



EUROPE'S RESEARCH LIBRARY NETWORK

Europe's Digital Humanities Landscape

*A Report from LIBER's
Digital Humanities &
Digital Cultural Heritage
Working Group*

Table of Contents

INTRODUCTION	01
· About the Working Group	02
KEY RECOMMENDATIONS	03
PARTICIPANTS, FUNDING, ORGANISATION & COLLECTIONS	05
· Survey Responses	06
· Funding	07
· Organisation	08
· Collections	
DIGITAL HUMANITIES ACTIVITIES	13
· Capture & Creation of Data	13
· Enrichment, Analysis & Interpretation of Data	15
· Storage of data	16
· Dissemination of Data & Meta-Activities	17
STAFF & SKILLS	19
· Library Staff & Job Titles	19
· Skills Gaps	21
· How Skills Are Acquired	22
· Types of Training Offered	23



PARTNERS	25
· Target Audiences & Research Areas	25
· Networking, Community Building & Collaboration	26
IMPACT & FUTURE	27
· Raising Awareness	27
· Impact Evaluation, Infrastructures & Future	28
LIBRARY PROFILES	31
· Bavarian State Library	31
· Bodleian Library	33
· British Library	35
· KU Leuven Libraries	37
· National Library of Norway	39
REFERENCES & PHOTO CREDITS	41

INTRODUCTION

From 2017-2019, LIBER's Digital Humanities and Digital Cultural Heritage Working Group worked to identify and share best practices related to Digital Humanities (DH) work ongoing in European research libraries.

This was achieved in a number of ways:

READING LISTS

Much has been written about the relationship between DH digital humanities and their relationship to libraries. To help locate the most relevant literature, the group developed four reading lists: 1) policies and portfolios¹ 2) cooperation between libraries and researchers² 3) skill building³ 4) the role of libraries⁴.

COMMON CHALLENGES

Establishing a DH activity within a library can be complicated but knowing the likely challenges can help you plan. The group therefore followed up on an article by Miriam Posner on DH challenges in

libraries by asking group members what they saw as the biggest challenges, and comparing those answers to Posner's list.⁵ Some challenges remained, while others changed or even disappeared. One challenge was mentioned which Posner did not mention: the digital collections that we host and provide to our patrons are often restricted either technically (too difficult to access or share), legally (copyright issues prevent reuse, even in research) or digitally (not all collections are digitised yet and those that are often have OCR issues).

USE CASES

To get an overview of current activities of our members, and to prepare for our large survey, a mini-survey was done in the summer of 2018.⁶ Alongside insights on how questions should be phrased, this mini-survey also provided use cases from 17 LIBER libraries.

SURVEY

The culmination of the group's work was a

Europe-wide survey on digital collections and the activities libraries undertake around them. It covered the following topics and themes:

- Awareness
- Collections
- Funding
- Future Work
- Impact
- Organisation of DH in library
- Partnerships
- Services/support
- Staffing/skills
- Spaces (physical and digital)

These themes were based on input from participants at the Digital Humanities and Digital Cultural Heritage workshop at LIBER's 2018 Annual Conference (Lille, France; 4-6 July). From their suggestions, topics were selected and cross-checked with other similar surveys, to ensure all areas were covered.

The final survey consisted of 83 questions and was open for responses between 1 February and 15 March 2019.

¹ <https://libereurope.eu/blog/2018/01/29/digital-humanities-reading-list-part-1>

² <https://libereurope.eu/blog/2018/02/05/digital-humanities-reading-list-part-2>

³ <https://libereurope.eu/blog/2018/02/27/digital-humanities-reading-list-part-3>

⁴ <https://libereurope.eu/blog/2018/03/08/digital-humanities-reading-list-part-4>

⁵ <https://libereurope.eu/blog/2018/05/25/how-challenging-is-doing-dh-in-a-library-in-2018>

⁶ <https://libereurope.eu/blog/2018/08/27/a-mini-survey-of-digital-humanities-in-european-research-libraries>

ABOUT THE GROUP

The group consists of 36 people working in LIBER libraries, each of whom belongs to a subject team.

- **Enhancement of DH skills for librarians:** led by Caleb Derven, Head of Technical & Digital Services, University of Limerick
- **Cooperation and relationship with the research community:** led by Liam O'Dwyer, Special Collections & Digital Humanities Librarian, Dublin City University
- **Roles of libraries in DH and raising awareness:** led by Kirsty Lingstadt, Head of Digital Library & Deputy Director of Library and University Collections, University of Edinburgh
- **Recommendations for the identification of policies and DH portfolios:** led by Demmy Verbeke, Head of Artes, KU Leuven Libraries

Special attention is given to digital cultural heritage collections through the involvement of Marian Lefferts, Executive Manager of the Consortium of European Research Libraries (CERL). The group is chaired by Andreas Degkwitz, Chief Librarian at Humboldt University, and Lotte Wilms, Digital Scholarship Advisor at the KB National Library of the Netherlands.

Key Recommendations

Research libraries have a valuable role to play in relation to the Digital Humanities. Some are already doing so, but many are just getting started and still others are looking to scale up their activities.

The following tips and best practices (drawn both from the results of our landscape survey and working group activities in the past two years) may help with these ambitions.

1. Create A Vision Or Goal. Working towards a goal or within a vision helps with scheduling and prioritization. By clearly stating what you wish to achieve or offer, you create a framework. This can be shared with researchers so they know what to expect from your library, and helps to manage the expectations of your partners.

2. Measure Your Impact. Identify early on how you will measure your achievements and impact. By building these into your work from the start, you can see what is working well, what needs to be re-valued and – critically – you can prove success and support arguments for resources if required. Measuring impact as part of research agendas also provides new ways for academics to value the library. For more on measuring impact, see p. 25.

3. Select Activities Wisely. Digital humanities covers a wide array of themes, techniques and tools. You don't need to do everything. Choose what works best for you and your organisation. If you have many digitised maps it makes much more sense to get involved with GIS than when you only have digitised manuscripts. Start with your collection strengths and build from there. For more on activities, see p. 13.

4. Reflect the Full Breadth of Your Collections. Libraries hold much more than paper and vellum. Archival and Object collections form important pieces of the puzzle when trying to understand traditional book, manuscript, music and maps collections but libraries are less advanced in making these collections electronically available. By broadening your library's scope to include these collections, where resources permit, your DH offering can be strengthened. For more on collections, see p. 8.

5. Have Confidence in Your Expertise. As the creator of your digital collections, you are the expert. You know how they were made, which choices meant which consequences, what specifically is digitized and under which license. You are therefore an ideal partner for researchers who need to know more about the collection and how to use it. Be that expert and exert yourself as such.

6. Involve All of Your Colleagues, Not Just the Obvious Ones. DH activities are most successful if they are supported by a large number of library staff members. At the same time, the support of higher management is key in order to free up budgets and staff. Think about how you want to build capacity and networks within your organization. DH might be an ideal opportunity to work with colleagues you would normally not see very often. For more on staff and skills, see p. 19.

7. Collaborate, Collaborate, Collaborate. Building a network is crucial as DH research often combines expertise from different partners. Once you have a clear idea of what you want to achieve, go out and disseminate your data, your team and your ideas. For more on collaboration and community building, see p. 26.

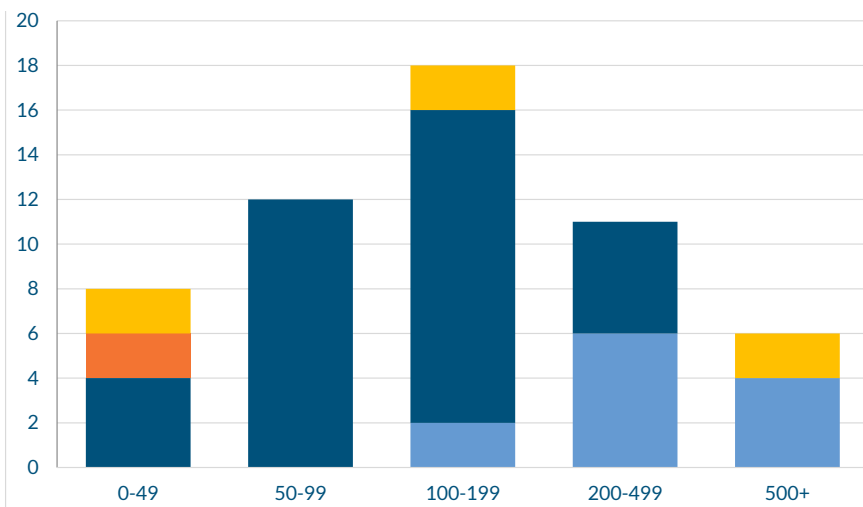
Participants, Funding, Organisation & Collections

Fifty-six people within 54 institutions from 20 European countries took the survey. Most are university libraries (63%), followed by national libraries (22%). Fifteen percent are museum, archive or other types of libraries, such as state libraries.

The size of the libraries counted by the amount of employees and their corresponding types can be seen in the following graph:

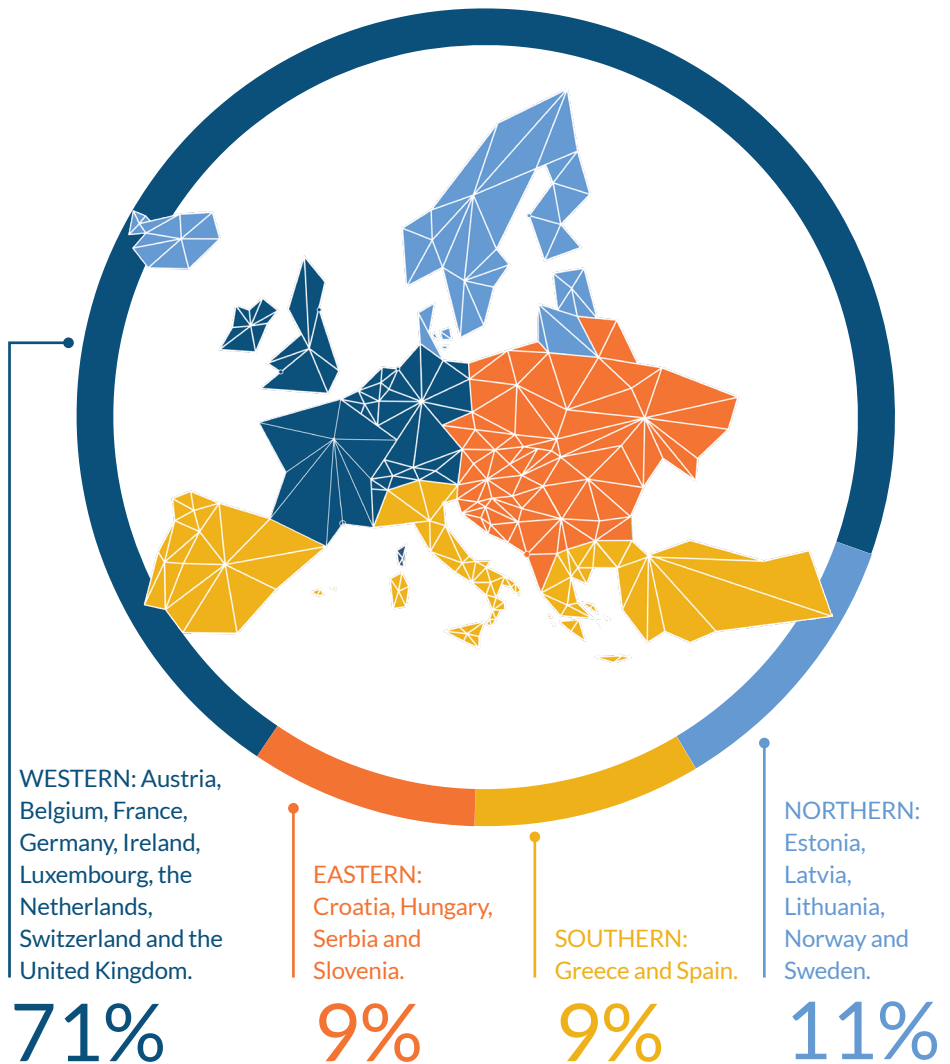
Number of Employees by Library Type

● University Library ● Museum or Archive Library ● National Library ● Other



The libraries we have surveyed are mostly libraries who have been active with digital humanities for some time: 64% have been active for five years or more, and 22% between two and four years. The remaining 14% are either not active yet or have been for up to a year.

Distribution of Responses from Across Europe

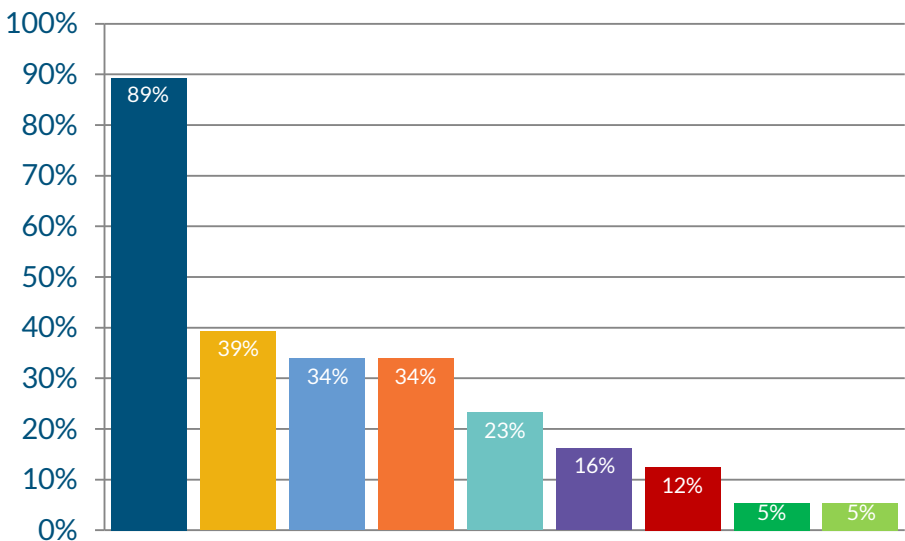


FUNDING

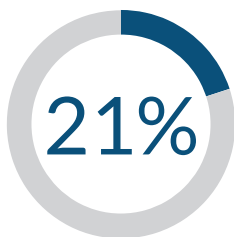
Two thirds of respondents said DH was funded as part of their strategic plan (40%), year plan (10%) or part of a forthcoming policy (15%). The graph below is therefore not representative for libraries starting out in DH but does give a good insight into how DH activities are funded.

How Are DH Activities Funded?

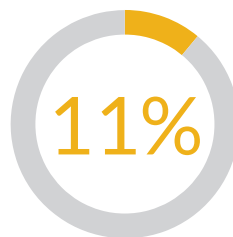
- Library general budget
- Grant funds from researchers
- Grants to the library
- European funding
- National funding
- Funds from the parent institution
- Dedicated DH budget in library
- User fees
- Other



Just 12% of libraries have a dedicated DH budget. Few see their DH funding as sustainable, despite the fact that 80% said DH as an activity was included in their policy plans.



Said DH activities were funded on a shoestring, ad-hoc budget.



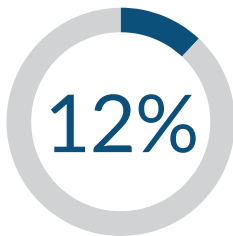
Said their investment was aimed at making DH a sustainable activity.

ORGANISATION

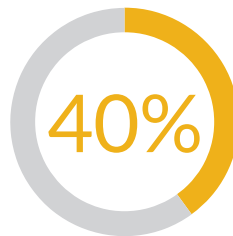
To get a picture of how DH is organised in libraries, we asked several questions related to their setup. Most libraries (84%) said there was no specific DH unit in their library. Almost 80% indicated that they had no physical space in the library for DH activities and 70% said they also had no digital space for DH in the library.

University libraries were an exception: 40% said their university had a DH unit in which the library was involved. In addition, 12 indicated they had a dedicated technical environment for DH in their library and 27 used the IT services of their universities. Most (38) also used their own IT infrastructure.

We were also interested to see whether DH is seen as a separate activity or as part of a digital scholarship umbrella. Most confirmed that DH is part of the digital scholarship activities of the library, which includes (for example) research data management and open access publishing.



Said DH was a separate activity in their library.



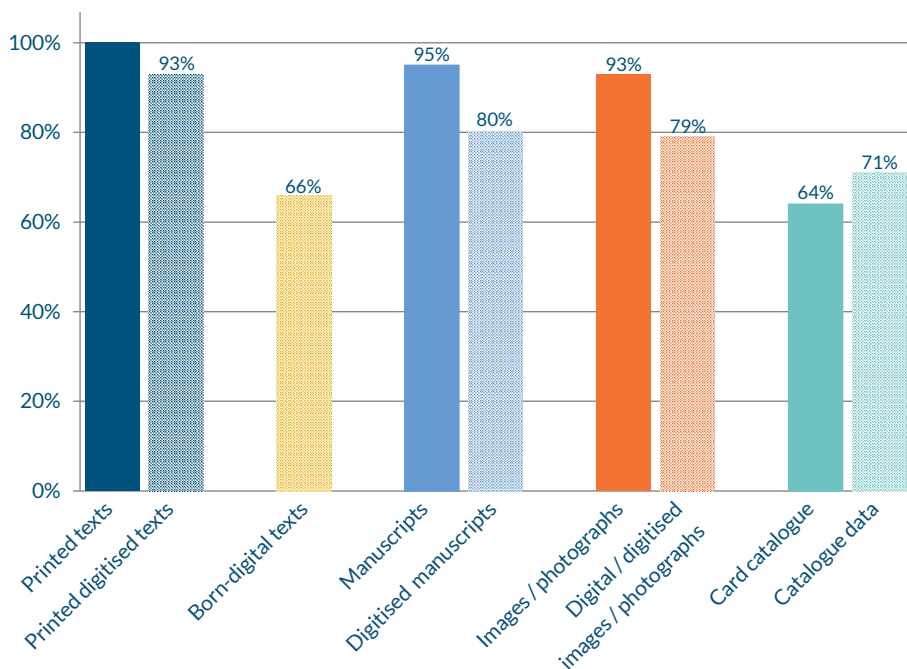
Said DH was part of a digital scholarship umbrella.

COLLECTIONS

All respondents said their libraries held printed texts. Most also hold manuscripts, images/ photographs, archival materials and maps (some also listed architectural plans and their card catalogue as a physical asset). In addition, the answers confirmed that libraries are custodians of an astonishing variety of cultural heritage materials including video, sheet music, sounds, and objects ranging from scientific instruments, paintings, drawings, postcards, coins and medals, to ethnographic collections, costumes and papyri.

Frequently, and not surprisingly, the physical collections are the basis for the electronic collections that are offered for digital research. There were some indications that systematic digitisation of the entire collections is still something to aspire to, and that large parts of the physical collections are unavailable in an electronic format. The graph on p. 9 show that, by and large, libraries have digital surrogates for their collections of printed texts, manuscripts and images/photographs available for reuse by researchers. Together with born-digital materials and card catalogues in the form of electronic bibliographic records, these are the collections that are most frequently offered to end users.

Frequently Digitised Collections



Less frequently, respondents indicated that they held and were able to offer other types of digital materials, as the table below shows. Not all digital offerings are based on the physical collections (e.g., third-party content and web archives).

CONTENT TYPE	ANALOGUE	DIGITAL
Archival collections	93%	64%
Maps	86%	59%
Sheet music	70%	43%
Video	73%	30%
Sounds / audio	67%	39%
Objects	55%	23%
Web archive		34%
Third-party content		36%
Other	18%	7%

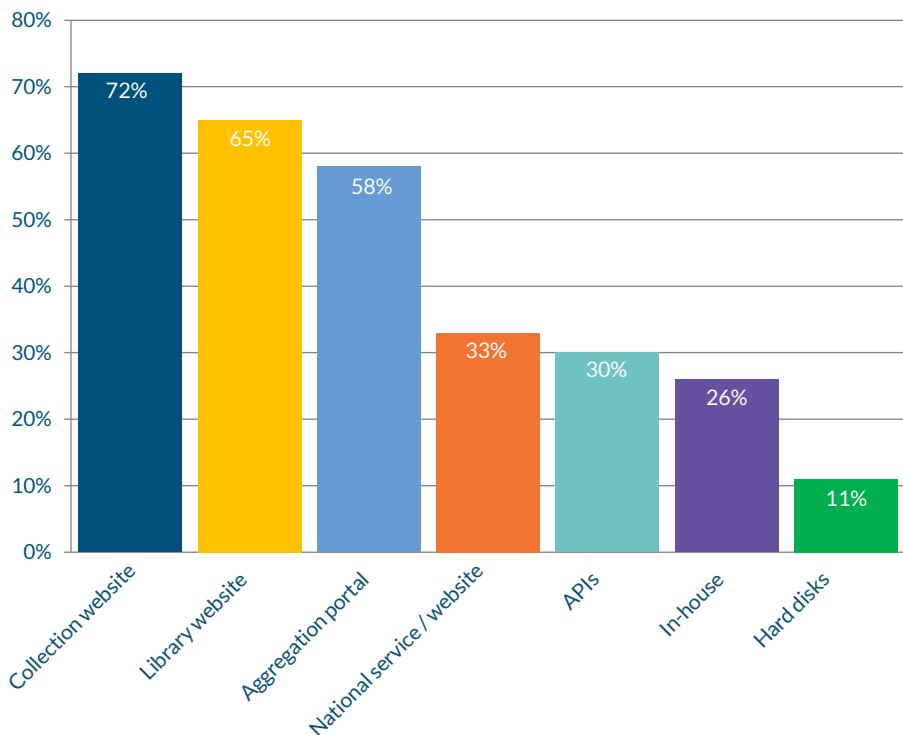
MAKING COLLECTIONS AVAILABLE

There are endless options for making digital collections available for research. Survey respondents most frequently chose to create a dedicated website for accessing the collection (72%), followed by making the data available via the institution's own website (65%).

Additionally, 57% of libraries said they used aggregators to disperse their digital collections. Data is distributed through a wide array of institutional, regional, national and international platforms and portals. In addition to country-specific aggregators, Clarin's Virtual Language Observatory, Flickr, the Internet Archive, Wikimedia and WorldCat were specifically named in the results.

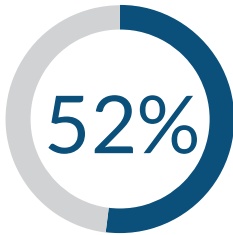
In a few cases, collections are available on a hard disk, in-house, for visitors of the library. About a quarter of respondents have an API to make data available for digital research.

How Can Your Digital Collections Be Accessed?



RE-USING COLLECTIONS

Users who want to re-use the digital collections to which they have access typically encounter a great variety of licenses, according to the survey results.



Said at least one collection was in the public domain.



Said part of their collections were copyrighted and only available on-site.

Comments left by respondents indicate that some are still researching which license(s) to apply, that frequently licenses are attributed case-by-case, on a collection or even item-by-item level. The trend seems to be towards putting digitised materials in the Public Domain (though perhaps with a restriction on commercial reuse). It may not always be easy for end-users to determine what they can and cannot do with the digital materials they have access to, because several respondents indicate that they still need to work on making their licensing decisions known to the public.

How Are Your Digital Collections Licensed?

The table below shows types of licenses, and the percentage of respondents who said they held collections with those licenses.

LICENSE TYPE	PERCENTAGE
Copyrighted, only available on-site	52%
Copyrighted, available off-site	25%
Copyrighted, except research	21%
Public domain, CCO	50%
CC with commercial reuse	25%
CC without commercial reuse	38%
Any other CC license	16%
Database right	9%
National license	9%

KEY TAKEAWAYS

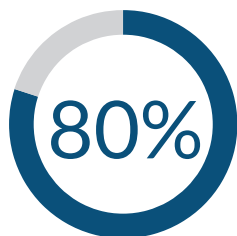
- On the whole, libraries' own physical collections form the basis for creating digital reproductions, and they are quite confidently and competently making available for digital research what they have. Digitisation is on-going, as there is still much to do.
- There is great awareness that born-digital materials, electronic card catalogues, web archives and third-party databases are also valuable to researchers.
- Libraries hold much more than paper and vellum. Archival and Object collections form important pieces of the puzzle when we try to understand our traditional book, manuscript, music and maps collections, but we are less advanced in making these collections electronically available.
- End-users are confronted with a very diverse landscape in terms of where and how electronic offerings are made available and what licenses govern their potential re-use.

Digital Humanities Activities

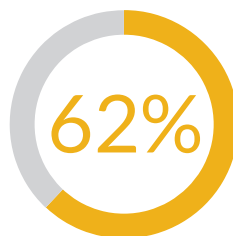
When asking the participants about the activities that they work on within their library, we referred to the six steps in the digital research process as laid out in the TaDiRAH taxonomy⁷, developed within DARIAH.

CAPTURE OF DATA

In terms of activities connected with the capture of data:



Engage in imaging regularly and a further 16% do so on an ad-hoc basis.



Perform data recognition on a regular basis.

On the other side of the spectrum, libraries are much less involved in recording, the discovery of data, gathering data and transcription. Around half of libraries said they are not involved in this activity. This is surprising as facilitating discovery is one of the main traditional roles of libraries.

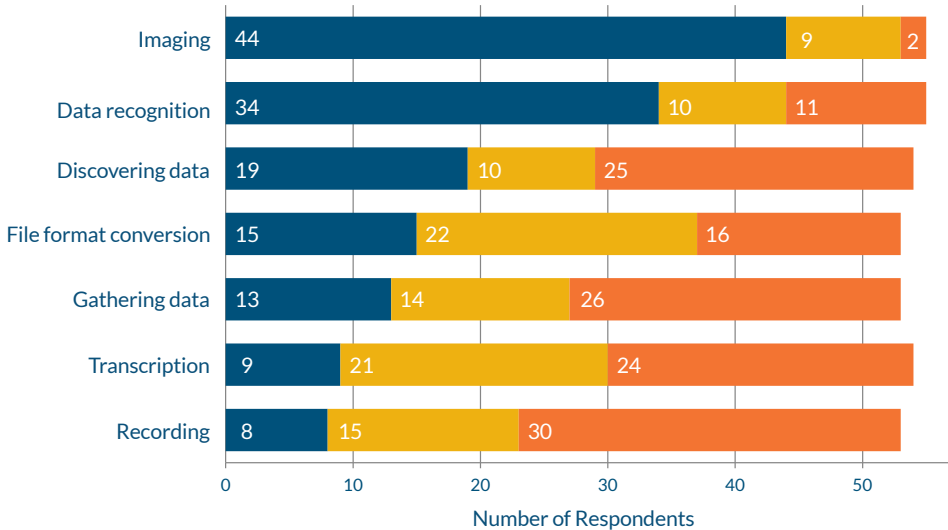
CREATION OF DATA

Libraries are far less involved in the creation of data. Activities which are undertaken (e.g., web development, writing about DH projects) mostly happen on an ad hoc basis. Translation (between natural languages, between natural and computer language or between computer languages) is especially an activity which is rarely undertaken by libraries. Less than 6% report that they do this on a regular basis, and almost two thirds of the respondents indicate that they never engage in this.

⁷ <http://tadirah.dariah.eu/vocab/index.php>

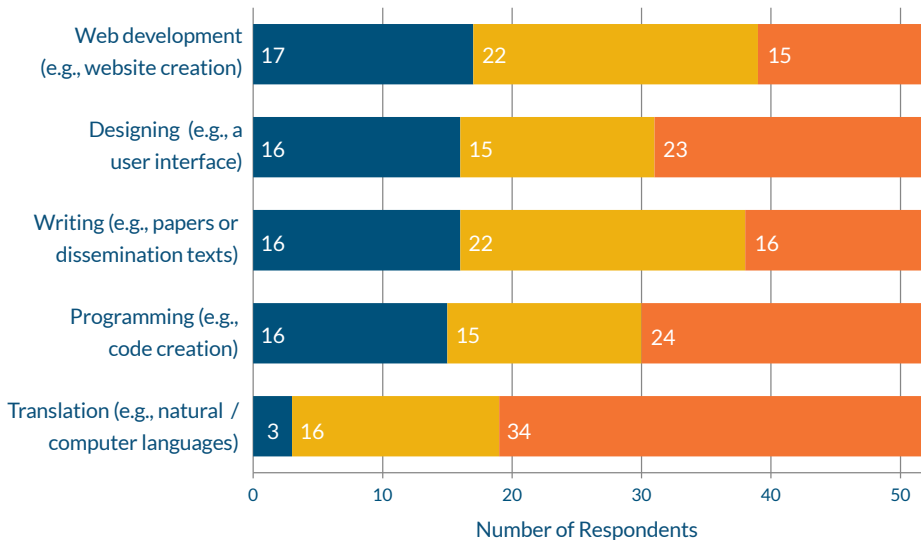
Which Data Capture Activities Does the Library Undertake Under the DH Flag?

● We do this regularly
 ● We do this on an ad-hoc basis
 ● We don't do this



Which Data Creation Activities Does the Library Undertake Under the DH Flag?

● We do this regularly
 ● We do this on an ad-hoc basis
 ● We don't do this



ENRICHMENT OF DATA

Almost two thirds of libraries annotate data (e.g. by adding metadata or keywords) on a regular basis and almost half do the same with cleaning data. Editing of data (e.g., by adding markup to a document) is less popular. More than a third say they never do this (see graph on p. 16).

ANALYSIS OF DATA

Libraries are least involved in activities relating to the analysis of data. In all cases except for the visualisation of data, more than half say they are not involved in the named activities.

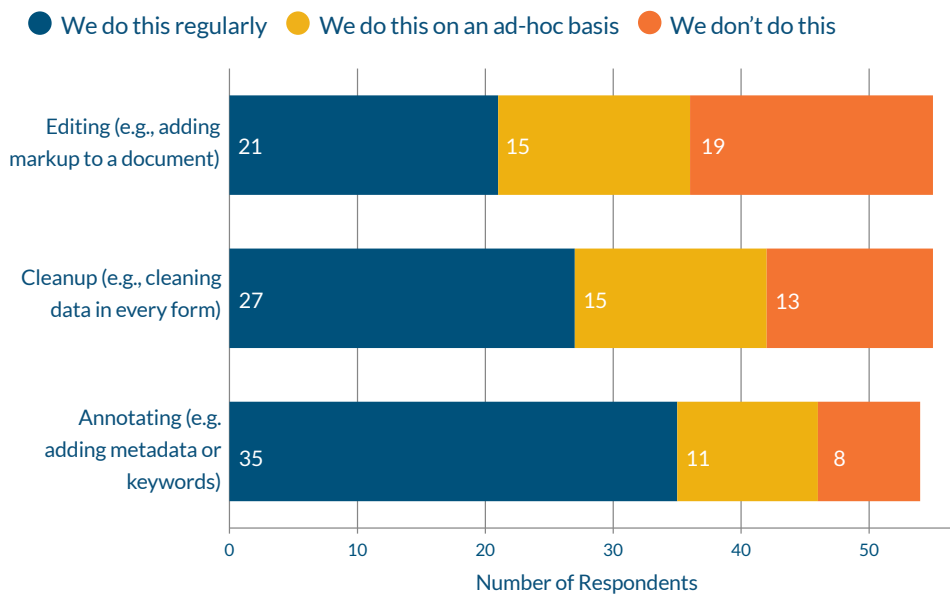
ANALYSIS TYPE	REGULAR ACTIVITY	AD-HOC ACTIVITY	NOT PERFORMED
	<i>(number of respondents)</i>		
Content	5	14	34
Network	5	8	43
Relational	5	12	38
Spatial	14	10	30
Structural	4	10	39
Stylistic	3	8	43
Visualisational	8	22	23

INTERPRETATION OF DATA

Libraries relatively rarely get involved in modeling and theorizing, although they tend to contextualize data by enriching it with metadata.

INTERPRETATION TYPE	REGULAR ACTIVITY	AD-HOC ACTIVITY	NOT PERFORMED
	<i>(number of respondents)</i>		
Contextualising (e.g., adding or enriching metadata)	21	19	15
Modeling (e.g., workflow design or mapping)	9	12	35
Theorizing (e.g., reasoning, abstract thinking)	4	13	37

Which Data Enrichment Activities Does the Library Undertake Under the DH Flag?

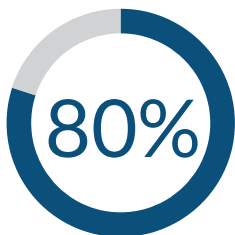


STORAGE OF DATA

Libraries report considerable involvement in the storage of data, either through archiving, the provision of long term storage, contributing to the organisation of data or by assigning identifiers. Respondents also mention involvement of the library in research data management in this context, as well as the fact that systems and conditions for long term digital preservation are not in place yet but planned.

STORAGE TYPE	REGULAR ACTIVITY	AD-HOC ACTIVITY	NOT PERFORMED
	<i>(number of respondents)</i>		
Identifying (e.g., assigning identifiers)	40	7	7
Archiving	39	5	7
Organizing of data	38	5	11
Preservation (e.g., long term storage)	36	8	10

DISSEMINATION OF DATA



Say the library is involved in the publishing of research data, tools or papers related to DH, either on a regular (48%) or ad-hoc (31%) basis.



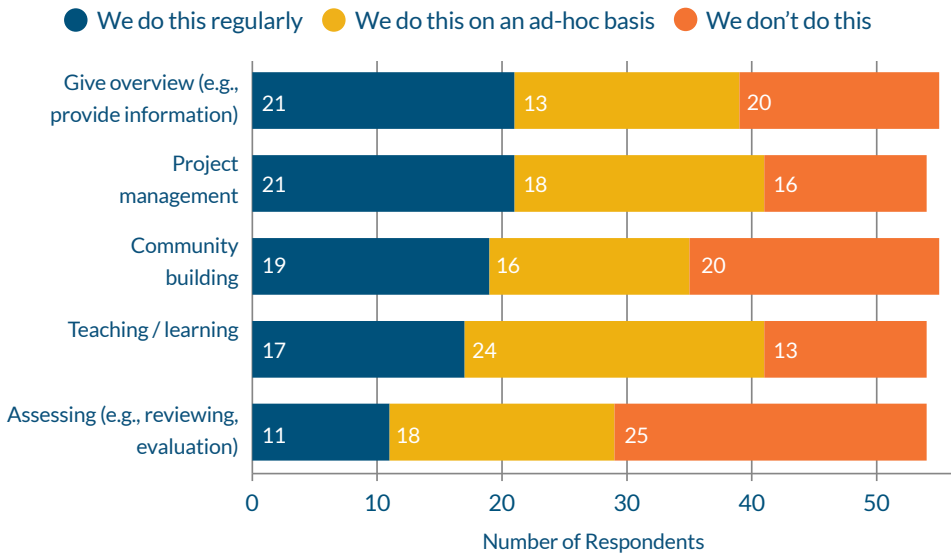
Are not involved with crowdsourcing projects at all. Will this change in the context of LIBER's recently established Citizen Science Working Group?

DISSEMINATION TYPE	REGULAR ACTIVITY	AD-HOC ACTIVITY	NOT PERFORMED
	<i>(number of respondents)</i>		
Publishing (e.g., research data, tools, papers)	21	19	15
Sharing (via informal channels such as Github or blogs)	15	21	18
Commenting (e.g., providing feedback)	11	20	22
Crowdsourcing	9	13	31

META-ACTIVITIES

Between 30 and 40% of the respondents indicated regular involvement in DH activities through community building, communicating about DH projects (e.g. by providing overviews), offering project management, by teaching or learning. Libraries also help assess DH projects: 33% on an ad-hoc basis and one-fifth regularly.

Which Meta-Activities Does the Library Undertake Under the DH Flag?



KEY TAKEAWAYS

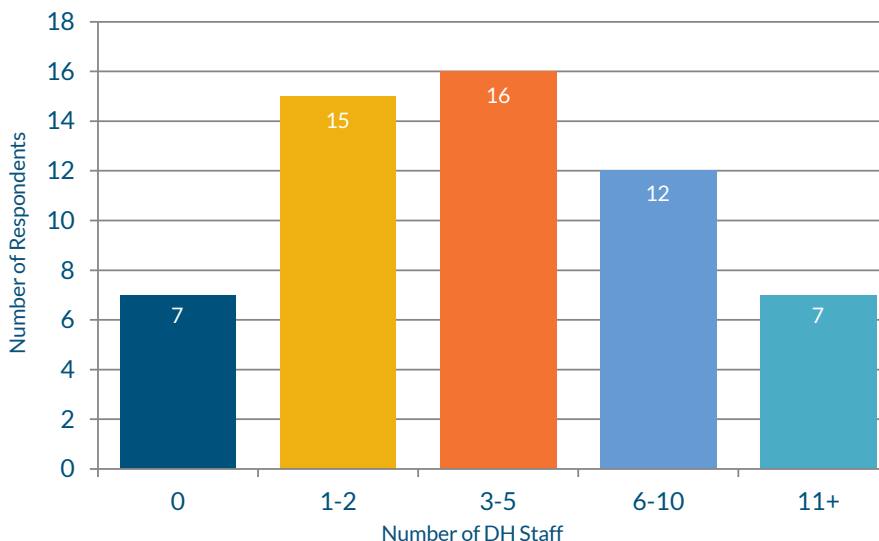
- Libraries play a central role in the capture, enrichment and storage of data (especially through imaging and the addition of metadata or permanent identifiers). They play less of a role when it comes to the creation, analysis or interpretation of data.
- Libraries play a central role in the publication of research data, tools or papers related to DH, a considerable role in meta-activities such as project management and communication and a (perhaps surprisingly) limited role in crowdsourcing projects.

Staff & Skills

LIBRARY STAFF

Libraries have generally made a commitment to staffing DH-related roles. This is reflected in the fact that 88% have staff actively working in DH roles.

Library Staff in DH Roles



These figures suggest a quite healthy investment among the libraries surveyed in providing DH services, and indicate an ongoing commitment to disseminating digital collections and data. About 34% of libraries are heavily involved in providing a sustained, ongoing DH service, with 12 respondents indicating 6-10 staff in this area and 7 respondents signalling 11 staff or more for DH activities.

JOB TITLES

When asked to share the job titles associated with digital humanities work (including making digital collections available as data), respondents came up with 147 titles. This suggests a deeply heterogeneous landscape among European research libraries, albeit one with a few recurring features. The word 'digital' figures very heavily in the list of titles, with 'librarian' following closely. Both 'manager' and 'head' are frequently mentioned, perhaps indicating that staff in library management roles figured heavily among the respondents.

Roughly, the job titles broke down into 22% librarian roles, 17% managerial roles and 11% developer roles with the remaining titles falling into a diverse and complex set of functions and services. However reading through this longer list of titles reveals a healthy representation of roles as diverse as project manager, developer/ programmer, archivist, curator and digital preservation roles.

Additionally, the survey asked participants to provide any job advertisements that may have been recently used to recruit staff responsible for some element of DH or collections as data. Of the 11 adverts submitted, 4 were for librarian positions and the remaining ads were for developers, project managers and curators. This confirms both the heterogeneous responses in the survey around the types of post and the prevalence of librarian posts.

The survey also asked whether respondents have ever been involved in hiring staff for digital humanities roles and to provide the job titles associated with these roles. A slight majority of those who answered the question have been involved with DH-related recruitment. While the job titles are often synonymous with those provided in the previous question, four project management roles (from the 26 job titles provided with this answer) stand out.

SKILLS GAPS

Technical skills are clearly lacking in relation to DH work in libraries. Fifty-eight percent of respondents noted 'Technical knowledge - such as coding or tool expertise' as the primary deficit in their environments. As might be expected of a survey with a predominance of librarian respondents, both 'soft skills' and 'collection building knowledge' garnished the least amount of responses. This may suggest a familiarity in or comfortability in these areas. However, the acknowledged gap in technical skills is noteworthy given that digital humanities work is generally so technology-infused and technology-dependent.

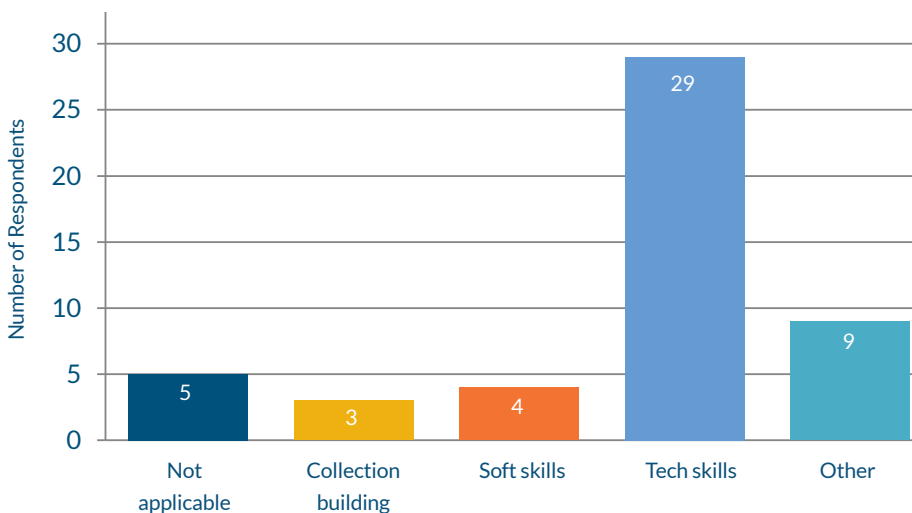
Technology, a prime mover of DH, can be elusive in its acquisition by practitioners. The free text comments supplied reinforce the survey results, noting a gap around specialist skills and technical infrastructure. Closing the skills gap in this area could be something with which LIBER could help.

Interestingly, one respondent notes that new staff members can bring new perspectives as well as new skills.

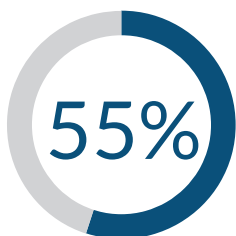
“The most missed skill set is data analysis and interpretation. We have to rely on external partners to do this part.”

-Survey respondent

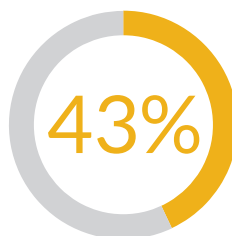
Where do you see the main skill gap in your library related to DH?



HOW SKILLS ARE ACQUIRED



Say DH-related skills are mainly acquired by making training available to staff through personal development plans.



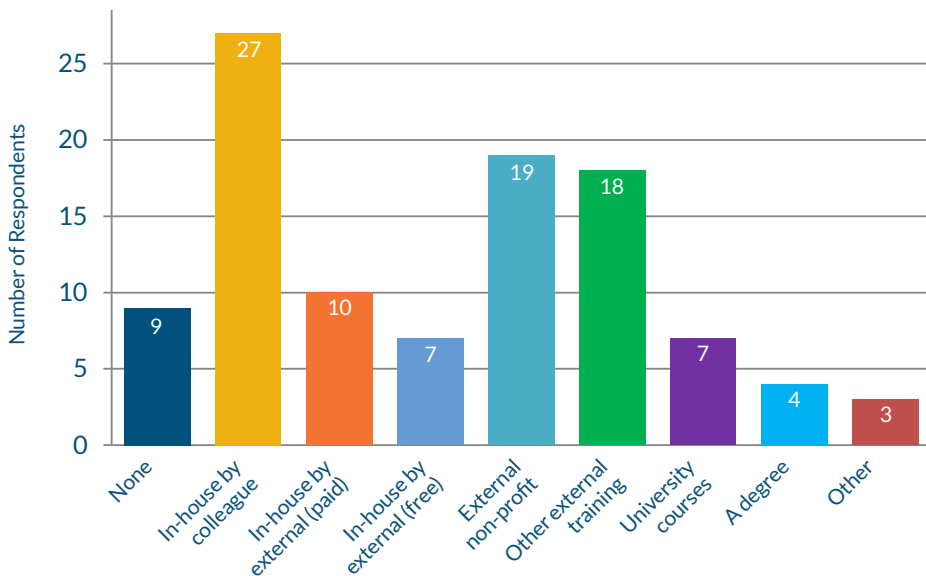
Acquire DH-related skills through the hiring of new staff.

The use of external trainers, internet resources and tutorials was also mentioned. Interestingly, the most common route to acquiring new skills relies heavily on the organisation's human resources infrastructure, since skills are acquired through new hires or professional development initiatives. The comments supplied for this question imply similar approaches. Staff in one institution were allocated time to engage in a variety of DH-related pedagogical activities, while another institution organised in-house training exploiting existing European infrastructures like CLARIN and DARIAH.

TYPES OF TRAINING OFFERED

Where the previous question asked about how skills are acquired, this question addresses the types of training offered to library staff. In-house training by colleagues is by far the most popular method of delivery (55%). Summer schools, Library Carpentry events and other types of external training also find favour with respondents. The comments suggest robust training programmes at some institutions are evolving, from staff-centred training to postgraduate university courses.

What sort of DH training do you offer to librarians?



“We’re developing a post-graduate course titled Computing for Cultural Heritage which will help to develop skills in this area. Alongside our Digital Scholarship training programme, we also have reading groups and lectures at the Library for staff dedicated to topics in digital scholarship.”

-Survey respondent

KEY TAKEAWAYS

- Libraries have generally made a commitment to staffing DH-related roles which is reflected in numbers of staff.
- The DH-related job landscape is deeply heterogenous in European libraries with some commonalities in staffing but a diverse set of roles.
- A significant skills gap is perceived in technical skills, while skill sets associated with traditional elements of library work seem well accounted for in DH-related library work.
- DH-related skills are predominantly acquired by a variety of professional development opportunities or through hiring new staff.
- DH-related training is well-developed and mature with in-house training and various external offerings as the most common means of delivery.

Partners

Our survey considered audiences and partnerships in the areas of digital content and digital humanities. How do libraries connect with their user groups? Who do they consider to be their primary users? How do they develop partnerships or collaborative activities?

TARGET AUDIENCES

All respondents identified researchers as a target audience for digital collections as data and 96% listed students. Around two thirds named other libraries and cultural heritage organisation as additional targets. These results along with comments such as 'general public' show an open approach to potential user groups of digital collections and content.

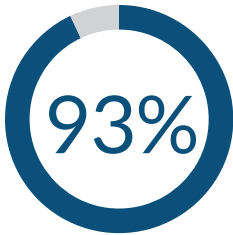
RESEARCH AREAS

History (76%) and Literature (59%) are (perhaps unsurprisingly) heavy users of digital collections as data but a broad spectrum of other research areas are also evident.

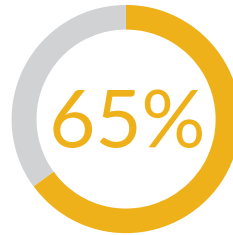
DOMAIN	LIBRARIES WHICH IDENTIFIED RESEARCHERS FROM THIS DOMAIN AMONG THEIR USERS	
	Percentage	Number
History	76%	41
Literature	59%	32
Media Studies	44%	24
Linguistics	41%	22
Modern Languages	32%	17
History of Science	32%	17
Classical Languages	30%	16
Theology	24%	13
Computer Science	24%	13
Philosophy	19%	10
Other STEM Sciences	9%	5
Other	22%	12

NETWORKING & COMMUNITY BUILDING

Given these identifiers around key audiences and users, how do libraries best form and maintain connections with these groups? Leveraging personal contacts remains a core element, along with running library events and presenting at conferences as a means of increasing awareness. Social media is heavily used while mailing lists and newsletters are less common.



Use personal contacts to stay in touch with target audiences for DH research.



Actively participate in conferences and a further 50% use library-organised events to reach target audiences.

Overall it is clear that outreach is a key element of libraries' involvement in DH and that there is no single solution or quick fix to community building. It requires time and commitment. This points again to the need for institutional support for libraries seeking to establish a role and presence in this space.

COLLABORATION

Libraries describe a high level of collaboration in DH, interally (61%), with external partners (48%), and with other research libraries (45%). One comment referred to 'initiatives such as IIF' suggesting the goal of interoperability as a form of collaboration by enabling researchers to work across different collections and datasets. Only 15% said their work on digital collections and data happened without collaboration.

KEY TAKEAWAYS

- While researchers are the core audience for digital content, a very open approach to potential user groups and use cases is also prevalent.
- An encouragingly broad range of humanities domains are actively engaging with libraries' digital content.
- Community building requires a blended approach, with face to face methods such as events and presentations a core element alongside other tools such as social media.
- There are high levels of collaboration in DH, and different forms: internal, external, standards-based, institutional.

Impact & Future

The role of libraries in Digital Humanities is still developing, as has been pointed out in a range of work on the subject. The library is trying to understand its emerging role, and how best to deliver it. This is very evident in the responses around the digital humanities activities currently being planned by libraries.

The main focus was on digitising collections and making more of them accessible to scholars - a very familiar activity. Access to collections has been a driver for many years and as digital humanities research increases so will the demand for digital collections.

Digital Humanities however, requires more than just digitised collections. It requires us to provide 'collections as data' which are computationally accessible also for machine learning and AI. This needs to be accompanied with the associated infrastructure and tools underpinned by digital preservation activities.

Also highlighted was the importance of labs and areas for experimentation, and grants enabling researchers to use them. There was a strong recognition that this is an emerging area of work for the library, and a feeling that a permissive culture of diverse experimentation is required to allow libraries to find tailored ways forward.

RAISING AWARENESS

Libraries mainly address internal and institutional audiences when raising awareness of digital humanities work, rather than a much wider audience or the general public – a target group which struggles to understand what digital humanities is about. The majority of the communications focused on academics and researchers within the institution, communicating how the library could partner or support digital humanities activities and help create or engage in digital humanities networks.

A significant focus of the communication was aimed at senior managers, policy decision makers, and funders. This shows that, while libraries understand that this is a key area of delivery for them, many others still require convincing and more advocacy work is required to ensure support and resources to deliver digital humanities activities and enable libraries to engage.

Awareness raising also focused on communicating with peers and in peer networks, and seeking to find others to learn from them, share experiences, and bring learning back into the organisation. This highlights that, for libraries, this was a new area of engagement.

IMPACT (EVALUATION)

Digital humanities work within libraries is currently undergoing limited evaluation. Over half of respondents do not conduct any specific evaluation. Again this is due in part to this being an emerging field, and partly due to the varied nature of the work. Where evaluation took place, it focused on a number of projects, consultations or interviews with researchers. In order to demonstrate value in future, key indicators or impacts will need to be measured.

INFRASTRUCTURE

The other major emerging trend was the provision of infrastructure and tools to undertake digital humanities work - Text and Data Mining, OCR (Optical Character Recognition) and IIIF (International Image Interoperability Framework) were all mentioned. Some responses added that the library needed to provide an infrastructure that was scalable, agile and responsive.

While often delivering for specific projects, libraries needed to look further so as to provide solutions for the wider community. This work often culminated in the creation of a digital scholarship lab though, from the responses, it was difficult to judge whether this lab was just a digital space or whether it also had a physical manifestation. The final trend was skills development not just for the library and its staff but more importantly for the library users.

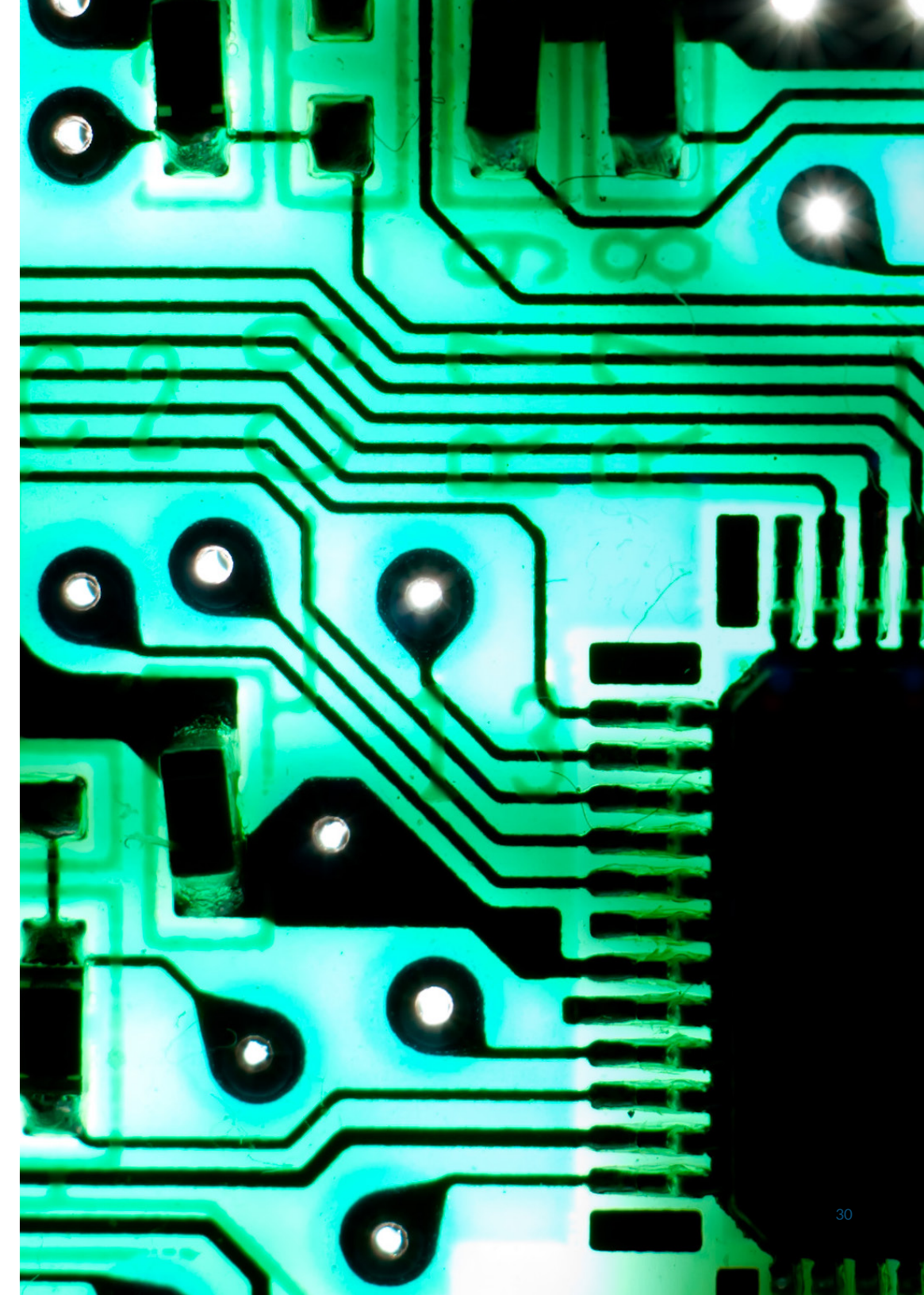
FUTURE

Looking forward to what digital humanities activities the libraries were planning, the key focus for many was digitisation of more collections, and, as was highlighted by the wide range of collections libraries hold, this included 3D. IIIF was mentioned and referenced a number of times, illustrating that this is becoming the de facto standard for making digitised content available.

While digitising and making collections more available was the key activity in forward plans, another significant trend was the development of tools to open up the collections with crowdsourcing being recognised as key. Also mentioned were tools to manipulate the collections, from visualisation, modelling, editing digital texts, to text and data mining, along with the provision of APIs and the utilisation of machine learning to enable this. Underpinning this work was the infrastructure, access to collections, and the provision of collections as data, and a recognition that for many libraries digital humanities are not just a project but the next phase of delivering library content to users. This is also demonstrated by libraries identifying digital humanities as a rising priority within the library.

KEY TAKEAWAYS

- Digitisation of library collections is a critical activity for libraries along with delivering digital preservation.
- Research Data Management and digital preservation underpin activities for digital humanities.
- While some publishers and other organisations are building digital humanities infrastructure, the library is recognising that some of these solutions are walled gardens and is ensuring that the right environments and tools are accessible to researchers.
- Libraries are working both as collaborators and supporters of digital humanities activities.
- Advocacy and capacity building are key areas for libraries to engage with.
- In order to be able to demonstrate effective delivery of digital humanities activities, libraries need to start identifying measures and measure impact.



Bavarian State Library

Munich, Germany – bsb-muenchen.de

The Bavarian State Library (BSB), founded in 1558 by Duke Albrecht V., is one of the large European universal and research libraries. In the field of manuscripts and early printed books as well as other special collections, the BSB gives researchers access to a unique treasure of cultural heritage and a broad range of fields for research – especially in the humanities. To share these treasures with researchers all over the world, the BSB has initiated large-scale digital projects.

Since 1997, the Munich Digitization Center (MDZ) prepares digital reproductions of the highest quality, not only of manuscripts, but also of printed books, maps, photographs, music scores etc. The MDZ also takes care of the long-term preservation of the data and their virtual presentation, e. g. by implementing the International Image Interoperability Framework (IIIF).

In 2007, the BSB started a much noted joint venture with Google to digitize the copyright-free holdings of the BSB and the ten Bavarian regional libraries. Over 1.9 million volumes from the 17th to the end of the 19th century are now accessible free of charge via Google Book Search and the library's own retrieval systems.

Since 2013, the BSB develops Bavarikon as a virtual platform for the presentation of Bavarian cultural heritage. Bavarikon is a cooperation project between different

public institutions (archives, libraries, museums). Especially with three-dimensional digital representations of outstanding objects and a constantly growing range of virtual exhibitions, Bavarikon reaches a broad public.

Although the Bavarian State Library's main focus is on conveying collections to researchers to support excellent research, its activities are not limited to the digitization of outstanding objects.

Funded by the German Research Foundation (DFG), four so-called Fachinformationsdienste (FID) – programs in scientific libraries to strengthen the research infrastructure – continuously develop a broad portfolio of digital services for research in the fields of Ancient Studies, Eastern-Europe Studies, History and Musicology. The range of services offered comprises amongst others information retrieval, bibliography, publication services, management of research data and much more. New web services are built in close communication with their respective community.

Beyond that, the Center for Electronic Publishing (ZEP) offers support to researchers, who wish to publish their research results on the institutional platform.

Focal points of the ongoing work are:

- Development of methods for the dynamic publishing of continuously amendable and extendible publications
- Indexing and linking digital publications for the sake of an improved use of the semantic web's advantages
- Trial and use of virtual research environments and digital working tools
- Development of services for storing and linking research data



Bodleian Library

Oxford, United Kingdom — bodleian.ox.ac.uk

The Taylor Institution Library, known as the Taylorian, is part of the Bodleian Libraries group at the University of Oxford. It houses collections in Modern European Languages, and is building a small collection of books on Digital Humanities.

Although the library's involvement in Digital Humanities is having a significant impact, it remains grass-roots and do-it-yourself.

Digital Humanities began at the Taylorian four years ago. The impetus was to explore how Reader Services staff might get involved in new areas, as some traditional areas became less important. Reader Services colleagues supported the Humanities Division by updating the People and Projects database on the "Digital Humanities @ Oxford" website. They emailed researchers and gathered up-to-date information.

Through this routine work it was hoped that librarians would learn about the methods and techniques used by digital scholars and thereby identify opportunities to offer new services and ways of supporting them. There was perhaps more hope of these things happening than what resulted. Colleagues who worked on this project had fun and learnt a lot but we are still waiting on those new Reader Services roles.

Alongside this project grew the enthusiasm of subject librarians to teach Digital

Humanities at the Taylorian. This was led by the subject librarian for German, Emma Huber, who had previous experience of digital methods from earlier positions. Taylor Digital Editions began last year and has gone from strength to strength. First run as a pilot for staff, it now teaches masters and doctoral students how to create digital editions of precious items from the Taylorian collections⁸.

The course covers digital images, transcription, xml, TEI-encoding, quality assurance, research data management, metadata standards, delivery and dissemination. An introduction to Digital Humanities is being piloted this term, together with a coding club. In addition, the library publishes facsimile digitally printed editions and hosts related exhibitions⁹.

There have been challenges: finding time to put courses and events together; keeping up the momentum when day-to-day demands 'get in the way'; and, of course, funding. All these have been overcome thanks to the enthusiasm, energy and time invested by Emma and other colleagues.

It is a great reward that the Digital Editions course has won funding to ensure it and its website are properly resourced in future.

The moral of the Taylorian's experience is, be brave. To begin with it was hard to imagine that a small room containing an



assortment of furniture and a basic camera stand was going to attract students to a Digital Humanities course. Yet it did. A well designed course and friendly librarian mentors answered a teaching need that was not being provided elsewhere in the teeming University.

⁸ <https://editions.mml.ox.ac.uk>

⁹ <https://www.bodleian.ox.ac.uk/taylor/about/exhibitions-and-publications>

Why does the British Library invest in the Digital Humanities? Our Living Knowledge vision sets the stage. We are experiencing a revolution in the creation, analysis and exploitation of data. Our digital collections have reached a critical mass to support research. Alongside this, users in many communities are demanding to incorporate our digital collections and data in their work. In order to remain relevant for them we must establish new approaches for support. The Digital Scholarship Department at the British Library was set up in 2010 following a strategic review to better support this ambition, with British Library Labs launched in 2012.

The Digital Scholarship and BL Labs teams have supported hundreds of researchers and creatives in reusing our digital collections and data for innovative projects. For example, in the last financial year, BL Labs provided substantial support for over 50 projects, with lighter-weight support for an additional 150 projects. BL Labs has been pivotal in creating an international 'Library Labs' community, with over 40 organisations from 20 countries attending a September 2018 symposium in London and a March 2019 workshop in Copenhagen. There is a strong desire to build on this network into the future. Digital Scholarship's collaboration with the Alan Turing Institute for Data Science and Artificial Intelligence to deliver the 'Living with Machines' project between 2018 and

2023 represents the largest Digital Humanities project ever funded. Building on our experience with openly licensed data, we know we need to invest in structures and facilities to enable access to work with restricted collections onsite in the Reading Rooms both in digital and physical form.

We have developed a good understanding of emerging requirements for those who reuse our digital collections and data. The following steps have been most effective in encouraging Digital Scholarship at the British Library:

- Extensive engagement with those who may have an interest in using our digital collections and data - plus a support process for those who would like further advice about how it may be used in innovative projects.
- Curating the data we make available, together with detailed guidance, and where possible links to case studies, lowering the barrier to getting digital collections used.
- Provision of a Digital Scholarship Training Programme to support existing and new staff to build confidence and skills across a broad range of topics.
- Developing a plan for better onsite/offsite facilities to enable computational access and analysis for data and provide the necessary

infrastructure for this to happen.

The challenges will be familiar to anyone working in the GLAM sector: rising expectations coupled with shrinking budgets, legacy infrastructure and policies, complex rights, organisational risk appetite, deteriorating physical materials, the pace of change in the library world compared to the digital world.

We used a number of different approaches to overcome these challenges. The foundation for many of our activities was the systematic release of open data via an Access & Reuse Group tasked with maximising value from our digital collections.

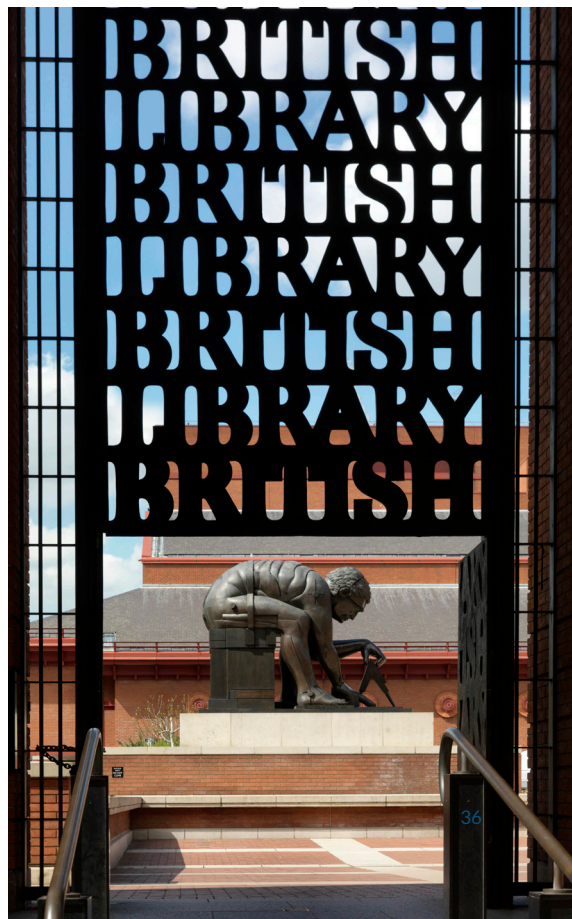
BL Labs was a vehicle to facilitate experimentation for anyone (including staff) in a risk appropriate way. It provided an organisational focus to bring together a number of disparate activities so that it became easier to experiment with our digital collections. Feeding lessons learned from this ongoing engagement work into strategic planning is key to ensure long term change, using incremental delivery to demonstrate continued organisational benefits.

For those looking to do more with the Digital Humanities, we offer these suggestions:

- Start small, start now - find creative ways to pilot new things.
- Reflect, document and share your lessons learned, whether big or small.
- Work with partners who can support organisational aims & objectives, e.g. The Carpentries, Wikimedia, Building

Library Labs, etc.

- Be as open as possible - this will unlock more value to your organisation than anything else you do!
- Harness and celebrate the existing knowledge and skills of staff.
- Invest in training staff so that they're more able to collaborate on DH projects with others - this investment will be repaid in successful grants and funding bids.
- Share what didn't work - this can save others time and effort.
- Celebrate successes, whether as case studies or stories. The more you can share the words of your collaborators, the more convincing it'll be.



KU Leuven Libraries

Leuven, Belgium — bib.kuleuven.be

At KU Leuven Libraries, digital humanities support is spread over several different departments working together, rather than organized in one centralized unit. Particularly LIBIS, the Digitisation Department and Artes (i.e. the division of the library focusing on the Arts and Humanities) offer services for DH.

Besides subject specialists, who work closely together with the academic community to build the library's physical and digital collections and services, Artes employs an expert in digital scholarship in the humanities whose task it is to support digital forms of research and teaching in the Arts and Humanities. This colleague assists in planning research proposals and finding the right partners for specific projects, and teaches a number of classes on digital literacy in BA, MA and PhD programs at the Faculty of Arts.

The Digitisation Department coordinates the various digitisation efforts within the library. The Imaging Lab, part of the Digitisation Department, is responsible for two strands. The first is the digitisation of KU Leuven collections. The second strand is digitisation and imaging in the context of specific research projects (KU Leuven and external collections). Next to high-end digitisation of cultural heritage objects, the lab develops advanced services such as multi-light and multi-spectral imaging, revealing features not visible to the human

eye. These services are developed in close collaboration with research groups in the humanities and engineering. Ongoing research projects are the continuous development of the Portable Light Dome (RICH project) or 3Pi (Diagnosis of Papyrus-Parchment-Paper through Advanced Imaging).

LIBIS also takes a central role in several research projects, in which they are present in all the project stages, from the initial planning and the writing of a proposal, through the execution (by taking up work packages), to the dissemination of the project results. An example is the RelReS or Research Infrastructure for Religious Studies project. This H2020 project has the goal to open up access to the most important research resources and expertise on religious studies. LIBIS develops a unified discovery environment providing access to otherwise dispersed and inaccessible collections, linking them together through the use of ontologies and linking of data, as well as providing improved standardized access to the datasets in machine readable formats for reuse.

Another exemplary project demonstrating the close collaboration between digital humanities researchers and the different departments of KU Leuven Libraries is the Magister Dixit project. This project resulted in a virtual platform that provides access to a large collection of handwritten lecture

notes of the ancient University of Leuven (1425-1797). Different partners took up various roles to achieve high-quality access to these important research resources: high-end digitisation by the Digitisation Department; creation of metadata by specialists from the metadata department; classification of the manuscripts on subject and topic by the involved researchers from the Lectio research group; long-term preservation and IIF compliant access to the digital objects by LIBIS.

The goal of the departments' combined effort is to support humanities researchers in setting out and achieving their digital strategy and increasing the presence of the humanities in research infrastructure projects.



National Library of Norway

Oslo, Norway — nb.no

As a research library, we want to be ahead of the development of research tools, methodologies, and techniques in the pursuit of new knowledge in the humanities. Scholars and academics expect us to provide them with cutting edge research infrastructure, also in terms of digital research techniques, and this is a central part of our mandate.

Digital humanities gives enormous potential to create new insights about our past, present, and future, and we have therefore made great efforts in creating digital research infrastructure alongside our digitization project (which has been running for 13 years already). Examples are our language technology resources and the establishment of laboratories for artificial intelligence laboratory and the digital humanities.

The demand for our digitized material and research infrastructure is huge. It is our impression that our decision – taken long time ago – to digitize our entire collection was a crucial decision. Scholars and academicians can take for granted that we want nothing to be left out and that they will eventually be offered the chance of studying every aspect of our cultural heritage, using digital humanities methods, from every possible angle of approach. In addition to that, our digital humanities laboratory gives a strong signal of commitment from our part.

Although we have made great progress, we are also still learning when it comes to the application of digital research techniques. We need to develop our skills and competencies, and we need to assist many scholars. We run a lot of workshops, thereby facilitating a dialogue with users of our research infrastructure. We learn a lot from this.

Best practice shows that collaboration is a good thing, so we advise other libraries to seek collaboration and follow international standards when it comes to formats and technologies.



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References & Credits

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Notes

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