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SCRAN: a case study of Networked Cultural Multimedia for Education

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Scottish Cultural Resources Access Network

Abstract: This paper describes SCRAN, the Scottish Cultural Resources Access Network. SCRAN is a Millennium project, spending 15 million pounds sterling to build a networked multimedia resource base for the teaching and celebration of human history and material culture in Scotland.

Although it is based on the museums, archives, libraries and built heritage of Scotland, SCRAN's prime concern is not with conservation, nor with documentation, but with educational access.

SCRAN is a rights clearance project, grant-aiding the digitisation of assets in exchange for a non-exclusive licence for their educational use.

It is also a resource disclosure and delivery project: SCRAN acts as a Metadata repository, pointing to digitised assets in its own resource base and to objects in the real world, as well as acting as a gateway to other electronic collections. SCRAN is becoming seen by many as a

prototype of the Educational Content Generators that will be needed on the UK National Grid for Learning

THE SCOTTISH CULTURAL RESOURCES ACCESS NETWORK

The initial letters of the Scottish Cultural Resources Access Network spell "SCRAN", which is an old Scottish word meaning "provisions" or "nourishment". This is quite appropriate because, in fact, SCRAN has obtained funding of some Ł15 million sterling to build a networked multimedia resource base for the teaching and celebration of human history and material culture in Scotland.

SCRAN was founded by the National Museums of Scotland, the Scottish Museums Council (representing some 400 local museums) and the Royal Commission on the Ancient and Historical Monuments of Scotland, and contributing members include the Hunterian Art Gallery, the National Library of Scotland, and Edinburgh University Archives. Its work consists of digitising selections from the museums, archives, libraries and built heritage of Scotland, yet SCRAN's prime concern is not with conservation nor with documentation, but with educational access.

NETWORKING FOR EDUCATION

The United Kingdom Government report <u>Towards the Learning Society: the National Grid for Learning</u> (ref. 1) envisages a future where Information and Communication Technology will be increasingly harnessed to support schooling, training, lifelong learning and education in its widest sense. The report compares educational networking to an electricity supply system. It announces plans to wire up every school and public library in the country, but declares that, just as an electricity distribution grid would be useless without power stations, it will only be worth investing in an educational network if it includes appropriate providers of educational content.

This demand for digital content is also reinforced in the report of the Library and Information Commission

The Peoples Network (ref. 2), and the UK Government have now responded by providing a further Ł50 million sterling to begin to satisfy it (ref. 3).

INTELLECTUAL PROPERTY

It is our observation that until now, the creation, distribution and re-use of educational multimedia content has been fraught with difficulties and uncertainties. Teachers have been discouraged from the use of digital material by doubts about their right to use it, or lack of time to request permission from the rights holder and money to pay for it. Owners of content have been discouraged from distributing or in some cases even digitising it, for fear of being ripped off in some way. Within the areas which it can influence, the SCRAN project has been attempting to simplify the situation, and this publication includes a paper on some of the issues (ref. 4)

SCRAN is an electronic rights management project, grant-aiding the digitisation of assets in exchange for a non-exclusive educational license. Contributing institutions gain a new digital asset, which they can exploit commercially if they wish, while teachers and students at SCRAN member institutions can download educational resources, copyright cleared for unlimited use.

In addition to this service for formal education, any member of the public, anywhere in the world, is allowed access to a thumbnail image (no greater than 150 pixels wide) of each asset, plus full textual documentation. This documentation is based on conventional library and museum records, but supplemented by caption material specifically written to be understandable by the intelligent lay reader, and to build into a vast online encyclopaedia.

Members of educational institutions licensed by SCRAN, can, by clicking on a SCRAN thumbnail, download a much larger image (larger than the typical PC or Mac screen), for use in any way they wish. This image, at 256 colours and 72 dpi, is perfectly acceptable for use in current technology personal computer and projection systems. It is far short, however, of the specification demanded by commercial users, and this provides some confidence to the contributor that SCRAN licensees would find it difficult to break their contracts and sell the images on. In addition, the image itself is encoded with a watermark, which, though invisible to the human eye, can be decoded to prove piracy, should the need ever arise.

As described above, educational licensees are served with images at a resolution suitable for use on today's technology, and no more. But the images themselves are digitised at a much higher resolution. This is because the future will be longer than the past; technology will change over the years, and we wish it to be possible to upgrade the educational assets without needing to re-digitise the original objects.

RESOURCE DISCLOSURE AND DELIVERY

The high-resolution master image is, of course, only a surrogate for a real object in the material world. In a similar fashion, the educational image is a networked surrogate of the archival master, and the web thumbnail is a surrogate for the educational image. Likewise, to disclose the existence and content of such images, it is necessary to use textual surrogates, known as "Metadata". SCRAN acts as a metadata repository, providing pointers to digitised assets in its own resource base, but also to millions of undigitised objects in museums and libraries, as well as digital records in other electronic collections.

The users of SCRAN cannot be expected to know the terminology or conventions of the many domains SCRAN materials have been derived from, whether libraries, museums, archives or archaeological corpora. Thus the metadata SCRAN uses must be at a significantly general level of definition to be helpful to the non-specialist user, and hospitable for searching across domains. Fortunately, SCRAN's development coincides with the emergence of the Dublin Core Metadata Element Set (ref. 5), a standard set of data elements specifically designed for this purpose. SCRAN is an early implementer of the Dublin

Core.

SCRAN can also be considered as a pioneer, as far as museums and archives are concerned, of the Z39-50 Search and Retrieve Protocol (ref. 6). Originally designed to allow cross-searching of library catalogues implemented on different computing platforms, this protocol is proving sufficiently robust to serve similar requirements in other domains, and Z39-50 profiles have already been developed for museums, archives and digital collections. SCRAN has implemented the gateway software to act as a Z39-50 "Target" and is already being searched in parallel with other Z39-50 targets by some users.

THE STORY SO FAR

In its first two years, SCRAN has built a resource base giving WWW access to over 300,000 cultural records from throughout Scotland, including tens of thousands of images, sound and film clips and virtual reality environments, ready formatted and copyright cleared for classroom use. SCRAN's first educational products are already in service, and one of them, the CD-ROM The Scottish People, 1840-1940, has been distributed to every school in Scotland. SCRAN is becoming seen by many as a prototype of the Educational Content Generators that will be needed on the UK National Grid for Learning

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