The role of Research Libraries in the creation, archiving, curation, and preservation of tools for the Digital Humanities

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THE ROLE OF RESEARCH LIBRARIES IN THE CREATION, ARCHIVING, CURATION, AND PRESERVATION OF TOOLS FOR THE DIGITAL HUMANITIES

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EXECUTIVE SUMMARY

The purpose of this report is to present and discuss the results of the ‘Research Libraries and Digital Humanities Tools’ project undertaken by RLUK. The project aimed to explore the role that libraries currently have or can potentially have in the creation, archiving, curation, and preservation of tools for Digital Humanities research; it is part of RLUK’s goal to understand the role that research libraries play in digital scholarship, identify specific areas where they can add value as well as facilitate the sharing of existing best practice.

Therefore, a survey was conducted where professionals, mostly from research libraries within the RLUK membership, took part and reported on the variety of Digital Humanities projects they support and the different ways in which they engage with scholarly work in the area. Additional discussions with some of these participants not only shed further light into the collaborative activities formed in the context of various initiatives, such as the production and preservation of tools, but also into the different models of involvement in Digital Humanities scholarship.

Based on the results, we argue that there is a role for libraries in the creation, archiving, curation and preservation of tools for Digital Humanities research, mainly as a collaborative activity between library professionals and researchers in the field.

Some of the main issues raised in this report are:

- Research libraries were found to actively collaborate with scholars in the building of various tools for research and teaching; yet, their maintenance and long-term preservation remains challenging for most institutions.
- Through examining different cases of support of/ involvement in Digital Humanities research, it became apparent that there was not one single model to fit every need. Libraries usually tended to utilise existing resources in creative ways that allowed them to engage with scholars in the field but complied with their strategic goals.
- The role, responsibilities and skill set of librarians have been expanded to effectively respond to the challenges posed.
- As research libraries increasingly become active partners in Digital Humanities research and teaching, the sharing of knowledge and best practice will ensure that these partnerships remain beneficial for institutions.

Following, some background information on previous research conducted in the area will be provided, including more details about the methodology employed in this project. Then, the results of the survey and case studies are presented and analysed. Finally, a discussion of the major points derived from the data analysis and which concern the role of research libraries in Digital Humanities scholarship - including the creation, archiving, curation, and preservation of tools - will conclude this report.
It is widely accepted that research libraries play an important role in facilitating academic research and teaching. However, given the technological advances of the last few decades, this role has been continuously transforming; the fundamental changes that information technology has brought to various academic fields, such as the Arts & Humanities, can be regarded as one of the reasons.

The emergence of Digital Humanities (DH), \(^1\) in particular, raises new challenges for libraries. But which are the qualities of DH scholarship which instigate a change in the support system traditionally provided by libraries to Arts & Humanities researchers? According to Spiro (2012), interdisciplinarity, openness and collaboration are some of the core characteristics of DH scholarship, making it distinct from the work conducted in the context of more traditional Arts & Humanities fields. In addition, scholars in the field increasingly create, use and communicate various forms of digital data in previously unimaginable ways, while libraries are often expected to adapt and respond accordingly. As Vandegrift and Varner (2013, p. 72) argued, ‘the library can no longer be simply a place to get the right answers or to be directed to the correct resource […]’.

However, the interest and initiative demonstrated by many librarians since the emergence of DH should not be overlooked; those who participate at the Center for Institutional Cooperation (CIC) collaborative in the US can be regarded as a good example (Keener, 2015). The Scholars’ Lab\(^2\) at the University of Virginia is another interesting case where successful collaborations between librarians and DH scholars have been developed; according to Nowviskie (2014), the lab became ‘[…] the benchmark model for a number of library-based labs and graduate fellowship programs in the late 2000s and early twenty-teens’.

Yet, existing research has mostly focused on the role of libraries in supporting scholarship rather than in their role as collaborators in its creation. Also, Keener (2015, p. 2) argued that that very little research has been conducted on the emerging research relationships specifically between academic librarians and DH scholars. According to the CIC (2012) report, some of the most successful partnerships in digital scholarship have been those between scholars, librarians, archivists, technologists and students; this finding highlights the importance of the participation of different communities in academia in this type of scholarship. Posner (2013) also argued that ‘many of the problems we have faced “supporting” digital humanities work may stem from the fact that digital humanities projects in general do not need supporters — they need collaborators’.

Hence, it becomes apparent that, in the context of the current information and academic landscape, a more collaborative approach to the facilitation of scholarship is needed. Given that DH scholars frequently create and use digital tools (e.g. open access, commercial) in the context of their projects which, sometimes, find challenging to maintain after these end - for example, due to time limitations, lack of funding or loss of expertise (e.g. when researchers change institutions after the end of a project) - librarians can be the right partners to offer solutions to several of the problems met during the lifecycle of a project.\(^3\) Bryson et al. (2011) suggested that libraries can play a key part in the initiation of a DH project through providing pre-existing infrastructure as well as in its preservation and sustainability. Regarding the latter, Huculak and Goddard (2016) argued that ‘without the expertise of librarians and archivists, many DH projects fail to achieve a long-lasting plan once the project ends. If data is lost, future research questions are negated’. Thus, besides enhancing access to digital information resources and tools to which the library subscribes, do libraries have a role in the (co-)creation of tools for DH? Also, what steps should be taken with regards to their archiving, curation and preservation?

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\(^1\) For ease of reference, the acronym DH will be used instead of Digital Humanities from this point on.


\(^3\) Some recent examples demonstrating the active role of libraries in DH projects can be found in Tzoc (2016) and on DHCommons.
Waters (2013) suggested that libraries should follow closely the work conducted in the various areas of DH in order to consider where it should be more useful to place their focus. On the other hand, Posner (2013) argued that a plan to support DH work should be in accordance with the goal and mission of the library so that it can be realistic and sustainable. Maron (2015) identified three main conceptual models of support employed by US libraries when it comes to DH research; the service model, the lab model and the network model. In the first case the library has a more responsive role to the needs of DH scholars and students while, in the second, it actively participates in innovative activities in collaboration with DH scholars and professionals.

However, as Maron (2015) explained ‘both the service model and the lab model tend to assume that one specific unit on campus — whether the library, the IT department, or a DH center — will take the lead in setting up systems for whatever sharing, service provision, and standards will be adopted by digital projects’; having only one such unit, though, is not always possible. The third case is a ‘hub and spoke’ (Maron, 2015) model of different units which communicate and collaborate with each other, while being equally important; many of Maron’s interviewees found this case as ideal.

These are only some of the studies which illustrate aspects of the conversation around the role of libraries in DH research. However, as most of them have been conducted with US libraries as their main focus, the UK academic library landscape has remained largely unexplored. The ‘Research Libraries and DH Tools’ project aims to contribute to our understanding of the role of, mainly, UK research libraries in DH research (with a focus on tools), along with the models of involvement they employ, as well as to the more general discussion in the field.
METHODOLOGY

This section focuses on the methodological decisions taken in the context of the project with regards to the terminology employed, objectives and research questions, survey design, recruitment process and data analysis.

DEFINITIONS

According to Schlosser (Mackenzie & Martin, 2016, p. xiv), the term digital scholarship comprises ‘research and teaching made possible by digital technologies, or that takes advantage of them to ask and answer questions in new ways’. Regarding DH, Waters’ (2013) argued that the core feature of this type of research can be reflected in the following definition: ‘the application of digital resources and methods to humanistic inquiry’ (Waters, 2013, p. 4; also, in Schaffner & Erway, 2014, p.7).

As it will be shown during the presentation of the results, the professionals who took part in the project often referred to DH as part of digital scholarship. This occurred especially when discussing the library’s position and plans towards supporting researchers who use digital technologies and resources as part of their work, suggesting that the one term is not exclusive of the other. More specifically, given that no assumptions were made with regards to the employment of specific models or mechanisms for the support/ involvement in DH scholarship by libraries, it was left to the participants to clarify whether these fell under a general strategy for digital scholarship or involved activities that were targeted specifically to DH researchers.4

Although this project focused, principally, on the role of libraries in DH, the terms of both ‘DH’ and ‘digital scholarship’ will be used to refer to and discuss issues raised by the project’s participants. Finally, it is worth mentioning that, in the context of this project, the term ‘tools’ refers to anything that can facilitate scholarly work, from methodological tools to digital collections and resources used in the context of teaching and research.

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4 As it will be explained later, this was achieved by allowing flexibility in the way participants could provide and elaborate on their answers (e.g. through comment boxes in the questionnaire).
RESEARCH OBJECTIVES AND QUESTIONS

The objectives of the ‘Research Libraries and DH Tools’ project can be found below:

- Explore the types of DH initiatives that RLUK members currently support/participate in.
- Identify current support/collaboration models employed by member institutions with regards to DH research.
- Investigate the role of libraries in the creation, archiving, curation, and preservation of DH tools as well as understand related challenges and requirements for developing it.
- Start building a community around DH issues that concern member institutions, raise awareness about related practices in the library sector and make suggestions which will lead to further discussion.

The research questions we set to answer in order to explore whether there is a role for libraries in the creation, archiving, curation, and preservation of tools for DH research and, thus, meet the aims and objectives of this project were the following:

- What does undertaking such a role mean for research libraries and their staff (activities, soft & technical skills, knowledge base, infrastructure)?
- What are the types of tools that DH scholars need and for what purposes?
- In what context would such collaborations work (e.g. type and purpose of projects) and under which terms (e.g. part of a digital humanities centre, participation at grant schemes and publications)?
- What can we learn from existing cases of such collaborations about the future role of libraries in DH scholarship?

DATA COLLECTION AND ANALYSIS

The survey, which constitutes the main data collection method of this project, was designed to trigger responses that would enable us to get a good idea of current library practices and opinions, mainly amongst RLUK members, concerning the support of involvement in DH research. Through the questionnaire (Appendix I) we aimed to:

- Firstly, to understand the level of engagement that our member institutions have been experiencing with regards to DH scholarship and find out about the types of initiatives they support and the tools used by the scholarly community in their institution.
- Secondly, to learn their opinion about the current/potential role of libraries in the creation, archiving, curation, and preservation of tools for DH research.

The project’s advisory group supported the design of the survey through the provision of feedback which was used to revise and improve it before its launch on 20th January 2017.

The application chosen for the design of the survey and the collection of the data was Google Forms. It is worth mentioning that, when designing the survey, attention was paid in providing participants with the opportunity to describe their own institutional case if the existing choices were not relevant to them or elaborate more on their choices; thus, many of the questions included the choice of ‘other’ or a text box which could be used to add more information. The definition of the term ‘tools’ as used in the context of this project (see ‘Definitions’ section) was also made clear to those completing the survey.
Regarding the recruitment of participants, three announcements, calling all 37 RLUK members\(^5\) to take part in the survey, were sent through the RLUK mailing lists. Apart from that, an additional sampling technique was employed; certain individuals from member institutions whose online profiles indicated that they may have been involved in the support of DH research or who were in the position to forward the call for participation to library colleagues with DH responsibilities were contacted. This approach led to a significant increase in the number of respondents from member institutions which had not been represented in the survey.

There were 27 responses to the survey. From these:

- 26 were from member institutions. Although the general tendency was for one person from each institution to take part in the survey, there were two cases where two people from the same institution completed the survey. In this case the responses were merged. Thus, the total amount of different member institutions that successfully completed the survey was 24.
- 1 response was from a non-RLUK member (Hull University Library).

After the first set of data had been gathered and undergone an initial phase of analysis, it was decided to proceed into further data collection through looking at specific cases of institutions which were considered to be active in the area of DH and where library professionals closely worked with scholars in the field. This would enable us to develop a better understanding of certain library practices when it comes to DH scholarship as well as the necessary conditions for developing a collaborative approach not only towards the creation, archiving, curation, and preservation of DH tools but also towards enhancing scholarship in the field. After consulting the advisory board members, a list of questions (see Appendix II) that could shed further light into this area was drawn.

Prospective participant-institutions were chosen based on their activity in the areas of the production and preservation of DH tools as well as the ways they engaged with the DH community, such as supporting researchers at different stages of their projects or being active collaborators in them; these came either from the list of survey respondents or from other member institutions that had expressed an interest in the project but could not participate in its first phase. The institutions that provided information (either by completing a form with four questions or by answering relevant questions over the phone) with regards to their activity at this stage were:

- Sussex University Library (area of interest: Sussex Digital Humanities Lab) (Participant A)
- St Andrews University Library (area of interest: creation, archiving, curation, and preservation of tools) (Participant B)
- Sheffield University Library (area of interest: tool preservation) (Participant C)

Then, both sets of data were compared and analysed, while relevant literature in the field was consulted during the process. Before proceeding with the presentation of the results, though, it should be noted that this was a small scale research, which had as its goal to develop an initial understanding of certain aspects of the DH activity that currently takes place, mainly, within RLUK membership and encourage more conversation around related issues. Thus, the results presented here may not necessarily reflect the situation in other libraries across the UK and Ireland or beyond. However, given the fact that amongst RLUK members are some of the most active institutions in this area of research, their experiences may be relevant and useful to others as well.

\[^5\] RLUK Members, http://www.rluk.ac.uk/rluk-members/members/.
RESULTS

The aim of this section is to present and briefly discuss the main issues that emerged through the analysis of the survey and case study results.

DIGITAL HUMANITIES IN THE LIBRARY

Generally speaking, the working definition of DH that many of the libraries taking part in the survey have adopted - even, in some cases, unofficially - seems to have been shaped to a great extent by the types of initiatives their scholarly communities lead (e.g. academic programmes, types of research projects, teaching, networks), the type and level of participation in these initiatives (including services provided) as well as the expertise of the (teams of) library professionals who are responsible for any DH activities. Accordingly, it should be noted that whenever the activities of the library stakeholders and, thus, the services offered fell under the more general umbrella of digital scholarship, this term was preferred over the DH one.

![Figure 1 A word cloud based on the survey participants' working definitions of DH](image)

Regarding the DH definitions (Figure 1) provided by our respondents, these often referred to the application of computational technologies and methods to answer humanities research questions; the creation, use and promotion of digital resources and environments, tools and material (digitised or born digital) to support humanities inquiry and teaching as well as the provision of relevant training; the digital dissemination of research; and the use of digital technology to explore cultural heritage collections. Some of these also included terms which, to an extent, reflect the qualities and purpose of DH scholarship, such as interdisciplinarity, collaboration, communication, outreach and engagement.
As anticipated, a range of DH activities was conducted by the scholarly and student communities that the member libraries supported. Figure 2 provides an idea of the broad areas under which these activities can be categorised:

As it also becomes apparent through the above graph, there was a good degree of DH activity in most institutional cases. However, when the participants were asked whether there is a DH Department/Centre/Team/Network in their university or library, 33.3% replied ‘Yes’ while slightly more than half of them (51.9%) chose ‘Other’. The comments, though, that accompanied the latter choice did not deny the existence of a DH unit at a particular institution, but rather reflected the variety in the circumstances under which DH activity can be conducted: from informal networks of DH academics, students and professionals to different units at an institution sharing responsibility for DH activities. Despite the diversity of the DH community, most of those who took part in the survey showed a good level of awareness with regards to the tools that the members of their scholarly communities use (library tools or other DH tools, e.g. open source, commercial) or create (for examples of tools see Appendix III); in several cases, this knowledge was acquired through close contact or previous experience with DH researchers and the provision of related services and infrastructure. Yet, it should be noted that there were cases where libraries demonstrated a more in-depth awareness of the habits and tools used by their communities as well as others where the participants stressed that more research is needed in this area. Therefore, as shown in Figure 3, a mixture of services was often provided by libraries in order to meet the needs of the various DH communities.

![Figure 2 Graph showing the broad areas of DH activity conducted by scholarly communities at member institutions](image)

As a result, some of them maintained webpages where extensive lists of tools were included, e.g. in the case of St Andrews University Library, [http://www.st-andrews.ac.uk/library/services/researchsupport/digihum-rescomp/network/trainingresources/](http://www.st-andrews.ac.uk/library/services/researchsupport/digihum-rescomp/network/trainingresources/) or the Cambridge University Library, [http://www.lib.cam.ac.uk/research/digital-humanities/digital-humanities-tools](http://www.lib.cam.ac.uk/research/digital-humanities/digital-humanities-tools).
Yet, even though services such as the above - which ranged from digital repositories, content and tools to lecturing, skills training, and advice on grant applications, open access and RDM - were available to DH researchers, 74.1% of the respondents mentioned that they were not provided exclusively for this type of research (even if some services were more popular with DH scholars). As many of these professionals argued, it is more efficient to offer services to the DH community that ‘come out of services generated for the library activities themselves’ (Participant 07) rather than provide specialist services. Although most of this group of respondents mentioned that the library has plans to further develop DH services, these have ‘to be in accordance with institutional priorities’ (Participant 03).

As the respondents (18.5%) whose library offered specialist DH services said, there can be certain challenges associated with this approach, such as lack of staff, sustainability and scalability issues, lack of skills and expertise, data management issues, and problems due to the interdisciplinary nature of DH research. At the moment, though, ad-hoc support (81.5%) seems to provide the right degree of flexibility for balancing the provision of standard and specialist library services (as also in Varner & Hsew, 2016).

Regarding emphasis on services for supporting DH researchers, several of the respondents mentioned that this should be placed on promoting the use of library collections in DH projects, creating sustainable and scalable resources and repositories and improving library facilities (e.g. computing facilities), understanding the needs of scholars and offering relevant skills training as well as providing advice on matters concerning the different stages of the digital data lifecycle (from access and creation to preservation, management and dissemination). There was also an interest for greater involvement in collaborations and interaction with the DH community with the purpose of facilitating research (e.g. providing advice on digital project management) and providing pedagogic support; yet, again the main focus should be on matters relevant to the library, where there is evidence of need or in cases where library services can complement existing ones provided by other relevant units (e.g. DH or IT units) at the institution.

Thus, based on the 63% of the participants, the collaborative activities that existed between libraries and their DH communities were to a great extent in line with the types of activities mentioned so far. Libraries were greatly involved where the use of digital resources by DH scholars was concerned as well as participating at/ running events, forums and, mostly informal, meetings (e.g. to inform on library offerings or consult on research matters) with DH community members. There were some cases where the library was an active collaborator in the creation of DH tools and teaching in the context of DH programmes or relevant skills workshops. It is worth mentioning that the majority of the 18.5% who chose ‘other’ in this question (on collaborative activities) referred to small scale activities and informal or ad-hoc support, which indicate that the level of involvement in DH activities is, in reality, higher that the aforementioned 63%.
However, almost half of the respondents (48.1%) said that there is no formal mechanism/training/awareness in the library with regards to the support of collaboration with DH researchers and students, while those who replied ‘Yes’ (18.5%) gave examples of training sessions, regular forum meetings, internal library arrangements and the promotion of material online. Another 18.5% of the respondents who chose ‘Other’ either referred to existing plans in the library to form/ participate at a relevant scheme or mentioned a pause to related activities (one case). Finally, a 14.8% did not know or was not sure whether such as a scheme existed. As a result, only in few cases there was a dedicated person for the support of DH scholarship (22.2%). Yet, the answers provided by the majority of respondents (44.4%) indicate that, in most occasions, DH-related duties have been allocated to existing staff members, expanding their role, an issue which can cause various challenges and is worth examining further.

These percentages are largely in agreement with the results presented so far and confirm the informal and ad-hoc nature of many collaborations reported by the survey participants. Yet, although this approach is flexible, it is worthwhile noting that the lack of a formal mechanism may mean that the positive effect that librarians’ expertise and contribution can have on DH projects can not be easily measured which, in turn, could impede the library's (or responsible team's) potential for recognition (e.g. at a university level) and, thus, its ability to claim more funds/resources in this area.

**DIGITAL HUMANITIES TOOLS AND THE LIBRARY’S ROLE**

Regarding participants’ views on the creation, archiving, curation, and preservation of tools (e.g. digital collections, visualisation tools, text and data mining tools) for DH research:

- 51.9% thought that the creation of digital tools for DH research should be done in collaboration with any responsible DH unit/team, while 25.9% said that libraries can create their own tools for DH research and teaching. 7.4% said that researchers should do it, 3.7% did not know/were not sure and 11.1% chose ‘Other’.

- 63% replied that there is a role of libraries in archiving and curating tools for DH research and teaching in collaboration with any responsible DH unit/team, while only 3.7% said that the library has the sole responsibility for this. 18.5% did not know/were not sure and another 14.8% chose ‘Other’.

- 55.6% agreed that libraries have a role in the preservation of tools for DH research and teaching, again in collaboration with any responsible DH units/teams, whereas only 3.7% thought that the library alone is responsible for it. 3.7% said that DH scholars should do this, 22.2% did not know/were not sure and 14.8% chose ‘Other’.

Firstly, it is necessary to note that the majority of those who agreed that there is a role for libraries in collaborating with any DH units or teams for the creation, archiving, curation, and preservation of tools for DH research, often stressed various conditions under which such collaboration should work. Libraries can cooperate with researchers in building tools that focus on using, promoting and improving access to their collections; given that librarians ‘have the best working knowledge of the collections’ (Participant 08), they can also advise on what types of tools would benefit use and re-use of content as well as have a positive effect on research and teaching.

Moreover, although collections and building/providing infrastructure to improve access to them are the responsibility of the library, some participants argued that (co-)creating tools that could be used for utilising this content in innovative ways should follow the mission of the library. It is worth mentioning that some respondents provided examples which demonstrated successful cooperation with the DH community and the DH expertise that library professionals at certain institutions have developed on topics such as imaging, crowdsourcing, digital platforms and environments, databases, digitisation, text/data mining and programming (see examples in Appendix III).
As for archiving and curating tools, respondents told us that the library is responsible for archiving and curating the tools that creates as part of its mission. This role can be expanded to include the archiving and curation of digital resources and tools created in the context of research projects as well as resulting data sets and research outputs. Yet, due to challenges such as those presented in Figure 4, library professionals can sometimes only play an advisory role in this process or, those supporting DH research, can collaborate with other teams which may already be responsible for such issues (e.g. IT, RDM). Responses regarding the preservation of tools were similar; although there can be cases where this is possible through collaboration with researchers or other responsible teams (e.g. IT, RDM), in some occasions a more suitable role may involve educating scholars around preservation issues or supporting advocacy activities and the dissemination of tools without providing active preservation services.

According to Zorich (2008, p. 26), libraries in the U.S., along with Digital Humanities Centres (DHCs) are the ‘partners of choice’ when it comes to digital preservation. Also, when it comes to preservation of digital outcomes, libraries are the first thing that comes to the DH scholar’s mind; yet as Schaffner and Erway (2014, p. 13) noted ‘librarians know only too well that it is expensive to maintain operating prototypes over generations of hardware and software’.

For the purpose of achieving sustainability, Schaffner and Erway (2014, pp. 13-14) highlighted that systems and tools should ideally be re-used and re-purposed; supporting scholars with the design of their digital project (e.g. at the proposal stage), as one of our participants also mentioned, will help them consider issues of sustainability at an early stage and, thus, plan accordingly.

Although collaborations with DH researchers and units with regards to the creation, archiving, curation, and preservation of tools have the potential of furthering the offerings of research libraries, there are certain challenges which can hinder them.

![Figure 4 The challenges associated with the creation, archiving, curation, and preservation of tools for DH research](image)

Apart from the challenges presented in Figure 4, additional issues raised by our participants were: limited staffing (especially with extensive computing skills); the fact that tools which are not created by the library can be harder to support; problems concerning ‘common’ language; lack of appropriate infrastructure and unjoined systems; lack of/ limited researcher incentives; licensing restrictions; the need for better integration with DH and greater commitment; limited awareness at the level of university managers; limited collaboration between libraries; the diversity of DH community needs; and the need for more well-defined library roles when it comes to the support of DH/ digital scholarship practice.
Finally, the skills needed in the context of collaborations with DH units or teams that would focus on tools are shown in Figure 5.

Considering the two choices with the highest ratings, technical/programming skills and knowledge base, it may be pertinent to note that only in few cases library teams included staff members with strong programming experience, while one of the participants underlined that the skills and knowledge base that librarians need to develop for dealing with DH scholarship are those taught in DH programmes and not in traditional library schools. The skills that were mentioned on top of the above included: skills for cross-disciplinary collaboration, understanding IPR issues, understanding of research lifecycle as well as funder and REF requirements.

Having summarised the results of this scoping survey on the role of the library in the creation, archiving, curation, and preservation for tools for DH, it became apparent that, despite any challenges, library professionals do actively collaborate with DH scholars or support them during different stages of research. Thus, in the next section, it is worth looking in more detail at some of the institutional cases which demonstrated a high level of participation in DH activity; examining the circumstances under which these collaborations were developed, including the benefits and challenges involved, may be useful to others who are interested in increasing their involvement in DH research either by supporting or collaborating with scholars in the context of their (DH or digital scholarship) strategy.

7 A useful online resource for developing technical and programming skills is the Library Carpentry, https://librarycarpentry.github.io (as suggested by Participant 27).
FORMING DIGITAL HUMANITIES COLLABORATIONS

In this section, we will present three cases of member institutions which are actively involved in DH research, either by collaborating with or supporting members of their community during different stages of the research process. The aim is to highlight the role of the library in DH research and understand the circumstances under which different types of collaborations are formed.

SUSSEX UNIVERSITY LIBRARY

AREA OF INTEREST: THE SUSSEX HUMANITIES LAB (SHL)

The goal of the SHL programme is to bring together expertise from different disciplines to push the boundaries of Arts & Humanities research. Based on the description of the programme, digital humanities constitute one of its major points of interests. The development of the Digital Humanities Lab as part of the programme aimed to facilitate innovative work in this area, attract major funding resources and produce work that would benefit the University.

THE LIBRARY’S ROLE

In the context of this project, our interest in SHL lies into the fact that the University Library constitutes an important partner of the programme. It is worth highlighting that the library's participation in SHL stems for the longstanding relationship of library staff members with the directors of the programme and their willingness to actively engage with researchers, not just support them (as Participant A noted). Actually, the results of the second phase of our research showed that the library actively collaborates with other members of the SHL on a number of different projects. These projects are conducted either by SHL-funded researchers who are based in the library and supervised by the Special Collections Manager or constitute collaborative activities between the library and other members of the Lab (e.g. solution-based or infrastructure projects).

Their aim is to ‘embed the work of the Library and Special Collections in the research activity of the Lab’ (Participant A) and enhance library services for research and teaching at the University (e.g. by developing the infrastructure for an Open University Press). Moreover, as part of the projects that the library is (jointly) leading or contributing to – through providing archives-related expertise, advice on digital preservation or the technical infrastructure for supporting digital projects – it participates in funding bids led by the Lab, while members of staff are invited to seminars and meetings and included in regular email communications. Finally, the library is actively involved in the (co-)organisation of events that focus on showcasing innovative research that falls within the scope of SHL’s interests, such as the Digital Preservation for Social Sciences and Humanities conference (summer 2017), while also developing a wide network of colleagues.

BENEFITS & CHALLENGES

Based on Participant A’s account, being a member of the SHL programme can be particularly beneficial for the library; the research and other collaborations that are formed further the library’s offering, enhance its services and infrastructure as well as make its work and collections more ‘visible’ to the Higher Education (HE) community and beyond. Moreover, by being acknowledged in funding applications, staff members are recognised as experts in their area which can then lead to additional collaborations and funding for the library. Lastly, the positive impact that this collaborative model has on staff morale is worth highlighting; more specifically, Participant A said that:

‘[…] this collaboration brings us closer to our academic colleagues which makes us more confident in inputting to this area of research where we feel we have a contribution to make.’

8 Sussex Humanities Lab, http://www.sussex.ac.uk/shl/about/.
On the other hand, the challenges associated with this model, from the perspective of the library, can be time and communication-related. As reported, the library professionals are not funded to conduct research and, thus, it can be challenging to balance, time-wise, the research activity required in the context of many projects with the responsibilities of their role. Thus, Participant A suggested having an advocate in the library is very important as they can be responsible for identifying the benefits of potential projects for the library and encouraging others to participate. Regarding the collaboration with other members of such a programme, good communication and negotiation skills are essential. Given that, within this model, the need to capture funding is constant, the position of the library has to be clearly communicated and the ideas for projects that could potentially benefit it supported; yet, highlighting the value of teamwork and encouraging other members to participate in these is equally significant.

**COMMENTS**

This programme resembles the lab model described in Varner & Hsew (2016) which has been increasingly adopted by many institutions in the US and Europe over the last decade for the purposes of organising, conducting and communicating DH research. Participating in such a programme opens up opportunities for academic libraries and their staff and increases the visibility of their work and collections. However, as Maron (2015) argued, this model focuses mostly on the support of the projects produced by the partners and, thus, it may exclude other work which does not fall within its scope. It is worth noting, though, that projects which enhance library services can have a positive effect on the whole university community (and beyond) and can increase the impact and reach of a similar programme, something that should be highlighted by library professionals when advocating for project ideas. Mutual interests and commitment to DH research as well as excellent communication between partners are prerequisites for successful collaboration in the context of this model; as shown in the case of the Sussex University Library, its involvement in SHL was an outcome of longstanding professional relationships and shared interests. Finally, since this model entails active participation in a variety of research and other activities, the time that these require should be taken into account when allocating responsibilities. Alternatively, relevant duties should be built-in in job roles where employees are expected to get involved in related programmes.

**ST ANDREWS UNIVERSITY LIBRARY**

**AREA OF INTEREST: CREATION, ARCHIVING, CURATION, AND PRESERVATION OF DH TOOLS**

The second case will look at the St Andrews Library’s Digital Humanities & Research Computing team and discuss the results regarding their involvement in DH research. The team - which consists of one DH librarian as well as two full-time and one part-time research software engineers - offers specialist DH services and actively engages with researchers for the purposes of the creation, archiving, curation, and preservation of tools; here, we seek to understand how their model of support works, including the benefits and challenges that this entails.

**THE LIBRARY’S ROLE**

According to Participant B, the team is usually approached by researchers, mainly academic staff and postgraduate students from different subject areas, who lack the technical skills required to conduct specific tasks in the context of a digital project; these can range from the building of a website or a database/archive and creating a digital edition to writing code for a digital application. The research software engineers are usually the first point of contact for researchers when seeking support for their projects while the DH librarian will act as an intermediate, monitoring the progress of the work, allocating responsibilities and attending meetings when necessary (usually at the beginning and end of a project or when there are certain concerns).
Apart from that, the team is responsible for producing and maintaining St Andrews Digital Collections using the Islandora platform; archiving, curating and preserving digital projects in collaboration with the relevant departments/ schools; and running two networks (a Digital Humanities Network and a Research Computing Network) with the aim of building communities of practice and providing the space to discuss issues around DH and software development. Lastly, the team can offer assistance with funding applications when required.

Although this support mechanism is mainly demand-driven, the team's role is not entirely reactive. More specifically, the DH librarian is expected to initiate and lead DH projects related to the library’s digital collections or other projects and digitisation activities which will increase the library's visibility in this area. Additionally, the role of the DH librarian involves promoting the services provided by the team as well as communicating and working together with staff and students for the purposes of seminar teaching and the delivery of specialist DH training (e.g. TEI Text Encoding, data visualisation); based on Participant B’s comments experience in academic liaison can help here. Lastly, it is worth mentioning that at the time of this project’s data collection phase, discussions were held about the possibility of setting up a DH Master’s degree at St Andrews, where the Library could actively contribute to teaching; this can indeed be a very interesting opportunity which will expand the traditional role of the library.

**BENEFITS & CHALLENGES**

Being actively involved in DH research, through assisting researchers at different stages of their projects and having a pedagogical role, brings library professionals closer to the DH community and enables them to develop strong professional relationships which can lead to further partnerships. Not only do these push the boundaries of the library's traditional role, but also raise the team's status as experts in the area. As Participant B noted:

> ‘We feel we are pioneering a new role for the library, showing that libraries and librarians can be useful in new ways.’

An additional benefit of such collaborations can be the funding that the library can receive as part of its participation in some of the projects (e.g. those funded by AHRC, ERC etc.) - in proportion to the team’s contribution. This, in turn, can be used for expanding the team whose services are expected to become more popular in the nearest future. Moreover, the fact that the team is increasingly included as a contributor in the projects’ outputs raises its visibility and highlights its capacity as a research partner; the team also aspires to work together with researchers in the context of joint research publications, something that has not happened yet.

However, it should be noted that the majority of the projects that the library supports are not funded while, at the moment, it is quite difficult to receive funds for purely library-based projects. Under these circumstances, it can be more challenging for the team to get formal recognition for its work and limits its ability to balance the workload by recruiting more members who combine the required coding experience with good knowledge of the humanities research process, skills that a traditional librarian would not normally have. Finally, good communication skills and diplomacy are essential for tackling challenges that can arise throughout the duration of a project - such as misunderstandings regarding the delivery of a certain component of a project, expectation management about timelines and changes in the project’s plan from the side of the researcher - or when dealing with cases where the library may not be able to contribute - such as when the researcher approaches the team at a very progressed stage of a project.

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11 It is worth noting that the platform's underlying infrastructure can be used by anyone who is interested in displaying digital content on their own website.
In this model, the support provided is mostly ad hoc and aims to meet the researchers’ needs as they emerge. Yet, the fact that there is a library team with specialised skills (e.g. advanced technical skills and knowledge of the humanities scholars’ needs) and clear DH responsibilities, makes it slightly different from the traditional service model where librarians support DH researchers along their other duties, as time allows (Maron, 2015). Having a specific role enables the team to actively engage with the DH community, collaborate for research and teaching purposes as well as lead various related initiatives (e.g. DH networks and library-based projects); yet, in comparison to the previous case (Sussex University Library), the library’s ability to influence the initiation of collaborative projects that could directly benefit it is limited. On the other hand, this model does not hinder the team’s potential of being established as a trusted DH partner within the campus and the first point of contact for researchers embarking on digital projects; active involvement in DH research combined with good promotional activities can quickly lead to further collaborations and visibility. In this case, though, employing more professionals with the necessary expertise and soft skills (e.g. communication skills) may be necessary in order to meet increasing demand.

SHEFFIELD UNIVERSITY LIBRARY

AREA OF INTEREST: DIGITAL PRESERVATION

The case of the Sheffield University Library was chosen as a good example to demonstrate the role that a research library can play in the preservation of digital tools for DH research. The library has recently invested in the digital preservation system Rosetta and, although its implementation is still at an early stage, it will soon be linked to other tools with the aim of providing whole data lifecycle services. Against this background, it is worth examining the library’s support model and its involvement in DH research.

THE LIBRARY’S ROLE

The library’s strategy involves supporting all research and teaching at the university, including digital scholarship. Its involvement in DH falls within the scope of assisting researchers with regards to digital research rather than offering specialist services. Generally, the support provided by the library is mostly ad hoc and, although there is no dedicated DH team, some of the staff members have relevant responsibilities embedded in their role; for example, the NFCA manager and Arts Faculty Engagement librarians have DH in their remit while staff at the Library Research Services Unit are responsible for informing and advising all scholars on issues around scholarly communication, data sharing and use.

However, it is worth mentioning that the library works in partnership with the Digital Humanities Institute at Sheffield University and has often been involved in projects, especially with a focus on its collections, which can be characterised as DH; for instance, library staff have worked with linguists on the use of Gale’s 19th Century Collections online with Sketch Engine. Services built around collections are an important part of the library’s work when supporting academics, including DH researchers; library professionals enable access to and use of the collections with the aim of facilitating the research process, from data collection to publishing.

Regarding digital collections, in particular, the digitisation programme supported by the Special Collections Department and National Fairground & Circus Archive (NFCA) has led to the production of several digital resources available for academic DH use. In addition, members of staff have now started curating born digital collections in a way that will make them more accessible for future DH work. Text and data mining is also an area where the library plans to develop services in the nearest future which, along with relevant training sessions, can be of particular interest to researchers in the field.

13 Sketch Engine, https://www.sketchengine.co.uk.
Finally, as part of its mission to support and advocate for open scholarship (as Participant C noted), the library has invested in the digital preservation system Rosetta which will be used to archive and preserve all research outputs (DH projects included) and digital collections for the long term (in collaboration with relevant schools/ departments). This will be linked to the data hub ORDA (Online Research Data), which is powered by figshare, to provide whole data lifecycle services, enhancing in that way access to ‘raw material’ for future projects, data sharing and re-use. These services will be complemented by a variety of workshops, training and one-to-one sessions that the library is already running on themes such as digital scholarship (e.g. in collaborations with the White Rose University Press), open research and data management planning.

**BENEFITS & CHALLENGES**

The library's focus on supporting digital and open scholarship for the long term has led to the creation of various digital collections and resources; these certainly strengthen its profile as a research institution and enhance its importance within the academic community. Additionally, current efforts around digital preservation and data management will place the library into a leading position in these areas as there are still many institutions which find it challenging to create services that would sustain resources and research data and outputs for the long term.

Regarding the preservation of DH material, especially, the experience the library will gain through the process will soon prove valuable to other institutions in the UK and beyond as the pressure to maintain and manage different types of digital content and research outputs generated in the field grows (also in Thiede, 2017). Lastly, being part of a DH network can prove beneficial to the library as close communication with academics in the area can lead to further collaborative projects which will increase the impact of collections. Being close to DH practitioners will also enable library professionals to stay updated on latest developments in the field and the needs that researchers have so they can adapt their services accordingly.

Yet, the fact that, in most cases, the library can not be considered a full-fledged DH collaborator (e.g. it does not normally participate in joint applications for funding, co-author research outputs or influence the initiation of DH projects) may hinder its ability to receive additional funds and get more formal recognition for the expertise of its staff members. The need for greater collaboration that will benefit the library was an issue that came up clearly through the survey. More specifically, one of the Sheffield Library staff members who participated in the survey (Participant 02) noted:

> ‘This is not merely a case of what the library has to offer to researchers, but also what DH practitioners have to offer to the library. We should be inviting them to develop services to support us as much as we develop services to support them to create the partnerships we need.’

Library professionals have knowledge around the use and re-use of data that many of the Arts & Humanities researchers lack. As their expertise will be increasingly in demand by DH researchers, they may want to seek (e.g. through their expanding network) to generate collaborations which will formally acknowledge them as partners; given the difficult economic circumstances that HE education institutions often face, and the expensive nature of long term digital preservation, collaborations that benefit both sides will prove valuable in the nearest future. A need that may eventually arise for recruiting staff with specific skills to work in the context of certain DH projects will be more easily met if the library receives funds as part of its active participation in DH activities.

Based on the data gathered around the role of the library in digital scholarship and DH research, it is worth highlighting again the emphasis placed by the library on developing expertise in digital preservation and data management. As it was found through the survey, long term preservation is an area which all institutions consider important, but maintaining DH projects for the long term was not regarded as one of the tasks that a library should always undertake; lack of infrastructure, expertise and limited funding, along with the challenges posed by the variety of DH projects and the non-standard format of their outputs may prevent some libraries from commencing similar activities (see also pp. 14-16). As a result, sharing the knowledge that the library acquires as their work in the area progresses will be of importance to others. Regarding its engagement with DH researchers more generally, it is important that the library continues to educate scholars on the need to develop their preservation plans early on in a project and inform them on the library’s available services and resources (also in Thiede, 2017). Finally, encouraging scholars to collaborate with the library on projects which take advantage of the collections and datasets that it already has and manages may make preservation in DH a more manageable task.
This project aimed to explore the role that research libraries, especially within the RLUK membership, currently have or can potentially have in the creation, archiving, curation, and preservation of DH tools as well as understand the models of support employed by different institutions. In this section, the main issues derived from the survey results and the case studies will be summarised and discussed further through the use of relevant literature.

**ENGAGING IN DH RESEARCH**

Based on the analysis of the data collected for the purposes of this study, it can be argued that the majority of the participating libraries, regardless of the model of support/collaboration they followed, demonstrated a good level of engagement in DH research through one or more of the following ways: (co-)building, providing and maintaining DH tools; contributing to research and teaching; participating at/leading relevant professional networks. However, as the interest and activity in digital research has been constantly growing within the Arts & Humanities disciplines, it was not surprising that research libraries have started to actively support scholars and students in the area. Given, though, that there is little research on how UK libraries engage with DH researchers - most of the studies so far have focused on US libraries (see p. 7) - the degree of their involvement, the models of support/collaboration they employ as well as the benefits and challenges that these involve remain largely undocumented.

Actually, DH is a field where library professionals can significantly contribute as well as build relationships that can prove beneficial for their institution. According to Zhang, Liu and Mathews (2015, pp. 365-369), there are four reasons that demonstrate the potential of the field: DH creates knowledge through new methods; DH scholars across disciplines are highly collaborative; DH scholarship reaches a broader audience with built-in discovery tools; the DH community has established major scholarly communication, professionalization, and educational channels for itself. Yet, unlike scholars in other academic fields, Arts & Humanities researchers frequently lack the digital skills and infrastructure to build and maintain their projects (also in Maron & Pickle, 2014, p. 9; Zhang, Liu & Mathews, 2015, p. 370).

Taking into consideration that Arts & Humanities scholars are amongst the most frequent users of library resources and collections (especially special collections), DH is undoubtedly a rich area for collaborations between researchers and library professionals; the fact that the majority of our participants, who represent some of the leading research libraries in the UK and Ireland, agreed that there is a role for libraries in DH research (either with a focus on tools or not) confirms this argument. As showed during the presentation of our results, forming collaborations in the context of such projects can increase the impact of collections, lead to further funding and raise the status of a library and its staff.

However, when planning to engage in DH research, either as part of a digital scholarship or DH strategy, the challenges that such a decision may entail should be carefully considered. Firstly, the diverse types of projects and the variety of formats in which DH scholarly outputs are produced can make it difficult for staff members to design a support system that could efficiently cover all relevant areas. Maron and Pickle (2014, pp. 5-6) argued that lack of clarity around DH and the requirements of researchers in the field can hinder strategic planning with regards to service and staff development; a similar issue was also raised by some of the professionals in this study who found the lack of a ‘common language’ around DH challenging. Regarding the technical support of DH projects (e.g. for their building or maintenance), limited resources (e.g. funding, staff) and lack of appropriate infrastructure can constitute an additional obstacle when developing a plan to effectively work with scholars in the context of DH research.
According to Posner (2013) lack of recognition and incentive are two common challenges that library staff members encounter when supporting DH research; some of our participants also referred to the limited support by their institutions as an additional problem which prevents them from getting further engaged in the area. Thus, a strategy that allows staff to get actively involved in DH activities that will benefit the library should also take into account issues such as the balancing of the workload or the development of skills; this is particularly important when there is no dedicated team for DH support or when it is not possible to hire new staff members. Based on the results of this project, programming skills, an understanding of DH research and excellent communication and negotiation skills were crucial for supporting and collaborating with scholars in the area. Building strong relationships with faculty members and demonstrating commitment are also necessary for developing successful collaborations which can lead to recognition for library professionals and their institution. Making relevant project agreements that will ensure that the contribution of library professionals is recognised is also advisable (also in Schaffner & Erway, 2014, p. 14).

Although we agree with earlier studies (e.g. Schaffner & Erway, 2014; Nowviskie, 2014) that there is no single solution for everyone to follow, being in close contact with the DH community in your institution and aware of the type of research pursued as well as the needs of researchers is essential not only for reacting to current challenges but also for planning ahead and making investments that are sustainable and beneficial for the library. Sula (2013) and Vandegrift and Varner (2013) include several suggestions on how to best learn about your stakeholders' needs and engage with the DH community. Finally, knowledge exchange and experience sharing between institutions is recommended for identifying best practices with regards to the support of/ involvement in DH research as well as areas where libraries can work together.

**THE ISSUE OF PRESERVATION**

During the presentation of the survey results it became apparent that research libraries actively create various tools for DH research and teaching; these can range from digital collections and resources to tools used at different stages of the research lifecycle (e.g. methodological tools, data sharing and management). In addition, the received responses showed that many libraries were involved in the archiving and curation of tools for academic use in DH.

It is worth noting that, in several cases, the activities described above were conducted in collaboration with scholars or with the relevant departments/ schools. However, regarding preservation and the role that the library can play in maintaining DH projects and tools for the long-term, opinions were divided; although all of the participants acknowledged its importance, a large percentage deemed this a challenging and expensive area for a library to commit to. Yet, even those who agreed that there is a role for libraries in preserving DH research outputs (including tools), either as a collaborative activity or not, noted that relevant activities should be in accordance with the library's mission.

Digital preservation is a pressing issue for DH projects. According to Kretzschmar and Potter (2010, p. 439), collaborating with the library is the only way to sustain digital projects and other DH material for the long term. However, as noted in Thiede (2017), the issue of preservation is not often in the researchers' priority list at the beginning of a digital project; therefore, many projects and their outputs are at risk of disappearing after the funding ends, a result which directly affects their potential for re-use and limit significantly their impact on future research.

Library professionals have the knowledge and skills to support researchers throughout this process but, more importantly, can influence change in scholarly habits with regards to digital preservation; despite of the model of support employed (e.g. lab or service model, DH or digital scholarship focused model) this can be achieved by collaborating with the relevant departments/ schools, actively promoting the library's services and assisting academics in the creation of their preservation plans early on in the scholarly workflow (as some of the participating institutions were already doing) (also in Schaffner & Erway, 2014, p. 13). Although it may not be possible to maintain every project for the long term, suggesting a preservation plan that meets the library's criteria (e.g. existing resources) or entails re-use of library content increases the chances that a project might be sustainable and, thus, integrated into the library's systems.
However, along with training researchers, libraries should take any necessary steps to ensure that their services stay up to date with the preservation needs of DH projects as well as take advantage of opportunities that could increase the library’s resources and further enhance its services (e.g. through greater collaboration with scholars and participation in DH projects). Being in close communication with researchers - for example, through the professional DH networks that most of the institutions in this study have developed or are currently developing - and sharing expertise between institutions are two avenues through which library professionals can get informed about research developments in the field and opportunities that will benefit the library.

THE ROLE OF THE LIBRARIAN

Apart from learning about the role of research libraries in the creation, archiving, curation, and preservation of tools for DH research as well as the different models of support they employ, this project also enabled us to observe how the role of the librarian has developed to adapt to the challenges of the digital age, an issue which is worth discussing briefly.

To begin with, the professionals who took part in this project were in their majority in higher level and managerial positions (e.g. director, assistant director, head, manager), one was a senior librarian, two liaison librarians and one project officer. Most of the titles included words related to the support of digital practice such as ‘digital’, ‘digitisation’, ‘information’, ‘data’, ‘(digital) curation’; four of the titles included the phrase ‘Digital Humanities’. Moreover, it became apparent that new teams had been often formed in order to meet the challenges associated with DH/ digital scholarship research, e.g. data management team, digital resources team, digital scholarship team; internal arrangements usually defined the responsibilities that each team had.

According to Varner and Hsew’s (2016) report, which focuses on US libraries, subject librarians were amongst those most likely to support DH researchers; however, this staff category did not come up as much in our results. On the other hand, several of the professionals who participated in this project (along with other members of their teams) tended to be responsible for parts of the library’s collections (e.g. special collections); it is worth noting that professionals working with collections are often the first point of contact for Arts & Humanities researchers and, thus, may easily develop professional relationships which can lead to DH collaborations. Furthermore, the increasing number of professionals with advanced technical skills, such as software developers, that join many library teams highlights the existing need for staff members with specific skill sets who can successfully support and collaborate with scholars in the context of DH projects.

Finally, it may be pertinent to close by mentioning Zhang, Liu and Mathews’ (2015, pp. 371-373) observations concerning the variety of roles that many library professionals have experienced over the years and the fact that some of them can be ‘re-cycled’ for the purposes of supporting DH work; these include the role of the content provider, curator, messenger or liaison, educator, and consultant. However, they argued that there is still a need to develop roles such as those of the mediator and interpreter, host, partner, innovator, hybrid scholar, and advocate; these are indeed the roles that many of our participants have started embracing in order to effectively engage in DH research.
To conclude, it can be argued that the libraries participating in this project showed a good degree of involvement in DH scholarship through (co-)building and maintaining tools, contributing to research and teaching or taking part in relevant forums. There was also a positive reaction to the prospect of forming further collaborations with DH communities both generally and with a specific focus on tools as these have been proven to be advantageous for both sides.

Although all institutions were concerned with the support of digital research and the tackling of related problems, there was not just one model of support that everyone followed; instead, most of the libraries tended to utilise their assets in various ways that enabled them to work efficiently with scholars without defying their mission. Yet, excellent communication and negotiation skills were at the core of every fruitful collaboration; these were also found to be part of the expanded skill set that library professionals have started to develop in order to effectively respond to the challenges posed by DH research. Finally, as most of the research libraries in the UK and Ireland have started moving from being mere service providers to being active participants in research and teaching, it became clear that identifying and sharing best practices for engaging in digital research will be an essential next step; this will ensure that these partnerships remain beneficial for the institutions and that the contribution of library professionals is recognised.
REFERENCES


REFERENCES


Susa Humanities Lab. Available at http://www.sussex.ac.uk/shl/about/ (accessed 18th May 2017).


APPENDICES

APPENDIX I - SURVEY QUESTIONNAIRE

RLUK Survey - Research Libraries and DH Tools

This survey was designed by RLUK in order to explore the role of libraries in the creation, archiving, curation and preservation of tools for Digital Humanities research. The results will help understand how libraries currently deal with the challenges associated with this type of research and how they may respond in the future. The results of the survey will be part of a report on the topic which will be shared with everyone.

1. Email address * __________________
2. What is your role in the library? * __________________
3. Please mention the library you work for. ________________
4. How do you define Digital Humanities (DH) in your library? Please provide a working definition rather than an overall definition of DH. * __________________
5. Is there a DH Department/Centre/Team/Network in your university or library? If DH research is planned/conducted under different circumstances in your institution, please describe in ‘Other’. *
   Mark only one oval.
   O Yes
   O No
   O Not sure/Don't know
   O Other:

6. What types of initiatives are undertaken by the DH community you support? [Check all that apply] *
   O Digitisation
   O Text/Data Mining
   O 3D Modelling
   O Visualisation
   O Image Processing
   O Crowdsourcing
   O Programming/Coding
   O GIS/Mapping
   O Network Analysis
   O Digital/Social Medial and Communication
   O User Studies
   O Digital Pedagogy
   O Museums and Cultural Heritage related research
   O Digital Editions/Digital Publishing
   O Other:
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7. To what extent are you aware of the types or names of tools that the DH community you support uses/needs? Please provide examples of tools if appropriate. * ______________

8. Does your library have a dedicated person/team for supporting DH researchers and students? * Mark only one oval.
   O Yes
   O No
   O Not sure/Don't know
   O Other

9. What types of services does the library offer to DH scholars and students? [Check all that apply] *
   O DH Materials and Collections
   O Training
   O Digital Tools and Infrastructure
   O Ad-hoc Support
   O Funding
   O Other: ______________

10. Please elaborate on your choices in the previous question or give relevant examples. ______________

11. Are any of these services provided solely for the support of DH research and teaching? *
    O Yes
    O No
    O Other: ______________

12. If you answered 'Yes', please specify. [Otherwise, please write N/A and move to the next question]

13. If your library does offer dedicated support to DH scholars, what are the challenges associated with the provision of specialist services? Please give relevant examples if applicable. [If you answered ‘No’ in Q.11, please write N/A and move to the next question] * ______________

14. If your library does not offer specialist services for DH research and teaching, do you/your team think it should and why? Please give examples of the types of services if applicable. [If you chose ‘Yes’ in Q.11 and answered Q.12, please write N/A and move to the next question] ______________

15. Where do you/your team think emphasis should be placed when providing services for DH research and teaching and why? * ______________
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16. Are there any collaborative initiatives between the library and the DH community in your university? If DH collaborations are formed under different circumstances in your library, please describe in Other. *
   ○ Yes
   ○ No
   ○ Not sure/Don't know
   ○ Other:

17. If you answered ‘Yes’, please specify. [Otherwise, please write N/A and move to the next question]
   __________________

18. Is there any formal mechanism/training/awareness in the library with regards to the support of collaboration with DH researchers and students? * Mark only one oval.
   ○ Yes
   ○ No
   ○ Not sure/Don't know
   ○ Other: __________

19. If you answered ‘Yes’, please specify. [Otherwise, please write N/A and move to the next question]
   __________________

20. Do you think that there is a role for libraries in creating digital tools for DH research and teaching? Digital tools can include anything that could be used by the DH community to conduct innovative research and teaching (e.g. digital collections, visualisation tools, text and data mining tools). * Mark only one oval.
   ○ Yes, libraries can build their own tools for DH research and teaching
   ○ Yes, in collaboration with the DH Department/Centre/Team/other responsible unit
   ○ No. DH researchers should do it. The librarians’ role is to consult them
   ○ Not sure/Don't know
   ○ Other: __________

21. If you answered ‘Yes’ [either of the two cases], please elaborate or give relevant examples of types of tools/initiatives [Otherwise, please write N/A and move to the next question] __________________
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APPENDIX I - SURVEY QUESTIONNAIRE

22. Do you think that there is a role for libraries in archiving and curating tools for DH research and teaching? * Mark only one oval.
   - Yes, libraries alone are responsible for archiving and curating tools for DH research and teaching.
   - Yes, in collaboration with the DH Department/Centre/Team/other responsible unit.
   - No. DH researchers should archive and curate the tools. The librarians’ role is to consult them.
   - Not sure/Don’t know
   - Other: __________________

23. If you answered ‘Yes’ [either of the two cases], please elaborate or give relevant examples of types of tools/initiatives [Otherwise, please write N/A and move to the next question]

24. Do you think that there is a role for libraries in preserving tools for DH research and teaching? * Mark only one oval.
   - Yes, the libraries alone are responsible for preserving tools for DH research and teaching.
   - Yes, in collaboration with the DH Department/Centre/Team/other responsible unit.
   - No. DH researchers should preserve the tools. The librarians’ role is to consult them.
   - Not sure/Don’t know
   - Other: __________________

25. If you answered ‘Yes’ [either of the two cases], please elaborate or give relevant examples of types of tools/initiatives [Otherwise, please write N/A and move to the next question] __________________

26. What are the challenges associated with the creation, archiving, curation, and preservation of tools for DH in your library? [Check all that apply] * Check all that apply.
   - No related policies
   - Lack of institutional support
   - Lack of recognition
   - Limited funding
   - Skills
   - Other: __________________

THE ROLE OF RESEARCH LIBRARIES IN THE CREATION, ARCHIVING, CURATION, AND PRESERVATION OF TOOLS FOR THE DIGITAL HUMANITIES
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27. What skills do librarians need to develop for creating, archiving, curating, and preserving DH tools in your library? [Check all that apply] * Check all that apply.

- Technical/programming skills
- Negotiation and communication skills
- Knowledge base
- Leadership skills
- Mentoring skills
- Research skills
- Other: __________________

28. Do you have any other comments with regards to the role of libraries in the creation, archiving, curation and preservation of tools for DH? ________________
Thank you for taking part in the RLUK survey ‘Is there a role for libraries in creating, archiving, curating and preserving tools for Digital Humanities (DH) research?’ and/or for agreeing to take part in the second phase of the RLUK ‘Research Libraries and DH tools’ project. You mentioned collaborating with/supporting researchers in the context of the creation of tools or in the context of archiving, curating, and preserving tools or in the context of other DH projects and/or answered that there is a role for libraries in the creation, archiving, curation and preservation [in one area or all of them] of tools for DH research, either as a collaborative activity or not.

Please provide more information about the context of these collaborations (current or potential ones) and/or the circumstances under which your/the involvement in the creation, archiving, curation, and preservation [either in one or all of them] of DH tools or in other DH project works/might work.

The purpose of this short interview questionnaire is to identify and understand current models of support/collaboration between academic libraries and scholars in Digital Humanities. The results will be combined with that of the survey and will contribute to a more complete picture of the support mechanisms currently employed by leading research libraries in the UK and Ireland as well as the circumstances under which these operate.

You mentioned collaborating with/being involved in the support of DH scholars. How do these collaborations/support mechanisms work? Please consider the following when providing your answer:

- the role of the librarian (e.g. full-fledged collaborator, assistant, service or training provider, liaison)
- stages of the librarian's involvement in the project (beginning, middle, final stages of the project or throughout its development)
- existing forms of recognition (formal or informal) of the librarian's contribution to DH projects
- available funding sources
APPENDIX II - CASE STUDY DATA COLLECTION SHEET

Does your model of engagement in DH research fit any of the descriptions below? If yes, please state which one and elaborate. If not, please explain why. Also, please consider the following when providing your answer:

- Your library’s approach: what works well and what doesn’t?
- Based on your opinion, is there an ideal model?

**Network model:** In this model, multiple units whose services were formed to meet a specific need and have developed over time come together to form a system of end-to-end support.

**Service model:** In this model, the service unit seeks to meet the demand expressed by faculty, often with a strong focus on meeting an individual’s research needs.

**Lab model:** In this model, the lab tends to have a specific focus, tied either to the mission of the campus or to the aims of their founders, which necessarily means that many do not take on responsibility for digital projects that fall outside of the scope. (Varner and Hsew, 2016)

What are the (current and potential) benefits and challenges when collaborating with/supporting scholars in the context of DH projects or the creation, curation, archiving and preservation of tools for DH research and teaching? [erase accordingly]

Based on your experience, what are the key requirements for developing successful collaborations/support mechanisms with regards to DH [erase accordingly]?

References:
APPENDIX III - LIST OF TOOLS AND SERVICES

Examples of types of tools/services used by the DH community at the member institutions as provided by the survey participants:

- Google tools
- Social media platforms
- Digitisation Tools and Equipment, e.g. copystands and cameras, scanners and microfiche readers
- Multimodal imaging equipment, e.g. multispectral imaging cameras, and post-processing tools, e.g. Adobe Suite (https://www.adobe.com/uk/products/cs6.html), Capture One (https://www.phaseone.com/en/Products/Software/Capture-One-Pro/Highlights.aspx)
- Sound Editing Software
- Programming and mark up languages, TEI/XML (http://www.tei-c.org/index.xml), XQuery (https://www.w3.org/XML/Query/), Python (https://www.python.org) along with relevant open source or commercial software, e.g. <oXygen/> (https://www.oxygenxml.com) for working with xml
- 3D Modeling and visualisation software and tools, e.g. Agisoft Photoscan (http://www.agisoft.com), Palladio (http://hdlab.stanford.edu/palladio/)
- Content management tools
- Digital edition platforms and online corpora
- Image/media viewers, including IIIF APIs
- Qualitative Data Analysis Tools, e.g. NVivo (http://www.qsrinternational.com/nvivo-product), WordSmith (http://wordsmith.org)
- Network Analysis Tools, e.g. Gephi (https://gephi.org), Onodo (https://onodo.org)
- Search interfaces
- Data sharing services and tools, ORDA (Online Research Data) (https://www.sheffield.ac.uk/library/rdm/orda), Figshare (https://figshare.com)
- Tools for building datasets and APIs, e.g. Parsehub (https://www.parsehub.com), Import.io Magic (https://magic.import.io/examples)
- Text/language analysis and corpus management tools, e.g. Sketch engine (https://www.sketchengine.co.uk) Voyant (http://voyant-tools.org)
- Digital Humanities toolkit platforms and websites (including institutional), e.g. Dirt Directory (http://dirtdirectory.org)
- Publishing tools, e.g. Exhibit (https://www.simile-widgets.org/exhibit3/)
- Collaborative tools e.g. Trello (https://trello.com) for project management
APPENDIX III - LIST OF TOOLS AND SERVICES

Examples of types of services/tools that support DH research and teaching (but, very often, not exclusively) provided by the libraries participating in this report:

- Digital repositories, e.g. Hydra Repository (https://projecthydra.org)
- Digital collections and libraries, including content mainly from institutional collections, e.g. Digital Bodleian image platform (http://digital.bodleian.ox.ac.uk), EEBO-TCP XML text collections (http://www.textcreationpartnership.org/tcp-eebo/), Bibliographical Register 1747-1897 (https://arts.st-andrews.ac.uk/biographical-register/), A Royal Foundation: 400 Years of the King James Library (http://arts.st-andrews.ac.uk/digitalhumanities/exhibitions/king-james/index.shtml), Library Borrowing Registers Transcription Project (https://arts.st-andrews.ac.uk/transcribe/index.php/Index:UYLY205_2_Receipt_Book_1748-1753.djvu), Special Collections Online (http://specialcollections.le.ac.uk)
- Co-development of degrees/course modules as well as lecturing and training courses (in collaboration with a unit responsible for DH research or the university's training development programme or the library's training programme), e.g. skills/methodology in copyright; RDM; metadata; programming skills (i.e. R language); open access, scholarly and content re-use (mainly with a focus on institutional material); scholarly communication; online exhibitions (Omeka); GIS; data curation; data visualization; TEI text encoding; digitisation; qualitative research methods
- Consultation and support (mainly ad-hoc) of DH projects (including funded and collaborative projects) with regards to archival and special collections content; 2D and 3D digitisation; metadata/controlled vocabulary; public engagement; funding bidding; digital and open access publishing, research data deposit and dissemination of outcomes; data mining; spectral imaging and image analysis; digital mapping; copyright and licencing; RDM; digital preservation; DOI provision; discovery tools for DH data; visualisation, crowdsourcing; ESRC impact acceleration (impact analysis, analytics, user journeys, etc.); gallery exhibitions (including links with arts venues), scoping long-term archiving; software and application development


Other digital resources for teaching and research, e.g. the ‘Using Primary Resources’ e-textbook (https://etextbook.jiscinvolve.org/wp/2017/01/24/launch-of-the-using-primary-sources-e-textbook/), toolkit resources (St Andrews University Library, http://www.st-andrews.ac.uk/library/services/researchsupport/digihum-rescomp/network/trainingresources/, Cambridge University Library, http://www.lib.cam.ac.uk/research/digital-humanities/digital-humanities-tools), other types of datasets, such as the digital collections data structure (e.g. collection structure on Islandora platform available by St Andrews University Library, http://www.st-andrews.ac.uk/libraryblog/2016/02/digital-collections-revamped/)
APPENDIX III - LIST OF TOOLS AND SERVICES

- Digital infrastructure for asset management and preservation, e.g. Rosetta (http://www.exlibrisgroup.com/category/RosettaOverview), as well as integrated services that facilitate the whole research lifecycle, e.g. THOR: Technical and Human Infrastructure for Open Research (https://www.bl.uk/projects/thor)

- (Co-)Organising relevant events, seminars, forums e.g. Digital Humanities at Oxford Summer School (https://digital.humanities.ox.ac.uk/dhoxss/), British Library Labs (http://labs.bl.uk), Digital Conversations (http://blogs.bl.uk/services/blog/6a00d8341c464853ef017d3ee231c5970c/search?filter.q=digital+conversations&search.x=0&search.y=0)


- Funding schemes and competitions, e.g. Wellcome Library funds (https://wellcome.ac.uk/funding), British Library Labs (http://labs.bl.uk)

- Digital publishing initiatives, e.g. White Rose University Press (http://universitypress.whiterose.ac.uk)