing, to advance open content delivery methods and technologies by:

1. Deploying leading-edge learning management tools for learner support;
2. Encouraging the creation of non-formal collaborative learning communities; and
3. Enhancing international research-based knowledge about modern pedagogies for higher education.

Drawing on its long experience of innovating and delivering supported learning to a mass market, both in the UK and increasingly abroad, the University expects to make a significant impact on both the quality and reach of open content delivery at an international level, as well as a major contribution to the electronic delivery of learning resources worldwide. One of the primary aims in doing so is to meet the learning needs of a wide range of people with differing levels of educational achievement, skills and confidence.

The deployment of learning media and technologies on a large scale is core to the University's work and has resulted in the development of high-quality content and learning support delivered through innovative open and distance learning modes. The current proposal to build on this experience in the open content environment is, therefore, an obvious extension of the University's educational mission.

PROPOSAL NARRATIVE QUESTIONS

A. Background

1. Mission of your organization (skip if university), and of program unit.

The University is driven by its Charter, mission and values. One of the objectives contained in the Charter is 'to promote the educational well-being of the community generally'. This commitment to educational outreach is reinforced in the University's mission statement, which binds the institution to promoting 'educational opportunity and social justice by providing high quality education to all who wish to realise their ambitions and potential'. These commitments establish unifying and guiding principles for the work of the University, underline its social responsibilities, and provide motivation to all who are employed by it. The application of these principles on a global scale, particularly in the context of the developing world, provides further inspiration for staff of The Open University and is a key driver of aspects of its current activity.

2. Why is your organization or program unit particularly well suited to carry out this project?

The Open University is at the cutting edge in the development of learning technologies:

1. It has the capacity to create virtual learning environments which are pedagogically sound, supportive of the learning process, and can be used to support less experienced learners; and
2. The University is currently consolidating its capabilities in relation to e-learning through major development of its virtual learning environment.

The University has pioneered methods for large-scale delivery of educational opportunities through supported open learning:

1. It delivers at scale by servicing a quarter of a million students and users of its course materials each year;
2. It has taught two million people and awarded 325,000 degrees since 1971; and
3. It has a prodigious international reach.

The excellence of The Open University's learning materials and their delivery is recognised nationally and internationally. This is evident in:

1. The award to the University of Middle States Accreditation in the USA;
2. The most recent assessment of the UK Quality Assurance Agency, which placed 17 of the 23 subjects reviewed at the University in the 'Excellent' category; and
3. The outstanding feedback from students received in the UK National Students Survey in 2005.[1]

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[1] http://www.hefce.ac.uk/learning/nss/.

The Open University curriculum is rich in the range and types of academic content which might be harvested for open content delivery:

1. Courses and programmes range from the access level to taught doctorates, including research-based doctoral degrees;
2. Courses and programmes have been developed across a wide spectrum of academic areas from the arts and humanities to mathematics, science and technology, including major interdisciplinary programmes; and
3. The curriculum is increasingly being developed to cater for those with professional and vocational learning needs.

The University has a wide range of curriculum products available in a variety of media from which to select for open content delivery:

1. Standard print texts can be made available in PDF and Word formats;
2. CD-ROM and DVD materials are available, along with course materials which have been developed specifically for on-line usage;
3. Television archive footage, photographs and images are another source of potential content; and
4. Standard course materials have been 're-versioned' for web usage.

The University has experience of developing and supporting non-formal learning opportunities designed to:

1. Facilitate support processes which encourage the creation of learning communities and stimulate an appetite for further study;
2. Encourage access to formal higher education; and
3. Work with partner organisations to target groups which do not traditionally have access to university study.

Through its course team processes, the University has a long history of bringing together subject specialists with experts in learning technologies. This enables:

1. Matters of subject content to be considered alongside learning technology issues;
2. A major focus on the quality of learning and the technologies deployed to support it; and
3. Creative critical interaction across different skills sets.

Since its inception in 1971, the University has given rigorous attention to monitoring and evaluating its practices and student reactions to its courses and programmes:

1. The Institute of Educational Technology at the University plays a major role in institutional research and evaluation. Its resources will be used to evaluate the effectiveness of the University's open content provision. Some of the most influential authors in distance education have come from this Institute[2]; and
2. The capacity to mount major research and evaluation, along with sound and extensive international links with others in the open and distance learning world, will enable the University to contribute to the advancement and dissemination of knowledge in the field of open content.

[2] These include Rowntree, Laurillard and Mason.

The University has long experience of working with partners in the delivery of educational opportunities:

1. This has been particularly significant in relation to widening access and providing learning for hard-to-reach groups; and
2. The University has extensive experience in working closely with, briefing and supporting intermediaries and others in partner organisations.

The Open University is well integrated with the key networks linking the global open and distance learning communities:

1. It is well placed to further develop its links with the global open content community, to learn from other institutions, and to share best practice with them;
2. There is a strong commitment within The Open University to the collaborative development of open and distance learning overall, and to open content in particular; and
3. This is paralleled in its approach to technical development, where open source software and a commitment to international standards is central to further development of its virtual learning environment.

Finally, the University is committed to developing, with others, open content solutions that are effective and sustainable for both users and providers. This is a development activity and a research opportunity for which the University is well suited and is of considerable significance as we stand on the threshold of a new era of global educational delivery. Appendix L sets out in more detail the University's commitment to open content and the rationale behind the University Council's decision to undertake a major open content project.

3. List recent, relevant, major accomplishments, including those under a Hewlett Foundation grant, where applicable.

Student Feedback

The Open University recently received outstanding recognition as a result of the National Student Survey conducted in the UK in 2005. On the basis of a thorough poll of more than 170,000 final year students throughout the country, **the University was awarded the best rating of all universities in the UK**, and was named as the institution with the highest overall student satisfaction rate, scoring 4.5 out of a possible 5. The results also put the University at the top of a new rankings table created by the Times Higher Education Supplement (THES). A second THES table, focusing on specific subjects, lists ten subject areas – more than any other institution – in which Open University students are more satisfied than those at any other university, irrespective of the mode of learning.

Excellence in Teaching

Following a UK Government initiative to promote good practice and research in teaching and learning in higher education, **the University has been awarded funding for four Centres for Excellence in Teaching and Learning (CETLs)**, with only one other University being granted so many centres (Appendix D). The University has Centres for Excellence in:

1. Open Learning in Mathematics, Science, Computing and Technology;
2. Personalised Integrated Learning Support;
3. Practice-Based Professional Learning; and
4. Innovative Physics Teaching.

Middle States Accreditation

The Open University has recently been granted accredited status by the Middle States Commission on Higher Education (MSCHE) based in Philadelphia, USA. The Commission, which was established in 1919, sets high standards as a leader in promoting and ensuring quality assurance and has been active in developing processes to accredit distance learning provision. The University's accredited status means that it is now **recognised in the USA as an academic institution which meets the MSCHE 'gold standard' of academic respectability**. This recognition opens up new vistas for the University in the United States and globally.

Technical Developments

The University has over 200,000 registered students who have access to its on-line content. It has established a sophisticated asynchronous conferencing system and has undertaken considerable research on the pedagogic uses of this system. A synchronous audio tool has been built which works over simple modems and on a many-to-many principle. File sharing and concept mapping tools have also been developed and standard web services for use by the University's course teams, such as instant messaging, blogging and wickis, are being deployed. The University has also developed a forms-based, content managed system for producing websites for any course. **Three hundred University courses currently use this system for specifying web content and student on-line interaction**.

Many forms of interactive software are produced for deployment on CD and DVD ROM. Just one recent example is a virtual field-trip system for a second level environment course which won the adult interactive learning category at the Society for Screen-Based Learning on Screen awards in 2003.

As well as the innovative technologies detailed above, the University also makes a considerable contribution to international educational standards bodies such as OKI and IMS. The current head of the strategic technology department of The Open University is the Chair of the Board of Directors of the European IMS Network. The University is actively involved with the UK Joint Information Systems Committee's (JISC) E-Learning Framework, which seeks to develop a set of open source tools that can be assembled within an open architecture. Two projects in the area of Learning Design have been completed successfully as part of this initiative.

Knowledge Media Institute

The University's Knowledge Media Institute (KMi) is a 60-person research laboratory devoted to both basic research and applied development at the convergence of the internet, learning, collaboration, and knowledge management. KMi develops 'next generation' tools for the University, focusing on better ways to work with ideas and improved means of collaborating over the internet. **The laboratory hosts internationally leading researchers in the Semantic Web, Argument Mapping, Internet Peer Review, Digital Presence, and Web Collaboration Media**. Since its launch in 1995, KMi has established itself as a paradigmatic example of a creative, forward-looking laboratory, which is now being replicated in other institutions.

Institute of Educational Technology

The Institute of Educational Technology (IET) at The Open University **provides advice on the use of information, communication and other modern technologies to support effective learning in higher education, particularly in distance learning and e-learning**. The IET works collaboratively with leading scholars in the UK and internationally, and promotes continued professional educational development among higher education practitioners. It seeks knowledge and understanding, both inside and outside the University, which it shares with course teams, designers and policy-makers so that they are in a position to act on the basis of solid research evidence. Over 100 people work in the Institute based in one of three centres: the *Centre for Educational Development (CED)*, the *Centre for Institutional Research (CIR)*, and the *Centre for the Study of Educational Technologies (CSET)*.

BBC Partnership

The Open University has a long-standing and very public partnership with the British Broadcasting Corporation (BBC). The partnership has been in place since the University was established as "the university of the air" and now leads the adoption of new broadcast and online technologies. As a mark of our mutual commitment to the advancement of public access to education through public media, the partnership agreement begins with the following statement:

> *"In support of UKJ national policy and priorities for widening participation in higher education, The Open University and the BBC acknowledge a shared agenda in the stimulation of such participation in the regions and countries of the UK and also overseas as appropriate and in the development of delivery technologies and appropriate educational content which can overcome the disadvantages of time, cost, geographical isolation and educational access."*

1. **Broadcasting:** The collaboration between the University and the BBC results in numerous broadcast programmes per year commissioned and funded directly by the University, such as the popular science series *Hollywood Science* and *Rough Science*. The University also co-produces some programmes, including landmark series such as *Child of our Time,* a study of childhood presented by Sir Robert Winston that gained a 27% share of the viewing audience; and *Coast,* another hugely popular series following the history, archaeology and development of the coastline of the UK;
2. **Educational outreach and broadcast support:** Broadcast programmes are supported through the University's own public website, Open2.net (http://www.open2.net/). The site is openly accessible and is referenced prominently in the broadcasts. Viewers who are directed to the site are invited to become involved in educational activities in support of the programmes. Recently, for example, viewers have charted wildlife activity in their own area, assessed their own preferred learning styles, and interacted with a virtual holiday planner to assess the environmental impact of their trip. Others followed coastal walking trails, complete with identification charts for geographical features, wildlife, and industrial archaeology; and
3. **The Creative Archive:** In a major open content project, the University has partnered the BBC, Channel 4 and the British Film Institute in launching the Creative Archive (http://creativearchive.bbc.co.uk/). The Creative Archive open content licence releases moving image and recorded sound programming held in the archives of the four organisations. Content is available freely within the UK for download, remix and incorporation.

The four founding members of the project are seeking to expand the available content. Other bodies are already beginning to join the partnership and are spreading the release of open content within their own archives.

Other Partnerships

Through the development of its Supported Open Learning Model, the University has created high-quality distance education materials, methods and tools which have been successfully adopted by other distance education establishments around the world. The institution has provided support for, and has been involved in, the conception and launch of comparable institutions and projects in Africa, South America, Singapore, and the US. Recent partnerships include:

1. **The Arab Open University (Arab OU):** This is a project to improve skills in the workplace, with teachers being identified as one of the primary target groups. There are currently six branches of the Arab OU in Kuwait, Lebanon, Egypt, Bahrain, Jordan and Saudi Arabia, with plans ultimately to include a total of 22 Arab countries. Over 10,000 students enrolled in the Arab OU in February 2005;
2. **Central China Radio and TV University (CCRTVU):** Material for the teaching of English to Chinese university students was developed for the CCRTVU by The Open University's Faculty of Education and Language Studies in conjunction with International House Ltd. An estimated 250,000 copies are to be produced; and
3. **The National Institute of Information Technology (NIIT) (Delhi):** The University has just agreed to launch a worldwide partnership with this international IT training organisation. It envisages delivering Open University curriculum to 10,000 students by 2011.

Africa

The University is presently using open content approaches to contribute to educational development activities in Africa, reflecting a major institutional commitment to providing support to low income developing countries. The Teacher Education in Sub-Saharan Africa (TESSA) project is already making a significant contribution to primary level education. It aims to develop a school-based training programme for unqualified and under-qualified teachers working in primary schools. The project will draw on the best of national and international experience to produce resources and support structures in the key curricula areas of literacy, numeracy and life skills. Another major initiative, the Open Door project, is being launched Autumn 2005 and is to receive substantial financial support from the UK Department for Education and Science. **The project will make Open University course texts *freely available* to a number of institutions in low income African countries**, with the objective of building capacity and enhancing curricula in several African higher education institutions. In both the TESSA and Open Door projects, all materials are being made available without charge to African users.

B. Problem

1. What issue or problem are you planning to address?

Despite the efforts of governments and other agencies, there remain significant differentials in access to educational opportunities across the world. These disparities are stark in countries such as the UK and the USA, and are even more pronounced between developed and less developed countries. Within the UK, research shows that significant barriers to access still exist for certain social and economic groups. Open content provides the opportunity for access to high-quality learning materials which would not otherwise be available and affordable to many groups within both the developed and developing worlds. At the 2005 MERLOT Annual Conference, Sir John Daniel noted that 'The most promising innovation in e-learning is the concept – and the developing reality – of open educational resources (OERs)' http://www.col.org/speeches/JD_0507Merlot.htm). The critical issue facing open content providers is how open content delivery can maximise learning, encourage lifelong learning, and engage with hard-to-reach groups.

The Open University recognises the importance of both identifying ways to maximise the contribution of open content delivery to learning, and determining how much support may be needed by users with limited educational skills and confidence. There is a need to take open content beyond its principal focus on rights management issues and constitute it firmly as a learning technologies initiative. Increasingly, there is recognition that content alone will not be sufficient to empower learners: **the key issue is not so much access to content itself – which in an information rich world is increasingly easy – but rather *how to use content in empowering ways***.

Non-formal learning opportunities have been steadily eroded within the UK by changes in resourcing and support structures. In addition, they have not been as widely recognised as they should have been. **Electronic provision permits exploration of new ways of delivering *non-formal* learning opportunities, which can stimulate an appetite for further learning and have the potential to serve as the basis for creating educationally effective learning communities**.

At the same time, there is a need to develop the knowledge base in relation to open content delivery and its place within the wider e-learning environment. It is important to understand how open content delivery can achieve the maximum educational benefit and effectively reach users on a scale that will make a significant impact on, and increase, educational opportunities. It will, in particular, be necessary to **develop the knowledge base in relation to *use* of open content delivery as means of both reaching otherwise *hard-to-reach groups* and tackling *educational disadvantage***. Very important also is the need to understand better the **level of support** which these groups may require to develop their educational skills and confidence.

Issues of sustainability and scale in respect of open content delivery, as well as intellectual property, also require investigation in a world in which technology, the internet and globalisation are fast introducing structural forces which are likely to demand reconsideration of the current intellectual property regime. **Re-thinking intellectual property in the light of open content aspirations and objectives will require attention to issues of quality and how it can be both managed and monitored in an open content learning environment. Understanding better how *quality* can be assured will be key feature of future sustainability.**

2. What evidence do you have that the problem is important? For some proposals, this might include a short literature review. (If this is a research project, this also would be the place to propose your hypothesis, along with alternative hypotheses.)

The fundamental charter of higher educational institutions is to generate and disseminate knowledge as effectively, and with the highest level of quality, as possible. The internet opens up intriguing new dimensions to this challenge, not only by increasing the potential audience for published materials but, more profoundly, by improving the rate at which materials evolve by providing a collaborative arena for exchanging ideas whilst still honouring intellectual property rights. The Open University therefore regards the open content movement as a key opportunity to fulfil better its mission to broaden access to education.

The internet differs from nearly all previous educational technologies in that it is both an excellent content delivery mechanism and also a communication medium. While much attention was initially given to the potential of e-learning as a **delivery mechanism** – recent efforts to develop repositories of shareable learning objects, such as MERLOT, are apposite examples – there is also a movement which stresses the importance of **dialogue, collaboration and community building**. These two approaches are not mutually exclusive. Through the combination of both approaches, **open content has the potential to move beyond the provision of content to the creation of a structured and supported learning environment**.

The Massachusetts Institute of Technology (MIT) OpenCourseWare initiative has been very successful in generating a great deal of interest in the area of open content. Yet its own evaluation suggests that most learners who use it already have a high educational level. This indicates that the initiative is not reaching those who might, arguably, benefit most from it. Recent expansion of the open courseware model to Japan and Spanish language universities clearly demonstrates the global appeal of the concept, but this model will increasingly need to be made accessible to a broader populace. **The Open University has always had a widening participation agenda, reaching audiences that have been disenfranchised or excluded from conventional education**.

One of the early lessons the University learned was that, while content is important, it represents only half of a meaningful distance education experience. The other half can be grouped together under the label 'support' and it is these two elements that form the basis of the University's Supported Open Learning Model. This model was developed for traditional distance education practices with printed units, face-to-face tuition, and summer schools. Over the past decade, however, the University has successfully adapted the model for internet delivery.

3. How does your objective relate to the Foundation's grant-making priorities?

The University's Open Content Initiative is consistent with The William and Flora Hewlett Foundation's own commitment to open content provision in several respects:

1. The Foundation wishes to see **high-quality materials freely available on the internet**. The Open University has a huge reservoir of excellent materials which, if suitably selected and presented, could make a major contribution to the range and quality of global open content provision; and

2. The Foundation also wishes to see the **development of new models for the organisation and delivery of content**. The University is strongly committed to providing content in a **supported** electronic environment which will empower users in their interaction with that content. The University will draw on leading edge technologies and learning environment design to deliver this.

4. How does your work advance the knowledge base beyond its current state?

Perhaps the two most significant factors that The Open University brings to the OER field are **scale and experience**. The University possesses a massive quantity of high-quality learning material that can be repackaged in varying ways for online dissemination. It also has a highly regarded record of developing robust systems (both technological and pedagogical) that provide meaningful learning experiences to large student populations. In terms of experience, the University has long been involved in pioneering distance education materials designed to be studied by independent learners who often have competing demands on their time, as well as a range of needs and backgrounds. The institution also has experience in creating, deploying and supporting the types of tools necessary and appropriate for distance learners. In this respect in particular, the University differs from many of the other existing open content providers whose material has been created on the assumption of face-to-face use. The University's Open Content Initiative will, therefore, **improve understanding of the impact on users of materials developed *specifically* for distance learning**.

Second, The Open University's proposal seeks to **advance the current state of knowledge** by including some material which is 'internet-native'. Some existing open content initiatives already do this, most notably that of Carnegie-Mellon. By designing material which is intended to be delivered via the internet, the full potential of the medium can be exploited, including self-diagnosis, collaboration, resource-based teaching, personalised delivery of content, and so forth. This work will further advance the knowledge base relating to higher education pedagogies in general and to e-learning and effective delivery within an open content environment in particular.

The third strand of the initiative will be the **creation and deployment of suitable learning *tools***. By placing equal emphasis on the environment, tools, support, and the content itself, the University's proposal recognises that learning does not take place in a social vacuum. On a traditional campus, the standard lecture may be analogous to the delivery of content, but students on a campus also engage in learning through tutorials and study sessions, as well as through non-formal dialogue in bars, libraries, corridors, and many other similar contexts. E-learning needs to replicate these different modes of communication and learning experience if it is not to be seen as a poor relation to conventional education. The Open University's initiative will help to develop understanding about how such learning communities can be created and supported through open content provision.

Specifically, we will be focusing on the 'support' aspects of the Supported Open Content environment: **what does it mean to provide support for the different kinds of end-user we expect to attract in an open content scenario?** A selection of existing learning-support tools from the University's virtual learning environment and the Knowledge Media Institute will be offered in an integrated web-user interface. In addition, we will investigate and evaluate new social networking and 'sense-making' tools whose value is already recognised in other

fields and which we need to assess better in the context of open content[3]. During the current preparatory stage now funded by The William and Flora Hewlett Foundation, detailed consideration is being given to what tools can most effectively be deployed, and how those tools should interconnect with those already used in the University's mainstream virtual learning environment.

5. Is there similar work to yours being carried out in other places?

There are a number of important initiatives from which The Open University will learn and build upon:

1. Although it is intended that the University will offer a different approach from that provided by MIT, the main open content provider in higher education is MIT's OpenCourseWare (http://ocw.mit.edu/index.html);
2. Utah State University has an open courseware initiative, with some content and notes available for eight courses (http://ocw.usu.edu/Index/ECIndex_view);
3. Johns Hopkins School of Public Health has eleven open content courses available with lecture notes, readings and a syllabus for each (http://ocw.jhsph.edu/);
4. Tufts University currently has six open content courses, each with extensive notes, readings and additional material (http://ocw.jhsph.edu/);
5. The Foothill-De Anza Community College has launched the Sofia project to release courses in open content form. The College currently offers eight such courses but, unlike many other offerings, these are designed specifically for internet delivery rather than simply replicating lecture notes from existing courses (http://sofia.fhda.edu/index.htm);
6. Carnegie-Mellon has launched an open learning initiative. These courses are designed for internet delivery and feature collaboration, online assessment and interactive elements (http://www.cmu.edu/oli/index.html);
7. Six universities in Japan have recently formed the Japan OCW Alliance, in collaboration with MIT (http://www.jocw.jp/); and
8. Rice University Connexions provides facilities for anyone to access the educational materials held in its 'Content Commons' and to modify the materials and collaborate with others. The Content Commons contains a large amount of material from a number of sources, including Cambridge University, which are published under a Creative Commons licence. This project seeks to generate communities around the content and also to develop tools (www.cnx.rice.edu).

In addition, while they are not labelled open courseware, there are a number of learning object repositories which collect together re-usable chunks of material. These include:

1. The Learning Matrix: This repository has peer-reviewed digital resources in the fields of mathematics, science, and technology which aim to promote inquiry and problem-based learning in college classes (http://thelearningmatrix.enc.org/);
2. SMETE: This promotes itself as a digital library of resources for students and teachers in the areas of science, mathematics, engineering and technology, as well as the promotion of community between educators in these fields (http://www.smete.org/smete/);

[3] See slides and podcast of the recent presentation *From Open Content Repositories to Open Sensemaking Communities*, Utah State University 2005 Conference on Open Education: http://cosl.usu.edu/cosl/conference/2005/.

3. Illumina: This site has a collection of resources, again in the sciences, mathematics, technology, and engineering, with a focus on undergraduate teaching (http://www.ilumina-dlib.org/index.asp);
4. HEAL: This is a collection of multimedia resources for health colleges (http://www.healcentral.org/index.jsp);
5. MERLOT: This is a collection of links to resources for students and educators in higher education covering all subject areas (http://www.merlot.org/Home.po); and
6. JORUM: Funded by the JISC in the UK, this is a free online repository service for teaching and support staff in further and higher education institutions in the UK (http://www.jorum.ac.uk/).

C. Outcomes

1. *What are the outcomes you wish to accomplish with this project? How will you know if you have achieved the outcomes? Depending on the time frame, there may be intermediate outcomes (short-range) and ultimate outcomes (long-range). Outcomes are presumed effects from the project intervention on the target population. Describe the way you would measure the outcomes. (e.g. In a demonstration of a reading program, an intermediate outcome might be increasing the percentage of children in a classroom reading proficiently by 20% in the first year – a longer-term outcome by the third year might be a 60% increase. The measure would be an appropriate assessment.)*

Central to The Open University's proposal is the distinction set out in Appendix E between:

1. **The Repository** – a supported open learning site for **learners**; and
2. **The Depository** – a supported open 'sense making' site for **creators**.

The Repository will showcase and offer access to pedagogically structured open content from The Open University. It will provide optional pathways for use by learners either individually or in (self) organised groups. The Depository will contain **both** the material from the Repository **and** less well-structured open content in the expectation that it will be adjusted, augmented and customised by users in the community such as educators, tutors, learners and others. The Repository is akin to the 'cathedral' of well-crafted and carefully developed software identified in the Open Source World by Eric Raymond, whereas the Depository can be likened to the 'bazaar' of release open and early software described by Raymond.

Whilst the University wishes to explore and understand both of these domains, the Depository will be more experimental and will permit scope for direct introduction of research-based tools. The aim is to feed through altered material and material developed by other providers from the Depository to the Repository, with decisions on this transfer resting with a review team drawn from The Open University and partner institutions.

In order to populate these sites, the University will draw on its extensive curriculum content as described in Appendix F. In the case of the Depository, the content will be added to by other providers and will be critical to the University's engagement with the open content principles of sharing and re-use. Subject to appropriate quality assurance processes, content from other providers could also be located within the Repository, again in line with open content principles.

With this background in mind, it is anticipated that the following outcomes will have been achieved by the end of **Stage 2:**

1. Enhanced learning experiences for users of open content delivery:
    a. Potential learning pathways for users which will enable them to choose options and develop coherent learning plans created through careful selection of curriculum content and its presentation within the learning Repository (Appendix E);
    b. An open virtual learning environment which will enable users to manage their learning, develop their learning skills and confidence, and form supported non-formal learning communities if they wish; and

   c. Creation of 900 learning hours within the Repository for the initial launch, rising to 5,400 learning hours by the end of the second year of Stage 2 (Appendix I).

2. Greater involvement in higher education by under-represented groups and empowerment of the various support networks that work with them:

   a. Freely available materials without commitment by users;
   b. Opportunities to test their capacity for learning among learners;
   c. Opportunities for those with limited experience and confidence to become better prepared for formal education; and
   d. Provision of the content and tools necessary to offer targeted support to those working with under-represented groups.

3. Enhanced knowledge and understanding of open content delivery, how it can be effective, and the contribution it can make to the further development of e-learning:

   a. A body of knowledge about models of pedagogic effectiveness for open content delivery, particularly in relation to the use of materials prepared for distance learning;
   b. An understanding of the models available for delivering effective support for collaborative user groups within the learning environment;
   c. An understanding of how open content partners can collaborate around the development and re-use of material, with 8,100 learning hours being provided within the Depository (Appendix I);
   d. Knowledge about how the open content providers and their partners can collaborate around support for those users with limited educational confidence and skill;
   e. Publication of papers and reports which will be available to the open content provider community; and
   f. Creation of a specific research and evaluation focus on open content within the University with a wider commitment to enhancing international knowledge about what works in higher education[4] and, specifically, about the effective use of modern technologies for sound pedagogic purposes.

4. Enhanced understanding of sustainable and scaleable models of open content delivery:

   a. A better understanding of how distance education providers like The Open University can establish open content provision on a sustainable basis, accompanied by dissemination of this knowledge;
   b. Understanding about the inter-relationships between open content provision and the core business of universities; and
   c. Models of sustainability to underpin Stage 3 of the Open Content Initiative.

[4] Pascarella, E.T. and Terenzini, P.T. (2005). *How college affects students (Vol 2): A third decade of research.* San Francisco: Jossey-Bass.

Subject to the outcomes of Stage 2 and the creation of a sustainable basis for on-going open content provision, in broad terms the **outcomes of Stage 3** will be:

1. Ongoing contribution to the development of supported open content and its underpinning knowledge base;
2. Increasing success in extending participation in higher education and enhancing educational opportunity;
3. Ongoing contribution to the development of e-learning and the evolution of open and distance learning online educational provision; and
4. Ongoing contribution to the development of models of open content delivery that can be embedded within systems and processes on a sustainable basis.

2. Describe the key obstacles to accomplishing your intended outcomes.

A major challenge will be the development of effective ways of engaging with hard-to-reach users, particularly those with low educational qualifications. This will require innovative approaches to:

1. Overcoming the barriers which limit confidence in the use of digital technologies; and
2. Empowering other providers through content and tools to enable them to tackle the problem of physical access to ICT experienced by some groups in the UK and elsewhere, especially in developing countries.

A further obstacle is cultural diversity and the difficulty this presents to the use elsewhere in the world of some materials generated in the UK. There are also particular difficulties relating to cultural specificity.

3. Describe how you believe the work of your project will generalize beyond its current setting (e.g. In the reading study, to what extent are your results useful for populations outside your study sample?).

The University's experience of open content and what can be learned from it will have wider implications for e-learning provision and its place within distance learning in general. It will also be likely to shape the future evolution of open and distance learning, in particular on-line educational provision. As a result of the University's work and its collaboration with others, there will be available for wider use within the global on-line provider community shared knowledge and understanding of:

1. Models for the delivery of effective pedagogy through open content provision;
2. Models for the effective support of users and user communities; and
3. Models for sustainable long-term open content delivery.

In addition, the supported open content environment for learners will, at one and the same time, serve as a supported 'sense making' space for creators which is likely to have wider application to communities of knowledge workers beyond open content. Indeed, some of the learning support tools of The Open University are already released for free download and with source code, and the University will be incorporating other open source tools which will, in turn, be released back into the community for further open source development.

D. Activities/Outputs

1. *What are the activities/outputs that you will use to achieve your intended outcomes? (In the context of the reading example, obtaining the permission of the schools and putting a new professional development program in place would be activities, while an output might be an increase of 25% of teachers demonstrating competence teaching the new curriculum.)*

The University's aim in Stage 2 is to conduct a two-year programme of open content provision. Stage 2 will begin on 1 May 2006, with a live launch date of 1 October 2006. Completion will take place by 30 April 2008. During this two-year period, the amount of content to be made available will steadily increase in the Repository and the Depository from a total of 900 learning hours to 13,500 learning combined (Appendix I).

A number of **principles** will inform the choice of content:

1. Content will be sufficiently structured to enable users to find pathways through it if they so wish. It is recognised that there will be a degree of dipping in and out, but coherent pathways will be provided for those needing them;
2. Content will be selected at all academic levels, ranging from access level through to postgraduate level. This will enable users to choose from a number of levels in accordance with their skills and confidence, and will also provide progression routes for those seeking steadily to develop their experience;
3. The curriculum will be broad insofar as it should incorporate the widest possible choice, thereby encouraging the highest level of usage. Curriculum content will be chosen so as to achieve as wide a cross-cultural appeal as possible (Appendix F); and
4. The size of learning modules will be kept relatively small and will not exceed 10-15 hours of study, with each module having its own learning outcomes and a form of feedback or follow-up activity.

The following **activities** will be carried out:

1. Selecting curriculum content from materials developed specifically for distance learning;
2. Designing and integrating learning management and community-building tools (Appendix K);
3. Identifying open source VLE software and creating an open content learning platform;
4. Developing internal and external communications strategies;
5. Identifying relevant target audiences and assessing their learning support needs;
6. Liaising closely with the University's Centre for Widening Participation[5];
7. Undertaking research and evaluation activities with the Institute of Educational Technology;
8. Monitoring the impact of open content quality assurance processes;
9. Monitoring the impact of open content on the University's core business;
10. Resolving third party copyright issues;
11. Clarifying licensing arrangements (Appendix J); and
12. Investigating new business models and assessing the position of course materials within the existing model.

[5] The Centre for Widening Participation at The Open University is dedicated to broadening access to education among marginalised groups which, for social and economic reasons, generally have a low level of participation in university studies.

The activities listed above will result in the following **outputs**:

1. An open content curriculum with integrated learning management and community building tools;
2. A robust and scaleable open learning electronic environment involving the development of a Repository and a Depository (Appendix E);
3. The creation of new ways to deliver non-formal learning opportunities;
4. The roll-out of internal and external communications strategies;
5. An open content strategy for reaching under-represented groups and an understanding of the levels and types of support they require;
6. Research and evaluation outputs and their dissemination;
7. Business analysis and evaluation outputs designed to develop an understanding of sustainability issues; and
8. A contribution to the re-thinking of the intellectual property regime in higher education in the light of open content aspirations and objectives.

2. Describe how you will measure whether or not you have successfully carried out your activities and achieved your goals.

This section describes methods of data collection and evaluation that will be used to appraise success against goals and other deliverables. It is complemented by Section F, which provides details on regular reporting processes and accountability lines, and by Appendix B. These data collection and interpretation activities will inform the Open Content Initiative Board, which will be responsible for monitoring operational progress against activity plans.

Evaluation will be informed by the scrupulous model established at MIT. As well as a summative role in regard to accountability, it will be formative and utilization-focused.[6] It will therefore be continuous – describing achievements to date, commenting on likely trajectories, and suggesting directions for development.

The research and evaluation team associated with the University's Institute of Educational Technology will be funded for three months beyond the formal lifespan of Stage 2 in order to produce a description of project achievements at the end of year 2. Although certain data of evaluative value will continue to be collected as a matter of course after the end of year 2 (and will be subject to routine University quality processes), the research and evaluation team will not itself continue.

One set of outcomes relate to user engagement. Another relates to providers' experiences, with a focus on the Depository, the Repository and the peer-testing laboratory. Five questions will guide each of these areas of evaluation. These are set out in Tables 1 and 2 overleaf:

A research and evaluation steering team, comprising University and national evaluation experts, will monitor the operation and advise on strategic evaluation directions. These will include fostering the development, in collaboration with other open content providers, of more robust knowledge of open content, widening access and sound pedagogies.

6 Patton, M. Q. (1997) *Utilization-focused Evaluation.* Third edition. Thousand Oaks CA: Sage.

Table 1 shows the variety of data which will be collected by six types of on-line enquiry:

TABLE 1: OUTCOMES RELATING TO USER ENGAGEMENT						
Data source Main questions	Web use statistics	Web-based questionnaires	Epistolary (on-line) interviews	On-line community (focus) groups	Content feedback	Trajectory (post-participation) research
Who uses OC? (patterns of access)	√	√				
How is OC used? (patterns of learning)			√	√	√	
Perceived outcomes (satisfaction levels, benefits and shortfalls)	√	√	√	√	√	√
Perceived relationship with OC (trust, disclosure, loyalty, etc.)		√	√	√	√	
Participant trajectories (continued engagement, disengagement, disillusion)	√	√				√

Table 2 shows the variety of data which will be collected by six types of enquiry:

TABLE 2: OUTCOMES RELATING TO PROVIDERS' EXPERIENCES					
Data source Main questions	Web-based questionnaires	Epistolary (on-line) interviews	Face-to-face and phone interviews	Delphi studies (individual and focus group)	Trajectory (post-participation) enquiries
Experience of creating OC	√	√			
Experience of devising tools (Supported Open Content) and of their use	√	√			
Perceived personal outcomes (satisfaction, benefits and shortfalls)	√	√	√		√
Perceived participant outcomes (satisfaction levels, benefits and shortfalls)	√	√			√
Judgements about the pedagogic, social and business models			√	√	

3. Explain why these activities/outputs will lead to your intended outcomes and overcome any obstacles.

The activities/outputs are essential for moving beyond the provision of content alone to the creation of a positive and empowering learning environment. In order to achieve this, it is essential that detailed and creative work is undertaken to develop:

1. A curriculum which is well planned and provides users with opportunities for developing learning pathways, and which is well integrated into a learning environment that provides users with the tools they need to manage their learning and develop collaborative links with other users;
2. An understanding of how open content delivery impacts on different target audiences, and in particular how it can be effective in encouraging learning among hard-to-reach groups;
3. A technical platform which is robust and capable of delivery at scale and integrated with the University's virtual learning environment; and
4. Research and evaluation outputs which will feed into the developmental work and provide a basis for enhanced knowledge and understanding.

4. What key constituencies, including traditionally under-served groups, participate in the work of the project?

The University has a long tradition of, and considerable experience in, involving the users of materials in their development through 'developmental testing' methodologies. It is anticipated that the content to be made available, and the learning environment in which it is deployed, will be thoroughly tested among a wide range of potential users in a number of different countries. Users will range from those with considerable educational experience to those with limited experience. It will be essential to involve users of all levels of ability to ensure that materials, tools and support are appropriately targeted.

5. If the work entails significant collaborations with other organizations or sub-organizations, please discuss.

The University will work closely with other open content providers. Given MIT's significant contribution to the development of open content delivery, it is expected that collaboration with this institution will be an important aspect of The Open University's initiative. Steps towards establishing such collaboration have already been initiated. The University's relationship with other open content providers will evolve over the two-year period and will receive major emphasis within the initiative.

It is likely that some materials will require cultural adaptation. The Open University has a great deal of experience in adapting material to meet the cultural needs and sensitivities of different audiences, both in terms of content and pedagogy. Recently, we have helped to establish the Arab OU, which involved considerable cultural modification of existing materials. The Open Content Initiative will meet these demands in two ways: through the use of open tools, such as wikis, that allow users to modify them for their own context; and by working with partners such as the Arab OU to create different versions of materials.

As the work will have an equal focus on developing appropriate tools, there will be collaboration with open source software projects. Chief amongst these will be working with Moodle, which will constitute the main learning environment (http://moodle.org/). Other collaborations may be instituted with the LAMS learning activity editor, which provides a means of developing and delivering learning activity sequences (http://www.lamsinternational.com/). In addition, open source projects such as the SAKAI initiative in the US, which seeks to develop an open architecture so that tools can communicate effectively with each other, will be relevant (http://www.sakaiproject.org/). Discussions were initiated at the Utah State University/Hewlett Foundation conference on inter-operability standards across open content tools and infrastructures. The Open University will contribute as an active partner to this effort.

The adoption and development of appropriate educational technology standards will be important, particularly in the area of marking content so that it can be found and adapted easily. In this area, the University will continue to work closely with IMS (http://www.imsglobal.org/).

In order to address some of the key hard-to-reach groups, it will be essential to empower those in other organisations in the UK and elsewhere to provide targeted support to such groups, principally through development of suitable content and tools. The University has long experience of supporting other organisations. Through its former Community Education Programme, which has been superseded by the existing Centre for Widening Participation, the University has developed expertise in working with and supporting others facilitating non-formal learning opportunities and communities. This expertise will be translated into the domain of open content delivery using information and communication technologies.

E. Inputs

1. *What are the major inputs that will be devoted to the project? (Inputs would include people, facilities, time commitments, money.) Please include resources that are to be contributed by others such as your organization (including in-kind), other foundations or the government.*

The following inputs will be devoted to the project:

1. Project direction and management to ensure effective coordination between key units within the University, as well as structured interaction with external organisations and collaborators;
2. Faculty academic expertise in curriculum planning;
3. Learning technology expertise;
4. The University's technical infrastructure and core virtual learning project development;
5. Integrated multi-functional team-working;
6. Marketing and public relations inputs;
7. Knowledge and expertise from the University's Centre for Widening Participation;
8. Knowledge and expertise from the University's Student Services Unit;
9. Knowledge and expertise from the Institute of Educational Technology;
10. Knowledge and expertise from the Knowledge Media Institute;
11. Knowledge and expertise provided by external partners working with hard-to-reach groups;
12. Business development and appraisal expertise; and
13. Legal and intellectual property rights expertise.

2. *Describe your organization's commitment to diversity*

The Open University is committed to promoting a culture which fosters equality and diversity. It aims to be a truly inclusive organisation where individual differences are respected and valued and where everyone is able to fulfil their potential (Appendix G).

3. *What makes your proposed project likely to succeed with the inputs you intend to devote to it?*

Aside from those already outlined, there are several other reasons why it can be expected that the inputs will lead to the intended outcomes and will successfully overcome any obstacles:

1. There is very effective collaboration and a strong ethic of team-work within The Open University, with long experience of bringing together staff with a wide range of expertise. All major education and research outputs in the University are the outcome of the kind of integrated team-work which will be required by the Open Content Initiative;
2. There is a passionate commitment among faculty, learning technologies and technical staff to the enhancement of learning which will be brought to bear on the development of the initiative;

3. Considerable experience exists within the university for development of the knowledge base required for effective learning, pedagogy, and large-scale supported delivery; and
4. The University will work closely with partners to draw on the experience of others, and will embark on this new initiative as a truly learning organisation.

4. *Include relevant one-page curriculum vitae of key participants and for any significant advisors or consultants.*

   Appendix H.

F. Evaluation

This section is based on a broad view of the purposes of evaluation. Evaluation has at least three key purposes: (1) ensuring accountability; (2) providing a grantee organization with ongoing feedback about how well it is moving toward its intended outcomes, and thus facilitating continuous improvement, mid-course corrections, and the allocation of resources to the best use; and (3) capturing the knowledge developed by a grant for the benefit of the grantee, the Foundation, and others in the field. Describe how you intend to address these purposes.

1. Accountability is assured by actions arising from the oversight of the Open Content Initiative Board and evaluation activities described in Section D2. The research and evaluation team will publish:
    a. Three reports a year by the research and evaluation steering team for submission to the member of the Vice-Chancellor's Executive responsible for this project. These will identify the degree of match between the project budget and agreed plans and activities, as well as report on emerging findings in respect of the main questions presented in Tables 1 and 2. Reports will be discussed with The William and Flora Hewlett Foundation and made available openly on the internet;
    b. An annual report to The Open University Academic Board, which will be made available as above; and
    c. Presentations of research and evaluation findings to national and international academic conferences, for the purpose of academic accountability.
2. Feedback to The William and Flora Hewlett Foundation and The Open University is largely assured by the reporting mechanisms described in Section F1. As feedback needs to inform the University's operational systems, the following will also apply:
    d. Two presentations a year to a meeting of the University's Deans;
    e. Consideration of open content possibilities in courses, resources and opportunities for the 10,000 staff of The Open University who teach and directly support student learning. This will be associated with the UK national professional standards framework; and
    f. Incorporation of open content priorities into the annual planning cycle of units, through which priorities and resources are allocated. (And through the continuing process of monitoring and tuning Unit Plans.)
3. In addition to the dissemination outlined in Section F2, knowledge capture and dissemination will be achieved by:
    g. Continuing engagement with other open content providers within an international collaborative community;
    h. Continuing, two-way engagements with scholarly organisations;
    i. Strategic links with quality enhancement bodies (the Higher Education Academy, UK and the Carrick Institute, Australia) and other organisations (POD, USA; STLHE, Canada; SEDA, UK; HERDSA, Australasia);
    j. On-line publication and conference participation;
    k. International community-building as part of The Open University's established world-wide activities;
    l. Internal dissemination (Section F2); and
    m. Contribution to The William and Flora Hewlett Foundation's communication strategies and practices.

G. Financial Information

1. *Attach the following documents:*

   - *A project budget for each year of the proposed project, indicating the expenses to be allocated to the proposed Hewlett Foundation grant. (Please see Appendix C for an explanation of what should be included in your budgets.)*
   - *A list of current foundation funders, including the level of their support.*
   - *For U.S. organizations, your IRS determination letter.*
   - *For non-U.S. organizations, if applicable, your tax affidavit form, your financial support schedule, and your charter document in English.*

   A budget for Stage 2 of The Open University's Open Content Initiative (the pilot stage) is shown in Appendix C, covering the two-year period from 1 May 2006 to 30 April 2008. The budget has been broken down by area of activity and by financial year (in line with The Open University's financial year-end of 31 July).

2. *Please provide an explanation of any items in your budget that you believe need clarification.*

   An explanation of each of the budget elements is contained in Appendix C.

3. *What are your plans to diversify your funding base?*

   During Stage 2, The Open University will be assessing the impact of the Open Content Initiative on its core business and will be working towards establishing a framework for the future sustainability of the Initiative beyond the pilot stage. Plans to diversify the funding base beyond Stage 2 will be developed as an integral part of the pilot activity, and are likely to include the identification of opportunities to generate new income streams and to reduce costs by embedding open content within the University's systems and processes.

H. Compelling Reasons for the Grant

Briefly, what are the three most compelling reasons this grant should be made this year?

From 2006, The Open University will be intensifying its widening participation activities. The capacity to develop open content will enhance significantly its efforts to expand educational opportunity, particularly among educationally marginalised groups. Given the current and rapidly growing momentum of open content development, and the University's increased emphasis on widening participation, its entry into the open content provider community would be timely.

As successful further development of open content delivery is dependent on enhancing the knowledge base, the University's work will make an important contribution to international knowledge, specifically addressing an area where Pascarella and Terenzini (2005) acknowledge a need for significantly more research and development.

The Open University is particularly well placed to develop its open content initiative given other developments taking place in relation to structured authoring, the management of digital assets, the institution's re-development of its virtual learning environment, and the current emphasis on the rapid implementation of its e-learning strategy – much of which is based on an open-source or content philosophy. It is important to maintain the momentum already provided by The William and Flora Hewlett Foundation for developing open content approaches at the University.

I. Attachments

Attach the following to the body of your proposal:

1. *Logic model as described in Appendix A.*

   Appendix A.

2. *Evaluation chart – model your evaluation after the sample in Appendix B, using the same column and row labels. Your chart will provide the basis for your interim and final reports to the Foundation.*

   Appendix B.

3. *Your line-item budget, as described in Appendix C.*

   Appendix C.

4. *Your organization's IRS documentation of tax-exempt status (501c3 or other).*

   The William and Flora Hewlett Foundation is already in possession of this documentation.

APPENDIX A - Logic Model

INPUTS	ACTIVITIES	OUTPUTS	INTERMEDIATE OUTCOMES (by end of Year 2)	ULTIMATE OUTCOMES (beyond end of year 2)
Project direction and management Faculty academic expertise in curriculum planning and content creation Learning technology expertise Technical expertise The University's technical infrastructure and core virtual learning project development Integrated multi-functional team- working Marketing and public relations expertise	Selecting curriculum content from materials developed specifically for distance learning Designing and integrating learning management and community building tools Identifying open source VLE software and creating an open content learning platform Developing internal and external communications strategies	A robust and scaleable open learning electronic environment involving the development of a Repository and a Depository An open content curriculum with integrated learning management and community building tools involving the provision of 5,400 learning hours in the Repository and 8,100 learning hours in the Depository by the end of year 2 The creation of new ways to deliver non-formal learning opportunities The roll-out of internal and external communications strategies	Enhanced learning experience for users of open content delivery including the opportunity for users to create structured pathways through the content and to form non-formal supported learning communities	On-going contribution to the development of supported open content and its underpinning knowledge base

INPUTS	ACTIVITIES	OUTPUTS	INTERMEDIATE OUTCOMES (by end of Year 2)	ULTIMATE OUTCOMES (beyond end of year 2)
Knowledge and expertise from the Centre for Widening Participation Knowledge and expertise from the University's Student Services Unit Knowledge and expertise from the Institute of Educational Technology Knowledge and expertise provided by external partners working with hard-to-reach groups	Identifying relevant target audiences and assessing their learning support needs Liaising closely with the University's Centre for Widening Participation	An open content strategy for reaching under-represented groups and an understanding of the levels and types of support they need	Greater involvement in higher education for under-represented groups and the empowerment of the various support networks that work with them	Increasing success in extending participation in higher education and enhancing educational opportunity
The research and evaluation expertise provided by the Institute of Educational Technology in collaboration with faculty and Student Services staff	Undertaking research and evaluation activities in the Institute of Educational Technology Monitoring the impact of open content quality assurance processes on academic, pedagogic and technical quality	Research and evaluation outputs and their dissemination	Enhanced knowledge and understanding of open content delivery and its place within the wider e-learning environment, how it can be effective, and how it can be shared with other providers	On-going contribution to the development of e-learning and the evolution of open and distance learning online educational provision

INPUTS	ACTIVITIES	OUTPUTS	INTERMEDIATE OUTCOMES (by end of Year 2)	ULTIMATE OUTCOMES (beyond end of year 2)
Business development and appraisal expertise Legal and intellectual property rights expertise	Monitoring the impact of open content on the University's core business Resolving third party copyright issues Clarifying licensing arrangements Investigating new business models and assessing the position of course materials within the existing model	Business analysis and evaluation outputs designed to develop an understanding of sustainability issues A contribution to the re-thinking of the intellectual property regime in higher education in the light of open content aspirations and objectives	Enhanced understanding of sustainable and scaleable models of open content delivery	On-going contribution to the development of models of open content delivery that can be embedded within systems and processes on a sustainable basis

APPENDIX B – Evaluation Chart

	CATEGORY	INDICATORS	BASELINES	TARGETS
OUTPUTS				
1.	An open content curriculum with integrated learning management and community building tools	Number of open content resources (measured in learning hours) in Repository and Depository	Nil	Learning Hours: *Launch* *01/10/*06 - 900 *End Year 1* *30/04/07* - 7,200 *After 18 months* *30/10/07* - 10,000 *End Year 2* *30/04/08* - 13,500
		Number of tools operating within Repository and Depository		Tools: *It is envisaged that other tools from the selection in Appendix K will be added to these targets as both website and Depository interaction develop* Provisional plans to date include: *Launch* – Tool enabling limited interaction between users *End Year* 1 - Good conferencing functionality *After 18 mont*hs – e-Portfolio system in Repository *End Year 2* – Some audio conferencing tools and a trial of learning configuration tool in Repository
2.	A robust and scaleable open learning electronic environment for open content delivery	Functional condition of on-line system	Nil	*End of Year 1* - Repository and Depository both functioning at scale *End of Year 2* – Repository and Depository both functioning at scale 24x7
3.	The creation of new ways to deliver non-formal learning opportunities	Number of users who express satisfaction with Repository learning experience	Nil	*End Year 1* – Evidence of user satisfaction with open content learning *End Year 2* – Increased evidence of user satisfaction with open content learning

4.	The roll-out of internal and external communications strategies	Range and reach of dissemination channels within both internal and external information networks	Nil	Very wide positive publicity for Hewlett-funded Open University Open Content Initiative from multiple sources
5.	An open content strategy for reaching under-represented groups and an understanding of the levels and types of support they need	Number of educators and facilitators using open content to help under-represented groups	Nil	*End of Year 1* – Strategy for support of under-represented groups is formulated *End of Year 2* – Evidence of greater involvement in higher education of under-represented groups through participation in open content learning
6.	Production and dissemination of research and evaluation reports	Number of publications Number of seminars (UK and outside) Level of public presence of research output in (a) the Open University (b) UK (c) globally	Nil	*End of Year 1* – Interim research and evaluation reports publicly available on website Two academic papers on open content learning prepared for submission to refereed journals Two UK seminars on open content and two overseas conference contributions *End of Year 2* – Research and evaluation reports publicly available on website Four academic papers on open learning content prepared for submission to refereed journals Four UK seminars on open content and two overseas conference contributions

7.	Business analysis and evaluation outputs designed to develop an understanding of sustainability issues	Progress made towards sustainability models for Stage 3	Nil	*End of Year 1* – Management information systems all operational and generating required information *End of Year 2* – Sustainability routes within Open University systems and processes have been identified, enabling open content activities to be embedded and to become self-sustaining
8.	A contribution to the re-thinking of the IP regime in higher education in the light of open content aspirations and objectives	Level of collaboration among higher education institutions on IP matters Level of participation by third party rights owners in allowing material to be used in Open Content Initiative	Nil	*End of Year 1* – Collaborative strategy for open content providers regarding IP clearance has been developed by the University as a result of experience in clearing rights to date *End of Year 2* – Steadily increasing numbers of open content providers are working together in global consideration of IP issues regarding open content. Steadily increasing number of third party rights owners are allowing their content to be used for open content purposes without additional charge

INTERMEDIATE OUTCOMES: BY END OF YEAR 2				
1.	Enhanced learning experience for users of open content delivery including the opportunity for users to created structured pathways through the content and to form non-formal supported learning communities	Number of users of Depository and Repository and associated tools	Nil	Steadily increasing user numbers throughout period from launch to end of Year 2
		Number of institutions/educators providing content for Depository	Nil	Steadily increasing numbers of educators/institutions participating in Depository
		Level of user satisfaction	Nil	Increasing levels of user satisfaction reported in surveys and feedback
2.	Greater involvement in higher education for under-represented groups and the empowerment of the various support networks that work with them	Level of positive feedback from support networks	Nil	Emergent evidence of effectiveness of open content in supporting hard-to-reach groups
3.	Enhanced knowledge and understanding of open content delivery and its place within the wider e-learning environment, how it can be effective, and how it can be shared with other providers	Level of local, national and international interest within the education community in the results of research and evaluation	Nil	Emergent evidence that research and evaluation findings are influencing the global e-learning provider community
4.	Enhanced understanding of sustainable and scaleable models of open content delivery	Level of progress made towards sustainability	Nil	Identification of a number of routes that will enable the Open Content Initiative to become sustainable

ULTIMATE OUTCOMES: BEYOND END OF YEAR 2				
1.	On-going contribution to the development of supported open content and its underpinning knowledge base	Number of learning hours of material in Depository and Repository Number of users	13,500	Increasing levels of both learning hours and users year on year
2.	Increasing success in extending participation in higher education and enhancing educational opportunity	Number of members of under-represented groups who participate in open content learning and then enter credit-bearing higher education		Emergent evidence that members of under-represented groups who progress to credit-bearing higher education have benefited from engagement with open content
3.	On-going contribution to the development of e-learning and the evolution of open and distance learning online educational provision	Level of local, national and international interest in the results of evaluation Number of contributions to national and international open content learning events Number of papers written for academic and intelligent lay audiences and/or representation through other media Level of enquiries from other higher education institutions about open content		Increasing evidence of contribution made by Open Content Initiative to international discussions of effective means of using modern technologies to increase participation and success rates in higher education
4.	On-going contribution to the development of models of open content delivery that can be embedded within systems and processes on a sustainable basis	Development of business model to ensure sustainability of open content initiative		Open content embedded within Open University systems and processes in a sustainable model that will enable continued growth

APPENDIX D - Centres for Excellence in Teaching and Learning (CETLs)

Name of CETL	**Aims**
Centre for Open Learning in Mathematics, Science, Computing and Technology (COLMSCT)	COLMSCT aims to improve the learning experience of students who have limited opportunity for direct face-to-face interaction with teachers. The centre will develop improved student support methods, new learning materials and use of new technology. Its initial focus will be on assessment and e-learning.
Work Based Learning for Professional Development	This centre builds on existing excellence in the application of work-based learning to the development of professionals. Its core work will focus on evaluation, knowledge brokering and research designed to enhance understanding and teaching practice in the arena of professional knowledge and skill. It also aims to take forward work to enhance distance and e-learning modes of engaging with work-based learners.
Centre for Excellence in Innovative Physics Teaching	The Centre for Excellence in Innovative Physics Teaching is a result of a collaborative bid made by The Open University, the University of Leicester and the University of Reading. Physics departments at the three universities will work together to extend their established reputations as innovators in areas such as problem-based learning, skills-based laboratory teaching and multimedia teaching.
Personalised Integrated Learning Support	This centre will build on The Open University's expertise in supporting a large and diverse student population to offer a better integrated and more personalised learner support service. The project team will work closely with some of the University's tutors – who are those members of staff who most directly support the University's students - to develop a blended learning approach. The project aims to ensure that information, advice, resources and support are all more effectively tailored to meet students' individual needs. This work will enable students to become more confident learners.

APPENDIX E - Strategic Map and Process Model

The three attached diagrams represent our thinking about the scope of the organisational and process aspects of The Open University's Open Content Initiative:

1. Diagram 1 shows the primary structural elements involved in the Open Content initiative;
2. Diagram 2 illustrates the major processes which link those elements together; and
3. Diagram 3 represents both structure and process combined.

The following notes attempt to explicate these diagrams and indicate which elements are proposed for development in the short, medium and long terms. Underscoring this model is our desire to bring the philosophy of the open source movement into the practice of developing open educational resources.

Note A: The Repository – Supported open content site for learners

A short term goal is progressively to place a wide selection of pedagogically structured *open educational resources* derived from materials of The Open University in a *Repository* website. Integral to this site will be an appropriate selection of *open source support tools* that will help users/clients (principally learners) manage their chosen content and suitably interact with other users/clients.

Key characteristics of the 'chunks' (a working term) - or 'modules'- of open educational resources are that each will have:

1. Three to 15 hours of average expected study time (with 10 to 15 hours representing approximately a week of part-time learning in The Open University model);
2. A contents list and 'study calendar'; and
3. Clearly defined learning outcomes related to level of study with inbuilt, formative, self-assessment quizzes or activities relating to the learning outcomes.

Each 'chunk' or module will be self contained, but there will be a series of 'chunks' in a cognate discipline areas (e.g. psychology and mathematics). Suggested pathways through some or all of these 'chunks' will be outlined to provide a 'course of study', but users/clients will be free to organise their own pathways to suit their own needs, whether as an individual learner or as a teacher of a group of learners.

A limited number of models and templates for the self contained 'chunks' will be used to provide a framework for shaping the development and presentation of content and associated tools. These models and templates will build on some of the existing course models in The Open University's accredited programmes, reflecting different pedagogies, subject areas and learning needs.

Open University managed open educational resources

More work remains to be done during the current start-up phase to identify in detail exactly what content will be made available. For the purposes of this application, however, we are proposing some key principles which will inform the choice of content.

These are as follows:

1. The curriculum should represent all levels, from access/level 1 through to postgraduate level. This will enable users to choose from a number of levels in accordance with their skills and confidence, and will also provide progression routes for those seeking steadily to develop their experience;
2. The curriculum should be broad insofar as it should cover a wide variety of subject areas, thereby providing the widest possible choice and encouraging the highest level of usage. As much curriculum as possible will be chosen which will have wide appeal across cultures. An indication of the breadth of the University's curriculum is set out in Appendix F; and
3. The University's curriculum will be re-described in order to move beyond traditional subject area and faculty descriptors, as represented in Appendix H, to descriptors which will be more meaningful to open content audiences. Further work on these will be done during the remaining period of the start-up phase.

Open University managed open source support tools

It is our intention to provide a range of tools which will support and empower users of the content, particularly those with less educational skill and confidence. In relation to the Repository, there are a number of emerging principles:

1. The tools should be robust and should not present users with technical difficulties. To achieve this, we will ensure that there is close integration between the development of the open content platform and the University's virtual learning environment, which is simultaneously being re-developed;
2. The tools should be simple, accessible and usable so that they assist users rather than provide them with additional learning hurdles; and
3. Wherever possible, use will be made off open source tools. Indeed, the University's technical platform for its virtual learning environment will be provided by the open source MOODLE software, which will also serve as the technical platform for the Open Content Initiative.

Note B: The Depository – Supported open 'sense making' site for creators

Whereas the supported open content site will comprise a Repository containing fixed 'chunks' of open educational resources that can be strung together as appropriate (in the same way students select modules within our taught modular programmes), we also wish to foster the disaggregating and re-aggregation of smaller learning objects from our materials and from other sources. This will be facilitated by an open educational resource Depositary.

Open University sponsored open educational resources

The Depository will contain a greater variety of learning objects from which users/clients (in this case mainly the creators of courses) can construct a wider range of learning experiences. The Depository is likely to contain a larger amount of material than the Repository and the materials themselves will be in a less structured form. As people external to the University will be able to contribute to the site, it should serve as a good testing ground for open content sharing and re-use, and will provide invaluable experience of what is involved in working in a truly open content/open source environment.

Open University sponsored open source support tools

The number and variety of tools is likely to be greater in the Depository, which will serve as a testing ground for new innovative tools deployment. It is also hoped that some people in this community will develop 'chunks' intended to fit the Repository templates. These will then be peer evaluated before being added to the Repository.

The 'sense making' site will have a slightly different collection of support tools for learning management and community building. It will also be much more dynamic in the way that resources are developed and used by a very committed and well educated set of communities. Complex decisions will need to be taken about which tools to deploy, including their differential deployment between the Repository and the Depository. As stated above, the Depository will be used to test a potential range of new tools (Appendix K). During the remainder of the start-up phase, detailed decisions will be taken about tools deployment.

The Depository site will be more 'arms length' from The Open University (as indicated in Diagram 1). Nonetheless, the University will play a significant role in the Depository, which will be one of the main ways we engage with wider communities and other open content developments.

This separation into two sites – one that carries the full imprimatur of The Open University's quality standards, another that offers a wide set of communities the space and opportunity to experiment – is aimed at meeting the distinct needs of different users/clients, although some will access both sites. In this respect, the same content that is in the Repository will also be in the Depository, so enabling creators to re-fashion the 'chunks' available in the Repository at will. The planned size of both sites after two years, based solely on materials derived from The Open University, is set out in Appendix I, but the actual size will depend on the extent to which other providers decide to add materials to the Depository and offer 'chunks' for peer evaluation for placement in the Repository.

Note C: Peer Testing Laboratory

Standard quality assurance procedures will apply to materials which are generated within The Open University and placed in the Repository (and in the Depository, although expectations will be different for the latter). In the short to medium terms, however, we expect that 'chunks' which originate from elsewhere will be considered for inclusion in the Repository on the basis of both user evaluations/ratings of the 'chunks' and peer assessment of their academic quality. The Open University will retain oversight of technical quality, although this will be made as simple as possible through the use of a limited set of fixed schemas or models for the 'chunks'. In the longer term, The Open University intends to include some of these new open educational resources within its own current course catalogue.

User/client communities

A short to medium term objective, through the Repository, is to *widen access* to high-quality, pedagogically structured educational resources that can be either studied by individual learners or used by organised or self-organising groups/communities. These groups may be formally associated with another higher education institution and led by a teacher, or they may be non-formal learning communities started by key individuals in the same way that on-line discussion groups are initiated. The range of support tools available will facilitate the initiation, development and running of such formal and non-formal 'courses'.

Similarly, the short to medium term objective of the Depository is to *widen availability* of both open content *material* of varying types and sizes, and open source *tools* of differing capabilities, thereby enabling educators based in all countries, and hopefully all cultures, to develop open educational resources suited precisely to their needs. A key feature in making this successful will be the appropriate facilitation of networks linking course creators together and the establishment of special schemes through dedicated funding.

In the longer term we would also hope to *widen participation* in this virtual learning experience for those people in society who are, for example, less confident, less motivated, and/or less literate in the use of information and communication technologies. However, experience tells us that the most effective way to widen participation by under-represented groups is through partnerships and outreach activity, which provide additional resources and heightened support (including face-to-face sessions or one-to-one telephone sessions). As establishing such partnerships requires dedicated funding from a wide range of sources and is time-consuming, this is a longer-term goal of the initiative.

Evaluation and research

This diagram provides a two-dimensional representation of what The Open University proposes to undertake. A third dimension, which fixes this picture to a wall, is that of evaluation and research. The Open University is a world class centre for educational research, particularly in open, distance and e-learning. We wish to continue this tradition as part of the Open Content Initiative, so ensuring, first, that all activities at every stage are fit for purpose and reflect our hard won reputation for excellence in teaching and learning; and second, that we make our *own* learning widely available to the open content community.

DIAGRAM 1: STRATEGIC MAP FOR THE OPEN UNIVERSITY OPEN CONTENT INITIATIVE

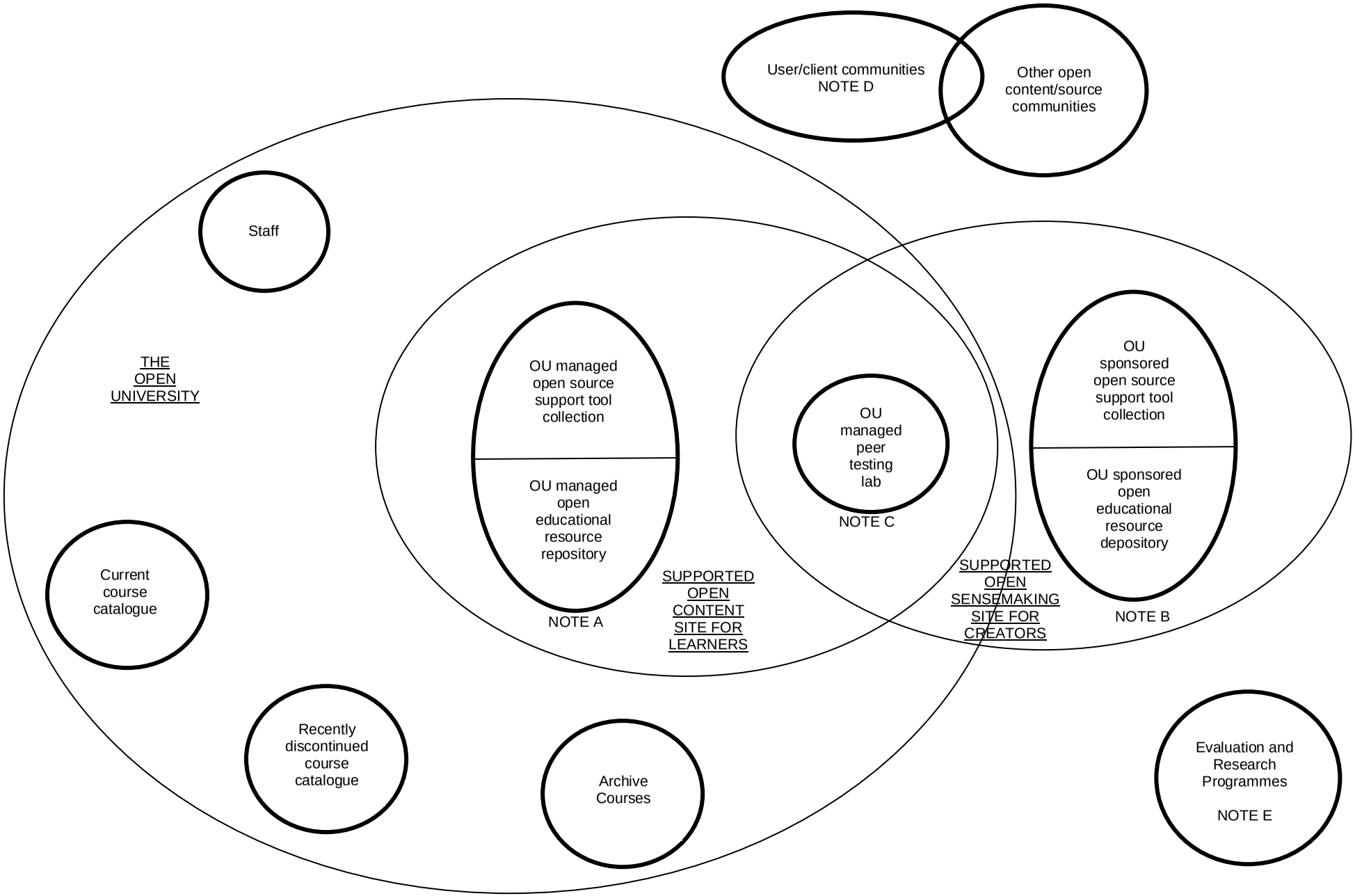


DIAGRAM 2: STRATEGIC PROCESS MODEL FOR THE OPEN UNIVERSITY OPEN CONTENT INITIATIVE

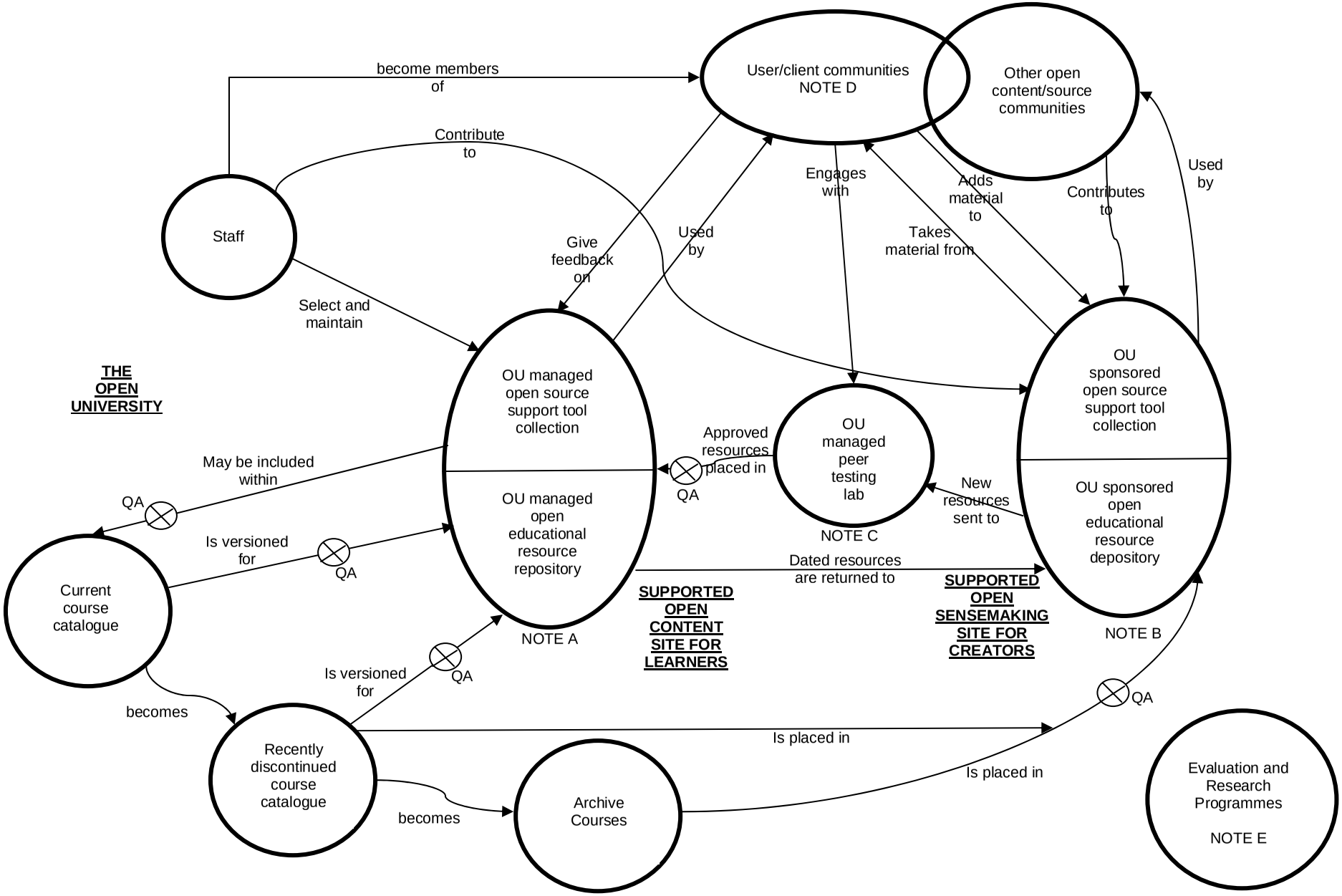
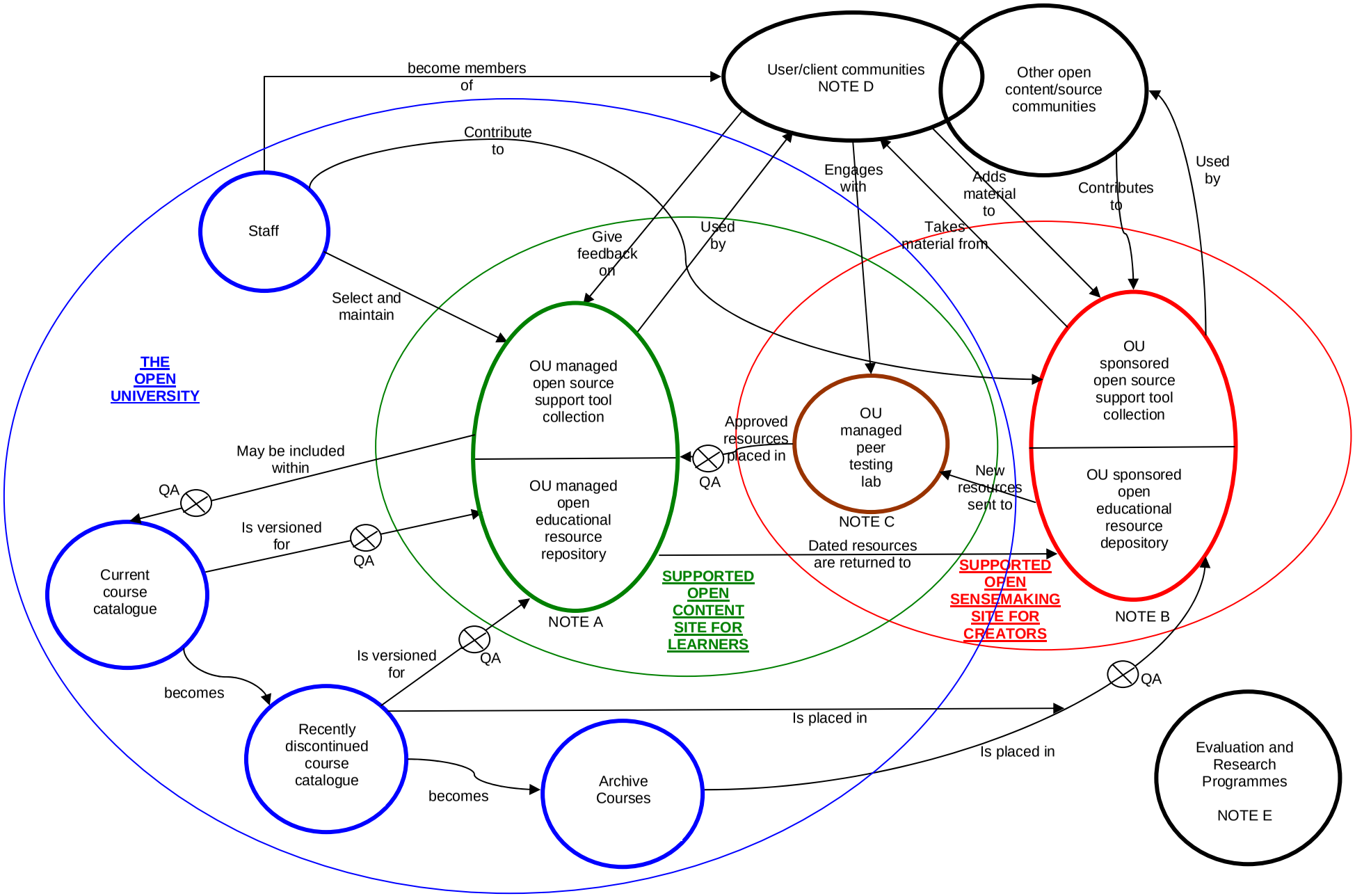


DIAGRAM 3: STRATEGIC MAP AND PROCESS MODEL FOR THE OPEN UNIVERSITY OPEN CONTENT INITIATIVE



APPENDIX F - The Open University Curriculum

The Open University has a diverse curriculum and wide-ranging styles of teaching materials. The Open Content Initiative will select and use educational resources from across the full range of these subject areas and materials. This Appendix summarises the broad curriculum areas offered at the University and lists the learning 'chunks' or modules we plan to make available through the initiative. At this stage, the primary emphasis is on identifying the core material to be located in both the Repository and the Depository. Additional material will be identified progressively for the Depository over the two-year period of Stage 2. Full details of Open University courses and qualifications from which most of the material will be derived can be found at the following:

http://www3.open.ac.uk/courses/bin/p12.dll?A02

Guiding principles

As stated elsewhere in this application, selection of content is being guided by the following principles:

1. The size of learning 'chunks' (or modules) should be kept relatively small, and should not exceed 10 to 15 hours of study. Each chunk should have its own learning outcomes and some form of feedback or follow-up activity.
2. The curriculum should be structured to enable users to find pathways through it if they so wish. We recognise that there will be a degree of 'dipping' in and out, but are committed to providing coherent pathways for those users who need them.
3. The curriculum available through the Open Content Initiative should represent all levels, from access/level 1 through to postgraduate level. This will enable users to select an appropriate starting level in accordance with their skills and confidence, and will also provide progression routes for those seeking to develop their experience steadily over time.
4. The curriculum should cover a wide variety of subject areas, thereby providing the broadest possible choice and encouraging the highest level of usage. In selecting components of the curriculum, particular attention will be given to including content which will have cross-cultural appeal.
5. The University's curriculum will be re-described in order to move beyond the traditional subject area and faculty descriptors currently in use for taught provision. The intention will be to develop descriptors which are more meaningful to open educational resource audiences.

Study skills and language learning

In addition to curriculum-focussed and subject-specific material, which is listed on the following pages, we plan to make available study skills material that will enable less confident learners to engage with the curriculum materials. This strategy is part of the project's commitment to widening participation. These modules will provide users with study skills to help them negotiate the site with confidence, to create a sensible study pathway and to make the most of their visits. Also included will be a selection of modules to interest learners who may wish to try out a new language or develop their language skills.

These skills development and language modules or chunks will include:

- Planning study
- Learning strategies
- Taking notes
- Reading to learn
- Writing skills
- Revision skills
- Time management
- E-learning
- Identity skills
- Independent skills
- Working with others
- Working with information

- Spanish:*Vivos vestigios del pasado*
- Spanish: *Con mis propias manos*
- Spanish: *A la vista*
- Spanish: *El don de la palabra*
- German*: Rundblick*
- German: *Auftakt*
- German*: Motive*
- German*: Variationen*
- French: *Bon Départ*
- French: *En Ville*
- French: *Nouvelles Mises au Point*
- French: *Réflexions*
- French: *Francothèque*

Major subject themes

The following pages show the major subject themes we intend to adopt for the site, as well as the most likely topics for the learning chunks to be made available within each theme. As selection of the chunks will depend to some extent on the degree of transformation required for web delivery and the amount of third party material to be excised, the precise combinations of chunks, and their sizes, titles and release dates, have yet to be established.

(a) Science and nature subject theme

This module cluster will focus on the world of science and will include mathematics, biology, physics, chemistry, earth science and space science. It will offer users a range of modules, beginning with basic scientific and mathematical explanations and moving on to more complex issues.

Modules/chunks:

- Chemical equilibrium
- Newton's Laws
- Energy
- Fundamental particles
- Energy systems
- Ecology
- Weather and climate
- Global surface temperatures
- Earth's energy balance
- Carbon cycle
- Water cycle
- Biodiversity
- Maths everywhere
- Comparing data sets
- Exploring distance time graphs
- Introducing and working with symbols
- Sequences
- Lines and Circles
- Trigonometry
- Functions
- Chance

- Molecular modelling
- NMR spectroscopy
- Batteries
- Periodic table
- What is life?
- Stars and alchemy
- Planets and life
- The early Earth
- How the Earth works
- Describing motion

- Systematics
- Plant pigments
- Photosynthesis

(b) Technology subject theme

This group of modules will focus on applications of technology. It will offer users the opportunity to build their understanding and skills in information technologies and computing, and to explore technological interventions and systems thinking for the built environment.

Modules/chunks:

- Living with the internet
- Design and the web
- Network management
- Talking with computers
- Communication and identity
- PC security
- Data
- Information

- Object oriented programming
- Interaction design
- Artificial intelligence
- Relational databases
- Internet applications
- Managing software
- User interface design
- Technology of music
- Designing
- Innovation
- Systems practice
- Creative thinking

- Manufacturing
- Product design
- Mechanics
- Structures
- Dynamics
- Analogue electronics
- Digital electronics
- Control

(c) Business and management subject theme

This module cluster will explore key concepts in management which users may find of value in relation to their work and career progression.

Modules/chunks:

- Marketing
- Operations
- Human resources
- Accounting and finance
- Knowledge management
- e-Business
- Strategy
- Leadership

(d) Society subject theme

This module cluster will explore aspects of contemporary society. It will enable users to investigate individual and social issues, environmental challenges and interpersonal and legal relationships.

Modules/chunks:

- Identity
- Gender
- Race and ethnicity
- Liberty and justice
- Poverty
- Crime

- Exploring psychology
- History of psychology
- Applied psychology

- Changes and rules
- Rights and justice in English law
- Law and the internet

- Globalisation
- Environmental impacts
- Transport systems
- Modelling car ownership
- Renewable energy
- Managing waste
- Population models

(e) Arts and history subject theme

This module cluster will enable users to dip into the highways and byways of history, literature, music and the arts. Users will be able to choose from topics ranging from creative writing and local history to philosophy and religion. The cluster will be designed to offer an enriching learning experience which links to users' personal development and leisure pursuits.

Modules/chunks:

- Start writing family history
- Start writing fiction
- Start writing for the internet
- Start writing poetry

- The story of the PC
- The story of the internet
- War memorials and commemoration
- Commemoration: Visual texts
- Commemoration: Written texts
- Forms and issues of language

- History as commemoration
- Art and its histories
- Art of the Twentieth Century
- From Enlightenment to Romanticism
- The rise of scientific Europe 1500–1800
- Medieval to Modern
- Total war and social change
- Understanding comparative history
- History of mathematics: Egyptians
- History of mathematics: Babylonians
- Palaeography

- Mind and action
- Knowledge and value
- Religion today: Tradition, modernity and change

- Understanding music
- From composition to performance

(f) Health and lifestyle subject theme

This cluster of modules will offer an opportunity for parents, service users, busy professionals and the general public to enrich their understanding of a range of health and social issues. Particular topics of interest will include childcare, mental health, genetics and public health.

Modules/chunks:

- Children and violence
- Roles and responsibilities
- Children in the early years
- Aspects of child psychology

- Complementary and alternative medicine
- Homeopathy
- Evaluating practice
- Diversity and difference
- Living with death and dying

- Mental health
- Stress
- Sleep
- Obesity
- Nutrition

- Genes
- Genetic testing
- Gene therapy

- Addictions
- Adipose tissue
- Predictive medicine
- Investigating HIV infection

APPENDIX G - The Open University Commitment to Diversity

The Open University aims to create the conditions whereby students and staff are treated solely on the basis of their merits, abilities and potential, regardless of gender, colour, ethnic or national origin, age, socio-economic background, disability, religious or political beliefs, family circumstance, sexual orientation or other irrelevant distinction.

All members of the University community are expected to support and promote equal opportunity and diversity policy. The declared objective is a University which is truly open to all sections of the community, and in whose activities all individuals, whether staff or students, are encouraged to participate fully and equally.

The commitment to a diversity policy is embodied in the following principles:

1. Discrimination, direct or indirect, based on a person's gender, colour, ethnic or national origin, age, socio-economic background, disability, religious or political beliefs, family circumstance, sexual orientation or any other irrelevant distinction, is unjust and immoral.

2. Notwithstanding its significant contribution to the widening of educational opportunity, the University acknowledges that, as a community, it still reflects patterns of inequality that are widespread in society at large. It is therefore determined through programmes of legally acceptable positive action to increase the level of participation as students, staff and clients of those groups that are currently under-represented.

3. A successful diversity policy requires the active support of the University community. The University therefore intends to seek the commitment and involvement of all sections of staff and students in the implementation of this policy.

4. The University intends to encourage good practice in equal opportunities with those external organisations with whom it works.

APPENDIX I - Curriculum Development Plan

	Launch	End of year 1	End of year 2
Repository			
Learning hours	900	2,700	5,400
Printed page equivalents	3,000	9,000	18,000
Modules	90	270	540
Courses/pathways	18	54	108
Depository*			
Learning hours	0	4,500	8,100
Printed page equivalents	0	15,000	27,000
Module equivalents	0	450	810
Course equivalents**	0	90	163
Overall			
Total learning hours	900	7,200	13,500
Total printed page equivalents	3,000	24,000	45,000
Total modules	90	720	1,350
Total courses/pathways	18	144	270

* It is assumed that the content in the Repository will also be available in the Depository. The figures for the Depository given above relate to additional Depository-specific content, but do not take into account content that may be provided by other institutions.

** The Depository will not be structured into 5 module courses, but expressing the content in these terms provides a useful comparison with the Repository and the size of its content.

KEY
Each average UK HE credit point = approx. 7.5 learning hours
Each average UK HE learning hour = approx. 3.3 printed pages
Each module averages 10 learning hours
Courses/structured pathways are assumed to constit of around 5 modules each

APPENDIX J - Rights Licensing

In engaging fully with the open content community, our view is that the choice of IP licence is as important an engine in delivering the project outcomes as the development and deployment of tools, architecture and the selection of content. We are committed to making our open content materials as widely, easily and openly available as possible. The licences under which we offer both content and the tools used to display or structure this content are those already most commonly used in the open content community. Users are, therefore, familiar with the terms.

Content

We recognise Creative Commons as the currency of IP licensing within the open content movement and it is not our intention to develop a licence restricting or supplanting the Creative Commons suite of licences. For reasons of compatibility with open content produced elsewhere, as well as consistency of approach and ease of comprehension by user groups, we are committed to making use of the Creative Commons licence: 'by-nc-sa'. As The Open University falls under English jurisdiction, we shall use the 'England and Wales' licence developed by Creative Commons UK. This licence applies worldwide and will be used for all Open University content throughout the period of the project. The same licence will be used for content presented in both the Repository and the Depository.

Tools

Tools created by the University for use in the project will be licensed under the GPL licence found at: http://creativecommons.org/license/cc-gpl. The Creative Commons home site has links to this licence and, in selecting it, the intention is to reinforce our licensing continuity. The tools released under this licence will either have been developed by The Open University or adopted from open source providers. There may be a very few, unavoidable instances where a tool includes embedded proprietary software, so restricting our ability to use the GPL licence.

Third party content

Some multimedia components which are rich in third party content may not be available in their entirety because of restrictions placed upon us by rights holders. We are, however, already in discussion with representative rights organisations – including the UK talent unions – with a view to negotiating blanket licensing agreements which will free us to make rich content of this kind available as open content. Part of what we hope to achieve in the project is to identify ways of making more embedded third party content freely available as part of products of The Open University released under the licence.

APPENDIX K - Learning-Support Tools for the Supported Open Content Environment

The Open Content Initiative is distinctive not only in the quality of the materials to be released, but also in its focus on developing an environment to actively support both individual learners and educators, and the self-organising communities which we anticipate will emerge. The specific action research challenge that will be addressed by this strand of the project can be framed as: **What does it mean to provide support for the different categories of end-user we expect to attract in an open content scenario?**

This Appendix details the tools that the project will evolve and deliver within the Repository. These will be duplicated and substantially extended in the Depository so as to facilitate the broader range of experimental, collaborative and other open source activities that the project is intended to support. The Appendix is divided into the following sections:

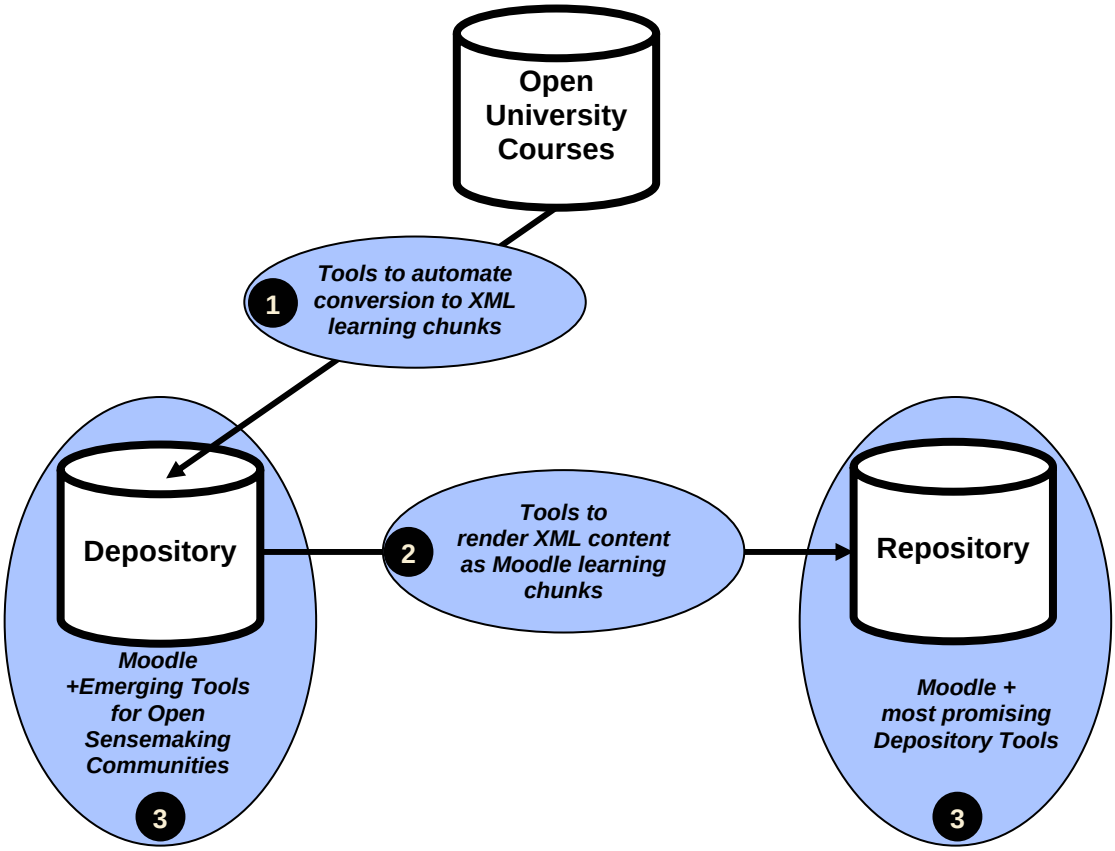
- Section 1: Open Content Technology - Three Categories
- Section 2: Tool Deployment in a Nutshell
- Section 3: Tool Functionality in the Repository, including:
  - Finding and Organizing Resources
  - Community and Collaboration
- Section 4: Tool Functionality in the Depository, including:
  - Supporting Creators in Remixing Content
  - Supporting Open Sensemaking Communities
    - Knowledge Mapping
    - Social Presence and Identity
    - Peer-to-Peer Collaboration
  - Proposed Technical Release Schedule for the Depository

Section 1: Open Content Technology – Three Categories

Three categories of technology are being developed within this project. Two of these are 'backstage' technical infrastructure to automate the conversion and publishing of Open University open content. Only the third category concerns end-users of the resulting website and is the focus of this Appendix. The three categories are:

1. Tools to convert existing content into XML, suitable for uploading to the Depository;
2. Tools to render selected XML content and publish it within the showcase Repository in the Moodle learning-support; and
3. Tools to support learners and educators as they engage with the content and with each other.

The figure below summarises this configuration:



Section 2: Tool Deployment in a Nutshell

The following matrix summarises the deployment of different technologies within the Repository and Depository. This table is explained and elaborated below.

	Repository	**Depository**
Year 1	• Moodle VLE	• Moodle VLE • Open Source Content Management/Versioning • Knowledge Mapping • Social Presence & Identity • P2P Collaboration
Year 2	• Evolutions of above, plus possibly other Depository tools/content	• Evolutions of above, plus possibly other tools for open sensemaking communities

Section 3: Tool Functionality in the Repository

The Open University is developing a 'third generation' Virtual Learning Environment (VLE) using the open source Moodle system [www.moodle.org]. Registered students of the University will begin using Moodle from May 2006. Moodle will be the platform for delivering the open content Repository, and will form part of the broader Depository (see Section 4 below).

When the Repository launches in October 2006, the VLE functionality offered to end-users will be similar to that provided to registered students, with the obvious exceptions of features that are not applicable in an open content context (such as course schedules, assignment submission management, and so on).

We now briefly summarise the key functionality of the VLE.

The Open Content Initiative will utilise Moodle, an open source virtual learning environment (typically called a course management system in the US), as the primary interface for users of both the Repository and the Depository. Moodle will provide a suite of tools for people engaged with the content in the open content file store. It will support users in their search for content, in creating meaningful structures, in engaging with other users and in creating communities. The tools within Moodle can broadly be split into two groups: those related to finding and organising resources, and those related to community and collaborative activities.

Finding and Organising Resources

Moodle offers several tools for engaging with existing learning content, including tools for importing content from multiple sources and adding structure to this content.

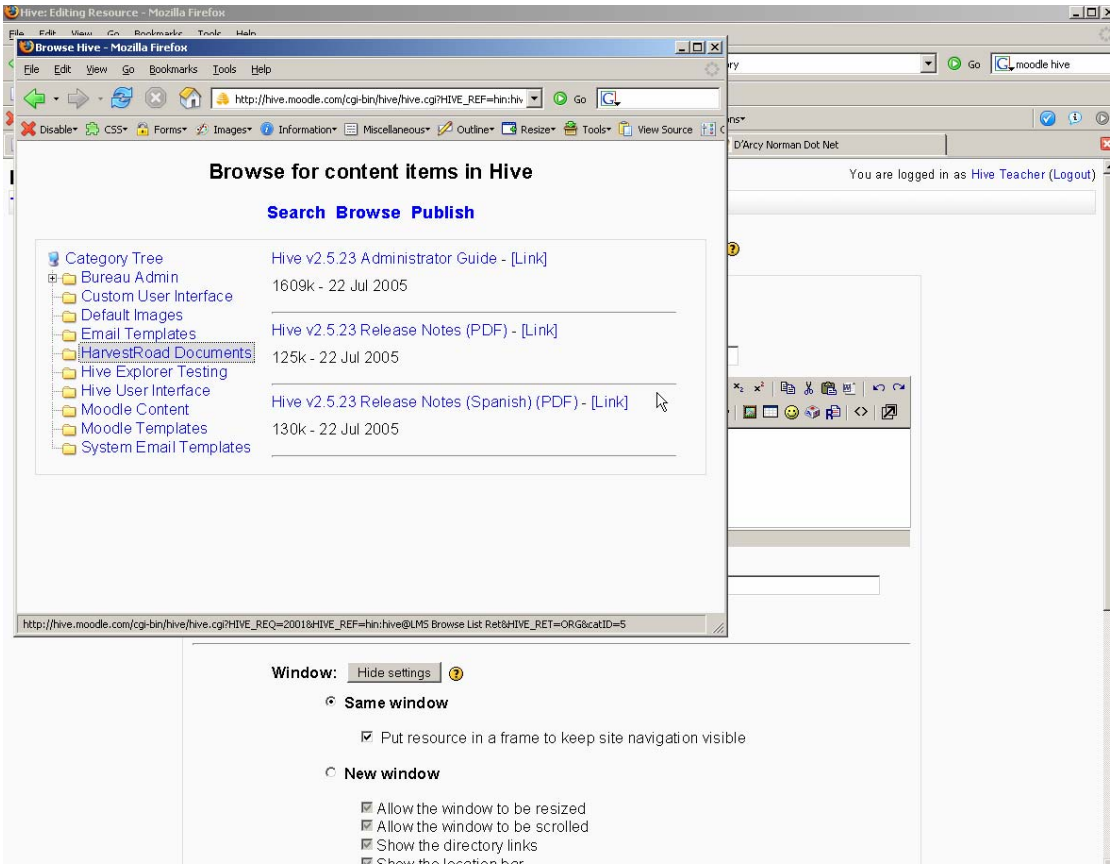
Moodle already has the ability to import content in a range of different formats including, for example, SCORM packages. It also provides a rapidly expanding suite of tools for finding and organising content from repository systems. Currently, Moodle has the capability to integrate with Hive, a learning content management system from HarvestRoad, and the NLN learning object repository (see illustration overleaf). The Moodle community is presently using the base technology from these two integrations to develop a more general repository API to allow Moodle to integrate with arbitrary content repository systems (like Fedora and Documentum).

In the context of the Open Content Initiative, Moodle will interface with the learning object Repository. Users will be able to create an account in the Moodle system and then search the Repository from within their personal area on the system. They will then be able to bookmark and tag resources for later use. Each user will be able to create a personal collection of resources in their user area using the Moodle interface and will ultimately be in a position to create and share learning experiences based on open content in the Depository area. In addition, those who also use Moodle within their own institutions will easily be able to import content from the Repository.

The Lessons tool within Moodle allows simple sequences of learning resources to be created. By using the branching tools available within the tool, it is possible to create programmed learning routes through collections of resources. Users can also easily create flash-card lessons and, with a little creativity, can use the lessons module to create simulations and case studies to respond to student input, so resulting in a degree of interactivity.

Development is already underway within the Moodle community to add sophisticated learning design tools to Moodle which will make it possible to create much more complex learning activities by linking both existing and new learning resources.

BROWSING A HIVE REPOSITORY FOR RESOURCES

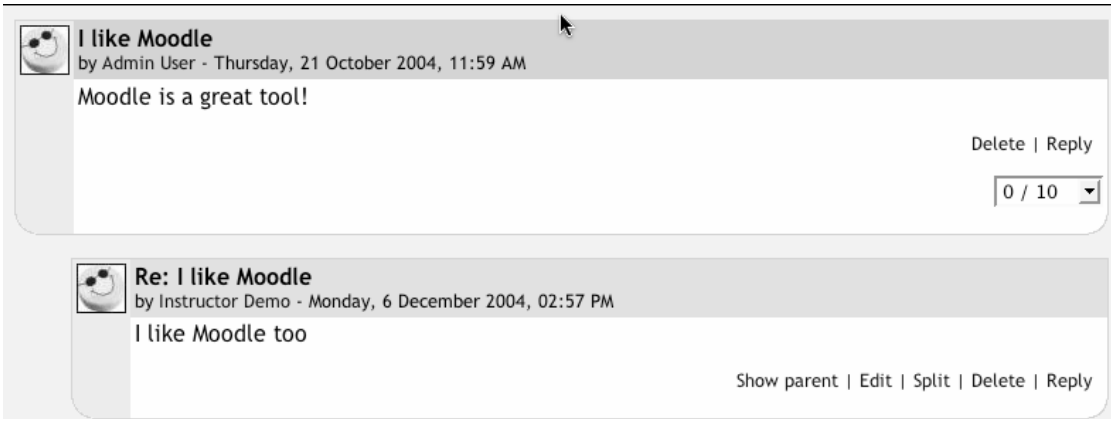


Community and Collaboration

Moodle's main strength is its focus on community and collaboration tools. Moodle has several tools to enable open content participants to create communities around the content. These tools are already part of the base Moodle distribution, so the Open Content Initiative team will not need to develop them for the purposes of this project. The tools in this category include Forums, Chat tools, wikis, weblogs and workshop tools.

(a) Forums

This is a powerful asynchronous communication tool within a Moodle course. Forums are effectively online message boards where students (and teachers) can post messages to each other whilst easily keeping track of individual conversations. Forums allow participants to communicate with one other at any time, from anywhere with an Internet connection, without requiring them to be logged in at the same time. This can be contrasted to synchronous communications such as chat rooms, instant messaging, and face-to-face conversations.



Because forums are asynchronous, students can take their time composing a reply. There is evidence to suggest that students are often more willing to participate in an asynchronous forum than they are to speak up in class. For learners for whom English is a second language, for people with communicative disabilities, and for those who are just plain shy, forums offer a chance to take as much time as they need to formulate a reasonable reply. In addition, they create many opportunities not just to replicate the conversations which occur in class, but also to create entirely new activities that are difficult to conduct in a classroom setting.

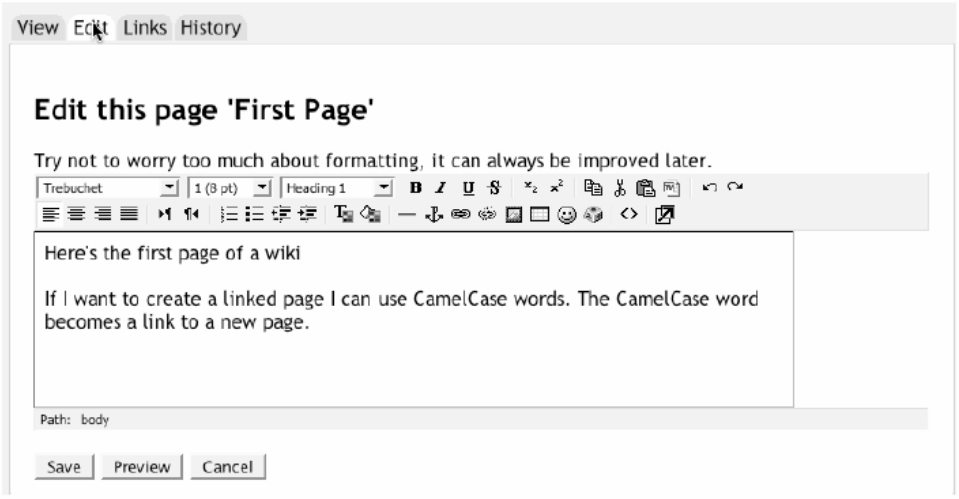
(b) Chat

Where real-time communication is required, Moodle also offers a simple synchronous communication tool allowing students to communicate in real-time. This is comparable to other instant messaging systems like AOL, MSN or iChat, but allows the chat to be integrated with other Moodle tools.

(c) Weblogs and Wikis

A weblog (usually referred to simply as ‘blog’) is a similar collection of web documents that is produced by a single author but is visible to the entire ‘class’.

A wiki is a collection of collaboratively authored web documents. Basically, a wiki page is a web page everyone in a 'class' can create together, with each participant having the ability to both amend existing and add new content.



(d) Workshops

The workshop activity is probably the most complex tool available in the current version of Moodle. The workshop is a structured framework within which a student can submit work for peer review. Workshops provide a process for both instructor and peer feedback on open-ended assignments, such as essays and research papers. There are easy-to-use interfaces for uploading assignments, performing self-assessments, and conducting peer reviews of other students' papers.

In addition to these resource handling and collaborative tools, Moodle has a range of the standard tools and systems expected in most VLE/CMS systems, including tools for creating content, for managing users and groups of users, and for creating quizzes.

Moodle's quiz module is one of the most complex pieces of the system. The community has added a large number of options and tools to the quiz engine, making it extremely flexible. It is possible to create quizzes with different question types, to randomly generate quizzes from pools of questions, and to allow students to re-take quizzes multiple times.

Section 4: Tool Functionality in the Depository

As a point of departure, the Depository will provide an installation of Moodle with standard VLE functionality, plus extensions as detailed in the Proposed Technical Release Schedule below. However, the Depository is designed to extend the functionality of the Repository beyond that of the initial Moodle release to:

- Support creators in downloading, versioning and extending Open University learning chunks; and
- Support creators and learners with emerging open learning-support tools.

Supporting Creators in Remixing Content

'Creators' may be staff whose job is to teach (school, college, university faculty, or educators from other sectors) or they may be 'learners' or indeed anyone else who believes they can add value to the University's learning chunks. An explosion of interest in the Web2.0 'mashup' paradigm championed by Google, Flickr, Amazon, Yahoo and others has already been flagged as 'elearning2.0'[1], and this dovetails nicely with our existing plans for leveraging the overlap between communities of creators and learners by extending and opening up our proposed toolset.

Learning chunks will be located in the Depository in two forms:

- **Moodle:** This will be a clone of the Repository, but it will be possible to download the Moodle source for import into the creator's own installation – for instance, in order to augment the learner experience by making available an open source extension to Moodle (e.g. an annotation tool); and
- **XML:** Creators do not like to be told what tools to use; this project is therefore agnostic in regard to what tools are used to work with learning chunks. We will, however, encourage creators to share reworked Open University learning chunks as XML, which can be imported back into Moodle. Every learning chunk will therefore be published as XML to facilitate its rendering by other VLEs/websites and its import into other course construction tools (such as authoring packages already used by Moodle authors, or specifically open content authoring environments such as Rice University's Connexions). We will also provide a schema against which any XML produced by creators should be validated. The schema itself will be subjected to the same developmental processes in the Depository by the community, in the same way as other content.

Open source content management

The dynamic of the open source movement requires us to support the processes of distributing and uploading incremental versions of content and possible software code. Moodle is not designed to support this, so a complementary environment is required, which will most likely be an open source PHP-based tool providing analogous functions to SourceForge and similar open source content management and coordination tools.

Supporting Open Sensemaking Communities

In The Open University's recent contribution to the open educational resources conference[2], support for Open Sensemaking Communities was proposed as the critical next step to move from open learning content repositories. The concept refers to the provision of tools to explicitly support learners and educators in annotating open content

[1] *elearning2.0* by Mike Mallach: http://www.knownet.com/writing/weblogs/Mike_Malloch/

[2] *From Open Content Repositories to Open Sensemaking Communities*, Utah State University, September 2005 Conference on Open Educational Resources: http://cosl.usu.edu/cosl/conference/2005/

with new interpretations, discussions, arguments and learning paths. Moreover, it should be easy to exchange these within the emergent, self-organising online communities which we anticipate will develop social and task-oriented structures as they work with the resources (from The Open University and elsewhere). Pedagogically, learners are expected to benefit from modes of learning which involve active reading, the crafting of interpretive representations, and a mixture of asynchronous and synchronous interaction with peers which will provide social and technical support and motivation.

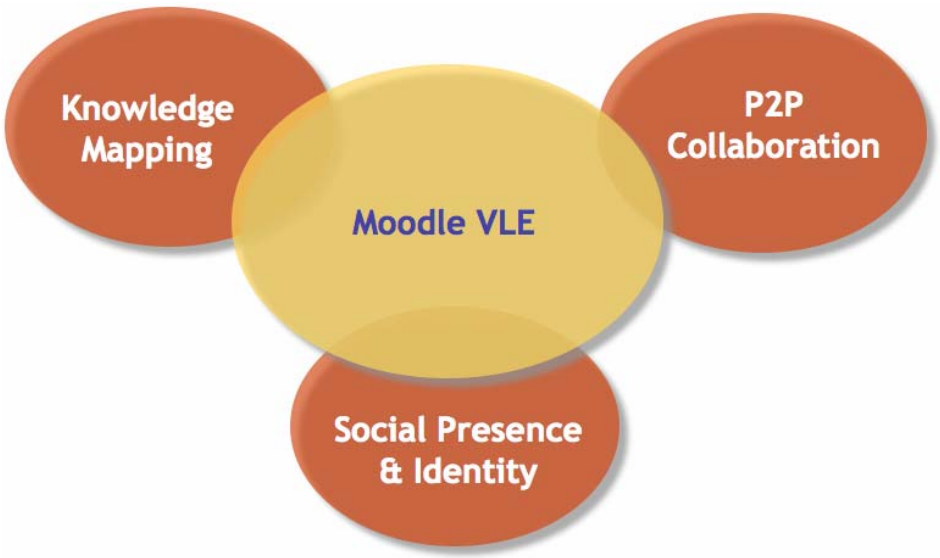
Enabling Technologies

The University's Knowledge Media Institute (KMi) has developed robust tools that already support hundreds of users every day in performing three distinct, but interwoven, sensemaking activities. It is anticipated that these will have equal applicability to communities of learners or creators. The three sensemaking support functions are:

1. Knowledge Mapping
2. Social Presence and Identity
3. Peer-to-Peer Collaboration

The three core KMi technologies which lie behind these functions – Compendium, BuddySpace and FlashMeeting – have been in daily use for several years now, providing good grounds for confidence in their technical robustness, usability and value. The challenge within this project is to deliver seamless user experiences (possibly simplified for students who may not be technically experienced), and to integrate them tightly into the Moodle VLE, initially in the Depository. It should thus be easy to annotate and map learning content, launch discussions in different collaboration media, or see who in the community has been working with a particular resource or might have relevant expertise.

The sensemaking community tools would thus be integrated into the Depository Moodle to achieve an integrated user environment, as illustrated below:



Action Research and Knowledge Dissemination

Open learning communities are a new usage scenario that is only beginning to be understood within the open content movement. It is therefore critical that, beyond the technical work (detailed below), researchers should study the adoption and usage patterns of each tool in order to identify its most useful new functions, assess its suitability for inclusion in the Repository, and share this knowledge with the broader open learning community.

Each of the three strands identified in the diagram above is now explained in terms of:

- Description
- Pedagogical Function
- Open Learning Context
- Action Research Issues
- Technical Work

A timescale for development and release is provided later.

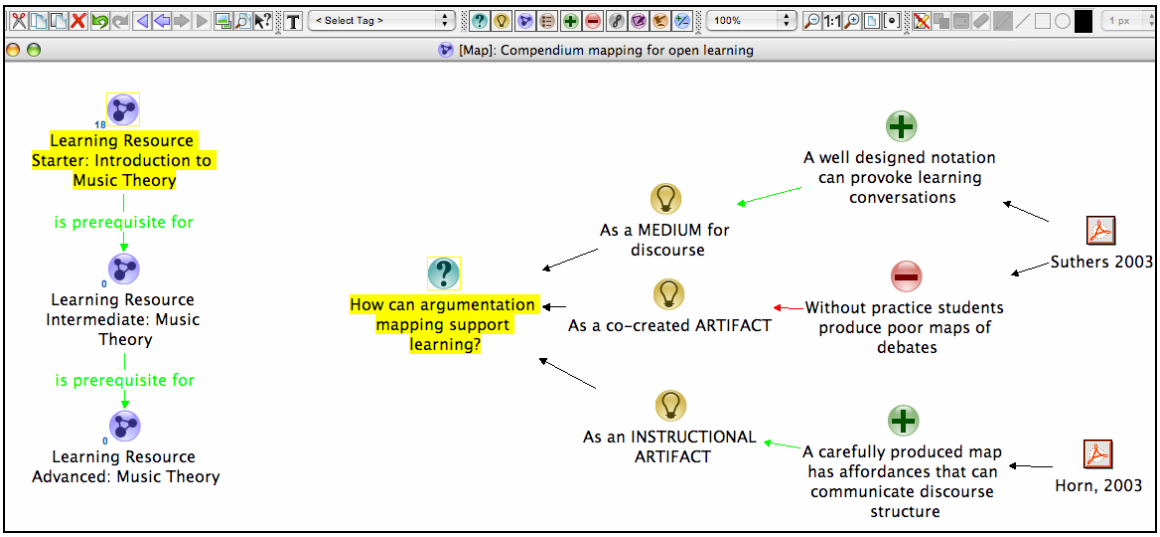
(a) Knowledge Mapping

Description:

Knowledge Mapping refers to the connections between ideas and the ability to view, share and critically analyse those connections. Consequently, it covers tools for annotation, linking and visualization, but with a specific orientation towards representations which focus on dialogue and argumentation to support critical reflection (with oneself and others). KMI's *Compendium* tool is hypermedia knowledge mapping software:

- *Hypermedia* because it provides several ways for users to *link* information chunks of any *medium*;
- *Mapping* because it provides a virtual canvas for organising visual webs of information; and
- It supports *knowledge management and learning* because it provides a (customisable) visual language focused on dialogue and argumentation.

TWO EXAMPLES OF COMPENDIUM KNOWLEDGE MAPS



On the left, a simple learning pathway map created by sequencing a set of maps, each of which is populated with structured resources (imported from the Repository/Depository, or in this case, Connexions objects). On the right, an example student Dialogue Map, used to articulate a research question, to which the student can link possible answers, arguments, and literature. These can be exported as interactive Web maps, or shared with other users who can build on them.

Compendium is a robust, freely downloadable, standalone client with >6,500 downloads, and an active user community applying for diverse modes of knowledge-intensive work across all work sectors, including teaching argumentation, e-science team deliberation, and strategic planning. A web client is now in beta testing, operating via web services on a shared database. A developer website was recently launched to support work on the freely available source code. The technical work to integrate this with the The Open University's open content is detailed below.

KMi is a founding member of the Compendium Institute, a not-for-profit virtual network which promotes the approach and supports the global user community. KMi serves as the development centre for the Institute (see www.CompendiumInstitute.org.)

Pedagogical Function:

Learning to think critically, argue in a scholarly manner, and collaborate to make sense of problems, are amongst the highest order skills that we seek to instil in learners. Empirical evidence shows that when used appropriately, argument and dialogue mapping can foster these skills and support these tasks. Argumentation for learning is now an extremely active field. In fact, two books were published in 2003 which focus on argumentation tools and learning/sensemaking.[3] In addition, users need intuitive, powerful tools to manage, share, analyse and track information, ideas and the connections between them.

[3] *Visualizing Argumentation*, Kirschner et al, 2003, Springer; *Arguing to Learn*, Andriessen et al, 2003, Springer.

In an Open Learning Context:

Knowledge Maps can be used to support many activities: to manage personal or group information by dragging and dropping in any document or website (a form of 'visual e-portfolio'); to manage knowledge and learning by charting questions, ideas, and arguments as they arise; to share learning pathway maps over resources; to work through revision question templates; to browse or construct argumentation maps associated with learning resources and literatures[4], or dialogue maps which add value to online meetings.

Students and educators will be able to publish Compendium maps to a Knowledge Map Exchange, which is an open content repository in its own right and is intended to complement learning resources. It will exemplify an open sensemaking environment which mediates layers of interpretation, linking and annotating resources within the Open University site, as well as out to any other site. Maps can then be searched, analysed and visualized in new ways to help students spot new connections and find new peers.

Action Research Issues:

- Can we induct new users into effective knowledge mapping by populating the Depository with examples, e-learning tutorials, and fostering an online peer-to-peer tutoring?
- What kinds of maps are created, and published, when they are integrated with learning resources? Do individuals gain reputation for the quality of their maps (cf. the *Identity* theme)?
- What are the limits of the current visualizations? Can we evolve them to meet new requirements from emergent practices?

Technical Work:

- Design and implement a mechanism to enable a user to easily populate Compendium with learning resources in such a way that these can be visualized, linked, tagged, re-sequenced, analysed, and republished.
- Design and implement the Knowledge Map Exchange, a version of the Compendium shared database system now being tested.
- Design and implement services to *generate* visualizations of learning resources and their Compendium annotations/web tags (going beyond hand-crafted maps): e.g. 'Show me counter-examples to this case study', 'Show me literature that supports this claim' (incorporating the ClaiMaker knowledge mapping system demonstrated to the Foundation: http://claimaker.open.ac.uk)

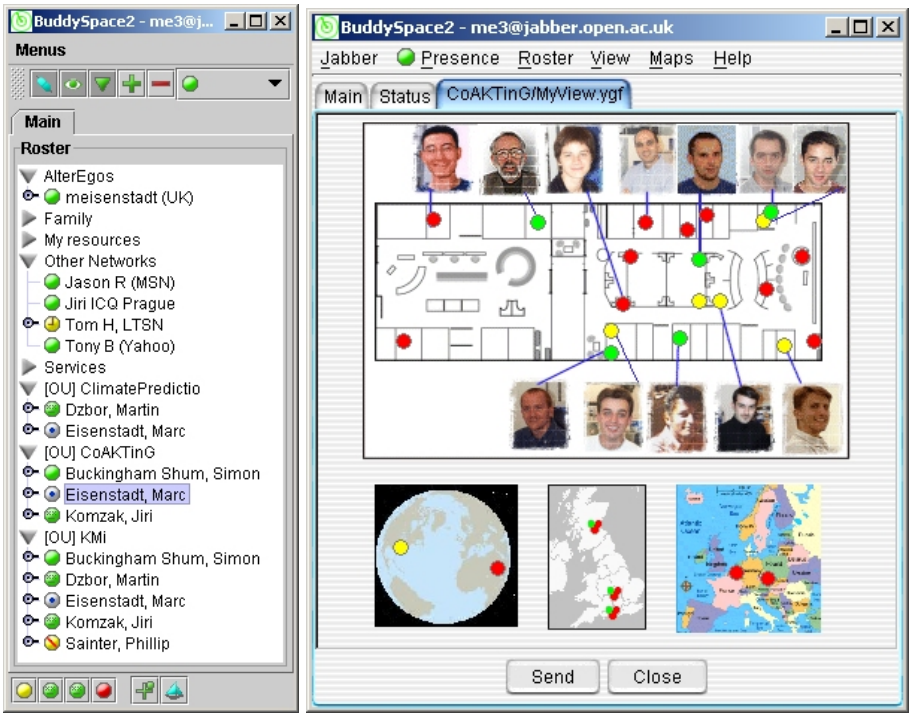
[4] At the Utah 2005 conference, there were some promising discussions with members of the COSL and Connexions open content groups on the use of Compendium as a visual tool for constructing hyperlinked learning pathways over resources. Similar discussions were held with Phoenix Wang with respect to mapping the Hewlett open content portal. It was concluded that a shared Compendium server was required, at that point not available. An initial version of this has now been implemented and is being tested. This project would consolidate this work and fully integrate it into The Open University site.

(b) Social Presence and Identity

Description:

KMi has developed a pair of open source tools, *BuddySpace* and *BuddyFinder*, that provide a combination of instant messaging, geolocation support ('who is online, and *where*?'), and friend-finding via semantic matchmaking ('who can help me solve a specific problem *right now*?').

BUDDYSPACE



On the left, a conventional list as found in any Instant Messaging client. On the right, presence indicators are overlaid onto geographical visualizations.

BuddySpace adheres to the IETF-standard Jabber/XMPP protocol recently adopted by Google Talk, and has been downloaded by more than 30,000 users. A range of user-defined plugins allow extensions, such as 'yoked simulation-sharing' for online group science work. BuddySpace is distributed from: www.BuddySpace.org.

Pedagogical Function:

- Studying in the presence of others can enhance the problem-solving experience, as numerous studies have shown (see Whitelock et al; Nardi et al).
- Presence and messaging provide a valuable backchannel – for example, conveying URLs of documents discussed or as a non-disrupting communication – and can also be used for meeting control tasks, such as queuing of speakers and voting on issues.

- The aim is to provide tools that enable us to *express the entire situated context of the learner*, which is clearly a lot more than just 'location X' and 'online' or 'offline'. The learner's current state of mind, including goals, plans and intentions, must be understood, as well as the way these connect with ongoing activities and devices accessible to the learner. As these are made explicit, plausible inferences can be drawn about what the leaner wants and needs to know, and this gives us an important 'foot in the door' for addressing the problem of delivering the right knowledge to the right people in the right place at the right time.
- Social networking is critical for learning: finding the right person can be more important than 'scouring the web for an answer', particularly when hand-holding or other explanatory services are required.
- Identity management and discovery should move beyond 'raw profiling' of formal name/address/location information. Reputation, for instance, is increasingly critical in everyday experiences of online resource gathering: who do you trust? It depends! This is critical in an online learning context.

In an Open Learning Context:

We see 'Social Presence' as an extension of information about a user's current *availability*, as seen in today's Instant Messaging environments, augmented (subject to the user's own preference and privacy constraints) to include other useful attributes such as attention, mood, location, device accessibility (e.g. 'cell phone only') and overall context (e.g. 'studying material X'). 'Social Identity' is an extension of a user's personal *information*, as seen in today's VLE and forum 'profiles', augmented (again subject to the user's own preference and privacy constraints) to include other useful attributes such as reputation, status, interests, friendship networks, browsing history, publishing history, tag-clouds, music playlists, annotated photo libraries, and so on. BuddySpace and BuddyFinder provide a strong start for this and can both be augmented in the right ways so as to be (a) web-centric and significantly easier for the vast majority of users; and (b) enhanced to include the extra functionality beneficial to learners.

Action Research Issues:

- Understanding the preference, privacy, and trust tradeoffs: revealing too much information can be a lot of work, and threatening to some. What safeguards are needed, and how are they best implemented?
- Understanding the best way to leverage presence and identity information for user advantage in common learning situations.
- Understanding when *synchronous* interactions yield the greatest dividends at scale (normally, very-large-scale learning activities emphasise asynchronous interactions).
- Demonstrating that 'location matters': location is very important to some, and irrelevant to others. In what contexts does it pay off?

Technical Work:

Although the tools are stable and widely used, the reality is that they are somewhat 'geek-y', catering primarily for 'Jabber enthusiasts'. At present, BuddySpace is implemented in Java, which incurs certain overheads for typical *users* who may or may not possess the requisite Java Runtime Engine. For *developers*, moreover, plug-in creation is harder than it ought to be. Nevertheless, these tools have already been deployed on a small number of courses at The Open University, and user feedback suggests that, with some development work, they could be made web-centric, simple to use, and inter-operable with Moodle. In addition, the act of map creation, although automated, currently rests in the hands of system administrators, whereas our feedback indicates that users are keen to customize their own maps. Finally, we believe that our current tools can be turned into generic 'presence and identity' management tools, as described below:

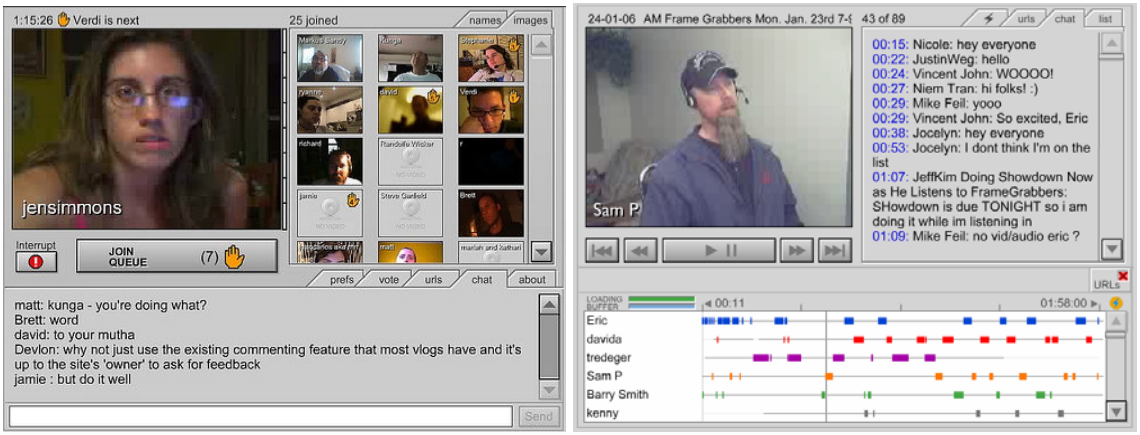
- Design and implement a 'client-agnostic presence dashboard' that interfaces to Moodle and common IM tools, and can run independently in the user's PC system tray or Macintosh Dashboard. This will serve as the master control panel and 'presence alert radar' for synchronous presence-handling.
- Design and implement an Identity Profile Management Widget that will handle a user's conventional identity profile, augmented with other useful attributes (such as reputation, status, interests, friendship networks, browsing history, publishing history, tag-clouds, music playlists and annotated photo libraries) and flagged for specific learning contexts.
- Design and implement a discovery search tool that fosters a culture of 'semantic matchmaking' whereby students can find other like-minded students, or at least those most likely to be able to provide relevant answers, feedback, mentoring, or (recursively) pointers to others who can assist.

(c) Peer-to-Peer (P2P) Collaboration

Description:

The *FlashMeeting Live* application is a simple browser-based applet that allows half-duplex, large-scale meetings, with text chat, voting, and URL sharing. The snapshot below (left) shows the tool being used by a group of 25 live attendees to discuss issues around Web 2.0 and video blogging. The system requires only the Macromedia-Adobe Flash™ browser plug-in and one user to generate the unique URL for each unique meeting for that community. The focus of this work is on instant accessibility and ease of use. Live meeting attendees raise a hand to speak and take turns in the interaction. This screenshot is taken from a public blog maintained by one of the self-organising community members, and is one of many which is now indexed by Google™ Images, from http://wearethemedia.com/2005/08/page/2/.

FLASHMEETING LIVE AND MEMO



On the left, FlashMeeting Live applet. On the right, the Memo applet.

The *FlashMeeting Memo* application is a browser-based applet that allows users to re-use the products of live meetings by editing and annotating them for the open content community. All products are accessible as annotatable URLs. Recordings on our current server have already been used very effectively as 'interviews' with learners, teachers and experts, and as live debates and support meetings in numerous learning scenarios. In the peer support scenario, student-peers can embed the meeting recordings into collaborative discussions and critiques. The memo screen snapshot above shows a recent (January 2006) Memo replay of a self-organized, peer-to-peer, support-group meeting of more than 30 international students studying an online course – precisely the kind of learner activity that we need to support in the Open Content Initiative to realise its 'Web 2.0' potential. The student-centred, student-driven event pictured here is one of over 2,000 conducted by 'real users' on the prototype KMi server as we have been developing this technology. One US-based student commented as follows on his or her self-organised study group (February 2006):

> *'FlashMeeting is not only an effective tool for us to further our learning, but by allowing us to bring people from all over the world together with realtime audio/video, it helps further build a sense of community that is difficult to achieve online with only text chat, forums or email as a means of communication.'*

The prototype FlashVlogging system allows users to rapidly publish instant video segments into video blogs (or vlogs), RSS feeds or direct into arbitrary web pages. The Rostra system is an RSS feed management system that helps users to manage, integrate and publish simple syndication services such as blogs, podcasts and vlogs, all from management web-forms. Further information is available from:

> http://flashmeeting.open.ac.uk/
>
> http://cnm.open.ac.uk/projects/flashvlog/
>
> http://cnm.open.ac.uk/projects/rostra/

Pedadogy in an Open Learning Context:

The key to the success of The Open University experience is that our students do not sit alone, surrounded by learning objects. Whilst quality content will draw users into the Repository, our extensive experience shows that it is the interactions which students have with our systems and with one other that aids their learning, brings them back, and develops a community. Our VLE concept already contains a number of important collaborative systems. The P2P Collaboration thread will connect a powerful range of existing and deployed KMi technologies into a unifying architecture to help users to collaborate with peers, and to annotate and syndicate media and their work with it.

Action Research Issues:

- Effective support for peer-learning in a synchronous Web 2.0 world. How can we facilitate social networking and reputation management via live technologies in an open and self-sustaining community of learners? What makes a good 'live and online' experience for a peer-learning community?
- Re-use and syndication of meetings as shared, public content. The experience of learners in live communities represents a potentially very valuable source of learning content in its own right. How can we support and manage the online sharing and syndication of that new content?
- How can we connect the work of learners who are creating their own multimedia content, live and online, with our existing content and management?

Technical Work:

FlashMeeting Live and Memo, FlashVlog and Rostra Services are all existing robust prototype deployments that have been shown to work very well in a peer-support role. The first set of these systems rely on proprietary server side technologies from Macromedia Adobe™. This means that, although the systems themselves are not yet suited to a fully open source release at this point, their products can certainly be released. Significant moves are also being made in the open source community to replace the propriety components. In the event that this parallel work is successful, we would hope to move to an open model in the course of this initiative. At this point, we propose a significant deployment into our open learning community to support the evolution of this new world of users. Those who need the most support are not the teachers, but the learners themselves.

The challenge of properly integrating these systems into a uniform architecture cannot be under-estimated. In addition, we aim to provide important additional Moodle-related management features which will ensure that our open learning scenarios (peer-to-peer events around open content artefacts and activities) are properly supported for all these collaboration systems.

Proposed Technical Release Schedule for the Depository

The project will develop a compelling suite of VLE tools and experiences based on Moodle, plus minor extensions for the October release. The initial tools will then be elaborated, and more advanced items and KMi tools will be added, over the ensuing 18 months. A conceptual and functional distinction is made between a learner's personal space (myMoodleSpace) and the collaborative group areas (re-purposing Moodle's model of 'courses').

The schedule below is for the **Depository** installation of Moodle. Migration of these features to the Repository will depend on the outcome of evaluations within the Depository.

'myMoodle Space':

Release 1: October, 2006

- Personal profile
- Personal interest profile
- Personal blog
- Personal calendar
- Personal bookmarks and tags
- Repository searching
- Personal Compendium tool for Knowledge Mapping

Communal Spaces:

Release 1: October, 2006

- Open source content management system for creators
- Example Knowledge Maps to complement selected content + e-learning resources to illustrate different kinds of Knowledge Map
- Flashmeeting Live and Flashmeeting Memo
- Sensemaking communities can form in Moodle around existing course topics
- Social presence: Jabber/XMPP <-> Moodle interoperability (IM + presence in Moodle workspace)

Release 2: Quarter 1, 2007

- Collaborative bookmarks and tags
- VideoBlog video annotation service, supported by Rostra news syndication and Podcasting
- Registered users can create their own collections/communities /learning experiences and share them with others.
- Social presence: Web-centric BuddySpace client (Jabber IM client with core BuddySpace/Moodle functionality)
- Knowledge Maps published for further selected learning resources

Release 3: Quarter 2, 2007

- Social presence: Extended map functionality for open/custom mixing interoperability e.g. with Google Maps

Release 4: Quarter 3, 2007

- Social presence: Generic 'presence dashboard' to control augmented presence info and alerts
- Social presence: Karma/Reputation management features
- Knowledge Map Exchange integrated into Moodle, enabling users to publish, share, edit, and search across maps easily and powerfully

Release 5: Quarter 4, 2007

- Import/export learning experiences (shells) in the Depository
- Community rating/peer review of objects
- Web-centric BuddyFinder based on augmented identity and reputation profiling
- FlashMeeting, VideoBlog and Rostra systems integrated with all other technical strands
- Knowledge Map Exchange integrated into Moodle, enabling users to publish, share, edit, and search across maps easily and powerfully

Release 6: Quarter 1, 2008

- Full deployment of live Peer Support technologies, and Peer Social Network management functions
- Social presence: Generic 'identity dashboard' to control personal privacy preferences and reputation management
- Knowledge Mapping extensions to integrate with a wider spectrum of tools and offer more powerful services. Candidates include the generation of new map visualizations, the ability to publish from Compendium to blogs and wikis, and to monitor RSS feeds

APPENDIX L – Institutional Commitment

The decision by the Council of the University to support a move into open content, along with strong support from the academic community provided through the Academic Board (the academic governing body of the University), was based on a number of considerations and agreed in July 2005. Most importantly, the Council satisfied itself that the philosophy of open content is entirely commensurate with The Open University's mission to equalise access to high quality educational opportunities. Similarly, the Academic Board of the University recognised the synergy between open content and the academic and social purposes of the University, and urged that progress towards open content provision should be as rapid as possible. The Vice-Chancellor has subsequently emphasised to the staff of the University her own commitment to open content and her view that it is of enormous long-term importance to both the University and wider society.

In supporting an Open Content Initiative, the Council was particularly influenced by the history of the University's partnership with the BBC, and open content made available on the internet was deemed to offer similar advantages in the new digital medium. The Council also acknowledged the technological and global drivers which are providing momentum for the opening up of content, and recognised that it is not in the interests of the University to ignore these influences. The strategic significance of open content in the contemporary world was also acknowledged and has since been further reinforced in the University's more recent strategic review.

The Council also anticipated benefits to the University through the opening up of content which is produced elsewhere. There was strong recognition that one of the key advantages of open content is the possibility it creates for sharing of content. It is this which underpins the commitment of the University, as set out in this application, to full participation in the open content community, to the essential philosophy and principles of open content, and to adopting open source for its electronic learning support tools.

The Council took the view that it was important to establish the impact of open content on its core business. In the light of the experience of working with the BBC, and after considerable discussion within the University, the Council's decision to support the Open Content Initiative was informed by its potential as a laboratory for exploring, understanding and testing how positive synergy can be achieved between open content and the core business of the University, albeit without exposing the institution to unnecessary risks. The potential benefits, along with the possibilities for further consolidating the University's e-learning expertise, also influenced the Council's decision.

The University's work in developing countries was another key factor in the decision reached by the Council. It was recognised that the Open Content Initiative will provide critically important mechanisms for facilitating learning in developing countries. As such, the initiative is central to the Open Door and TESSA projects referred to elsewhere in this application.

The Council recognised that the availability of external funding would enable the University to expedite its large-scale participation in open content delivery. There are of course limitations on the range of investments which the University can undertake using its own resources and, in the absence of additional support, these are likely to have impacted detrimentally on the schedule and scale of open content delivery undertaken by the institution.

External funding is, therefore, essential to enabling the University to move faster, to capitalise on the current momentum behind open content, and to be a major player at a formative stage in the development of open content provision globally. In short, the support of the William and Flora Hewlett Foundation will enable the University to act more quickly than would otherwise have been possible, and it will enhance the scale and impact of the work.

APPENDIX M - Sustainability

There is uncertainty and debate within the open content community about the conditions for sustainability. In this respect, The Open University is in the same position as other open content providers and, like others, must investigate how sustainability can be achieved without compromising the underlying tenets of open content. The University intends to use the two-year project as an opportunity to explore models for sustainability and a key outcome will be a plan for future sustainability. The first report on this is to be produced towards the end of Year 1.

In exploring the conditions necessary for sustainability, the University plans to undertake detailed work in at least the following areas:

Cost reduction

With the support of the William and Flora Hewlett Foundation, the University will have the resources to experiment with new technological approaches to the development and presentation of curriculum content In the medium to long-term, this will result in a situation in which curriculum is routinely produced in formats, and using technologies, which easily support open content delivery. The costs associated with developing these new approaches will steadily decrease as they become embedded in routine day-to-day curriculum development. In addition, the University is moving into open content at a time when it is simultaneously addressing the broader aspects of e-learning development and delivery (including the introduction of a new virtual learning environment). This offers a major opportunity to test and institutionalise conditions under which a key aspect of future sustainability will involve reducing overall costs through the application of new curriculum development practices and their associated technologies.

The University recognises that the application of technologies will not, as a matter of course, keep costs down. Through the development of structured authoring and digital asset management systems, however, it will be possible to reduce the costs of open content materials which are originated using these systems. The systems will facilitate cost effective re-purposing and re-packaging of materials for open content use in ways that are not possible across the full spectrum of the existing OU curriculum, much of which was developed using traditional print formats. In future, course production will be based on systems which will enable open content design to be built into the initial course production process.

Impact on core business

The University anticipates that open content provision will have a positive impact on its core business of developing courses for, and delivering them to, registered students who receive assessment, support and accreditation. Our aspiration is to create a mutually reinforcing set of open content and formally supported offerings which will together expand significantly the University's reach, both within the UK and globally. The funding base for open content in the longer term, therefore, lies in enhanced income levels generated through the core business of the University. How successful we will be in achieving this symbiosis remains to be seen and will be assessed closely as the open content project unfolds. The University is optimistic about the outcomes and plans to explore the necessary conditions for success over the next two years.

This being said, there is admittedly a degree of uncertainty about the actual impact of open content on the core business of the University. It is also unclear what market intelligence might exist that would enable us to proceed with greater certainty. In these circumstances, there is no alternative other than to explore possibilities through the experience of the project itself. As an institution with a pioneering record, The Open University is no stranger to this kind of uncertainty. When the institution was established in 1969, it is most unlikely that any amount of market intelligence would have predicted success, certainly not of the kind and degree which has subsequently been achieved. In fact, the University had to *innovate* its success: it did not merely follow market needs but rather set about constituting new markets by opening up educational possibilities which resonated with the needs and aspirations of large numbers of people. It is our view that the time has come for open content and, in accepting this, the University needs to adopt the same bold and pioneering approach which has characterised it throughout its history. With sufficient imagination and innovation, we believe that there is scope for developing new learning approaches and new business models that will ensure a positive impact on both educational provision in general and the sustainability of open content itself.

This belief rests on more than hope alone. We refer in our application to our partnership with the BBC. This partnership has passed through numerous phases, but the effective outcome throughout has been the provision of learning to the general public which is free at the point of use. Open University television programmes have been available on free-to-air national public service BBC channels for decades. Similarly, the collaborative BBC/Open University website, Open2.net[1], has for some time provided another vehicle for making Open University originated learning materials freely available. Although re-use of these materials is not freely permitted to course creators, both the broadcasts and the website provide content at no cost to learners themselves. The passive viewing audience for Open University/BBC broadcast programmes in 2004 was around 26 million people. Many of these viewers watched more than one series, with audiences ranging from 1.1 to 6.4 million for individual programmes. Nearly 60% of viewers were aware that The Open University was involved in the programme. Similarly, there were 982,738 individual users of the Open2.net site in 2004, each of whom spent an average of 9.3 minutes per visit. While it is difficult to correlate passive viewing directly with subsequent registration for courses at the University, not least due to apparent time lags of several years, over 20% of new students report that their first 'contact' with the University was through one of our broadcasts. The evidence also suggests that, in 2004/05, 114,616 enquiries were stimulated by Open University/BBC television programmes. Along with other partners, the University has recently launched a similar initiative called Creative Archive[2], which provides open access to moving pictures.

As should be clear from its work with the BBC, the University does not shy from its mission of educating the broader community and has thrived despite, and probably even as a direct result of, the free educational services it has traditionally provided. We are convinced that our commitment to making our curriculum freely available, as we have done through the BBC and the Creative Archive and as we will continue to do through the Open Content Initiative, serves the best interests of the institution. The University's high profile presence on national television has undoubtedly increased knowledge and awareness about it, and has contributed significantly to growth in student enrolment figures. Our expectation is that open content will have similar effects.

[1] http://www.open2.net/home.html
[2] http://www.creativearchive.bbc.co.uk/html

Whilst the scale of these benefits is as yet unknown - clearly, the impacts of the internet will not be the same as national broadcasting – our experience of working with the BBC suggests similar possibilities for open content in the digital age.

Additional services

The Open University also intends to explore the possibility of offering additional services to open content users; that is, users may wish to purchase services which are linked with, but offered in addition to, the open content which is provided free of charge. For example, personal tutorial services and various forms of assessment could be offered alongside open content use. The Open University already has a Student Services Division which provides these types of services to registered students. This Division currently has nearly 1,200 salaried staff and there is also a cadre of over 7,000 associate lecturers (equivalent to adjunct faculty) who could be engaged for these purposes. The University intends to explore these possibilities over the next two years and to develop detailed business plans in relation to them.

It should be added that there are a variety of other services which the University is well placed to provide as a result of its extensive infrastructure and service range. For example, there are opportunities for assessment and accreditation, and also for provision of educational information, advice and guidance. These possibilities raise the wider issue, which will be investigated by the University as part of this project, about the place of curriculum content within the traditional business model of the University: is it perhaps provision of educational support services, rather than content per se, which should be at the core of the University's business model in the future?

Sharing of materials

The University will actively explore the use of materials developed by other institutions. As the initial investment costs associated with course production are high, open content provides an opportunity to draw on materials developed elsewhere, thereby significantly reducing origination costs. So long as the open content domain is populated by materials of sufficiently high quality, there is a major opportunity for open content providers, including the Open University, to drive down costs in this way. Indeed, the University has already incorporated material from elsewhere into its curriculum and has even incorporated entire courses where appropriate. This has significantly reduced initial investment costs.

Additional external funding

The University will continue to explore additional grant funding sources, both to enhance the main open content programme, and to reach specific audiences and sustain key partnerships. In addition, we anticipate that our continuing work in Africa and other developing areas of the world will continue to attract funding from external sources. As this work will rely extensively on open content, resources for further development and sustainability will be leveraged via new grants for these outreach projects. In respect of the UK, we are already in discussion with the Higher Education Funding Council for England (HEFCE) about the possibility of receiving long-term funding to provide centralised open content support and infrastructure for the sector as a whole.