



Project Document Cover Sheet

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JISC Final Report (*Public Report*)

CHARTER - Final Report

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Table of Contents

Acknowledgements	4
Executive Summary	5
Background	6
Aims and Objectives	6
Methodology	7
Implementation	9
Outputs and Results	9
Outcomes	10
Conclusions	11
Implications	11
References	11
Appendixes	12

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- *Victoria Stobo and Victoria Oxberry, digitisation team employed on CHARTER*
- *Ahmed Abu-Zayed, Sue Milward, Phil Wickham, Ray Burnley, Bill Edmunds, Matt Newcombe and James Green from the CHARTER Project Team.*
- *Academic colleagues from Departments of English, History and Geography on Streatham and Tremough Campuses.*
- *Martin Myhill, Gary Stringer and Ian Cook from the Project Board.*

We also acknowledge the wider communities of practice in the heritage and digitisation sector whose input has been invaluable to CHARTER.

Executive Summary

CHARTER's AIMS

CHARTER was a small-scale digitisation pilot project designed to establish the processes, practices and infrastructure for online delivery of digital surrogates of the institution's heritage and research collections for research and learning.

CHARTER'S OBJECTIVES

Charter has completed the following objectives, as set out in the JISC Project Plan:

- Established a digital collections repository as a sustainable portal for users to access online digital artefacts drawn from the University's heritage collections regardless of their physical location or collection-origin.
- Populated the digital collections repository¹ with 4000 in-demand popular culture digital artefacts and related metadata (2000 images digitised during the project; 2000 existing images migrated over from a legacy database).
- Created an e-learning module using the digital artefacts in the repository to demonstrate their value and reusability to academics and students.
- Established best practice for digitisation and metadata standards, long-term preservation and accessibility of digital assets at Exeter.

The following objective has begun and will continue beyond the close of the project, as the new resource is launched and embedded into the curriculum and learning communities:

- Customise and disseminate the digital collections repository and communicate the outputs and outcomes of the project as case-studies and resources of benefit to research, teaching, e-learning, heritage and technical communities of practice.

CHARTER'S ACHIEVEMENTS

CHARTER has achieved its objective to create an online facility which delivers digital surrogates of the institution's heritage and research collections to students and researchers straight to their pc or classroom regardless of the physical location of the original object. The new digital collections repository is a searchable open access repository and 'one-stop-shop' for researchers, students and members of the public who want to find and use digital surrogates from the collections for research and teaching. Through CHARTER, this repository has been populated with 4000 digital images, of which over 2000 reflect CHARTER's interdisciplinary Victorian culture subject theme. Integration of the facility into the curriculum and community will take time, but CHARTER has created a sample e-learning showcase and a digital showcase to help celebrate and promote the resource to its target audiences. Customisation of the facility is still in progress (expected completion end of October 2009), following roll out of a new university-wide web brand (September 2009).

Arguably CHARTER's most important achievement has been fulfilment of the project's strategic aim to establish the processes, practices and infrastructure governing digitisation, delivery and preservation of digital surrogates based on Exeter's heritage and research collections. This was achieved through the combined skills of a multi-disciplinary project team (library, academics, digital assets experts, educational technologists, and web developers).

CHARTER'S CONCLUSIONS

At CHARTER's conclusion, the institution can celebrate the fact that it now has in place the infrastructure for heritage and research collection digitisation, delivery and preservation. It is also the case that CHARTER has helped to establish cross-team working, in this critical area of research and learning support activity, and has been the impetus for what will, over time, be culture change raising the status and resources available for digitisation within the University's Academic Services

¹ <https://collections.exeter.ac.uk/repository/>

Background

CHARTER built on earlier pioneering project's funded by the AHRC to bring the University museum collection for cinema and popular culture to a wider audience online. These projects, known as EVE and ADAM, began to change the curatorial and research community's attitude to the value of digital surrogates and e-learning.

Building on this earlier experience, CHARTER was designed to establish the next generation of tools (using DSpace open source software) for online delivery of these digital surrogates. In doing so, CHARTER has sought to create an online platform where digital versions of heritage and research collections can be searched and accessed regardless of their physical location or collection origin – museum, archive, library, or departmental research resource.

Without the new digital collections repository, there was no single point of access for academics, students, curators, librarians and the wider public community to digitised content drawn from across these collections. Digital surrogates were 'hidden' in separate silos which are either not available to the public (e.g. digital artefacts drawn from the archive and book collections) or vulnerable (e.g. images created through EVE and ADAM).

The new repository provides a means of breaking down the boundaries between collections and making them available online for interdisciplinary use in research and research-led teaching.

The starting point for the project was a comment made by a student user of EVE who stated that she 'felt she learnt more from the digital object online' in the space and time of her own pc, outside the physical restrictions of the special collections/museum environment. The need for the project has been user-driven, by those academics who have been gradually integrating heritage and primary research collections into their teaching, as means to bring their own research knowledge to the student body and develop student research skills.

To ensure a wide take up of the digitised content within the curriculum, new digitisation work in CHARTER used a Victorian culture theme, as agreed with the academic community. This has wide interdisciplinary appeal – academics from History, English and Geography were involved – and is also one of Exeter's heritage collection strengths.

Aims and Objectives

CHARTER'S strategic aim was to create the infrastructure for sustainable digital assets management of heritage collections in order to widen access to hidden collections of high value for research and teaching.

CHARTER's objectives have remained unchanged during the project. These were:

- To establish a digital collections repository as a sustainable portal for users to access online digital artefacts drawn from the University's heritage collections regardless of their physical location or collection-origin.
- To populate the digital collections repository with 4000 in-demand popular culture digital artefacts and related metadata (2000 images digitised during the project; 2000 existing images migrated over from a legacy database).
- To create an e-learning module using the digital artefacts in the repository to demonstrate their value and reusability to academics and students.
- To disseminate the digital collections repository and communicate the outputs and outcomes of the project as case-studies and resources of benefit to research, teaching, e-learning, heritage and technical communities of practice.

Methodology

Demand-Led Approach

CHARTER's methodology was demand-led. This small scale digitisation project, intended to establish the infrastructure for digital assets management of surrogates from heritage and research collections, was born out of discussions with academics in which it was decided which collections would have greatest value for teaching and research if available in a digital format. Curatorial input was important – helping to identify content following selection criteria set by academics and by identifying items from the collections that were already in demand for teaching and learning – but academic need was the main driver.

Victorian culture was agreed with this user community as the subject theme for the new digitisation. This met the project criteria with:

- Wide interdisciplinary appeal across the arts and humanities (attracting input to the project from three academic departments, English, History and Geography)
- Known collection strength of Exeter's heritage collections, with proven history of demand for group work and individual research
- No IPR issues

Stakeholder Analysis

The project was shaped during stakeholder analysis with academics and with colleagues from technical, curatorial and digital assets management in the University's Academic Services. Demand led the selection of content, through academic and curatorial selection panels, and user need (including e-learning functionality) and technical drivers led the development of the open-source repository for online delivery of the digitised content. The panel of academic experts and interdisciplinary project team remained a source of advice throughout the project, with input widening to include librarians, curatorial volunteers and postgraduates during the customisation of the repository interface.

Project management Framework

CHARTER adopted a formal project management framework, with a project manager, principal investigator and senior management project sponsor. The Project Team met monthly and the Project Board met every three months. To work through technical issues, a Technical Sub-Group was formed. Office Project software was used to monitor the progress of the project's work strands and the PI and PM worked together closely with the CIs to keep momentum within an interdisciplinary project team.

Interdisciplinary Project Team²

CHARTER was 50% funded by JISC and 50% funded by the University of Exeter. As a result, CHARTER was run as a project taking place through existing service teams, with just three directly incurred posts (Digitisation Officer, Digitisation Assistant, part-time Project Manager). The advantage of this approach was that the project deliverables were embedded within permanent teams, with skills and knowledge staying in the institution at the project close. The PI was also able to draw on existing personal and professional relationships across teams to get buy-in to the project in the start up period. The team included:

- Academics
- Educational technologists
- Web developers
- Digital assets experts
- Librarians & curators
- Project managers

Technical standards

CHARTER agreed at the project scoping phase prior to application that the repository would be created using open-source, interoperable software to enable easy migration and data sharing. The full

² <http://projects.exeter.ac.uk/charter/members.htm>

standards are set out in the CHARTER Project Plan, available online at:
<http://hdl.handle.net/10036/40138>

The project initially planned to use fedora³, but on consultation with JISC and the wider community of practice (e.g. Plymouth University, Durham University, Biomed), opted for Dspace⁴ as a better fit to the project's resources. Dspace is already in use at Exeter for the institution's research publication repository (ERIC, hosted by BioMed) and, following the CHARTER experience, will also form the repository of choice for the forthcoming OER JISC project.

Technical standards for image capture and metadata were extensively explored through the early months of the project. Dublin Core was agreed as the most suitable form of metadata, and extensive work took place to map between the respective heritage descriptive standards (ISAD(G) for archives, SPECTRUM for museum objects, MARC 21 for books) to ensure the use of DC in the DSpace digital collections repository would be rich in content and reflect the professional descriptive standards employed in the sectors holding the original objects digitised in the project. This mapping, which was original research undertaken by CI Ahmed Abu-Zayed, has been published on ERIC for others to share:

- Mapping Spectrum to Dublin Core: <http://hdl.handle.net/10036/78147>
- Mapping MARC21 to Dublin Core: <http://hdl.handle.net/10036/78146>
- Mapping ISAD(G) to Dublin Core: <http://hdl.handle.net/10036/78145>

Image capture standards were developed through research with other practitioners and with advice from the professional sector (JISC Digital Media). The digital preservation cycle for CHARTER includes storage of TIFFs (450 dpi) for preservation master and JPEGs and PDFs for online delivery via the repository. These standards have been documented in full and are available online via ERIC <http://hdl.handle.net/10036/56866>. To deepen their professional knowledge, the Digitisation Officer and Assistant both received additional training from JISC Digital Media on colour optimisation and advanced metadata management.

User-testing and E-learning

To demonstrate how teachers and lecturers can use content from the digital collections repository in teaching, an e-learning showcase module was created through the project. This was developed between two academics (English Dept) and the E-Learning Team during the last months of the project. The e-learning package (IMS content package using XML schema) has been completed and will be deposited on JORUM shortly⁵. The development of the e-learning package was also a means to user test the new repository and to help determine how it should be customised. Customisation work has been tested on the development server but is pending transfer to the live repository. This is because final approval for the design is pending approval from the University's Web Team (the development version of the repository, with the customised design features is available at: <https://dspace-dev.exeter.ac.uk/manakin/>). The customised design will be transferred to the live version by end of October.

Further consultation over the user interface also took place during discussions with the project team, project board, academics on the selection panel and additional postgrads, volunteers working on the collections and the wider curatorial team.

Academic feedback (on the customised version soon to be transferred to the live server) has been positive:

- 'impressed with overall layout and aesthetics'
- 'scans are of superb quality'
- 'very impressed with choice of materials so far – materials that are incredibly rare and which bigger repositories like Google Books and Internet Archive are... unlikely to have'
- 'good place for lecturers to get images for teaching'

³ <http://www.fedora-commons.org/>

⁴ <http://www.dspace.org/>

⁵ <http://www.jorum.ac.uk/>

- 'I'll definitely be setting some of the materials for use for MA students and second years'
- 'material seems easy to find and navigate'
- 'like the PDF function' (for easy downloadable use)

Other feedback was equally useful, providing food for thought for future development:

- 'you need to make it clearer that the repository is for visual materials only. Some users might be disappointed they can't download entire books'
- 'Students [may] feel at sea in the absence of more information about the items to put them in context: they'll need good guidance from lecturers'
- 'I did wonder whether some of the references to articles could have been fuller – so as to enable full citation'

These are valid comments. The descriptive metadata for the digital artefacts is as rich as the source material (e.g. source catalogue data for the museum and archive) and could not be deepened further within the bounds of the project. However, the feedback has helped to identify priorities for the next phase of the repository's development: with integration into DSpace of citation tools like Endnote, and exploration of user generated descriptive content, like Tag Clouds or Folksonomies).

Implementation

The robust project management approach adopted by CHARTER proved an essential framework for implementation of the project, as it involved coordination of new staff employed directly on the project and an interdisciplinary project team of staff seconded to CHARTER.

The regular project team meetings were used as 'project labs' for problem solving, and it was quickly apparent that a Technical Sub-Group was needed to work through the complex technical issues.

Perhaps the most complex issue that arose concerned the choice of repository software. One of the most important lessons learnt was that the project specified too early on which software it would employ, without sufficient scoping or experimentation. Originally opting for fedora, CHARTER's repository was actually built with DSpace software. This met the full functionality requirements and was a better fit to the time and resources available to the project. The decision was taken with full consultation with JISC, but on reflection it would have been better to have not locked down the options so early in the project. JISC projects are all about learning and the project team should have given itself more time for scoping and testing assumptions made at application stage.

In this context, the strong project management framework (including expert advice from the Project Board) proved a useful mechanism for ensuring the project approach kept close to its key objectives and was completed within the tight time frame available.

Outputs and Results

Thanks to CHARTER, everyone – students, public, researchers, donors, curators, teachers – can now access over 4000 digital surrogates of Exeter's special collections online through a digital collections repository that is free at the point of use for learning and teaching. They can also see how the digital content of the repository can be integrated into the curriculum through the e-learning showcase produced as part of the project.

The new digital collections repository is available at: <https://collections.exeter.ac.uk/repository/>

Through this site you can browse themed content, cross-search the whole repository, limit searches to specific collections (e.g. Bill Douglas Centre museum or Exeter's archives) or subjects (using 'light touch' Library of Congress Subject Headings and key words), and use the Handle system to create a permanent link records and images for use in e-learning, powerpoint and so on. This is a flexible, open-source and interoperable repository that will continue to evolve as it is taken up by the user community of academics and students.

The digital repository has been published on the University's website via Special Collections, and will also be promoted alongside ERIC, the institutional research publications repository, as the digital library section of the website develops through the current rebranding project. Both repositories will also be cross-searchable through ENCORE – a one-stop shop search engine on the library homepage (covering e-resources and the library catalogue) – in the next phase of upgrades from the library systems supplier, Innovative.

Behind the public interface for the new digital collections repository, there is also now, thanks to JISC, a well-established infrastructure for capturing and preserving digital surrogates and for delivering those digital artefacts online for research and teaching. Customisation of the web-interface for the new repository will continue beyond the project in response to user demand, but the processes, practices and infrastructure governing digital asset management at Exeter is now in place and set to continue beyond the project end. Thanks to CHARTER, the institution and its external partners and funders can now have confidence in the institution's ability to manage and preserve digital assets.

CHARTER has achieved all its tangible deliverables (2000 new Victorian culture digital images, migration of existing cluster content from EVE, creation of an online repository and e-learning package), but it has also delivered unexpected outcomes that will help ensure the long-term success and sustainability of the project (see below).

Outcomes

CHARTER has been both a challenging and rewarding project which has delivered successfully against its project outputs and led to positive outcomes that could not have been anticipated at the project's start.

In terms of tangible outcomes, CHARTER has achieved its objective to create an online facility which delivers digital surrogates of the institution's heritage and research collections to students and researchers straight to their pc or classroom regardless of the physical location of the original object. The new digital collections repository is a searchable open access repository and 'one-stop-shop' for researchers, students and members of the public who want to find and use digital surrogates from the collections for research and teaching. It includes 2000 new images and an additional 2000 images migrated from a legacy database. These are the concrete public outputs that demonstrate the value of Exeter and JISC's investment in the project.

Arguably, however, CHARTER's most important achievement is less tangible. This is the fulfilment through CHARTER of the project's strategic aim to establish the processes, practices and infrastructure governing digitisation, delivery and preservation of digital surrogates based on Exeter's heritage and research collections. This was achieved through the combined skills of a multi-disciplinary project team (library, academics, digital assets experts, educational technologists, and web developers).

It is because of this success that we can also measure CHARTER's achievements in terms of its contribution to Exeter's institutional strategy for the digital library and the e-learning agenda. Related digital library developments that will build on the skills and knowledge developed through CHARTER include:

- In-house project to digitise copyright cleared core-texts (to be made available via Exeter's VLE, Moodle)
- Use of DSpace software in Exeter's JISC funded OER project, which will sit alongside ERIC and the new digital collections repository
- Uptake of the new digital collections repository as means to host and share academic departmental research collections (e.g. digital image collection relating to Nubia, currently being deposited in the Institute of Arab and Islamic Studies area of the new repository, beyond the original scope of CHARTER)

Each of these new developments extend the value of the knowledge and skills gained through CHARTER and demonstrate how the project has helped to embed digitisation and digital learning and research strategies more closely into the heart of library and information planning at Exeter.

Conclusions

CHARTER has been a means to kick-start and secure long-term investment in digitisation and digital learning strategies at Exeter. The project has demonstrated the value of bringing together a diverse project team which has helped to deepen those professional and personal relationships across an organisation that help to ensure the sustainability of the project's outputs.

CHARTER was an ambitious project. Ostensibly a small-scale digitisation project, it has delivered new digital content, a new collections repository, standards for digital image capture and associated metadata and an e-learning package to showcase the value of the digital content for education and learning.

The learning curve and pace has been fast and challenging – and there is further customisation and dissemination work to conclude - but CHARTER has benefited from a strong institutional drive to establish the platform for digitisation and for integration of digital surrogates into the curriculum and research brand.

Implications

Arguably the most important implication for the user community is that CHARTER has delivered a means to, using JISC's phrasing, 'get the hidden visible' by creating an open-source and free at the point of use platform for online sharing of the rare and unique heritage and research collections in Exeter's care. Already in demand for learning, research and teaching, users can now access this content at their own pc and in their own learning time.

We will use the established processes and practices of CHARTER to continue the work of digitising our special collections, initially targeting legacy clusters of content that can be migrated to the new repository and directly integrated into teaching.

How the user community take forward the potential of the new repository is, to some extent, now in their hands. We anticipate that alongside the continued deposit of new content via the library (notably via special collections), departments will follow the example of the Institute of Arab and Islamic Studies and gradually 'own' and populate the new repository with digital objects in shared use for research and for teaching.

One extension of this practice, currently being carefully explored, is whether the repository could also be a space used by communities outside the University, including societies and heritage sector groups without their own managed digital repository space.

Whether populated by academics or the public, the implication of these developments is that 'community' spaces on DSpace would evolve through its user base.

It is also our ambition to further customise the repository and to integrate Web 2.0⁶ tools alongside, for example to enable user tagging to create a richer metadata schema relevant to each community depositing or using the repository. Integration of tools like Tag Cloud is outside scope of this project, but represent ideas that may progress in future.

References

The relevant references have been added into the text as footnotes.

⁶ http://en.wikipedia.org/wiki/Web_2.0#Characteristics

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Appendixes

To ensure this document is accessible, we have deliberately avoided complex technical terms. For those who do require this level of detail, we refer you to the Project Plan available online:
http://projects.exeter.ac.uk/charter/documents/CHARTER_projectplan_jpg_171208.pdf

The standards outlined in the project plan have been achieved

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Contact: Jessica Gardner (PI)
Date: September 09