



Project Document

Digital Rights Management for Jorum: an update, 2006

Synopsis: This is an update of the review of digital-rights management requirements and issues for Jorum that was published as part of the Jorum scoping and technical appraisal. This document reviews developments and issues in the broader environment, relevant outcomes from the JISC-funded study of DRM in the JISC IE, and draws conclusions for Jorum planning and development. DRM implications of specific business models are not revisited; further discussion of these would be informed by the detail of models to be adopted which is, as yet, unknown. Implications of offering Jorum as an outlet for commercial content is discussed in broad terms.

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Digital Rights Management for the Jorum: an update

Introduction

This document updates the review of digital rights management with reference to Jorum development that was published as volume VII of the Jorum scoping and technical appraisal study (Halliday 2004). The Jorum solution at launch was agreed before the JISC-funded study of DRM requirements in HE and FE began. It was considered appropriate that the longer-term solution for Jorum be informed by that study. The study, conducted by Intrallect, was completed in December 2004 (Intrallect 2004). This document reviews developments and issues in the broader environment, relevant outcomes from the Intrallect study, and draws conclusions for Jorum planning and development. It does not revisit the DRM implications of specific business models for content in Jorum. At present, the JISC wishes to defer decision on whether or not commercial companies will be offered the facility to deposit content in Jorum and offer it to the JISC community. Further discussion of the DRM implications of specific business models would be informed by detail about those models which, as yet, is unknown. The implications of offering Jorum as an outlet for commercial content is discussed in broad terms.

Digital Rights Management in the JISC Information Environment

The Intrallect DRM study generated a substantial number of use-cases and from those, it derived DRM requirements. The report from that study stated that requirements were 'developed with no regard to the processes or technology which might meet the requirements. This was done to preserve the distinction between what people need to do and the way to achieve that purpose.' Nevertheless, those attending workshops for the DRM study, were instructed to create use cases that could be completed in the current context and thus, use cases were necessarily limited to what could be achieved with extant technologies.

The Intrallect study concurred with the Jorum scoping and technical appraisal study with regard to the level of technical control required in UK HE/FE. It reported that academics are concerned that their material be used 'in accordance with the conditions under which it was offered' but a system based on trust (in both scholarship and learning and teaching) is well established so beyond authentication and authorisation technical enforcement is not a priority. These conditions are akin to those on which the Creative Commons system of licences is premised (see Creative Commons, 2001). This system has much to recommend it as a means of licensing content within tertiary education. However, Creative Commons is not suitable as a licensing system for Jorum. First, because Creative Commons licences are designed to facilitate a direct relationship between rights-holder and user; these are the two parties to any Creative Commons licence. Jorum, has responsibilities akin to those of a

publisher, i.e. it is an intermediary that is party to two bilateral relationships: the first with the rights-holder and the second with the user. Jorum requires a licence from the rights-holder to make her content available in the manner described in that licence. In turn, Jorum offers a licence to the user to use content in the manner permitted therein. Second, there is no provision in Creative Commons licences for database rights. As a community-owned resource, database rights in Jorum must be clearly stated. Third, some of the content deposited in Jorum includes material that is owned by a third party (i.e. not the depositor/creator). Permission to use third-party materials is usually granted on more restrictive terms than those of a CC licence, e.g. for a specific geographic region rather than for global distribution. The CC-UK organisation indicates that CC licences are unsuitable for materials held in repositories. It plans to point to the JISC Jorum Deposit Licence and other emerging licences as suitable alternatives.

Intrallect's agreement with the Jorum study regarding the level of technical control required implies that the Intrallect study referred primarily to content generated within HE/FE. Should the JISC decide to include commercial content in Jorum, the study may need to be revisited. The only technical control measure beyond authentication and authorisation that was identified in one of the Intrallect use cases was tracking of usage; this was raised as a possible condition of supply of content, for example, when content is available only through a particular hardware or software solution. This was not considered a priority for UK HE/FE and it would limit usage in a way that would be undesirable for Jorum and conflict with the JISC intention to promote open-source solutions. To facilitate maximum flexibility for future planning, it is important that Jorum uses open standards and can interoperate with other parts of the JISC IE and possibly beyond.

Among the thorniest issues identified by Intrallect were cultural supply-side issues; those relating to ownership of content created in UK colleges and universities and responsibility for and competence in securing third-party permissions. With regard to delivery of content, Intrallect referred to the conflict between heterogeneity in licence terms and the simple iconic representation of those terms - which is premised on standardisation. The technical challenges identified by Intrallect relate largely to the requirement that rights metadata be reliably attached to content as it travels in the digital environment and presented to users wherever that content is used. The Intrallect study also suggested that the facility to revoke a licence is important. This is an unusual requirement; in order to provide some security for the licensee, licences generally cannot be revoked. Intrallect was tasked with specifying the requirements of UK HE/FE with regard to DRM. It concluded its study by acknowledging the substantial breadth and depth of this topic; it recommended that the JISC fund a programme of research in this area covering user/creator education, licences and technology. The Jorum team is thus faced with the requirement to develop and deliver a service in a fluid environment.

Ownership of IP in content generated in HEIs and FEIs

The Intrallect study indicated the types of terms of use, e.g. modification and re-purposing, that would be acceptable to creators/owners of content. Generally, these terms referred to creators rather than institutions. Intrallect cited the findings of project ROMEO which focussed on academics' attitudes to eprint archives, i.e. acceptable terms of use in the Intrallect study were determined largely with reference to content that is customarily controlled by the creator (see Gadd *et al.* 2003a, 2003b). Nevertheless, Intrallect identified as a key issue the need for clarification on ownership of IP in content generated in HEIs and FEIs. The report indicated that the law is clear but interpretation and enforcement is uncertain.

Many institutions lack clear policy in this area and anecdote within the UK community suggests that staff often assume that they own content which, in law, is owned by their employer. Nevertheless, even where policy and legal ownership are clear, university and college teachers may dispute their employers' claims to rightful ownership; the strategy of an institution may clash with the needs of its employees in this regard. Institutions must develop and disseminate clear policy but consultation and negotiation with its employees is essential if that policy is to be adhered to and upheld. The notion that learning and teaching materials are resources, owned by a university, that may be repackaged, exchanged and sold by that university may conflict with widespread perceptions about academic freedom; or may be

considered appropriation by the employer of what is correctly part of the value that an individual teacher brings to her role (see Charlesworth 2005). Where custom and practice conflicts with policy, the enforcement of the latter may need to be tested in court (see Canadian Association of University Teachers, 2004). Even where an institution is established as rightful owner of content generated in the course of employment, in the UK, it is considered good practice for the institution to respect the rights of its employees to be identified as authors of the content that they generate and to object to derogatory treatment of that material, i.e. to act as if the creator has moral rights – when legally, there are no moral rights in material created in the course of employment (HEFCE, Universities UK and SCOP 2003).

Lack of clarity and a common understanding regarding ownership of learning materials within institutions presents a challenge for Jorum. It may be expected that individuals will assume ownership of content that their employers would, if consulted, consider to be the property of the institution. If individuals were permitted to deposit content into Jorum, this may result in Jorum holding content with inaccurate (or disputed) rights information. It may be difficult to identify cases where the creator had incorrectly assumed ownership in ignorance. Jorum requires certainty of ownership. At present, Jorum accepts deposit only by institutions; individuals cannot deposit content directly. Thus, accuracy of rights information is the responsibility of the depositing institution; it must ensure that any staff member who is authorised to deposit has a clear understanding of ownership of rights in that content. However, this policy raises another issue. While content created in the course of employment is owned by the employer, not all learning and teaching materials used to deliver courses in UK HE/FE are owned by institutions as not all university and college teachers create their materials within the course of employment. For example, an employee who is paid an hourly rate and only for teaching hours creates the materials used for her classes outside of her employment contract and thus owns those materials. Within a single FE college, terms of employment vary considerably (e.g. full-time permanent to part-time, temporary project worker or ad-hoc employee paid for hours worked) and rightful ownership of IP in content may vary with those terms (Alan Rae, Dundee College, personal communication, 2004). Rightful ownership is complex and is not transparent.

Nevertheless, the Jorum team believes that there are individuals within the community who, as rightful owners of the materials that they have created, wish to deposit those in Jorum. They could do this by assigning ownership of their materials to an institution to deposit on their behalf. However, a recent case in a Canadian University suggests that even when individuals are willing to share materials with colleagues, they wish to retain control over its integrity and use; assignment of ownership to an institution conflicts with that wish (Canadian Association of University Teachers, 2004). An alternative mechanism is available to allow individuals to deposit content in Jorum whilst retaining ownership; the owner may licence her content to an institution within the JISC community and the institution may, in turn, deposit that content in Jorum (thus sub-licensing it to Jorum which, in turn, will sub-license it to Jorum users). This will allow Jorum to offer individually owned content whilst the institution bears the responsibility (and any liability arising) for it.

Legality of content - liability for institution or individual

The Intrallect study indicated that HEIs/FEIs must establish efficient mechanisms for employees to secure permission to use third-party materials in their content. If the institution is to assert ownership of that content, it would be wise also to ensure that all content is approved by a qualified institutional employee to guard against infringement of any law related to information; otherwise, the institution itself is liable.

However, inspection by a qualified authority in the institution of all content before it is deposited would be highly resource intensive and may militate against deposit. Among the recommendations from two JISC workshops on rights in the digital environments in Spring 2005 was that JISC should 'Encourage and support the development of professional responsibility within FE and HE institutions towards the 'licensing-in' and 'licensing-out' of copyright works, including encouraging the provision of relevant levels of training in intellectual property management to all appropriate staff' (Charlesworth 2005). This type of activity is beyond the scope of Jorum but is necessary as a supporting activity if Jorum staff are to be confident that content is deposited with proper care to ensure that it infringes no law.

The Intrallect study acknowledged that in some instances, it is not possible to secure rights because the rights-holder cannot be identified or has failed to respond to all communications. In these instances, Intrallect suggested that content, including these third-party materials, may still be offered for use but with a clear alert to the user that s/he does so at her/his own risk. JISC Legal advises that cases where a rights-holder cannot be identified should be clearly differentiated from those where the rights-holder failed to respond to communications (Ralph Weedon, JISC Legal, personal communication, 2005). In the former case, it may be reasonable to include this content in Jorum and to indicate in the 'Notice and Takedown' policy that every effort has been made to secure permission for all third party content in Jorum but in some instances this has not been possible. The Jorum 'Notice and Takedown' policy will include this disclaimer. It will also provide clear guidelines to rights-holders on how to complain should they identify content in Jorum for which permission has not been granted. JISC Legal considers that instances where the rights-holder has been identified but has simply failed to respond to permissions requests present a far higher risk than those where the rights-holder cannot be identified and advises that this content should not be accepted by Jorum (Ralph Weedon, JISC Legal, personal communication). The Jorum depositor licence requires the depositor to secure permission to use any third-party materials and thus, any content for which permission has not been secured should not be deposited. Clearly, in any case, it is essential that all reasonable endeavours be made to secure permission before the third-party content is used.

When the Jorum scoping and technical appraisal study was written (winter 2003), the project team planned to implement a system of icons for communicating a limited set of licence terms; a system modelled on creative commons licences (Creative Commons 2001). Clearly, the number of icons that can be accommodated on a screen and become familiar and recognisable by users is limited. The Intrallect team suggested that a maximum of seven is appropriate (Charles Duncan, personal communication)¹. This system would require a set of standard licences - created by and offered by the Jorum licensing organisation (currently HEFCE). The Intrallect study suggested that moves to develop standard licences should be informed by wide consultation with stakeholders and by research such as that conducted during the Romeo project (with reference to eprints rather than learning objects) and by the ALCS (unpublished). Participants in two JISC workshops on rights in the digital environment which were held in Spring 2005 also recommended that the JISC should 'encourage the development and use of a common set of licences or licence templates for:

- FE/HE inter-institutional licensing of works, including repurposing;
- Licensing of works by FE and HE institutions from third parties, including repurposing;
- Licensing of works from FE and HE institutions to third parties; and
- Licensing/assignment of works by academics to third parties' (Charlesworth 2005).

While such standard licences may be acceptable to institutions and individuals within the JISC community, they are less likely to meet the needs of commercial organisations. There is experience within the community of negotiating standard licence terms for digital journals. A standard licence was developed co-operatively by a body consisting of representatives from all stakeholder groups including publishers. It was then used in NESLI negotiations on licence terms for digital journals. However, even where a private company accepts the licence as a template, it is generally the case that some terms are negotiated individually and thus are specific to that licence agreement. The JISC has yet to decide on whether or not commercial companies will be offered the facility to deposit content in Jorum. A decision to include commercial content in Jorum would probably necessitate a more flexible system for

¹ The JISC decided subsequently that, at launch, the Jorum would make only one licence available for content deposited in Jorum.

licensing; one that accommodates a broad variety of licences and does not depend on agreement of pre-determined licence terms. Furthermore, common sense would suggest that the Jorum would be more effectively future-proofed if licence terms were not hard-wired, i.e. if changing circumstances and thus changing licence terms could be accommodated. Nevertheless, variety in licence terms conflicts with a requirement for simple, iconic representation of those terms. The Intrallect study suggests, as a solution, 'actionable' licences. These would be produced by specifying a licence and linking it to the identifier of an object. The licence would be the standard body and the specific schedule could be generated from data associated with the identified object. As mooted, the schedule would contain detail about the object. This may not, however, meet the needs of commercial organisations wishing to impose non-standard licence terms. It may be that variation tends to occur in specific clauses. If so, a licence with a number of open fields would address that need. Clearly, if such a system were adopted, those object-specific terms would have to be presented in full to users of Jorum and to users of content wherever it travels after it is downloaded from Jorum. Presentation of rights metadata to end-users of content that has been downloaded from Jorum for use elsewhere depends on trust in the person who downloaded it (to adhere to the terms and conditions of use) and on her/his access to the technical skills and systems that enable this. At present, it is possible with little effort to decouple Jorum content from its metadata. Furthermore, many systems (e.g. VLEs) in use within the JISC community are not configured to download metadata with content and present it to end users.

Anything short of absolute flexibility, i.e. a system that can accommodate any licence, would require some scoping of the nature of variation in licences before any further specification is possible.

The facility to revoke or extend a licence

The Intrallect study specified the requirement for a facility to revoke or extend a licence. This is an unusual requirement. Generally licences are irrevocable; thus giving some security to the licensee (A. Guadamuz, AHRB Research Centre in Intellectual Property and Technology, personal communication). The requirement that licences be revocable further indicates the need for flexibility, i.e. that terms should not be attached permanently and inextricably to content. Intrallect suggested that revision and revocation of licence terms may best be accommodated by a central licence registry which could provide long-term provision of licences through all revisions. This is an interesting idea. Clearly, it would require a mechanism for attaching any update or revocation of licence terms to the information objects to which those terms apply. It is not clear how this would be achieved.

An approach that may meet the need for revocation or extension of licence terms and provide unlimited flexibility in licences that would accommodate commercial content providers and future developments in licensing, is that proposed as part of the EduSource project in Canada (Downes 2004). The EduSource DRM solution was designed to function in a distributed system. It is distinguished from other models primarily by the fact that rights metadata are not embedded with content. They are maintained in an environment that is separate from content and where control is exercised by vendors. The vendor may change the price at any point up until purchase and may apply pricing and terms collectively rather than on an item-by-item basis. Application of rights metadata to a collection can simplify metadata creation and maintenance for the vendor. Thus, rather than a single opportunity to determine and describe rights in metadata that are then released into a system, the content vendor retains control and thus the means to adjust pricing and terms of use in response to changing demand, timeliness of information or other factors, i.e. the vendor may practise responsive market differentiation. Downes claims that EduSource accommodates federated networks of repositories and facilitates flexibility for substantial variation in licence terms. It also promises an apparently efficient mechanism for commerce or exchange of information objects which minimises the per-item cost of administering a sale by bundling micropayments which are then processed by 'vendor brokers' and 'purchase brokers'. These offer the same types of benefit that subscription agents have for decades offered to libraries for purchase of serials. Unfortunately, the EduSource DRM solution has yet to be tested. While the code has been written, it was not implemented in the EduSource codebase (Downes, personal communication, 2005).

Further work required

The Intrallect study included a disclaimer to the effect that the study did not set out to define every element of rights metadata that might be required and so is not comprehensive. While the study distilled user requirements from a large number of use cases, these were limited to actions that are possible in the current context, i.e. exclude desirable uses that are not currently possible; flexibility would facilitate extension of this set of uses. The study concluded with the recommendation that the JISC establish a DRM development programme including three strands: good-practice guides; licences; and technology - practical DRM solutions. Clearly, further work is required before an implementable solution may be adopted with confidence. This recommendation is reinforced by the Alt-I-lab White Paper on Digital Rights Management which states that 'DRM is a broad and deep topic. Each aspect of it, including technology, legal aspects, standardisation and policy making must be studied on its own' (Robson *et al.*2004).

A DRM solution for Jorum - nature and scope

Mobility of content within and across networks - and persistence of rights data

DRM technologies have developed apace since the last Jorum report on DRM was published. They commonly tie use of content to a specific proprietary hardware solution into which is hardwired the DRM technology that protects that content (see Dusollier, 2003; Fox and La Macchia, 2003; Rosenblatt, 2003; Samuelson, 2003; Tyrvaïnen 2005). A proprietary solution that restricts use to a specific machine is inappropriate for UK HE/FE. Flexible use of content for teaching and learning is contingent on interoperability with the variety of tools and environments used by teachers and students, e.g. it should be possible for a teacher to select content from Jorum, manipulate it and import it for access from a VLE. Users want to access content from any machine either local or remote. Academics often work from home and want to be able to access institutional resources from there. Furthermore, DRM systems that depend on specific hardware compound the problems of archiving. If use is possible only when explicitly granted, then loss of the granting system implies loss of the content - it can no longer be accessed (Coyle 2003).

Jorum is designed as a national service within the JISC Information Environment. It should interoperate effectively with other elements of the JISC IE. As part of an integrated information environment, Jorum should benefit from central services such as authentication, authorisation, single sign-on (currently ATHENS and shortly to be migrated to Shibboleth). Thus, access to Jorum and to services into which Jorum content is imported are controllable. What remains is the challenge of ensuring that the rights information associated with a Jorum object travels with that object and is reliably presented to users wherever it is accessed and used. Jorum rights information is contained in a licence which is linked from a URL in the rights description field of the IEEE LOM. The Jorum service has been designed to ensure that users are presented with and accept terms and conditions of use. However, at present, when objects are downloaded and used in learning management systems, the rights metadata, and extended metadata such as ODRL, which is used to express the permissions granted by the rights holders to users of the resources, are generally not presented to users. Where content packages are exported, rights and ODRL metadata are exported as part of the IMS manifest file, but this is an XML file, and is not an ideal presentation of rights information to end users. Some institutions may have access to a system which, if coupled with appropriate staff skills, would present this rights information in a more useable form. Evidence to date suggests that systems in widespread use tend not to offer this feature. Ideally, when content leaves Jorum, the rights metadata would be presented to users without effort on their part to view it. At present, this is not guaranteed; it is essential that further work is undertaken to progress this requirement.

The Alt-I-Lab White paper suggests that the nature of the network is such that rights-management responsibilities will be transferred; that a solution is required that does not depend on a relationship with the content source, that is maintained as content is distributed throughout the network and that can be meaningfully interpreted and implemented by technologies throughout the network (Robson, 2004). Robson refers to the key notion of 'persistence'. He states that although use of DRELS has been well demonstrated in an

education context by projects like COLIS and CELEBRATE, none has yet demonstrated persistence, interpretation and enforcement of DRELS in a network. Thus, he concludes, these solutions are limited to use within a trusted network. The issue described by Robson may be addressed by the EduSource DRM solution but, as explained above, it has yet to be demonstrated.

Accommodating commercial content providers and implications for rights management of Jorum content

The Jorum scoping and technical appraisal study indicated that if commercial materials or materials for sale were to be included in Jorum there is likely to be great variety in licence terms.

Furthermore, the scope of a DRM solution will be dependent on the business model(s) accommodated by Jorum. For example, if content is to be offered to a limited number of concurrent users or for a limited number of accesses, the system must be able to track usage against these terms and perhaps actually restrict usage (e.g. refuse access beyond the concurrent-user limit or prohibit access when the pre-paid limit is reached). This type of extended functionality, designed to protect commercial content and uphold business models of commercial organisations is likely to be substantially more expensive to develop and implement than a system that requires authorisation and authentication but, beyond that, is based largely on trust. As the benefit of this expenditure would fall primarily on commercial organisations, it would seem like an unlikely cause for public expenditure and thus an unlikely solution for UK HE/FE.

When considering the appropriate DRM solution for Jorum, the JISC should determine and consider carefully, the costs and benefits of extending access and/or distribution beyond the JISC IE. The decision so to do would necessitate substantial flexibility in any system adopted now as Jorum must proceed to offer a service whilst at the same time anticipating adoption of processes and mechanisms yet to be developed and tested. This is the challenge for any service in development with substantial project-like features (i.e. that builds its path as it walks it); the SUNCAT project encountered similar challenges (Burnhill *et al.* 2004).

Fair dealing and privacy

The Jorum DRM report published in 2004 suggested that it is incumbent on those developing a DRM solution for UK HE/FE to uphold exceptions to copyright and ensure respect for readers' privacy. This responsibility remains. However, as Jorum is not an end-user service, the requirement for readers' privacy is not appropriate. It is necessary that those depositing and downloading content from Jorum are identified as parties to the relevant licence and that they can be readily identified in the event of a complaint regarding content that they have deposited or downloaded. As such personal data are to be collected and used by Jorum, it is necessary that the legal body responsible for Jorum be registered under the Data Protection Act and that it abide with the requirements of the act.

With regard to upholding exceptions to copyright, Erikson suggests that this may be achieved through a third-party escrow agent which would complement a licence server to mediate fair-use requests [fair dealing in the UK] by generating a waiver to provide access, on request, on a fair use basis (Erikson 2003). Erikson's proposal is premised on the assumption that a DRM system uses encryption and that licensors issue decryption keys as is commonly the case in a commercial environment. The waiver would be a means of decrypting content without a licence and thus, the escrow agent would require the licensor to deposit these decryption keys. JISC Legal advises both that it is currently acceptable to impose encryption thus interrupting access for fair dealing and that it may be acceptable to break encryption for use that may be defended in court under fair dealing provisions (Jason Campbell, JISC Legal, personal communication, 2005). Nevertheless, whilst encryption is commonly employed in DRM systems for commercial use, within UK HE/FE, it is less likely to be adopted; mechanisms for facilitating access on the basis of one of the exceptions to copyright would have to be designed into the simpler, less restrictive system that uses a combination of authorisation, authentication and trust whereby access is granted to authorised users along with information about rights restrictions. This might be achieved, for example, through

provision of a time-limited password accompanied by clear guidelines on what constitutes fair dealing (or one of the other exceptions). This would provide a trust-based system analogous to that in the print and paper-copy world whereby guidelines are posted by every photocopier.

Conclusions

This report is intended to update thinking on the required DRM solution for Jorum. The remit is challenging not only because the scope of Jorum is changing and evolving but also because Jorum is now a service in development rather than a service in planning; decisions have been made that constrain any DRM specification. For example, the EduSource DRM proposal merits further investigation as a solution that may facilitate great flexibility in licence terms and mobility of content whose rights data are persistently attached and presented to users. However, it is not clear whether or how this might integrate with the repository system used to build Jorum - Intralibrary.

The JISC has yet to decide whether it will allow commercial organisations to offer their content through Jorum either for sale or, in a limited manner, free of charge as a marketing exercise. A decision to include commercial content in Jorum may have widespread implications for Jorum planning and policy; including a requirement for more flexibility in licensing, greater control of use after download and thus a more expensive, technical DRM solution, and an increased risk, e.g. from 'wrongful takedown' of content that is subject to complaint. JISC should consider carefully whether access should be extended beyond the JISC IE with all the attendant complexity and expense that this entails.

Whatever DRM system is adopted, it is important that Jorum staff are able to trace and effect withdrawal from circulation of content that has been downloaded. Whilst every effort will be made to ensure that content in Jorum does not infringe any law, this cannot be guaranteed. In the event of a complaint Jorum staff will cease access to the object that is subject to complaint; if the complaint is upheld, Jorum staff will seek to withdraw all copies from circulation (see Jorum 'Notice and Takedown Policy').

It is important to Jorum and JISC that illegality in Jorum content be minimised. Intrallect described the lack of clarity in UK tertiary education with regard to ownership of content. It is also likely that many content creators are unfamiliar with information law. It is suggested that a central authority in each institution might inspect content to minimise liability. Given the volume of content that may be generated, this function may be prohibitively expensive. A pragmatic solution would be user education. Whilst Jorum requires an educated population of creators and users to safeguard itself as publisher, it has not been funded to develop and deliver education. As this requirement is likely to grow - to service not only Jorum but other repositories and similar services, the JISC should consider funding the development and delivery of education and guidelines and of providing access to advice.

At present, rightful ownership of learning and teaching materials is unclear to the creators. Furthermore, rightful ownership may vary depending not only on institutional policy but on contract terms within an institution. It is likely that in some instances, learning and teaching objects will be owned by individuals who may wish to deposit that content in Jorum. They could do so by assigning rights to an institution but whilst this would facilitate sharing it would also entail loss of control. The JISC should consult the UK HE/FE community to determine whether or not it is necessary that Jorum accommodate deposit by individuals as well as institutions.

One of the key decisions for JISC and the greatest challenge for Jorum is the proposed reach of Jorum content - how far it should be allowed to travel; whether it should be retained within the JISC information environment or extended beyond. Even a simple, trust-based system presents substantial challenge as it is based on authentication, authorisation and reliable communication of rights expressions. The latter is difficult because it requires that content only ever travels with the rights data attached and that the systems used to display, manipulate and distribute that content effectively communicate those rights data to users. The proposal that access to Jorum be broadened to other user communities (e.g. schools, private sector organisations and other public-sector organisations) has been mooted. Many

issues for the technology and licensing regime would require resolution before Jorum were made available to user communities beyond that served by JISC.

Communication of rights to users remains one of the key challenges for Jorum. Simple iconic representation of terms is an attractive prospect because users do not wish to read licences and certainly do not wish to read a different licence for each object of interest; a requirement to read licence terms before accessing each object is likely to militate against use of the system. However, icons do not communicate the complexity of the law. The solicitor advising the funding councils has advised that users must be presented with the full licence terms if these are to be upheld. Furthermore, iconic representation of licence terms requires standardisation in licences. It also requires adoption of the icons by all systems into which the content travels. This issue remains a challenge!

Bibliography

Burnhill, P., Halliday, L., Rozenfeld, S. and Kidd, T. (2004) SUNCAT: a modern serials union catalogue for the UK, *Serials*, **17** (1), 61—67.

Canadian Association of University Teachers (2004) Landmark Academic Freedom Decision at UBC, *Bulletin Online*, **51** (4), http://www.caut.ca/en/bulletin/issues/2004_apr/default.asp (accessed September 2005).

Charlesworth, Andrew (2005) JISC Rights in Digital Environments: Report from two workshops run by JISC on 3 and 22 March 2005, (available on request from Nike Holmes, JISC, n.holmes@jisc.ac.uk).

Coyle, K. (2003). *The technology of rights: Digital rights management* http://www.kcoyle.net/drm_basics.pdf (accessed September 2005).

Creative Commons (2001) creativecommons.org, (accessed September 2005).

Downes, Stephen et al. (2004) Distributed digital rights management: the EduSource approach to DRM. April 2004. http://www.downes.ca/files/DDRM_14April2004.pdf (accessed September 2005).

Dusollier, S. Fair use by design in the European Copyright Directive of 2001, *Communications of the ACM*, **46** (4), 51—55.

Erickson, John S., (2003) Digital rights management and fair use by design. *Communications of the ACM*, **46** (4), 34—39.

Fox, B.L. and LaMacchia, B.A. Encouraging recognition of fair uses in DRM systems. *Communications of the ACM*, **46**(4), 61--63.

Gadd, E, Oppenheim, C, and Probets S, 2003a, RoMEO Studies 6: Rights Metadata for Open Archiving, <http://www.lboro.ac.uk/departments/ls/disresearch/romeo/index.html> (accessed September 2005).

Gadd, E, Oppenheim, C, and Probets S, 2003b, The Intellectual Property Rights Issues Facing Self-archiving: Key Findings of the RoMEO Project, D-Lib Magazine, Vol. 9 No. 9. <http://www.dlib.org/dlib/september03/gadd/09gadd.html> (accessed September 2005).

Halliday, L. (2004) JORUM Scoping and Technical Appraisal Study Report, Volume VII, Digital Rights Management, http://www.jorum.ac.uk/research/archive/docs/vol8_Fin.pdf (accessed September 2005).

Higher Education Funding Council for England (HEFCE), Universities UK and SCOP (2003) *Intellectual Property Rights in e-Learning Programmes, Report of the Working Group*, http://www.hefce.ac.uk/pubs/hefce/2003/03_08.htm (accessed September 2005).

Intrallect, (2004) Digital rights management: Final report: Study carried out by Intrallect on behalf of JISC, 22 November 2004, <http://www.intrallect.com/drm-study/> (accessed September 2005).

Robson, R. (2004) Digital Rights Management: A White Paper for ALT-I-Lab 2004: Prepared on behalf of DEST (Australia) and JISC-CETIS (UK). http://www.jisc.ac.uk/uploaded_documents/AltIlab04-DRM.pdf (accessed September 2005).

Rosenblatt, Bill. (2003) 2003 in Review: DRM Technology, DRM Watch, 31 December 2003. <http://www.drmwatch.com/drmtech/article.php/3294391> (accessed September 2005).

Samuelson, Pamela. (2003) Digital rights management and fair use by design: DRM (and, or, vs) the law. *Communications of the ACM*, **46**, (4), 41--45.

Tyrvaenen, P., (2005) Concepts and a design for fair use and privacy in DRM, *DLib Magazine*, **7** (2), February 2005, <http://www.dlib.org/dlib/february05/tyrvainen/02tyrvainen.html> (accessed September 2005).

Glossary

ALCS: Authors' Licensing and Collecting Society

DRELS: digital rights expression languages

DRM: digital rights management

FE: further education

FEI: further education institution

HE: higher education

HEFCE: higher education funding council for England

HEI: higher education institution

IEEE LOM: Institute of Electrical and Electronics Engineers learning object metadata

JISC: Joint Information Systems Committee (a Committee of the UK further and higher education funding councils; see www.jisc.ac.uk)

JISC IE: JISC Information Environment

NESLI: National e-Journals Initiative

ODRL: Open Digital Rights Language

URL: uniform resource locator

VLE: virtual learning environment

XML: Extensible Mark-up Language