Project Identifier: (Impact of the Archaeology Data Service.)
Version: 1
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Date: 16/02/2012

JISC Project Plan

Project Information			
Project Identifier	*To be completed by JISC*		
Project Title	Impact of the Archaeology Data Service (ADS): a study and methods for enhancing sustainability		
Project Hashtag	#ADSimpact		
Start Date	1st February 2012	**End Date**	31st July 2013
Lead Institution	University of York, Archaeology Data Service		
Project Director	Professor Julian Richards		
Project Manager	Dr Stuart Jeffrey		
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Partner Institutions	Victoria University, Melbourne, Charles Beagrie Ltd.		
Project Webpage URL	http://archaeologydataservice.ac.uk/research/impact		
Programme Name	Enhancing the Sustainability of Digital Collections		
Programme Manager	Neil Grindley		

Document Information			
Author(s)	Stuart Jeffrey, Neil Beagrie, John Houghton		
Project Role(s)	Project Manager, Project Partner, Project Partner		
Date	6th March2012	**Filename**	ADS_Impact_Project Plan.doc
URL	http://archaeologydataservice.ac.uk/research/impact		
Access	This report is for general dissemination		

Document History		
Version	**Date**	**Comments**
Draft	29th Feb. 2012	First draft for circulation to project partners
Revised Draft	6th March 2012	Draft incorporating partner revisions

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1. Project Overview

1.1 Project Summary

This proposal was submitted to the Enhancing Sustainability of Digital Collections strand of the call which is designed to allow institutions to investigate and measure how effectively action can be taken to increase the prospects of sustainability for specified digital resources

The project will analyse and survey perceptions of the value of digital collections held by the Archaeology Data Service and how those perceptions of value can be measured. As part of this work, we will assess and quantify the economic impact of those collections with the ultimate objective of improving their prospects for sustainability. We will explore a range of methods and sources of data including investigating data from 1996-2012 on the growth of collections and users at ADS and how return on investment grows with the collections.

A focus of the project is disseminating our findings and recommendations to the wider JISC and research data communities. Although a number of studies have looked at methods of determining cost benefit and broad indicators of value, there remain significant challenges in establishing baseline data for measuring this in any quantitative way and there are still only a relatively small number of socio-economic studies focussing specifically on the impact of data services or research data infrastructure. The 'activity-based costing method' is potentially useful for assessing the costs of a data service or its economic impact on the creators and users of the data it holds. This method is widely used in other sectors and has been taken up by the Keeping Research Data Safe (KRDS) Activity Model for research data. The KRDS Activity Model has been tested against a range of research data services and a set of broad heuristics for research data archiving costs were established. The perceptions of all relevant stakeholders will be explored via surveys and selective follow-up interviews. The perception of value will include qualitative as well as quantitative measures and economic as well as non-economic factors. We will describe our methods and findings in a series of dissemination activities to stakeholders via newsletters, conference presentations, and a project workshop. We will critically evaluate our project and lessons learnt and formulate recommendations, advice and guidance to the wider JISC and research data communities that will be disseminated via an independent report prepared by Charles Beagrie Ltd. and Prof. John Houghton, a summary factsheet and presentations at relevant JISC events and conferences such as the IDCC conference.

1.2 Objectives

Using 15 years of ADS statistics, we will explore how return on investment has changed with the growth of the collections. This will potentially broaden the application of methods beyond established data services to other digital infrastructure in the JISC community. We will test a range of methods for measuring impact, collecting baseline data and suggest methods that may be used by others in the future. We will critically evaluate and extend approaches e.g. economic models for returns to investment, welfare economics or contingent valuation using revealed preference techniques.

1.3 Anticipated Outputs and Outcomes

Output / Outcome Type *(e.g. report, publication, software, knowledge built)*	**Brief Description**
• A project workplan;	Detailing the project, outcomes, methods and schedule.
• A project webpage to effectively support the project;	Detailing the project, outcomes, methods and schedule as well as progress throughout the lifetime of the project.
• A benchmark value perception report based on the results of the interviews and survey;	A report intended to allow longitudinal comparison of value perception
• An interim progress report;	Detailing progress at the projects half-way point.
• Dissemination outputs to ADS stakeholders;	A number of dissemination activities including, newsletter articles, presentations at conferences and workshop attendance relating the projects objectives,

	progress and results.
• Dedicated project workshop which will be open to the wider community.	Project workshop. We will critically evaluate our project and lessons learnt and formulate recommendations, advice and guidance to the wider JISC and research data communities
• A post-dissemination activity value perception report;	For comparison with the earlier benchmark value perception report in order to gauge project impact.
• Final report	An independent report prepared by Charles Beagrie Ltd. And Prof. John Houghton
• Completion report	A final report for JISC indicating the project status at completion.

1.4 Overall Approach

The project addresses the high-level objectives in the Call in the following way:

Analysing and surveying perceptions of the value of digital collections held by the Archaeology Data Service and how those perceptions of value can be measured. We propose that the perceptions of all relevant stakeholders will be explored via online surveys and selective follow-up interviews. The perception of value will include qualitative as well as quantitative measures and economic as well as non-economic factors;

As part of this work, taking steps to assess and quantify the economic impact of those collections with the ultimate objective of improving their prospects for sustainability. This will use a range of economic approaches including welfare economics, contingent valuation and macro modelling and draw on baseline data gathered through desk research (e.g. ADS user statistics), the online surveys and interviews;

Information on the more direct benefits and impact will be derived partly from interview and survey responses from the producers and users of ADS data and services; and will also draw on previous cost work at ADS and elsewhere, and internal ADS reports and statistics. This will include exploration of the costs and cost savings involved;

The call has a list to provide bidders with some indication of the range and type of enhancement activities (including dissemination) which might result in content being perceived as having more value, benefit or impact. That list is not prescriptive and alternative enhancement actions are permissible and encouraged;

Given the effort needed to achieve our survey and impact assessment objectives, we will focus remaining project resources on the simplest practical enhancement measure for adding value: communicating our findings on the value and economic impact of ADS to its key stakeholders and to the wider community. We will summarily describe our methods and findings in a series of targeted dissemination activities to ADS stakeholders via newsletters, conference presentations, the ADS Management Group, and a dedicated project workshop;

On completion of these measures we will evaluate any difference in perception of the value and likely prospects for sustainability e.g. via evaluation forms for participants at the workshop;

We will critically evaluate our project and lessons learnt and formulate recommendations, advice and guidance to the wider JISC and research data communities that will be disseminated via a summary factsheet and presentations at relevant JISC programme events and conferences such as the IDCC conference. 20% of our project is devoted to active dissemination of our findings and lessons learnt to the wider JISC and research data communities.

Overall Value to the JISC Community

As noted above, research data management and demonstrating impact of investments in research data infrastructure are important issues for the JISC and the JISC community. Although focussing specifically on Archaeology and the ADS, we believe our proposal is innovative and will be of interest to and have lessons for a much wider range of services and institutions.

The project will test and prove/disprove a wide range of methods for measuring impact and for collecting baseline data and suggest methods and approaches that may be used by others in the future. We will critically evaluate and extend approaches such as economic models for returns to R&D investment, or contingent

valuation using revealed preference techniques, to build on the approaches and set them in a broader context using tools such as the KRDS Benefits Framework.

These issues and approaches are likely to have wider relevance beyond archaeology. In focussing on the ADS, we will benefit from having access to ADS collection development and user statistics that have been maintained for 15 years since the inception of the service. Using those time series data, we can explore issues such as how return on investment has changed with the growth of the collections or application of economic methods such as "perpetual inventory" to data collections. Potentially this will broaden application of methods and lessons learnt well beyond established data services to other digital infrastructure in the JISC community including emerging or newly established services and projects.

1.5 Anticipated Impact

Impact Area	Anticipated Impact Description
The ADS and sustainability	Clearer understanding of the economic impact of the ADS and therefore enhanced ability to plan for sustainability.
ADS stakeholders and the wider community	Clearer understanding of the economic impact of the ADS and therefore enhanced ability to plan for sustainability. This is anticipated to enhance the arguments for engaging in digital preservation presented to the HE archaeological community
The wider Digital Preservation community	The lessons learnt and evaluation of research methodologies will be shared with the wider Digital Preservation community. We will critically evaluate our project and lessons learnt and formulate recommendations, advice and guidance to the wider JISC and research data communities
Maintain research excellence	As understanding of impact improves sustainability it allows the ADS (and therefore its users) to maintain research excellence.
Maintain teaching & learning excellence	As understanding of impact improves sustainability it allows the ADS (and therefore its users) to maintain teaching & learning excellence.

Impact Areas : maintain research excellence; maintain teaching & learning excellence; be more effective/save money; have a positive impact on wider society; be ready for technology needs in the future.

1.6 Stakeholder Analysis

Role	Stakeholder	Interest / stake	Importance (H/M/L)
ADS Funders	AHRC, NERC, English Heritage, Historic Scotland, etc	Impact of research data management and services in archaeology	H
ADS Depositors	Archaeologists and their employers	Value and incentive to deposit	M
ADS Users	New and current researchers working with research data	Impact of their research and research data management	H
National Data Services	NERC Data Centres, MRC DSS, UKDA etc	Demonstrating value to funders	M
JISC	JISC	Support for research data management and research Assessing the economic costs and benefits of digital infrastructure	H
HEIs	Any HEI and their projects or emerging services in research data management	Support of research strategy and demonstrating value to funders. Measuring impact of emerging services	H
Digital Preservation and Data Curation	International or non-HEI sector partners	Wider uptake of methods and approaches	M

Communities			

1.7 Related Projects

Current projects:

The seven other projects funded under Enhancing the Sustainability of Digital Collections, JISC 16/11 Programme – Digital Preservation & Curation

Analytical Access to Domain Dark Archive (AADDA)
Led by: Institute of Historical Research - University of London
Demonstrating the Value of the UK Web Domain Dataset for Social Science Research (Big Data)
Led by: Oxford Internet Institute, University of Oxford
Developing a sustainability index using British History Online (ISURV)
Led by: Institute of Historical Research, University of London
Enhancing the Sustainability of the Linnean Online Collections (Linnean)
Led by: University of London Computer Centre - University of London
Sustainability Development for a Crowd-sourced Learning Framework – The Geospatial Case Study (SDCLF)
Led by: University of Nottingham
Sustaining the EEBO- TCP Corpus in Transition (SECT)
Led by: Bodleian Library, University of Oxford
Semantic Technologies Enhancing the Lifecycle of Learning Resources (STELLAR)
Led by: The Open University

Precursor projects:
Economic Evaluation of Research Data Infrastructure (Charles Beagrie Ltd and John Houghton/ESRC)
John Houghton and Charles Beagrie Ltd have completed a study for ESRC on the economic impact of the Economic and Social Research Data Service (ESDS). This work commenced in July 2011 and a draft final report was submitted in December 2011. The study methodology covers a wide range of econometric approaches. Online surveys of users and depositors supplemented by interviews and desk-research have been a critical component of baseline data collection. Initial results have been extremely promising and we believe lessons learnt and experimental approaches tested could have wider applicability for research data services and projects that could be explored in future projects.

KRDS– Keeping Research Data Safe (Charles Beagrie Ltd and partner institutions./JISC)
http://www.jisc.ac.uk/publications/reports/2010/keepingresearchdatasafe2.aspx
The Keeping research data safe 2 (KRDS2) project has delivered a survey of cost information for digital preservation, collating and making available 13 survey responses for different cost datasets. The KRDS activity model was reviewed and its presentation and usability enhanced. Cost information for 4 organisations (the Archaeology Data Service; National Digital Archive of Datasets; UK Data Archive; and University of Oxford) was analysed in depth and presented in case studies and a benefits framework was produced and illustrated with two benefit case studies from the National Crystallography Service at Southampton University and the UK Data Archive at the University of Essex.

KRDS/I2S2 Digital Preservation Benefit Analysis Tools (Charles Beagrie Ltd and partner institutions/JISC)
http://beagrie.com/krds-i2s2.php
This project tested, reviewed and promoted combined use of the Keeping Research Data Safe (KRDS) Benefits Framework and the I2S2 Value Chain Analysis tools for assessing the benefits of digital preservation of research data. It extended their utility to and adoption within the JISC community by providing user review and guidance for the tools and creating an integrated toolset.

Costs and Benefits of Data Provision (John Houghton/ANDS)

http://ands.org.au/resource/houghton-cost-benefit-study.pdf
A study for the Australian National Data Service, which explored the costs and benefits of free access to public sector information (PSI), standardised licensing and formats, using the cases of national statistics, fundamental spatial data and hydrological data. While there are many ways in which the provision of more open access to PSI can affect the costs of government agency producers and the many existing and potential users of the information, the study focused on three main elements: the costs and cost savings experienced by the PSI producing agencies involved in provision of free and open access to information; the costs and cost savings experienced by the users of PSI that relate to accessing, using and re-using the information; and the potential wider economic and social impacts of freely accessible PSI, arising from increased use and measured in terms of returns to investment in its production. Methods included an activity-cost approach to direct agency and user costs, estimates of consumer welfare and returns to investment in data provision.

Economic and Social Returns on Investment in Open Archiving Publicly Funded Research Outputs (John Houghton / SPARC)
http://www.arl.org/sparc/publications/papers/vuFRPAA/index.shtml
A study that outlines one possible approach to measuring the impacts of the proposed US *Federal Research Public Access Act* (FRPAA). Using a modified Solow-Swan model, the study explores the impact of increased accessibility on returns to public investment in R&D. Preliminary modeling suggested that over a transitional period of 30 years from implementation, the potential incremental benefits of the proposed FRPAA archiving mandate might be worth around 8 times the costs.

1.8 Constraints

The project is constrained by the timetable and financial resources specified in the grant letter from JISC. Each partner is responsible for managing their effort on this project with regard to other commitments and each output is dependent on the successful completion their precursors (e.g. the post-dissemination value perception report is dependent on the baseline value perception report). Each partner is therefore required to coordinate closely with the project manager to ensure such constraints in timing do not become problematic. There are no additional external constraints.

1.9 Assumptions

As noted in the Risk Analysis a fundamental assumption of the project is that we will be able to engage the user community in such a way that valid analysis is possible. The previous experience of project partners with the ADS user community indicates that this is a fairly safe assumption. All staff time and materials have been appropriately budgeted for, and the scope of the project is constrained by the objectives detailed in sections 1.1 and 1.2.

1.10 Risk Analysis

Risk Description	**Probability (P) 1 – 5 (1 = low 5 = high)**	**Severity (S) 1 – 5 (1 = low 5 = high)**	**Risk Score (PxS)**	**Detail of action to be taken** (mitigation / reduction / transfer / acceptance)
Staffing	1	5	5	No recruitment is required for this project.
Low response to survey or requests for interviews	3	4	12	Good survey and interview design Work with ADS network to target and encourage participation Maximise lead-in times and flexibility to make appointments and identify interview reserves

				Incentives for survey testing and completion
Lack of evidence of economic impact	2	5	10	Using a range of data sources and methods Working with a service that has been established for 15 years Capturing wider non-economic perceptions of value
Seminars and outreach do not work	1	4	4	Track record of highly effective workshops, summary publications and outreach. Partner networks into relevant communities.
Emerging field with many challenges	3	4	12	Experienced partners who have collaborated on related studies Building and innovating on known approaches with some previous track record in same field

1.11 Intellectual Property Rights

As requested by JISC, the project partners will ensure that project outputs are made available free at the point of use to the UK HE/FE/Research community in perpetuity. We will ensure the consortium agreement between the partners achieves this and the assignment to JISC or HEFCE as its representative of a royalty-free non-exclusive licence in perpetuity for the outputs.

2 Project Resources

2.1 Project Partners

The Archaeology Data Service. http://archaeologydataservice.ac.uk
The ADS are the coordinating partner in the project and participant in dissemination activities, as well as the data centre under consideration.

Charles Beagrie Ltd http://www.beagrie.com/
Neil Beagrie is responsible for the preparation and execution of the user value perception reports, survey and interviews. Neil Beagrie will also prepare the project outputs, dissemination activities and will have editorial control of the independent report on the Impact of the ADS.

Centre for Strategic Economic Studies (CSES) http://www.cfses.com/
Prof John Houghton is responsible for the detailed economic analysis of the ADS drawing on information supplied by both the ADS and Charles Beagrie. Prof. Houghton will also contribute to the main report and other dissemination outputs.

A Consortium agreement covering all partners will be signed by the1st May 2012.

2.2 Project Management

The project team will be managed on a day to day basis by Stuart Jeffrey who will be the project manager. Stuart will be the point of contact for liaison on the study with JISC and and for all contractual matters. We will utilise JISC's standard consortium agreement (modified for this study and its partners) as the basis for the project agreement between the partners.

The team is geographically dispersed so the project will use the telephone and video conferencing, email and secure online document filestores and calendars maintained by the Charles Beagrie Ltd for its project work. We also aim to havea face to face meeting with all partners in June 2012Charles Beagrie Ltd has accounts with Powwownow for group teleconferences, Skype for video-conferencing and day-to-day calls, and Box.com for shared files. Project team conference calls will be held fortnightly in the first and final months of the project and as required during its middle phase, supplemented by face-to-face meetings when appropriate. All members of the team regularly use collaboration software and are very experienced in distributed team-working and project co-ordination.

2.3 Project Roles

Team Member Name	Role	Contact Details	Total days to be spent on the project
Julian Richards	ADS Director	Julian.richards@york.ac.uk	n/a
Stuart Jeffrey	ADS Project Manager	Stuart.jeffrey@york.ac.uk	30
Donna Page	ADS Administrator	Donna.page@york.ac.uk	2
Neil Beagrie	Project Partner	neil@beagrie.com	35
Daphne Charles	Project Partner	daphne@beagrie.com	31
John Houghton	Project Partner	john.houghton@pobox.com	28

2.4 Programme Support

Support may be required regarding dissemination activities, with advice regarding reaching the widest and most appropriate audiences in the HE sector being particularly welcome.

3 Detailed Project Planning

3.1 Evaluation Plan

Timing	Factor to Evaluate	Questions to Address	Method(s)	Measure of Success
Month 1	Project Plan	Does the project plan reflect the original proposal? Does the plan demonstrate a efficient and achievable route map for reaching the project goals?	Project plan submission	Acceptance by JISC.
Throughout the project – interim report at Month 9.	Project Progress	Does project progress match with the schedule in the project plan	Formal reviews and feedback on our interim report and emerging findings at mid-project and on drafts of the final report in the project's final stages.	Acceptance by JISC/Project Team
Throughout the project.	Quality of outputs	Do the outputs fulfil the role intended, and are they of an appropriate	Internal peer review and proof-reading	Acceptance by Project Team

		quality?	of all draft outputs.	
Month 18	Project Completion	Has the project fulfilled its objectives?	Formal post-completion report	Acceptance by JISC/Project Team

3.2 Quality Assurance

We will incorporate three key review points in the project for discussion and feedback of the work with the JISC: discussion and agreement of the detailed project plan; an opportunity for face-to-face discussion of progress and emerging findings at a mid-project review; and consultation on the draft of the final report.

The agreed project plan and milestones will provide the overall framework for monitoring the project. We will apply our standard Management and Quality Assurance procedures.

The deliverables from this activity will be regular project team teleconferences and meetings, an interim progress report to JISC, and a project completion report.

3.3 Communication and Dissemination Plan

Timing	Dissemination Activity	Audience	Purpose	Key Message
April 2013	Institute for Archaeologists Conference	Professional/Academic	Output dissemination to the archaeology sector	The impact of the ADS in the sector
March 2012 & Sept/Oct2012	ADS Management Board	Archaeology data management professionals	Project details & outcomes	Project objectives and delivery plan Change in perception of impact
Spring 2013	RDMF	Repository Managers	Output dissemination	What lessons and techniques are applicable to the wider sector
March 14th and as required.	JISC Programme Meetings	JISC and associated projects	To ensure experience is shared between projects	
Nov/Dec2012	Focus group workshop	Stakeholders and repository sector		Change in perception of impact
July 2013	Final report to JISC on the project website.	JISC, stakeholders and repository sector	To report on the outcomes of the project.	A report on the outcomes of the project
February/March2013	Project factsheet	JISC, stakeholders	Project	

		and repository sector	information, including lessons learnt and project outcomes.	

3.5 Sustainability and Embedding Plans

Project reports, supporting documentation and anonymised data generated from questionnaires and interviews will be made available from the project page on the ADS website. Where appropriate this material will also be archived into the ADS Content Management Systems and OAIS compliant repository for long term storage and future reuse subject to the ADS standard terms of use and access.

Project Outputs	Why Sustainable	Scenarios for Taking Forward	Issues to Address
All documentary outputs	Deposit with archive	Automatic	None