JISC

Project Information			
Project Acronym	V&R		
Project Title	**Visitors and Residents:** What Motivates Engagement with the Digital Information Environment?		
Start Date	01/01/11	**End Date**	31/07/11
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Partner Institutions	OCLC, JISC, University of North Carolina		
Project Web URL	http://www.oclc.org/uk/en/TBC		
Programme Name (and number)	Usability Strand (number TBC)		
Programme Manager	Ben Showers		

Document Name			
Document Title	Project Plan		
Reporting Period	Project initiation		
Author(s) & project role	Mr David White and Dr Lynn Connaway (Co-PIs)		
Date	04/02/11	**Filename**	v&r_projectplan_080211.doc
URL	http://www.oclc.org/uk/en/(TBC)		
Access	☒ Project and JISC internal	☐ General dissemination	

Document History		
Version	**Date**	**Comments**
Version 1.0	04/02/11	

JISC Project Plan
Visitors and Residents:
What Motivates Their Engagement with the Digital Information Environment?

Overview of Project

1. Background

We have little understanding of what motivates individuals to use particular technologies or spaces when engaging with the information environment. As a result people tend to adopt simplistic but culturally panicked ideas in their attempts to grasp the problem while others delve into specifics to the extent that little substantive conclusions can be drawn. This lack of understanding also makes the task of facilitating 'digital literacy' skills challenging as any form of literacy has to be defined against the motivations and goals of those individuals being taught.

The educational technology community and those responsible for creating and delivering services in the digital information environment could easily be accused of using an 'if they build it they will come' approach. This is an effect of institutions focusing on the provision of resources without properly considering the expectations or motivations of students and scholars. Individuals' shifting engagement with the information environment appears to have radically changed in the last decade; yet it is unclear whether this is the effect of larger cultural changes brought about by the web or of new attitudes towards education as a whole.

There is now a multiplicity of ways to engage in the information environment. Both the physical and digital libraries are among a plethora of options available to the information seeker. The large number of available open access choices creates a competitive information environment for universities that expend a great amount of resources on the information environment in the form of academic staff, print and digital sources, physical space (such as laboratories, libraries, and classrooms). The university resources often are not the first or even second choices of the academic community, who often choose the more convenient, easier to use open-access sources. (See references below for supporting literature.)

This project does not aim to answer 'What works?' but 'Why does it work?'. If we gain a better understanding of student and scholar motivations for engaging in the information environment, we have a greater chance of meeting expectations and creating services which are used and ultimately good value for money. We cannot continue to provide an educational version of every available platform in an attempt to mirror the web within institutions. We must make informed decisions on how to move forward to ensure that we will not be at the mercy of every 'new' technology that becomes available nor will we be expending funds on services, systems, and facilities that are not used.

The project will fill the gap in user behaviour studies identified in the JISC *Digital Information Seekers Report* (2010). Connaway and Dickey (*Digital Information Seekers*, 2010) call for a longitudinal study "to identify how individuals engage in both the virtual and physical worlds to get information for different situations could be conducted" (p. 56). They believe that "Such an investigation would contribute to a better understanding of how individuals navigate in multiple information environments and could influence the design and integration of systems and services for devices and applications, as well as cloud computing" (Connaway and Dickey (*Digital Information Seekers*, 2010, p. 56). It will utilise the visitors and residents principle described in the TALL blog (http://tallblog.conted.ox.ac.uk/index.php/2008/07/23/not-natives-immigrants-but-visitors-residents/), which hypothesizes that neither age nor gender determines whether one is a visitor (one who logs on to the virtual environment, performs a specific task or acquires specific information, and then logs off) or a resident (one who has an ongoing, developing presence online).

This is the project plan for the Phase 1 (pilot phase) of the project which is 6 months in duration. This plan for the pilot is set in the context of the full longitudinal study.

2. Aims and Objectives

The overall project will be a three-year longitudinal study conducted in 4 iterations of a sample of students and scholars representing different stages of the educational lifecycle:

1. **Transitional (Late stage secondary school – first year undergraduate);**
2. **Establishing (Second/third year undergraduate);**
3. **Embedding (Postgraduates, PhD students);**
4. **Experienced (Scholars).**

The design of the study is an attempt to eliminate any assumed links between age and technological engagement by working with users over time, tracking the shifts in their motivations and forms of engagement as they transition between these educational stages. The findings will be used to create a matrix of implementation options allowing those designing and delivering digital platforms and services to make informed decisions relative to engagement and motivation for individuals at each of the educational stages.

The ethnographic data collection methods and the individual attention devoted to the subjects will yield a very rich data set enabling multiple methods of analysis, differentiating this study from other projects, such as LAIRAH and the Google generation report for JISC. Instead of reporting the general information-seeking habits of the Google Generation and their use of technology, the proposed study will explore how the subjects get their information based on the context and situation of their needs during an extended period of time, identifying if and how their behaviours change, setting it apart from the Google Generation report. The proposed project is user-centered, not platform- or discipline-centered, contrary to the LAIRAH project. The literature reviewed includes no longitudinal research studying individuals' information use and search behaviours within a contextual framework in the different educational stages.

The Transitional stage is of particular interest as it bridges what is traditionally seen as a distinct divide between higher and tertiary education. We believe that this divide is notional and that the student's information-gathering techniques are unlikely to change in the few months between secondary school and university. Given the inclusion of this educational stage, the project will be building links with the secondary education sector. By including the Transitional educational stage the project will generate outputs which will enable universities to make informed decisions for planning services and systems for entering students; therefore, proactively planning rather than haphazardly reacting to passing trends.

3. Overall Approach

The educational-stages mentioned above will demarcate participants as they travel through the educational system. In addition to this participants will be chosen to draw out engagement factors relative to:

1. **Cultural background**
   Participants will be gathered from matching educational-stages in both the UK and the US.
2. **Socio-economic background**
   Participants will be chosen to represent a range of socio-economic backgrounds. This will partially be controlled by the types of institutions we approach.
3. **Disciplinary focus**
   Participants will chosen across the arts/humanities and the sciences.

Selecting participants on this basis will allow the study to delineate generic engagement factors from those that are specific to particular groups.

A set of questions will be developed for the individual interviews with the participants. The same questions will be asked of all participants. These questions will be developed based on the literature and prior research and will address the participants' needs and behaviours in both personal and academic situations and contexts.

Using the visitors and residents principle as a framework the project will identify the study participants' preferred methods of engagement with the information environment and explore the motivations behind their choices. The participants will be given a choice of communication methods, such as instant messenger interviews, Facebook, diaries, blogs, face-to-face or telephone, with the research team and other study participants throughout the three-year study period. This will provide additional information about the different participants' preferred forms of communication.

A subset of individuals from each of the educational stages will be tracked (through the monthly interviews, review of diaries, etc.) to identify their changing approaches to the information environment as they move through the educational stages. This will provide insight into how services need to be presented as context and expectations shift during the educational lifecycle.

The full 3 year study will be based on the following key research questions:

What are the most significant factors for novice and experienced researchers in choosing their modes of engagement with the information environment?

- Do individuals develop personal engagement strategies which evolve over time and for specific needs and goals, or are the educational contexts (or, in the context of this study, 'educational stages') the primary influence on their engagement strategies?

- Are modes of engagement shifting over the course of time, influenced by emergent web culture and the availability of 'new' ways to engage, or are the underlying trends and motivations relatively static within particular educational stages?

Phase 1 Pilot stage: Months 1 – 6

The initial 6 month pilot stage will focus on the Transitional educational stage to refine the research methodology and to establish the value of the work to the stakeholders. While this is the first section of a 4 part longitudinal study the pilot will produce valuable, stand alone, outputs (see Outputs section for details)

In the US the project will work in close partnership with the University of North Carolina, Charlotte (UNCC) to recruit participants, from different socio-economic groups from both private and public secondary schools as well as first-year university students. In the UK participants will be drawn from the University of Oxford, Sheffield University, secondary schools in Leicester and possibly secondary school in Oxford.

Participants

The project will recruit 30 individuals in the Transitional Educational Stage: late stage secondary/high school and 1st year university. 15 will be recruited in the US and 15 in the UK. Attention will be given to the selection of participants as to represent a range of socio-economic and disciplinary contexts.

Of the 30 participants recruited 6 in the US and 6 in the UK will document their information seeking activities for a 3-month period. They will be closely facilitated through this process and will communicate with us in the medium of their choice over that period.

Data

The data collected from the interviews and monthly correspondence with the selected 12 students will provide rich data that can be analyzed and reported both quantitatively and qualitatively.

- The quantitative data will include demographics; number of occurrences for different types of technologies, sources, and behaviours.
- The qualitative data will provide themes that identify behaviours and sources for different contexts and situations and will include direct quotes and behaviours.

The data will be manually coded using theme analysis and then input into the NVivo software program. This will enable the researchers to analyze and report the data not only by themes and demographics but also by the number of respondents and percentiles.

NB: The following phases are outlined here to set the pilot phase in the context of the overall longitudinal study. These phases are likely to be iteratively modified to account for ongoing findings and to ensure that the overall study remains as relevant to the stakeholders as possible over time.

Phase 2: Months 7-12

The study will be extended to include six participants from the other three educational stages. Building on the principle of the pilot the additional participants will be recruited from a post 1992 institution, such as Oxford Brookes University and an older institution, such as the University of Sheffield in order to more accurately portray typical UK students and scholars. This will bring the total number of participants including those from the pilot phase to 48.

Phase 3: Months 13-24

In addition to the tracking of the 24 participants during the second phase of the study, an online survey will be developed and disseminated to a total of 400 students and scholars – 200 from each of the universities. Fifty participants from each of the four educational stages will be selected from each of the universities. The participants will be asked questions derived from the collection and analysis of data collected from the 48 participants during the first two phases of the project. Since the longitudinal study sample is small, the online survey is a way to involve more participants in the study to validate the data collected from the individuals who participate in the three-year study.

Phase 4: Months 25-36

In the third year the project will work with a second group of six students (three students from each of the two types of universities) in the Transitional stage. This will help to determine if methods of engagement are changing over time as well as through the educational stages.

The project is not assuming that all expectations of the members of the four educational stages necessarily should be met since these expectations may need to be questioned. The educational process should, at times, be challenging and possibly disruptive, accepting that there should be a healthy tension between educational institutions and those it is there to serve. However, if a clear picture of expectations can be identified, informed decisions can be instrumental in determining what expectations should be challenged and the benefit to the learners that these challenges deliver.

4. Project Outputs

5.

Phase 1:

- Report of an exploratory study testing the validity of the theory of visitors and residents vs the digital natives and immigrants theory
- Established relationships with participants for a follow-up longitudinal study
- Comparative data from an international study – US and UK
- Data describing the behaviours of a sample of members of the Transitional Stage based on the context and situation of their information needs
- Formulation of hypotheses and a typology/mapping or model for further testing in a longitudinal study. The typology could be of immediate use for the community to consider when developing new services and programs. This will be the basis of what will become the matrix of implementation options. A matrix focused on usability and engagement/uptake.

NB: Again all outputs beyond the phase 1 pilot stage are included here to show the overall trajectory of the project and may well change through each phase iteration.

Phase 2:

Extending and updating the outputs from phase 1, drawing in data from the other educational stages.

Phase 3:

Data from the proposed survey in phase 3 will be analysed using the same metrics applied to phase 1 and 2 data collected from the core groups. This will indicate the representativeness of the core group to the larger sample of members from each of the educational stages. Themes that emerged in phases 1 and 2 will be explored in more detail, supported or challenged by the broader survey results. The evidence from the survey results and the data collected from the twenty-four individuals during the two-year study period will be used for the development of a broad model of engagement.

At this point some members of the core groups will have transitioned to different educational stages enabling the project to report on potential shifts in engagement as they move through the educational system. The influence of personal and educational goals will be analysed in relation to the context and requirements of the specific educational stage. Changes in individuals' practices as they move through these stages will be identified. Recommendations will be made to JISC as to how these verified modes of engagement should influence activity within relevant programme strands and the findings from this phase will inform the design of the 4th phase of the project.

Phase 4:

The introduction of a second group of individuals in their Transitional educational stage will provide data which will be compared to the members of the initial group from this stage. This will indicate if modes of engagement are changing over time under the macro influence of a changing culture and technologies, or if engagement and motivations remain constant over time. This longitudinal data will clarify the relationship between educational context and the influence of 'new' technologies. In addition, the data collected from the core groups in the third year of the project will demonstrate changing and constant behaviours across the three educational stages. Analysis of these data will

enable the researchers to propose a model which identifies how modes of engagement evolve or remain constant across educational stages and how this can inform the appropriation and adoption of digital technologies.

At its highest level, the model will test and refine the visitors and residents principle, acting as a catalyst for reflection and discussion for those who have not yet considered the service provision from an engagement point of view. The revised model will include a mapping of the modes of engagement against specific types of technology relative to the educational stages. At the basic level, the model will depict the cultural and educational drivers for specific patterns of engagement and identify how these may or may not change over time. The matrix of implementation options will be refined against the evolved model.

5. Project Outcomes

The phase 1 pilot stage outputs will inform the emergent JISC usability programme and projects. The outputs will also be of relevance to those running services within the digital information environment. Individuals who found the Google generation report[1] and activates of the LAIRAH[2] project of interest will find the outputs of this study very informative as it moves on understanding in this area towards cross discipline implementation recommendations.

Significantly the outputs will both inform the design of new projects/services and indicate possible changes that could be made to existing services to improved engagement/uptake. In this way the outputs of the study could have a significant impact on the 'efficiency' of existing services and the probability of higher uptake for new services. This could help to reduce the 'scatter-gun' approach of some institutions as they experiment with providing digital services which 'meet students and scholar's needs'.

The outputs as they evolve with each iteration or phase of the study will be broadly applicable in a variety of contexts and generated in a way to enable those responsible for the design and delivery of both the physical and digital information environment services to translate the findings into their given contexts. University decision makers can use the findings from this study to determine resource allocations for effective systems, services, and facilities that will engage both students and scholars.

A final set of recommendations will be made to JISC which will inform the structure of future programmes and indicate where existing services can be modified to increase their uptake in their given educational contexts.

6. Stakeholder Analysis

Stakeholder	Interest / stake	Importance
JISC	More clarity on the needs and motivations of students across the educational stages when engaging with online services/resources will inform project and programme designs to ensure maximum levels of uptake and engagement.	High

[1] http://www.jisc.ac.uk/news/stories/2008/01/googlegen.aspx
[2] http://www.ucl.ac.uk/infostudies/LAIRAH/

	The pilot phase will inform and support the putative Usability JISC programme. Significantly the findings of this study will also inform the 'tweaking' of existing services to better meet the needs of users as identified by this research.	
Online Computer Library Center (OCLC)	The findings of this study are crucial for OCLC, which provides a plethora of online library focused services. This is especially timely as the role of the library shifts within our culture and forms of engagement and new services evolve.	High
University of North Carolina, Charlotte	A better understanding of their students' motivations when engaging with their online service and resources.	Medium
TALL, Oxford University	TALL creates and runs a large number of online distance courses so its interests are similar to 'the wider community' below. In addition to this the study will be testing, refining and potentially evolving the visitors and residents typology which was first put forward by the group.	Medium
The wider community	An emerging matrix of implementation options which is not founded on nebulous generational concerns but on the more relevant educational stages. A better understanding of the relative influence of age vs education stage when engaging online. An indication of the factors which might affect users' approaches/digital literacies including nationality, educational stage, socio-economic background and discipline area.	Medium

7. Risk Analysis

Risks are applicable to the Phase 1 Pilot stage only

Risk	Probability (1-5)	Severity (1-5)	Score (P x S)	Action to Prevent/Manage Risk
Staffing: Loss of a project team member.	2	4	8	The project has two senior researchers. If one has to leave the project the other can take a leading role. Other roles on the project are fairly standard qualitative research assistant roles and should be possible to replace.
Organisational: Lack of clarity between the US and UK portions of the project.	3	3	9	Research questions and interview format will be clearly defined. Key project members will read all

				transcripts. Data coding and analysis will be done by hand and input into NVivo software.
Focus: The project becomes too nebulous.	1	4	4	Using the visitors and residents typology to underpin the study's approach creates a clear foundation for the project. The educational stages demarcate the projects focus into pragmatic segments.

8. Standards

NA

9. Technical Development

NA

10. Intellectual Property Rights

Any information gathered during the course of this study that is not already in the public domain will be deemed to be the joint property of the University of Oxford and OCLC. The information provided in the reports of the project, and the rights to all other output, will be deemed to be the joint property of the University of Oxford and OCLC. However, project outputs will be made available, free at the point of use, to the UK HE and FE community in perpetuity and will be disseminated widely by the University, in partnership with JISC, and OCLC.

Project Resources

11. Project Partners

This project is a partnership between JISC, the OCLC and the University of Oxford. A partnership agreement will be drawn up outlining the roles and responsibilities of each partner. This agreement will be signed by all parties by mid March 2011.

12. Project Management

The project will be overseen by David White, University of Oxford, and Lynn Silipigni Connaway, OCLC Research. Monthly project management meetings will be held by Skype and Google docs will be used to mitigate the challenges of sharing project documentation internationally.

Overall decisions on the exact approach and direction of the project will be undertaken by Lynn Silipigni Connaway and David White in conjunction with Ben Showers based at JISC. Day-to-day decisions will be taken by Lynn and David as appropriate within the agreed framework of the project.

Dr Lynn Silipigni Connaway (33% of time on project management)
Lynn's area of expertise is the study of user behaviours and data mining. (A description of Lynn's projects and curriculum vitae, with links to publications are available at http://www.oclc.org/research/staff/connaway.htm.) She also has completed two reports for JISC analyzing virtual research environment, digital repository, and user behaviour projects. This project is a good fit with Lynn's background and experience in user behaviour research and the scope of JISC's

programmes.
lynn_connaway@oclc.org

Mr David White (33% of time on project management)
David co-manages TALL an elearning group based at the University of Oxford. He has worked across education, technology and media for over 16 years. David has led a number of JISC projects in cutting edge areas and has recently been closely involved in the work of the HEFCE Online Learning Task Force. His thoughts on how individuals engage with the web and what the implications might be for education have been well received globally.
David.white@conted.ox.ac.uk.

Dr. Stanley Wilder (5% of time on US data collection, analysis, and dissemination)
Stanley Wilder is the University Librarian, University of North Carolina, Charlotte. Stanley began his professional career in 1985 at the University of Illinois at Chicago. He worked as an assistant/associate dean for 10 years at LSU, and then another 10 years at the University of Rochester. He holds an MLS from Columbia University, and MBA from UIC, and he completed 30 credit hours in a Ph.D. program at Rochester. Stanley has a strong research background, and practical experience in applying qualitative research methods to the behavior of academic library constituencies.

Dr. Donna Lanclos (10% of time on US data collection, analysis, and dissemination)
Donna M. Lanclos is an anthropologist and folklorist. She earned her PhD in anthropology from UC Berkeley in 1999, and has been working at UNC Charlotte since 2008, in her current position as Library Ethnographer since 2009. Her field experience includes work with Catholic and Protestant communities in Belfast, published as the book At Play in Belfast (Rutgers U Press 2003), as well as her current research among academics (faculty and students alike) at UNC Charlotte.

Jeremy Browning (10% of time on web development and maintenance for project web site and for technical support for the project)
Jeremy has a Bachelor of Science in Computer Science and is an experienced software engineer and developer. He is familiar with the Nvivo software program and will be the technical support for the research team. Jeremy also will develop and maintain the project web site.
browninj@oclc.org

Dr. Alison LeCornu (Research Assistant based at the University of Oxford)
Alison Le Cornu has worked in distance- and online-learning in HE for more than 15 years, managing programmes, researching, and as an educational developer. While at Oxford Brookes University she successfully bid for two HEA Subject Centre grants which allowed her to develop a series of Reusable Electronic Learning Objects and explore their use in a variety of contexts. Her PhD was in Adult Education; she conducted an empirical study on how people's religious faith impacted their learning, using a range of qualitative research methods. She is an active researcher: at Oxford University she was a team member of two JISC-funded research projects, Open Habitat and Isthmus, and she has published a number of articles on different aspects of the processes of learning . She is now a freelance educational developer and continues to specialise in technology-enhanced learning, helping institutions and staff teams to design and run blended-learning programmes for campus- and non-campus based students of all ages.

13. Programme Support

The project looks to JISC as one of the partners to provide guidance on the projects direction and methodology. JISC will be integrated into the decision making activities of the project on a partnership basis.

14. Budget

The budget in appendix A outlines the forecast expenditure for each of the project partners. Oxford's contribution has been costed on the basis of full economic costs using research TRAC methodology and the other project partners have used their own institutions' costing methodologies. The project

partners will make a combined institutional contribution of £41,370, which represents 45% or the total cost of the project.

Detailed Project Planning

15. Workpackages

See appendix B

16. Evaluation Plan

Evaluation is integral to the phase 1 pilot stage of the project. The projects approach and outputs will be evaluated by all of the partners including JISC to inform the design of phase 2.

17. Quality Plan

The project will be underpinned by the visitors and residents principle to ensure that the overall 'philosophy' and approach of the project remains clear.

The interview format will be designed relative to the key research questions to ensure that relevant data is collected.

All data collected (interview transcripts, diary logs, etc). will be read in full by Lynn Silipigni Connaway, David White and Alison LeCornu to ensure that personal bias is avoided and to calculate inter-coder reliability.. The coded data will be input into the Nvivo software program for further analysis and cross tabulation.

All reports and public outputs will be copy edited by an appropriate member of staff based at Oxford.

18. Dissemination Plan

Timing	Dissemination Activity	Audience	Purpose	Key Message
Jun-Sep 2011	Each partner will disseminate the projects outputs within their organisation.	Staff in partner institutions	Embed findings in partner institutions at a management level.	Indicative engagement trends emerging from the pilot phase
Mar-Aug 2011	Contributing to appropriate JISC programme meetings	Project teams	Share ongoing findings and to alert projects to the overall study beyond the pilot stage.	Our findings to date in the context of the usability strand and possibly other strands where appropriate.
Feb – Aug 2011	Website - blog	Ed-tech community	Alert the community to the nature and approach of the project and post outputs.	Sharing engagement motivations of staff and students.

Potential conferences:

- I^3 Conference in Aberdeen: 20-23 June 2011. call for papers closes 14th Jan (http://www.i3conference2011.org.uk/)
- ASSIST annual meeting in Louisiana: 7-12 October. (http://www.asis.org/asist2011/am11cfp.html)
- ALA conference in Louisiana: 24-27 June. (http://www.alaannual.org/)

19. Exit and Sustainability Plans

As outlined above this is the pilot stage of a 4 phase project. The partnership will discuss ongoing funding options as the pilot stage draws to a close. Outputs from this phase will be uploaded to the project website and will be built upon/evolved as the project progresses through subsequent phases.

Project Outputs	Why Sustainable	Scenarios for Taking Forward	Issues to Address
Project website	Will be the location for project outputs	Postings to the site will continue through all phases of the project	
Final report	Recommendations will be taken up by all partners	The report will act as a design guide for the next phase	
Draft engagement matrix	Will inform ongoing project and programme design at JISC and service design at OCLC	The matrix will be refined through the next phase and over the course of the full project	Assessing the validity of the first version of the matrix fro the pilot stage will be crucial.

Appendix B. Workpackages

For the phase on pilot stage only:

Workpackage	**Activities**
1. Project set-up *Jan 17 – Feb 25*	• **Project plan + budget + JISC website project page** Secure ethical sign-off • Establish administrative processes for delivering participant incentives • Induct research assistant based at Oxford and one at Sheffield • **Set-up project website** • Project kick-off meeting in early Feb (Exact date TBC)
2. Research design *Feb 7 – Mar 25*	• Refine research questions • Liaise with participant contacts at key institutions and recruit subjects • Develop **interview format** • Create framework for diary style submissions • Communicate data analysis methodology
3. Interviews *Mar 11 – May 27*	Arrange and undertake interviews
4. Diaries *Apr 11 – Jun 10*	Facilitate participants' dairy style logging of engagement (6 participants in UK and 6 participants in US)
5. Analysis *Jun 13 – Jul 29*	• Read transcripts and diary logs • Analyze data 'by hand' • Analyze data using the Nvivo software.
6. Writing-up *Aug 1 – Aug 26*	• **Write final report** Includes proposed design of the next phase and recommendations to JISC on usability. • **Propose draft engagement matrix**
7. Dissemination *May 27 – Sep 15*	Dissemination including input into appropriate JISC programme meetings.

WP	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1									
2									
3									
4									
5									
6									
7									