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Abstract

DT/7-D4 is concerned with which types of communication within academic communities are essential viewed in respect of preservation.

The central product is a presentation and an analysis of a questionnaire deployed to researchers at Aarhus University.

Keyword list

Questionnaire, communication, preservation, academia.

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References

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DT/7-D1	Revised Activity Plan for DT/7	April 17, 2008	Final version
DT/7-D3	Report on User Field Studies	June 16, 2008	Final version

EXECUTIVE SUMMARY

A key objective of DT/7 is to shed light on the types of communication that are important in academic and e-government communities and the implications for preservation. To achieve this, a broad spectrum of methods has been employed, including, in the first phase, qualitative analyses (such as interviews, data probe collections) and, in the second phase, quantitative analyses (questionnaires).

This specific deliverable DT/7-D4 ("Report based on DT/7 questionnaire") is concerned with the results of a questionnaire deployed to researchers at Aarhus University. It provides insight from a larger sample into findings elicited from a series of probes conducted during the first phase of the work package and set out in the DT/7-D3 deliverable. Initially we planned to deploy a questionnaire within each partner country (HATII/Scotland (UK), NANETH/The Netherlands, SB/Denmark). HATII and SB were to target the academic community and NANETH would target e-government. Unfortunately, we were unable to obtain permission to launch the e-government questionnaire within a reasonable time frame. Both the questionnaires targeting the academic community were launched. SB launched to Aarhus University, Denmark, and HATII to the University of Glasgow, Scotland. Due to lack of sufficient number of respondents from the University of Glasgow we have chosen to include only the results from Aarhus University in the analysis, thus maintaining a methodical sound report. NANETH will conduct additional interviews with focus on e-government as their contribution to the results of this iteration of DT//7. The results from NANETH will be published later (M42) in a separate deliverable DT/7-D5.

This deliverable, DT/7-D4, contains an introduction to the report, background to the DT7 work package, a brief description of the deliverable, a summary of the key findings, the methodology, and an analysis of the main findings of the questionnaire launched to researchers at Aarhus University. The appendices contain the questionnaire and the "raw data" in a quantified/summarized form as appendices.

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Attached separately:

Appendix 1: Cover e-mail and questionnaire

Appendix 2: Annotated cross-tabulations

1.   Introduction

This deliverable DT/7-D4 ("Report based on DT/7 questionnaire") reports on the results of a questionnaire deployed to researchers at Aarhus University. It presents the results of the questionnaire and our analysis. Our analysis will target what we think are the most interesting results. The questionnaire as well as the annotated cross tabulations of the answers are included in full as appendices for reference. The raw respondent data is available on request.

2.   Background

Libraries and archives have over centuries had the responsibility to capture as a minimum a representative sample of the production society. In the analogue world, this obligation was related to the physical output of society in terms of records and publications such as monographs, music records, video, radio and television, and newspapers. As the digital evolution moves from the initial phase of being an alternative used in the same manner as analogue materials (e.g. e-journals instead of journals, on-line music instead of records etc.) to being infused and diffused into the whole communication process, we need to revise our perception of what constitutes a preservable item? In this respect it is important to address questions such as:

- What is the future of scientific communication?
- How do researchers interact?
- How does the transition to digital methods of communication affect the preservation activities of the academic and research community?

Thus, a key objective of DT/7 is to shed light on what types of communication within academic community are essential, as viewed from the standpoint of preservation. To achieve this, a broad spectrum of methods has been employed, including both qualitative (e.g. interviews, data probe collection) and quantitative analyses (e.g. questionnaires).

DT/7-D4 summarizes the results of a questionnaire deployed to researchers at Aarhus University. The questionnaire was created on the base of the results presented in DT/7-D3. DT/7-D5, which is due to be completed in November 2009, will summarize the results of studies conducted by NANETH with Government institutions in the Netherlands and Belgium. Our aim was to address the topics from DT/7-D3 in a quantified manner and therefore the questions in the questionnaire are modelled from these results.

3.   A brief description of DT/7-D4

The report consists of four parts:

1. A summary of the key findings obtained from the survey.

2. An overview of the survey including an analysis of the main results. The overview, which constitutes the central part of this report, introduces and describes briefly the background to the work package and the findings of work to date, considerations about methodology and questionnaire design. The actual results are presented in groups, which have been thematically ordered, i.e. the questions have been grouped into themes, and each theme has been analysed, and the main result(s) and conclusion(s) are presented here.

3. Appendix 1. This appendix presents the questionnaire and the cover e-mail in full as they were deployed to the respondents.

4. Appendix 2. This appendix contains background data from Aarhus University, response rates, and the annotated cross tabulations which are meant as a cross reference to the overview in the report. The headings A - H correspond to the headings in the overview for easy reference.

4.   The survey: Summary of key findings

In order to broaden our knowledge and understanding of researchers' communicative and collaborative behaviour, we have expanded our previous qualitative and explorative analyses (reported in DT/7-D3) with a questionnaire covering eight essential themes and comprising 37 questions. The questionnaire was launched to researchers, including Ph.D. students, at Aarhus University, Denmark, and the analysis of the results revealed the following key findings:

- For almost all of the respondents e-mail communication is 'Important' or 'Very important' for their research. And - perhaps not surprising - research communication should definitely be in a digital form.

- The dominant view of the researchers is that intermediate research results should 'Always' or 'Often' be preserved. And nine of ten feel that access should not to be restricted to the actual researchers involved.

- 2/3 have had problems accessing older digital data.

- Most researchers prefer digital data or information to print; they also find it easier to access. It should be noted, however, that half of the respondents from Arts and Humanities 'Always' or 'Often' prefer printed data or information and do not find the digital format as easily accessible as their fellow researchers from other fields. Still, digital data and printed

data are trusted equally by all researchers. Problems in accessing old data are a common experience among most researchers, but especially frequent among those from the Natural and Health Sciences.

- For the majority of researchers, previous research activities and professional networks are very important for the generation of new ideas as well as for the research process in general. There seem to be only small variations between the different research areas concerning these issues. For almost all researchers communication with the professional network is 'Always' or 'Often' important for the initiation as well as completion of new research projects.

- The composition of most researchers' professional networks is cross-organisational or cross-institutional as well as cross-national. How the networks are composed - local (institute or organisation) or international - is not related to the use of digital media in communication. Their importance remains the same. E-mails are used 'Always' or 'Often' by almost all of the respondents, regardless whether the network is national, international, or based on the researcher's own institute or organisation.

- Libraries are more important as sources of information to researchers in Arts and Humanities and the Social Sciences than to researchers from other fields. Professional networks are more important as sources of information to researchers from the Health and Natural Sciences than to researchers from the Social Sciences and Arts and Humanities. Information provided by official institutions is more important to researchers from the Social Sciences than to researchers from other fields. The scientific databases are very important to researchers from all fields, but especially important for researchers from the Health and Natural Sciences. Wikipedia however appears not to be an important information resource to researchers from any fields.

5.   The survey: Background, methodology, and main results

5.1   Background

Previously, in the stage one of the work package (as reported in the DT/7-D3: 'Report based on user field studies'), we explored researchers' communicative and collaborative behaviour, and we identified some central themes and elements. These included:

- E-mail is an element of central importance in the researchers' communicative interaction. However, face-to-face meetings and telephone conversations were also important in supporting the generation and development of thoughts and ideas.
- Drafts and intermediate results and data are important to preserve as proof, as working and reference tools and as a bank of ideas.

- Preservation of such results that constitute stages in the research process is carried out on at individual rather than a collective or institutional level.
- The researchers' professional social networks are important as spheres for scholarly communication and dissemination of information. Their different forms (virtual, formal, personal etc.) supplement rather than substitute each other.
- Digital tools and resources are selected and used according to specific needs. Dissatisfaction with and lack of confidence in available software are apparent.

These results were produced by multiple methods and techniques such as diaries (data probes) and interviews, all under the auspices of qualitative methodology. The DT/7-D3 study part, which was focusing on the academic communities, included from Scotland and Denmark altogether 3 researchers from Science community and 3 researchers from Arts/Humanities.

5.2   Methodology

The methodology and aim of the survey analysis described in this present report, represents stage two of the work package, differs in several ways. The target group is limited to researchers from Aarhus University. Rather than the open and explorative approach and the corresponding methods in the previous field study (a population of six respondents from academic communities, self-reported data, fairly open structure to the data collecting process etc.), we used a questionnaire based on the earlier findings. The questionnaire is a highly structured data gathering tool with standardized questions allowing for deployment to a large population composed of different subgroups. All questions are closed and do not allow for comments to individual questions by the respondents.

The questionnaire consists of 37 questions within these themes:

A. Respondents' social data
B. Research related communication
C. Data or information to be preserved
D. Digital or printed data or information
E. Software for preservation or retrieval of data or information
F. Role of professional network
G. Communication with professional network
H. Importance of different information resources

The larger population of respondents allows for an in-depth analysis of central variables in the researchers' communication, their needs and preferences in preservation issues and their professional social networks. For example, this gives us an insight into the relative importance of digital and analogue data. Are they equally important to researchers in all fields? Are they trusted equally? Are there problems in accessing old digital data? Another example: the professional social networks could be of importance, but for which stages in the research process? The initial or the latter stages? And what is the dominant pattern of composition of these networks? Local, national, or international? The questionnaire was designed to investigate these (and other) questions.

The methodology applied is that of a total population approach. The response rates vary between 8 and 19,3%, averaging 14,8%. As this is not a sample-based study, it is sufficient to use basic descriptive methods in the processing of the data, concentrating on localizing and describing the most important trends and variations.

The questionnaire was deployed to researchers in the Arts and Humanities, the Social Sciences, the Natural Sciences, and the Health Sciences on Nov. 10. 2008. Technical problems delayed the deployment to the Arts and Humanities and the Social Sciences; consequently the end date was postponed to Dec. 8. One mail reminder was issued to the respondent population. An article describing the Planets DT/7 project and the ongoing survey was published in Campus, the Aarhus University bi-weekly on Nov. 24. The software SurveyXact was used to construct the questionnaire and to process the data.

5.3 **Main results**

The sample population included 2700-2800 researchers from Aarhus University, distributed among five faculties [*Theology (91), Humanities (421), Social Sciences (393), Natural Sciences (921), and Health Sciences (896). Numbers in brackets refer to the total numbers of persons at each faculty, as provided by Aarhus University key figures, year 2007*]. Researchers included the following groups: Professors, Associate professors, Lecturers/Post docs, PhD-students, "D-VIP" (part-time academic staff), and "Other".

The average response rate was 14,8%, the extremities being Arts and Humanities (8,0%) and the Social Sciences (19,3%).

Detailed tables are provided in appendix 2, p. 1.

Note that headlines and numbers in the following correspond to headings A - H in appendix 2 (Annotated cross-tabulations).

5.3.1 **A. DEMOGRAPHIC DATA**

This section includes the 'standard' demographic data, such as gender and age, in addition to more specific information about current academic activities, primary research field, and 'research age'.

The respondents were 47% women and 53% men. Approximately half (50,6%) falls within the age group '25-35 years', which corresponds well with the 'research age' that is 10 year or less for almost 70% of the respondents. The Natural and Health Sciences make up almost 70%, while the Social Sciences and Arts and Humanities are represented by 18,5% and 9%, respectively.

5.3.2   **B. RESEARCH RELATED COMMUNICATION**

This section is concerned with how researchers communicate, whether communication should be preserved, and the opportunities available to researchers to preserve their work-related communications.

- For nearly all (~95%) of the respondents, e-mail communication is 'Important' or 'Very important' for their research.

- Given the importance of e-mail communication, the results suggest the need for further analyses focused specifically on preservation needs and possibilities on a decentralized level (organisation or institution).

Q8. How important is e-mail for your research?
The aggregated result contains some slightly differing trends as researchers from Arts and Humanities and the Social Sciences regard e-mails as somewhat less important (~85% and ~88%, respectively, as compared to the overall average of 95%).

Q9. Should all your e-mails relating to your research be preserved?
The general high ranking of e-mails' importance does not imply that all the communication should be preserved. Of all respondents, one third states that 'All' or 'Most' of their e-mail communication should be preserved.

Q10. Should the results of research communication by telephone be preserved?
The majority (-59%), regardless of research fields, believes that research communication by telephone should not be preserved.

Q11.Does your organisation make it easy to preserve your research related communications?
More than half of the respondents (~53%) have a positive evaluation of the possibilities for preserving their research communication provided by their organisation/institution. A quarter (~24%) of the respondents is not aware of the possibilities, which is worth noting, given the importance of e-mail communication. One out of six (~17%) is dissatisfied with the possibilities for preservation.

Q12. Do you prefer research communication to be digital or printed?
It may not be surprising that the majority of the respondents (69%) prefer digital communication to print.

5.3.3   **C. DATA/INFORMATION TO BE PRESERVED**

This section is concerned with what research data should be preserved, and who ought to have access to this.

- The majority of researchers on the whole are satisfied with existing preservation practices. It should be noted, however, that a fairly large proportion may not be aware of their preservation needs.

- In general, the researchers have a positive attitude towards preservation of intermediate research results and they also favour access not to be restricted only to the actual researchers involved. On the other hand the issue of preservation of this type of data does not seem to be of the highest priority for the group.

Q13.Do you have a clear idea of the research data/information that has to be preserved?
The researchers in general have few doubts regarding preservation. Almost three quarters (~71%) of the respondents state that they 'Always' or 'Often' have a clear idea of which data or information should be preserved. However, almost one quarter (~23%) of the researchers from the Arts and Humanities have no opinion on this issue.

Q14. Will preserving more research data/information benefit your work?
A majority states that they would benefit from preserving more research data or information (~58%). Almost one third (~30%) of the respondents either do not know or have no opinion on this matter.

Q15. Will preserving less research data/information benefit your work?
The majority seems to have no wish to preserve less. Quite a large number 'don't know', and somewhat surprisingly, the Health, Natural, and Social Sciences have up to 16.8 % who would benefit 'in a few cases' from preserving less research data.

Combining Q14 and Q15, one conclusion may be that the academic world seems quite happy with the state of preservation in relation to research data. However, the numbers also reveal that researchers and lecturers may not be aware of their own preservation needs.

Q16. Should intermediate research results be preserved?
Intermediate research efforts should 'Always' or 'Often' be preserved, according to nearly two-thirds (~62%) of the researchers.

Q17. Should intermediate research results be accessible only to the researchers involved?
Although this type of data could be regarded as being more private and hence preferably restricted in access only to the researchers involved, this is not the case. Fewer than one out of ten (~7,1%) prefers access to intermediate results restricted to the researchers involved.

Q18. Should preservation of intermediate research results be the responsibility of the researchers themselves or the research institution?
A slight majority of respondents (~52,3%) expressed the view that preservation of intermediate research results is the responsibility of the researchers themselves, not their organisation or institute.

Q19. Does your organisation/institution make it easy to preserve your intermediate research results?
One third of the respondents (33,6%) find that preservation of this type of research data is made easy by the organisation or institute while a similar proportion (32,5%) either does not know or has no opinion.

5.3.4   **D. DIGITAL OR PRINTED DATA/INFORMATION**

This section is concerned with whether researchers prefer digital or printed data, and whether age is a problem with digital data.

- In general, researchers prefer digital data to print (It could be suggested that ease of access may play a role). It should be noted, however, that 50% of the researchers from Arts and Humanities 'Always' or 'Often' prefer printed data/information

- More than two thirds of the respondents have experienced problems in accessing digital data because it was old. The problem seems more widespread for the Natural and Health Sciences.

Q20. Do you prefer to use printed data/information rather than digital data/information?
Although caution must be exercised regarding the small numbers within Arts and Humanities, it seems that this group may have a stronger preference for printed data.

Q21. Do you find digital data/information easier to access than printed data/information?
Almost nine out of ten researchers (~87%) 'Always' or 'Often' find digital data or information easier to access. Arts and Humanities researchers rate ease of access to digital data slightly lower. This pattern is confirmed if we turn to preference of use (Q20): two thirds (~62%) 'Seldom' or 'Never' prefer to use printed data.

Q22. Do you trust printed data/information more than digital data / information?
Digital and printed data or information is trusted equally.

Q23. Have you experienced problems accessing digital data / information because it was old?
Across all research fields a large group has had occasional problems with accessing digital material because it was old. The Natural Sciences take the lead with 69,5% in this category. In contrast, 44,1% of Arts and Humanities have had no problems accessing digital data due to age.
The overall conclusion is that two-thirds of the researchers occasionally have experienced trouble with accessing old digital data; however at the same time a rather large group (34.7% in total) says that they have experienced no trouble. These results seem to be independent of (research) age.

Q24. Should researchers' personal websites and other digital artefacts such as blogs, wikis etc be preserved?
According to the researchers themselves digital artefacts such as blogs or wikis should not be preserved unconditionally. Half of the respondents (~55%) are of the opinion that it 'depends on quality and content'; while one quarter (~25%) finds that such artefacts should never be preserved. Again, these results show no relation to (research) age.

5.3.5   **E. SOFTWARE FOR PRESERVING AND RETRIEVAL OF DATA/INFORMATION**

This section is concerned with whether researchers have access to software sufficient for preservation and retrieval purposes.

- It seems that the researchers are either satisfied with the software or do not know whether they are satisfied or not. Only a small percentage is dissatisfied.

- In further analyses an obvious next step would be to clarify which specific software is used for preservation and retrieval of research related materials.

Q25. Is the software supplied by your institution sufficient to preserve research-related materials?
For preservation purposes around 41% of the respondents are always or mostly satisfied. The same percentage answers 'I don't know'. Around 12% answers 'no'.

Q26. Is the software supplied by your institution sufficient to retrieve research-related materials?
 For retrieval, nearly two thirds (~62%) are positive, while almost one third (~27%) does not know.

5.3.6   **F. ROLE OF PROFESSIONAL NETWORK**

This section is concerned with the function of the researchers' professional network.

- The professional networks are very important for the research process, in its initial as well as in its completion phase.

Q27. A research project is never finished: it is always open for further development.
The majority (88%) agrees or partly agrees with this statement.

Q28. Do new ideas for your research stem from your own previous research activities?
Almost nine out of ten researchers state that new ideas for their research stem from their own previous research activities.

Q29. Do new ideas for your research stem from your professional network?
On the other hand, almost the same percentage states new ideas for research 'Always' or 'Often' stem from their professional network.

Q30. Do you feel a personal ownership to your research ideas; do they not belong to anyone else?
At the same time more than half of the respondents feel a personal ownership of their research ideas……

Q28-Q30 clearly indicate that professional networks and previous research activities are both very important for the majority of researchers. The dependency, however, does not imply that a feeling of personal ownership to new research ideas does not exist. These findings indicate that the relation between the individual and the collective in the area of research is both complex and multifaceted.

Q31. Is communication with your professional network important for the initiation of new research projects?
For nine out of ten researchers (~88%) communication with the professional network is 'Always' or 'Often' important for the initiation of new research projects.

Q32. Is communication with your professional network important for the completion of new research projects?
Almost the same percentage states that communication with the network 'Always' or 'Often' is important for the completion of new research projects.

5.3.7 G. COMMUNICATION WITH PROFESSIONAL NETWORK

This section is concerned with the composition of and communication within the network.

- The professional networks are cross-organisational or cross-institutional as well as cross-national.

- The bases of the professional networks - local (institute or organisation) or international - are not related to the use of digital media in communication. Their importance remains the same.

Q33A. Does your professional network consist of colleagues from your own institution?
Fewer than one tenth (~7%) of the respondents have a network based entirely on their own organisation or institute. For the majority (~90%) the network is only 'Partly' locally based.

Q33B. Does your professional network consist of colleagues from your own country (national network)?
This distribution repeats itself when we look at the extent to which the professional network is nationally based. An entirely nationally based network is a marginal phenomenon (~4%), while nine out of ten (88%) have a 'Partly' nationally based network.

Q33C. Does your professional network consist of colleagues from countries other than your own (international network)?
Almost nine of ten researchers answer 'Partly' to this question.

Q34. Do you use digital medias in communication with your professional network?
While the initial results (B) only showed the importance of e-mail communication we are now able to elaborate further on the issue. E-mails are used 'Always' or 'Often' by almost all of the respondents (~98%), regardless whether the network is national or international in its composition.

Likewise, if we focus on networks based on the respondent's own institute or organisation we get almost identical results.

Q35. Do you communicate face-to-face with your professional network?
In spite of the analogue or digital medias available, by far the majority of the researchers (85%) often communicate face-to-face with their professional network.

5.3.8   H. IMPORTANCE OF DIFFERENT INFORMATION RESOURCES

This last part is concerned with the importance of different sources of information to the researchers.

- Libraries are more important as sources of information to researchers in Arts and Humanities and the Social Sciences than to researchers from the Health and Natural Sciences.

- Professional networks are more important as sources of information to researchers from the Health and Natural Sciences than to researchers from Social Sciences and Arts and Humanities.

- Information provided by official institutions is more important to researchers from the Social Sciences than to researchers from other fields.

- The scientific databases are very important to researchers from all fields, but especially important for researchers from the Health and Natural Sciences.

Q36. How important are each of the following sources of information in relation to your research?

A. Libraries
Less than half of all respondents (~43%) rate libraries as being of primary importance, i.e. '1. essential', though three out of four (~77%) of researchers from the Arts and Humanities rate libraries this way. More than half of the researchers from Social Sciences (~57%) rate libraries as '1. essential', while the Health and Natural Sciences rate libraries lower. In the field of Arts and Humanities, libraries are more important than they are in the fields of Natural and Health Sciences. The Social Sciences occupy the middle position.

B. Professional Networks
Researchers from the Health Sciences regard the networks as very important: three out of four (~74%) rate them as '1. essential', while little more than half (~54%) of respondents from the Social Sciences agree. The Natural Sciences come in second while Arts and Humanities occupy the middle position.

C. Wikipedia

The web encyclopaedia Wikipedia is not important to many researchers; only 2% rate it as '1. essential'.

D. Official Institutions

One out of ten researchers from all fields except the Social Sciences regards official institutions as essential sources of information. One out of five (~22%) social scientists rates the official institutions as '1. essential'. This may reflect the importance of social macro data typically provided by official institutions.

E. Private Companies

In general, private companies are not regarded as important sources of information in a research context. The Health and Natural Sciences have a slightly higher rate of rankings '1. essential', but still less than 6%.

F. Search Engine

Google (or another search engine) is generally rated as being an information source of some importance. On the average, a quarter of all respondents (~27%) rates it as '1. essential'. To researchers from Natural Sciences it is more important (~34%) than to researchers from other fields. Google is rated higher by researchers from all fields than Wikipedia.

G. Scientific Database

The scientific databases (PubMed, Web of Science etc.) containing references to journal articles, reviews, conference papers etc. are typically made available to the researchers by university libraries. They are rated as very important by researchers from all fields. Three out of four rate them as '1. essential' (~74%). This average however is composed of less than half of the researchers from Arts and Humanities (~44%) and nine out of ten (~90%) from the Health Sciences. Compared to the rankings of the importance of libraries perhaps these results can complete the picture.

6. Concluding remarks

Researchers know what they need to preserve and believe they should retain more and not less. This includes intermediate as well as final results and these should be available to the community more generally. Despite this, there is a difference in opinion about who should preserve intermediate results, – themselves or the organisation. While many find preservation of intermediate results constructive, the same proportion does not know what possibilities exist in their organisation or have an opinion. Preservation of intermediate results is perhaps not particularly important to them.

Access to digital information for the long-term is vital. The community believes a research project is always open; ideas come from previous research and contact with peers. They find digital information easier to access than print and trust it as much as paper. Yet many have already experienced problems in accessing digital data because it is old. This community also relies heavily on digital communication. Unsurprisingly, the use of e-mail is universal, as professional networks are a source for new ideas and these are intra and inter-organisational and international. Many believe all or most e-mails should be included in preservation work.

Appendix 1: Cover e-mail and questionnaire
Attached separately

Appendix 2: Annotated cross-tabulations
Attached separately

Appendix 1

- **Cover e-mail**

- **Distributed questionnaire**

Undersøgelse af forskningskommunikation/Survey of research communication

Kære forsker, underviser, PhD-studerende ved Aarhus Universitet

Vi henvender os til dig, fordi vi arbejder på et EU-støttet projekt under 6. rammeprogram, som overordnet handler om digital bevaring. Vores fokus er, hvordan forskere kommunikerer og deres behov for at bevare denne kommunikation, - det kan være som diskussion af ideer, kommentarer til udkast til publikationer, foreløbige datasæt osv.

Projektet hedder Planets (http://www.planets-project.eu).

Vi er nu i gang med en kvantitativ undersøgelse af dette område, hvortil vi vil bede dig om din hjælp. Den består i at udfylde spørgeskemaet, der ligger på denne webside:

http://www.planets-project.eu/dt7-questionnaire/

Til grund for de spørgsmål vi stiller, ligger en kvalitativ undersøgelse (baseret på dagbøger, interviews mm.), hvori bl.a. fire forskere fra Aarhus Universitet har medvirket.

Spørgeskemaet udsendes til forskere, undervisere og PhD-studerende på HUM, TEO, SAM, NAT og SUN ved Aarhus Universitet.

En tilsvarende undersøgelse bliver foretaget i regi af Nationalarkivet for Holland og Glasgow Universitet (HATII). Spørgeskemaet er derfor på engelsk (ligesom dette introbrev nedenfor). Skemaet tager 10-15 minutter at udfylde.

Undersøgelsen løber frem til 1. dec. 2008, men vi vil gerne have din besvarelse hurtigst muligt.

Besvarelsen sker under fuld anonymitet, og vi lover, at ingen svarpersoner vil kunne identificeres i de bearbejdede resultater.

Skulle du have spørgsmål, er du velkommen til at kontakte os.

På forhånd tak og med venlig hilsen

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Dear researcher, instructor, PhD-student at the University of Aarhus

We are writing to you because we need your help. We are currently working on a project funded by the European Union under the Sixth Framework Programme, which deals with core digital preservation challenges. The focus of our work is to investigate how researchers communicate with each other, their means of communication and their possible needs to preserve this communication; - this may include the exchange of ideas, comments to publication drafts, initial or temporary sets of data etc.

The name of the project is Planets (http://www.planets-project.eu).

More specifically, we are working on a quantitative analysis of this issue, and we would very much appreciate your contribution to this work. You can help us by completing the questionnaire that can be found on the following website

http://www.planets-project.eu/dt7-questionnaire/

The questions we ask in our questionnaire are based on a qualitative analysis (including diaries, interviews etc.), which involved the participation of four researchers from the University of Aarhus.

The present questionnaire is distributed to researchers, instructors, and PhD-students at the faculties of Humanities, Theology, Social Sciences, Science, and Health Sciences at the University of Aarhus.

Parallel surveys will be performed under the auspices of the The National Archives of The Netherlands, and HATII, University of Glasgow. This is the reason why the questionnaire is in English. It is estimated to take 10-15 minutes to complete.

The questionnaire will be accessible until December 1, 2008. We would, however, very much appreciate to receive your response before this date.

We guarantee all respondents full anonymity.

If you have any questions regarding the survey, please do not hesitate to contact us.

Thank you.

Kind regards,

Annette Balle Sørensen, abs@statsbiblioteket.dk, tel 8946 2372
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Questionnaire for researchers and members of the academic community

1. Country (of your organisation):

(1) ❑ Denmark

(2) ❑ United Kingdom

2. What is your sex?

(1) ❑ Female

(2) ❑ Male

3. How old are you?

(1) ❑ 18-25 years

(2) ❑ 26-35 years

(3) ❑ 36-45 years

(4) ❑ 46-55 years

(5) ❑ 56-65 years

(6) ❑ More than 65 years

5. What are your current academic activities? (multiple answers possible)

(1) ❑ Researching

(2) ❑ Teaching

(3) ❑ Research group leading or managing

(4) ❑ Other_____

6. Which is your primary research field?

(1) ❑ Arts and humanities

(2) ❑ Natural science

(3) ❑ Health science

(4) ❑ Social science

(5) ❑ Other_____

7. How many years have you worked within research and/or teaching?

(1) ❑ Less than 5 years

(2) ❑ 6-10 years

(3) ❑ 11-20 years

(4) ❑ More than 20 years

8. How important is e-mail communication for your research?

(1) ❑ Very important

(2) ❑ Important

(3) ❑ Not important

(4) ❑ I have no opinion

9. Should e-mails related to your research be preserved?
(Note that 'preserving' means saving indefinitely)

(1) ❑ All

(2) ❑ Most

(3) ❑ Some

(4) ❑ None

(5) ❑ I have no opinion

10. Should results of research communication by telephone be preserved?
(Note that 'preserving' means saving indefinitely)

(1) ❑ All

(2) ❑ Most

(3) ❑ Some

(4) ❑ None

(5) ❑ I have no opinion

11. Does your organisation/institution make it easy to preserve your research related communications?
(Note that 'preserving' means saving indefinitely)

(1) ❑ Yes

(2) ❑ No

(3) ❑ In some cases

(4) ❑ I don't know

(5) ❑ I have no opinion

12. Do you prefer research communication to be

(1) ❑ Digital?

(2) ❑ Printed?

(3) ❑ I have no preference

13. Do you have a clear idea of the research data/information that has to be preserved?
(Note that 'preserving' means saving indefinitely)

(1) ❑ Always

(2) ❑ Often

(3) ❑ Seldom

(4) ❑ Never

(5) ❑ I have no opinion

14. Will preserving <u>more</u> research data/information benefit your work?
(Note that 'preserving' means saving indefinitely)

(1) ❑ Yes, in all cases

(2) ❑ Yes, in most cases

(3) ❑ Yes, in a few cases

(4) ❑ Never

(6) ❑ I don't know

(5) ❑ I have no opinion

15. Will preserving <u>less</u> research data/information benefit your work?
(Note that 'preserving' means saving indefinitely)

(1) ❑ Yes, in all cases

(2) ❑ Yes, in most cases

(3) ❑ Yes, in a few cases

(4) ❑ Never

(6) ❑ I don't know

(5) ❑ I have no opinion

16. Should intermediate research results be preserved?
(Note that 'preserving' means saving indefinitely)

(1) ❑ Always

(2) ❑ Often

(3) ❑ Seldom

(4) ❑ Never

(5) ❑ I have no opinion

17. Should intermediate research results be accessible only to the researchers involved?

(1) ❑ Yes

(2) ❑ No

(3) ❑ Depends on the specific research project

(5) ❑ I have no opinion

18. Should preservation of intermediate research results be the responsibility of the researchers themselves - in contrast to e.g. the research organisation/institution?
(Note that 'preserving' means saving indefinitely)

(1) ❑ Yes

(2) ❑ No

(3) ❑ In some cases

(5) ❑ I have no opinion

19. Does your organisation/institution make it easy to preserve your intermediate research results?
(Note that 'preserving' means saving indefinitely)

(1) ❑ Yes

(2) ❑ No

(3) ❑ In some cases

(5) ❑ I don't know

(6) ❑ I have no opinion

20. Do you prefer to use printed data/information rather than digital data/information?

(1) ❑ Always

(2) ❑ Often

(3) ❑ Seldom

(4) ❑ Never

(5) ❑ I have no opinion

21. Do you find digital data/information easier to access than printed data/information?

(1) ❑ Always

(2) ❑ Often

(3) ❑ Seldom

(4) ❑ Never

(5) ❑ I have no opinion

22. Do you trust printed data/information more than digital data/information?

(1) ❑ Yes, in most cases

(2) ❑ No, I trust them equally

(3) ❑ No, I trust digital data/information more

(4) ❑ I have no opinion

23. Have you experienced problems accessing digital data/information because it was old ?

(1) ❑ Yes, often

(2) ❑ Yes, occasionally

(3) ❑ No

24. Should researchers' personal websites and other digital artefacts such as blogs, wikis etc. be preserved?

(Note that 'preserving' means saving indefinitely)

(1) ❑ Yes

(2) ❑ No

(3) ❑ Depends on quality and content

(5) ❑ I have no opinion

25. Is the software supplied by your organisation/institute sufficient to <u>preserve</u> research related materials?

(Note that 'preserving' means saving indefinitely)

(1) ❑ Yes, in all cases

(2) ❑ Yes, in most cases

(3) ❑ Yes, in a few cases

(5) ❑ No

(6) ❑ I don't know

(7) ❑ Not relevant

26. Is the software supplied by your organisation/institute sufficient to <u>retrieve</u> research related materials?

(1) ❑ Yes, in all cases

(2) ❑ Yes, in most cases

(3) ❑ Yes, in a few cases

(5) ❑ No

(6) ❑ I don't know

(7) ❑ Not relevant

27. A research project is never finished; it is always open for further development!

(1)   ❑ I agree

(2)   ❑ I partly agree

(3)   ❑ I neither agree nor disagree

(5)   ❑ I disagree

28. Do new ideas for your research stem from your own previous research activities?

(1)   ❑ Always

(2)   ❑ Often

(3)   ❑ Seldom

(4)   ❑ Never

(5)   ❑ Not relevant

29. Do new ideas for your research stem from your professional network?

(1)   ❑ Always

(2)   ❑ Often

(3)   ❑ Seldom

(4)   ❑ Never

(5)   ❑ Not relevant

30. Do you feel a personal ownership to your research ideas; they do not belong to anyone else?

(1) ❑ Always

(2) ❑ Often

(3) ❑ Seldom

(4) ❑ Never

(5) ❑ Not relevant

31. Is communication with your professional network important for <u>the initiation</u> of new research projects?

(1) ❑ Always

(2) ❑ Often

(3) ❑ Seldom

(4) ❑ Never

(5) ❑ Not relevant

32. Is communication with your professional network important for <u>the completion</u> of new research projects?

(1) ❑ Always

(2) ❑ Often

(3) ❑ Seldom

(4) ❑ Never

(5) ❑ Not relevant

33. Does your professional network consist of colleagues from

	Exclusively	Partly	Not at all	Not relevant
your own organisation/institute?	(1) ❑	(2) ❑	(3) ❑	(4) ❑
your own country (national network)?	(1) ❑	(2) ❑	(3) ❑	(4) ❑
countries other than your country (international network)?	(1) ❑	(2) ❑	(3) ❑	(4) ❑

34. Do you use digital medias (e-mails, blogs etc.) in communication with your professional network?

(1) ❑ Always

(2) ❑ Often

(3) ❑ Seldom

(4) ❑ Never

(5) ❑ Not relevant

35. Do you communicate face-to-face with your professional network?

(1) ❑ Always

(2) ❑ Often

(3) ❑ Seldom

(4) ❑ Never

(5) ❑ Not relevant

36. How important are the following sources to you in relation to your research? To each of the listed sources please assign an appropriate number from 1 to 5 (1=essential, and 5=not important)

	1	2	3	4	5
Professional network	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Wikipedia	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Libraries	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Information provided by official institutions	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Information provided by private companies	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Google or another search robot	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑
Scientific databases (PubMed, Web of Science etc.)	(1) ❑	(2) ❑	(3) ❑	(4) ❑	(5) ❑

37. If you have any other comments, additional thoughts and/or suggestions, please share them with us.

_____

_____

_____

_____

_____

We thank you for your time and effort!

Please click the cross button to submit your answers.

Appendix 2

Annotated cross-tabulations

Annotated cross-tabulations

(Crossed with primary research field)

Aarhus University key figures (2007) and response rates

Key figures from Aarhus University (2007)

	Professors	Associate professors	Lecturers/ Post docs	PhD-students	"D-VIP"	Other	Total	Total *Merging Theo and Hum*	
Theo	10	27	14	33	4	3	91	Arts & Hum	512
Hum	30	168	47	95	50	31	421		
Soc	56	86	37	97	66	51	393	Soc	393
Nat	61	216	189	373	49	33	921	Nat	921
Health	51	111	75	421	98	140	896	Health	896
Total	208	608	362	1019	267	258	2722	Total	2722

Response rates

Total (AU)		% of total	Respondents	% of total	Women	Men	Don't know (?!)
512	Arts & Hum	18,8	41	8,0	13	27	1
393	Soc	14,4	76	19,3	34	40	2
921	Nat	33,8	146	15,9	61	84	1
896	Health	32,9	141	15,7	79	61	1
2722		99,9	404	14,8	187	212	5

A. Demographic data (Q1-Q7)

1. Country (of your organisation)

	Respondents	Percent
Denmark	402	99.5%
United Kingdom	2	0.5%
Total	404	100.0%

2. What is your sex?
Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Female	28.6%	42.1%	56.5%	46.6%	50.0%	47.0%
Male	71.4%	57.9%	43.5%	53.4%	50.0%	53.0%
Total	35	140	138	73	10	396

3. How old are you?
Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
18-25 years	5.6%	9.3%	3.6%	1.4%	9.1%	5.5%
26-35 years	36.1%	62.1%	42.4%	54.8%	27.3%	50.6%
36-45 years	19.4%	16.4%	31.7%	17.8%	27.3%	22.6%
46-55 years	22.2%	6.4%	14.4%	15.1%	18.2%	12.5%
56-65 years	16.7%	5.7%	4.3%	11.0%	9.1%	7.3%
More than 65 years	0.0%	0.0%	3.6%	0.0%	9.1%	1.5%
Total	36	140	139	73	11	399

5. What are your current academic activities? (multiple answers possible)
Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Researching	88.9%	93.5%	92.8%	95.9%	100.0%	93.5%
Teaching	66.7%	65.5%	31.7%	60.8%	63.6%	52.9%
Research group leading or managing	30.6%	15.1%	11.5%	8.1%	9.1%	13.8%
Other	13.9%	10.1%	10.1%	9.5%	18.2%	10.5%
Total	36	139	139	74	11	399

6. Which is your primary research field?

	Respondents	Percent
Arts and Humanities	36	9.0%
Natural Science	140	35.0%
Health Science	139	34.8%
Social Science	74	18.5%
Other	11	2.8%
Total	400	100.0%

7. How many years have you worked within research and/or teaching?
Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Less than 5 years	33.3%	51.8%	45.3%	50.0%	54.5%	47.6%
6-10 years	16.7%	25.2%	23.0%	18.9%	9.1%	22.1%
11-20 years	19.4%	11.5%	18.7%	12.2%	18.2%	15.0%
More than 20 years	30.6%	11.5%	12.9%	18.9%	18.2%	15.3%
Total	36	139	139	74	11	399

B. Research related communication (Q8-Q12)

Main observations:

- *Far the majority (~ 95%) of all respondents states the e-mail communication is (very) important for their research (Q8), - but this communication should not necessarily be preserved (Q9).*
- *More than 60% prefer research communication to be digital (Q12)*

8. How important is e-mail communication for your research?
Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Very important	58.8%	82.9%	88.0%	66.7%	30.0%	77.9%
Important	26.5%	16.3%	10.4%	21.7%	60.0%	17.4%
Not important	14.7%	0.8%	1.6%	8.7%	10.0%	4.1%
I have no opinion	0.0%	0.0%	0.0%	2.9%	0.0%	0.5%
Total	34	129	125	69	10	367

It is somewhat surprising that 5 of 34 respondents from Arts and Humanities and 6 of 69 respondents from the Social Sciences state that e-mail communication is not important for their research.

Thus, a closer examination of these groups is performed using filters for Arts & Humanities and the Social Sciences, respectively (below):

_____

Arts and Humanities:

FILTER: Arts and Humanities

How old are you?

Crossed with: What is your sex?

	Female	Male	Total
18-25 years	20.0%	0.0%	5.7%
26-35 years	60.0%	24.0% (6/25)	34.3%
36-45 years	20.0%	20.0% (5/25)	20.0%
46-55 years	0.0%	32.0% (8/25)	22.9%
56-65 years	0.0%	24.0% (6/25)	17.1%
More than 65 years	0.0%	0.0%	0.0%
Total	10	25	35

FILTER: Arts and Humanities / E-mail communication is not important

How old are you?

Crossed with: What is your sex?

	Female	Male	Total
18-25 years	0.0%	0.0%	0.0%
26-35 years	100.0%	25.0%	40.0%
36-45 years	0.0%	0.0%	0.0%
46-55 years	0.0%	0.0%	0.0%
56-65 years	0.0%	75.0%	60.0%
More than 65 years	0.0%	0.0%	0.0%
Total	1	4	5

FILTER: Arts and Humanities / E-mail communication is not important

What are your current academic activities? (multiple answers possible)

Crossed with: What is your sex?

	Female	Male	Total
Researching	100.0%	100.0%	100.0%
Teaching	0.0%	75.0%	60.0%
Research group leading or managing	0.0%	25.0%	20.0%
Other	0.0%	0.0%	0.0%
Total	1	4	5

As seen, the group of people from Arts and Humanities who state that e-mail communication is not important for their research consists of 1 woman (age 26-35 years) and 4 men (1 belonging to the age group 26-35 years, and 3 belonging to the age group 56-65 years) [*it should be noted that the total number in the A&H group of men falling within 56-65 years is 6!*]. – Research is included for all 5 persons in their current academic activities.

The Social Sciences:

FILTER: The Social Sciences

How old are you?

Crossed with: What is your sex?

	Female	Male	Total
18-25 years	3.0% (1/33)	0.0%	1.4%
26-35 years	60.6% (20/33)	51.3% (20/39)	55.6%
36-45 years	21.2% (7/33)	15.4% (6/39)	18.1%
46-55 years	12.1% (4/33)	15.4% (6/39)	13.9%
56-65 years	3.0% (1/33)	17.9% (7/39)	11.1%
More than 65 years	0.0%	0.0%	0.0%
Total	33	39	72

FILTER: The Social Sciences / E-mail communication is not important

How old are you?

Crossed with: What is your sex?

	Female	Male	Total
18-25 years	0.0%	0.0%	0.0%
26-35 years	50.0%	25.0%	33.3%
36-45 years	0.0%	50.0%	33.3%
46-55 years	0.0%	25.0%	16.7%
56-65 years	50.0%	0.0%	16.7%
More than 65 years	0.0%	0.0%	0.0%
Total	2	4	6

FILTER: The Social Sciences / E-mail communication is not important

What are your current academic activities? (multiple answers possible)

Crossed with: What is your sex?

	Female	Male	Total
Researching	100.0%	100.0%	100.0%
Teaching	100.0%	75.0%	83.3%
Research group leading or managing	0.0%	25.0%	16.7%
Other	0.0%	0.0%	0.0%
Total	2	4	6

It appears that the group of people from the Social Sciences who state that e-mail communication is not important for their research consists of 2 women (belonging to the age groups 26-35 years and 56-65 years) and 4 men whose age distribution is quite dispersed (from 26-55 years).
Research is included for all 6 persons in their current academic activities.

_____

A tentative overall conclusion on Q8:

While far the majority (~ 95%) of all respondents states the e-mail communication is (very) important for their research, a small yet significant group of researchers within Arts and Humanities and the Social Sciences find that e-mail communication is not important for their research. The tendency seems that relatively more men find e-mail communication 'not important'.

9. Should e-mails related to your research be preserved?
   (Note that 'preserving' means saving indefinitely)
Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
All	8.8%	10.9%	11.2%	5.8%	10.0%	9.8%
Most	20.6%	23.3%	28.0%	18.8%	10.0%	23.4%
Some	44.1%	38.0%	51.2%	42.0%	40.0%	43.9%
None	20.6%	24.0%	8.0%	29.0%	30.0%	19.3%
I have no opinion	5.9%	3.9%	1.6%	4.3%	10.0%	3.5%
Total	34	129	125	69	10	367

While more than 20% from all research fields but the Health Sciences state that *none* of their e-mails related to research should be preserved, only 8% of the Health Sciences researchers say so ….

10. Should results of research communication by telephone be preserved?
(Note that 'preserving' means saving indefinitely)

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
All	0.0%	1.6%	1.6%	0.0%	0.0%	1.1%
Most	0.0%	1.6%	2.4%	1.4%	0.0%	1.6%
Some	35.3%	17.1%	25.6%	13.0%	10.0%	20.7%
None	52.9%	59.7%	57.6%	60.9%	70.0%	58.9%
I have no opinion	11.8%	20.2%	12.8%	24.6%	20.0%	17.7%
Total	34	129	125	69	10	367

Far the majority – regardless of research field – finds that research communication be telephone should _not_ be preserved!

11. Does your organisation/institution make it easy to preserve your research related communications?
(Note that 'preserving' means saving indefinitely)

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Yes	38.2%	29.1%	32.8%	24.6%	20.0%	30.1%
No	23.5%	15.0%	17.6%	15.9%	30.0%	17.3%
In some cases	17.6%	24.4%	24.0%	20.3%	10.0%	22.5%
I don't know	17.6%	22.8%	22.4%	30.4%	40.0%	24.1%
I have no opinion	2.9%	8.7%	3.2%	8.7%	0.0%	6.0%
Total	34	127	125	69	10	365

A quite large number of respondents _don't know_ whether or not their organisation/institution makes it easy to preserve research related communication.

_____

12. Do you prefer research communication to be
Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Digital?	58.8%	73.2%	74.4%	60.3%	40.0%	69.0%
Printed?	17.6%	9.4%	12.0%	13.2%	20.0%	12.1%
I have no preference	23.5%	17.3%	13.6%	26.5%	40.0%	19.0%
Total	34	127	125	68	10	364

The majority – regardless of research field – prefers that research communication is in a digital version

C. Data/information to be preserved (Q13-Q19)

13. Do you have a clear idea of the research data/information that has to be preserved?
(Note that 'preserving' means saving indefinitely)
Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Always	0.0%	12.6%	14.4%	4.4%	0.0%	10.2%
Often	67.6%	51.2%	71.2%	57.4%	60.0%	61.0%
Seldom	8.8%	24.4%	6.4%	19.1%	20.0%	15.7%
Never	0.0%	2.4%	0.8%	4.4%	0.0%	1.9%
I have no opinion	23.5%	9.4%	7.2%	14.7%	20.0%	11.3%
Total	34	127	125	68	10	364

There is virtually no doubt across research fields of what needs to be preserved. But again, Arts and Humanities stand out with 23.5% who have 'no opinion'.

If we follow this trail divided on gender the picture looks like this:

_____

Do you have a clear idea of the research data/information that has to be preserved? (Note that 'preserving' means saving indefinitely)

Crossed with: Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Always	0.0%	7.3%	11.6%	3.3%	0.0%	7.7%
Often	90.0%	45.5%	72.5%	60.0%	60.0%	62.1%
Seldom	0.0%	30.9%	5.8%	10.0%	0.0%	14.2%
Never	0.0%	1.8%	1.4%	10.0%	0.0%	3.0%
I have no opinion	10.0%	14.5%	8.7%	16.7%	40.0%	13.0%
Total	10	55	69	30	5	169

Do you have a clear idea of the research data/information that has to be preserved? (Note that 'preserving' means saving indefinitely)

Crossed with: Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Always	0.0%	16.7%	18.2%	5.4%	0.0%	12.6%
Often	56.5%	55.6%	70.9%	54.1%	75.0%	60.2%
Seldom	13.0%	19.4%	5.5%	27.0%	25.0%	16.2%
Never	0.0%	2.8%	0.0%	0.0%	0.0%	1.0%
I have no opinion	30.4%	5.6%	5.5%	13.5%	0.0%	9.9%
Total	23	72	55	37	4	191

Including only Arts and Humanities, a significant higher proportion of men than women answers 'I have no opinion'

14. Will preserving more research data/information benefit your work? (Note that 'preserving' means saving indefinitely)

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Yes, in all cases	2.9%	2.3%	3.2%	2.9%	0.0%	2.7%
Yes, in most cases	29.4%	23.4%	20.0%	17.4%	0.0%	21.0%
Yes, in a few cases	29.4%	32.0%	41.6%	39.1%	60.0%	37.2%
Never	2.9%	12.5%	4.8%	13.0%	10.0%	9.0%
I don't know	20.6%	26.6%	25.6%	23.2%	30.0%	25.1%
I have no opinion	14.7%	3.1%	4.8%	4.3%	0.0%	4.9%
Total	34	128	125	69	10	366

Surprisingly, the answers here are very scattered. Combining 'Yes, in most cases' and 'Yes, in a few cases' suggests that a majority would benefit from an increase in preservation of research data. However, it is by no means an unconditional 'Yes'.

Again, Arts and Humanities include a large group of 'I have no opinion'.

FILTER: What is your sex / Female

Will preserving more research data/information benefit your work? (Note that 'preserving' means saving indefinitely)

Crossed with: Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Yes, in all cases	0.0%	1.8%	4.3%	3.3%	0.0%	2.9%
Yes, in most cases	30.0%	23.2%	17.4%	23.3%	0.0%	20.6%
Yes, in a few cases	30.0%	28.6%	46.4%	30.0%	60.0%	37.1%
Never	0.0%	12.5%	2.9%	6.7%	0.0%	6.5%
I don't know	30.0%	28.6%	23.2%	30.0%	40.0%	27.1%
I have no opinion	10.0%	5.4%	5.8%	6.7%	0.0%	5.9%
Total	10	56	69	30	5	170

FILTER: What is your sex / Male

Will preserving more research data/information benefit your work? (Note that 'preserving' means saving indefinitely)

Crossed with: Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Yes, in all cases	4.3%	2.8%	1.8%	2.6%	0.0%	2.6%
Yes, in most cases	30.4%	23.6%	23.6%	10.5%	0.0%	21.4%
Yes, in a few cases	26.1%	34.7%	36.4%	47.4%	50.0%	37.0%
Never	4.3%	12.5%	7.3%	18.4%	25.0%	11.5%
I don't know	17.4%	25.0%	27.3%	18.4%	25.0%	23.4%
I have no opinion	17.4%	1.4%	3.6%	2.6%	0.0%	4.2%
Total	23	72	55	38	4	192

No significant gender differences appear to exist in this case.

15. Will preserving less research data/information benefit your work? (Note that 'preserving' means saving indefinitely)

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Yes, in all cases	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Yes, in most cases	0.0%	2.3%	2.4%	4.3%	10.0%	2.7%
Yes, in a few cases	6.1%	15.5%	16.8%	13.0%	10.0%	14.5%
Never	33.3%	43.4%	44.0%	37.7%	30.0%	41.3%
I don't know	39.4%	29.5%	28.8%	33.3%	40.0%	31.1%
I have no opinion	21.2%	9.3%	8.0%	11.6%	10.0%	10.4%
Total	33	129	125	69	10	366

As one might expect, the majority has no wish to preserve less. Quite a large number 'don't know', and somewhat surprisingly, the Health, Natural, and Social Sciences have up to 16.8 % who would benefit 'in a few cases' from preserving less research data.

Combining Q14 and Q15, one conclusion may be that the academic world seems quite happy with the state of preservation in relation to research data. However, the numbers also reveal that researchers and lecturers may not be aware of their own preservation needs.

(No differences between genders could be observed)

16. Should intermediate research results be preserved?
(Note that 'preserving' means saving indefinitely)

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Always	8.8%	21.9%	28.8%	5.8%	20.0%	19.9%
Often	41.2%	46.1%	45.6%	39.1%	20.0%	43.4%
Seldom	32.4%	19.5%	18.4%	31.9%	30.0%	23.0%
Never	2.9%	1.6%	2.4%	4.3%	0.0%	2.5%
I have no opinion	14.7%	10.9%	4.8%	18.8%	30.0%	11.2%
Total	34	128	125	69	10	366

Intermediate results seem to be quite important across all research fields although a large group answers 'seldom' to this question. Still, a fairly large group across all research fields (except for the Health Sciences) has no opinion about this topic.

In this case, a gender difference may exist (see below)

FILTER: What is your sex / Female

Should intermediate research results be preserved? (Note that 'preserving' means saving indefinitely)

Crossed with: Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Always	10.0%	19.6%	26.1%	10.0%	20.0%	20.0%
Often	70.0%	50.0%	46.4%	50.0%	0.0%	48.2%
Seldom	10.0%	14.3%	18.8%	16.7%	60.0%	17.6%
Never	10.0%	1.8%	2.9%	3.3%	0.0%	2.9%
I have no opinion	0.0%	14.3%	5.8%	20.0%	20.0%	11.2%
Total	10	56	69	30	5	170

_____

Should intermediate research results be preserved? (Note that 'preserving' means saving indefinitely)

Crossed with: Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Always	4.3%	23.6%	32.7%	2.6%	25.0%	19.8%
Often	30.4%	43.1%	43.6%	31.6%	50.0%	39.6%
Seldom	43.5%	23.6%	18.2%	44.7%	0.0%	28.1%
Never	0.0%	1.4%	1.8%	5.3%	0.0%	2.1%
I have no opinion	21.7%	8.3%	3.6%	15.8%	25.0%	10.4%
Total	23	72	55	38	4	192

These two tables show that within Arts and Humanities, female respondents are clearly much more in favour of preserving intermediate results than male respondents. It should be noted though that the numbers of respondents are very low within this group and thus the results should be accepted with much caution.

17. Should intermediate research results be accessible only to the researchers involved?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Yes	32.4%	32.0%	45.6%	18.8%	30.0%	34.2%
No	2.9%	10.2%	7.2%	4.3%	0.0%	7.1%
Depends on the specific research project	55.9%	54.7%	46.4%	66.7%	60.0%	54.4%
I have no opinion	8.8%	3.1%	0.8%	10.1%	10.0%	4.4%
Total	34	128	125	69	10	366

Very few want to restrict intermediate research results to only the researchers involved. The largest group stating so is the Natural Sciences (10.2%)

14

18. Should preservation of intermediate research results be the responsibility of the researchers themselves - in contrast to e.g. the research organisation/institution? (Note that 'preserving' means saving indefinitely)

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Yes	55.9%	53.9%	55.6%	44.9%	30.0%	52.3%
No	11.8%	13.3%	19.4%	10.1%	10.0%	14.5%
In some cases	23.5%	20.3%	20.2%	26.1%	30.0%	21.9%
I have no opinion	8.8%	12.5%	4.8%	18.8%	30.0%	11.2%
Total	34	128	124	69	10	365

More than 70% of the respondents think that preservation of intermediate research results is the researchers' own responsibility, at least in some cases.

At the same time, however, almost 20% of the group of the Health Sciences answers 'No' to this question.

19. Does your organisation/institution make it easy to preserve your intermediate research results? (Note that 'preserving' means saving indefinitely)

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Yes	32.4%	35.4%	37.1%	27.9%	10.0%	33.6%
No	23.5%	15.0%	16.9%	7.4%	30.0%	15.4%
In some cases	14.7%	19.7%	20.2%	14.7%	20.0%	18.5%
I don't know	23.5%	26.0%	21.0%	35.3%	30.0%	25.9%
I have no opinion	5.9%	3.9%	4.8%	14.7%	10.0%	6.6%
Total	34	127	124	68	10	363

A quite large group 'doesn't know' nor 'has no opinion' whether or not the organisation/institution makes it easy to preserve intermediate research results. This may suggest that preserving intermediate research results is not of the highest priority for this group

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D. Digital or printed data/Information (Q20-Q24)

20. Do you prefer to use printed data/information rather than digital data/information?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Always	5.9%	0.8%	0.0%	0.0%	10.0%	1.1%
Often	44.1%	29.1%	27.2%	31.9%	30.0%	30.4%
Seldom	29.4%	57.5%	55.2%	43.5%	50.0%	51.2%
Never	2.9%	11.8%	10.4%	14.5%	0.0%	10.7%
I have no opinion	17.6%	0.8%	7.2%	10.1%	10.0%	6.6%
Total	34	127	125	69	10	365

Although caution must be exercised regarding the small numbers within Arts and Humanities, it seems that this group has a stronger preference for printed data.

21. Do you find digital data/information easier to access than printed data/information?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Always	17.6%	32.0%	29.6%	27.5%	20.0%	28.7%
Often	55.9%	59.4%	59.2%	56.5%	50.0%	58.2%
Seldom	20.6%	6.2%	7.2%	10.1%	10.0%	8.7%
Never	0.0%	0.0%	0.8%	0.0%	10.0%	0.5%
I have no opinion	5.9%	2.3%	3.2%	5.8%	10.0%	3.8%
Total	34	128	125	69	10	366

When it comes to access the case is clearer. Roughly 29% overall always find digital material easy to access, and roughly 58% often find it easier to access. The different research fields are very similar with the exception of Arts and Humanities, which stands out with only 17% 'always' finding digital information easier to access than printed information, and 20% 'seldom' doing so (In contrast to around 30% and 6-10%, respectively for the other research fields). The overall conclusion seems to be that digital rather than printed information in general is regarded easier to access.

_____

22. Do you trust printed data/information more than digital data/information?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Yes, in most cases	11.8%	5.5%	3.2%	7.2%	20.0%	6.0%
No, I trust them equally	82.4%	87.5%	91.2%	85.5%	80.0%	87.7%
No, I trust digital data/information more	2.9%	3.9%	4.0%	1.4%	0.0%	3.3%
I have no opinion	2.9%	3.1%	1.6%	5.8%	0.0%	3.0%
Total	34	128	125	69	10	366

Regarding digital vs printed material around 88% overall trust them equally with no significant variation across research fields. It may be worth noting that a small percentage (varying from 3.2% - 11.8%) 'in most cases' trust printed information more than digital information.

The overall conclusion is that printed and digital materials in general are trusted equally well.

23. Have you experienced problems accessing digital data/information because it was old ?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Yes, often	11.8%	3.9%	5.6%	7.4%	11.1%	6.1%
Yes, occasionally	44.1%	69.5%	58.9%	47.1%	66.7%	59.2%
No	44.1%	26.6%	35.5%	45.6%	22.2%	34.7%
Total	34	128	124	68	9	363

Across all research fields a large group has had occasional problems with accessing digital material because it was old. The Natural Sciences take the lead with 69.5% in this category. What is more interesting is that 44.1% of Arts and Humanities have had no problems accessing digital data due to age!

The overall conclusion is that roughly 60% occasionally experience trouble with accessing old digital data, however at the same time a rather large group (34.7% in total) experiences no trouble.

_____

Q23 in relation to age:

FILTER: Have you experienced problems accessing digital data/information because it was old?

Answer = Yes, often

How old are you?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
18-25 years	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
26-35 years	25.0%	100.0%	71.4%	60.0%	100.0%	68.2%
36-45 years	25.0%	0.0%	14.3%	0.0%	0.0%	9.1%
46-55 years	50.0%	0.0%	0.0%	20.0%	0.0%	13.6%
56-65 years	0.0%	0.0%	0.0%	20.0%	0.0%	4.5%
More than 65 years	0.0%	0.0%	14.3%	0.0%	0.0%	4.5%
Total	4	5	7	5	1	22

FILTER: Have you experienced problems accessing digital data/information because it was old?

Answer = Yes, occasionally

How old are you?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
18-25 years	6.7%	6.7%	1.4%	3.1%	16.7%	4.7%
26-35 years	46.7%	56.2%	41.1%	56.2%	0.0%	48.8%
36-45 years	20.0%	24.7%	38.4%	12.5%	50.0%	27.9%
46-55 years	6.7%	7.9%	12.3%	15.6%	33.3%	11.2%
56-65 years	20.0%	4.5%	4.1%	12.5%	0.0%	6.5%
More than 65 years	0.0%	0.0%	2.7%	0.0%	0.0%	0.9%
Total	15	89	73	32	6	215

_____

How old are you?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
18-25 years	6.7%	11.8%	6.8%	0.0%	0.0%	6.4%
26-35 years	33.3%	67.6%	47.7%	53.3%	50.0%	52.8%
36-45 years	20.0%	2.9%	29.5%	20.0%	0.0%	18.4%
46-55 years	20.0%	5.9%	11.4%	16.7%	0.0%	12.0%
56-65 years	20.0%	11.8%	4.5%	10.0%	50.0%	10.4%
More than 65 years	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	15	34	44	30	2	125

Q23 in relation to research age:

How many years have you worked within research and/or teaching?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Less than 5 years	25.0%	80.0%	85.7%	60.0%	100.0%	68.2%
6-10 years	0.0%	20.0%	0.0%	0.0%	0.0%	4.5%
11-20 years	50.0%	0.0%	0.0%	0.0%	0.0%	9.1%
More than 20 years	25.0%	0.0%	14.3%	40.0%	0.0%	18.2%
Total	4	5	7	5	1	22

How many years have you worked within research and/or teaching?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Less than 5 years	33.3%	41.6%	34.2%	43.8%	50.0%	39.1%
6-10 years	20.0%	29.2%	26.0%	18.8%	16.7%	25.6%
11-20 years	26.7%	18.0%	28.8%	12.5%	33.3%	21.9%
More than 20 years	20.0%	11.2%	11.0%	25.0%	0.0%	13.5%
Total	15	89	73	32	6	215

_____

FILTER: Have you experienced problems accessing digital data/information because it was old?

Answer = No

How many years have you worked within research and/or teaching?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Less than 5 years	40.0%	63.6%	56.8%	51.6%	50.0%	55.2%
6-10 years	20.0%	18.2%	22.7%	19.4%	0.0%	20.0%
11-20 years	0.0%	0.0%	9.1%	16.1%	0.0%	7.2%
More than 20 years	40.0%	18.2%	11.4%	12.9%	50.0%	17.6%
Total	15	33	44	31	2	125

24. Should researchers' personal websites and other digital artefacts such as blogs, wikis etc. be preserved?
(Note that 'preserving' means saving indefinitely)

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Yes	11.8%	9.4%	4.0%	8.7%	10.0%	7.7%
No	20.6%	22.7%	29.8%	23.2%	20.0%	24.9%
Depends on quality and content	61.8%	57.0%	51.6%	53.6%	50.0%	54.8%
I have no opinion	5.9%	10.9%	14.5%	14.5%	20.0%	12.6%
Total	34	128	124	69	10	365

Interestingly, between 20 and 30% find that personal websites and other digital artefacts such as blogs, wikis etc should never be preserved.

_____

Q24 in relation to age:

FILTER: Should researchers' personal websites and other digital artefacts such as blogs, wikis etc. be preserved?

Answer = Yes

How old are you?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
18-25 years	0.0%	16.7%	20.0%	0.0%	0.0%	10.7%
26-35 years	75.0%	58.3%	20.0%	83.3%	100.0%	60.7%
36-45 years	0.0%	25.0%	20.0%	16.7%	0.0%	17.9%
46-55 years	25.0%	0.0%	40.0%	0.0%	0.0%	10.7%
56-65 years	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
More than 65 years	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	4	12	5	6	1	28

FILTER: Should researchers' personal websites and other digital artefacts such as blogs, wikis etc. be preserved?

Answer = No

How old are you?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
18-25 years	14.3%	3.4%	5.4%	0.0%	0.0%	4.4%
26-35 years	14.3%	55.2%	40.5%	46.7%	0.0%	43.3%
36-45 years	14.3%	17.2%	27.0%	13.3%	100.0%	22.2%
46-55 years	0.0%	6.9%	16.2%	13.3%	0.0%	11.1%
56-65 years	57.1%	17.2%	8.1%	26.7%	0.0%	17.8%
More than 65 years	0.0%	0.0%	2.7%	0.0%	0.0%	1.1%
Total	7	29	37	15	2	90

_____

FILTER: Should researchers' personal websites and other digital artefacts such as blogs, wikis etc. be preserved?

Answer = Depends on quality and content

How old are you?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
18-25 years	4.8%	6.8%	1.6%	0.0%	20.0%	4.0%
26-35 years	38.1%	61.6%	50.0%	56.8%	20.0%	53.5%
36-45 years	28.6%	17.8%	37.5%	21.6%	0.0%	25.5%
46-55 years	19.0%	9.6%	6.2%	16.2%	40.0%	11.5%
56-65 years	9.5%	4.1%	3.1%	5.4%	20.0%	5.0%
More than 65 years	0.0%	0.0%	1.6%	0.0%	0.0%	0.5%
Total	21	73	64	37	5	200

FILTER: Should researchers' personal websites and other digital artefacts such as blogs, wikis etc. be preserved?

Answer = I have no opinion

How old are you?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
18-25 years	0.0%	14.3%	0.0%	10.0%	0.0%	6.5%
26-35 years	50.0%	71.4%	38.9%	40.0%	0.0%	47.8%
36-45 years	0.0%	14.3%	38.9%	0.0%	50.0%	21.7%
46-55 years	50.0%	0.0%	16.7%	30.0%	0.0%	15.2%
56-65 years	0.0%	0.0%	0.0%	20.0%	0.0%	4.3%
More than 65 years	0.0%	0.0%	5.6%	0.0%	50.0%	4.3%
Total	2	14	18	10	2	46

_____

Q24 in relation to research age:

FILTER: Should researchers' personal websites and other digital artefacts such as blogs, wikis etc. be preserved?

Answer = Yes

How many years have you worked within research and/or teaching?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Less than 5 years	75.0%	36.4%	20.0%	83.3%	100.0%	51.9%
6-10 years	0.0%	45.5%	20.0%	0.0%	0.0%	22.2%
11-20 years	25.0%	18.2%	40.0%	16.7%	0.0%	22.2%
More than 20 years	0.0%	0.0%	20.0%	0.0%	0.0%	3.7%
Total	4	11	5	6	1	27

FILTER: Should researchers' personal websites and other digital artefacts such as blogs, wikis etc. be preserved?

Answer = No

How many years have you worked within research and/or teaching?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Less than 5 years	28.6%	37.9%	35.1%	31.2%	50.0%	35.2%
6-10 years	0.0%	24.1%	16.2%	25.0%	50.0%	19.8%
11-20 years	14.3%	17.2%	27.0%	12.5%	0.0%	19.8%
More than 20 years	57.1%	20.7%	21.6%	31.2%	0.0%	25.3%
Total	7	29	37	16	2	91

FILTER: Should researchers' personal websites and other digital artefacts such as blogs, wikis etc. be preserved?

Answer = Depends on quality and content

How many years have you worked within research and/or teaching?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Less than 5 years	28.6%	50.7%	50.0%	48.6%	40.0%	47.5%
6-10 years	28.6%	26.0%	26.6%	21.6%	0.0%	25.0%
11-20 years	19.0%	11.0%	17.2%	13.5%	40.0%	15.0%
More than 20 years	23.8%	12.3%	6.2%	16.2%	20.0%	12.5%
Total	21	73	64	37	5	200

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How many years have you worked within research and/or teaching?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Less than 5 years	50.0%	71.4%	50.0%	50.0%	50.0%	56.5%
6-10 years	0.0%	14.3%	27.8%	10.0%	0.0%	17.4%
11-20 years	0.0%	7.1%	11.1%	10.0%	0.0%	8.7%
More than 20 years	50.0%	7.1%	11.1%	30.0%	50.0%	17.4%
Total	2	14	18	10	2	46

E. Software for preserving and retrieval of data/Information (Q25-Q26)

25. Is the software supplied by your organisation/institute sufficient to preserve research related materials? (Note that 'preserving' means saving indefinitely)

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Yes, in all cases	6.1%	9.4%	4.8%	8.7%	0.0%	7.1%
Yes, in most cases	30.3%	28.1%	43.5%	31.9%	20.0%	34.1%
Yes, in a few cases	12.1%	5.5%	4.0%	2.9%	0.0%	4.9%
No	15.2%	12.5%	11.3%	5.8%	30.0%	11.5%
I don't know	36.4%	43.8%	34.7%	46.4%	50.0%	40.7%
Not relevant	0.0%	0.8%	1.6%	4.3%	0.0%	1.6%
Total	33	128	124	69	10	364

All research fields are divided between having sufficient software for preservation and not knowing anything about the topic. There seems to be no difference between research fields except from a slight tendency pointing towards the Health Sciences being more content with the software and the Natural Sciences having an overweight of 'I don't know'.

The overall impression is that there is an obvious need for more or at least some advertising for the existing options.

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26. Is the software supplied by your organisation/institute sufficient to retrieve research related materials?
Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Yes, in all cases	0.0%	9.4%	6.5%	7.2%	0.0%	6.8%
Yes, in most cases	38.2%	58.6%	57.3%	53.6%	40.0%	54.8%
Yes, in a few cases	11.8%	3.9%	2.4%	1.4%	10.0%	3.8%
No	11.8%	9.4%	4.8%	0.0%	10.0%	6.3%
I don't know	32.4%	18.8%	28.2%	36.2%	40.0%	27.1%
Not relevant	5.9%	0.0%	0.8%	1.4%	0.0%	1.1%
Total	34	128	124	69	10	365

Again, it seems like the individual research fields are divided between having sufficient software for retrieving research related material and 'not knowing', however with the Natural, Health, and Social Sciences appearing more content. Interestingly, 6% of Arts and Humanities find the question 'Not relevant'. (An obvious follow up would be to find out which tools they use. One might discover that the prevailing tools are supplied from other 'vendors' than the 'home organization').

F. Function of professional network (Q27-Q32)

Main observations:

- *The overall observations are that previous research activities and professional networks are very important for the majority of researchers for the generation of new ideas as well as for the research process in general. There seems to be only subtle variations between the different research areas concerning these issues.*

27. A research project is never finished; it is always open for further development!

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
I agree	52.9%	44.9%	36.8%	39.1%	70.0%	42.5%
I partly agree	32.4%	47.2%	46.4%	49.3%	20.0%	45.2%
I neither agree nor disagree	5.9%	5.5%	7.2%	7.2%	0.0%	6.3%
I disagree	8.8%	2.4%	9.6%	4.3%	10.0%	6.0%
Total	34	127	125	69	10	365

28. Do new ideas for your research stem from your own previous research activities?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Always	5.9%	0.8%	1.6%	4.3%	0.0%	2.2%
Often	82.4%	85.2%	86.4%	88.4%	60.0%	85.2%
Seldom	0.0%	7.0%	4.0%	4.3%	30.0%	5.5%
Never	0.0%	0.0%	1.6%	0.0%	0.0%	0.5%
Not relevant	11.8%	7.0%	6.4%	2.9%	10.0%	6.6%
Total	34	128	125	69	10	366

It is clear that the origin of new ideas is to a great extent is based on previous personal research activities, - regardless of research field. Almost everyone (> 85%) declare that "new ideas for your research '**always**' or '**often**' stem from your own previous research"

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29. Do new ideas for your research stem from your professional network?
Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Always	0.0%	2.4%	4.0%	0.0%	0.0%	2.2%
Often	82.4%	81.1%	89.6%	79.7%	60.0%	83.3%
Seldom	8.8%	11.8%	4.0%	17.4%	30.0%	10.4%
Never	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Not relevant	8.8%	4.7%	2.4%	2.9%	10.0%	4.1%
Total	34	127	125	69	10	365

A professional network seems to be essential for the development of new research ideas. Again the different research fields appear quite similar. More than 80% state that "new ideas for your research 'always' or '**often**' stem from your professional network".

30. Do you feel a personal ownership to your research ideas; they do not belong to anyone else?
Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Always	14.7%	6.2%	8.8%	11.6%	0.0%	8.7%
Often	44.1%	43.0%	47.2%	47.8%	40.0%	45.4%
Seldom	29.4%	29.7%	31.2%	30.4%	40.0%	30.6%
Never	5.9%	13.3%	7.2%	5.8%	10.0%	9.0%
Not relevant	5.9%	7.8%	5.6%	4.3%	10.0%	6.3%
Total	34	128	125	69	10	366

More than half of the researchers feel a personal ownership to research ideas. However, also a large group (> 1/3) claims that they seldom or never feel a personal ownership to their research ideas. No clear differences can be observed among the different research areas.

The observations here may seem to be in conflict with the responses to Q28-29 and Q31-32 from which the conclusion is clear: Previous research activities and professional networks are very important for the majority of researchers for the generation of new ideas and for the research process in general. However, this dependency does not necessarily eliminate the feeling of personal ownership to new research ideas (In addition, 'personal' may or may not include a small group of researchers; this cannot be deduced from the question).

31. Is communication with your professional network important for <u>the initiation</u> of new research projects?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Always	23.5%	21.3%	41.6%	10.1%	10.0%	26.0%
Often	61.8%	67.7%	53.6%	66.7%	60.0%	61.9%
Seldom	2.9%	5.5%	3.2%	17.4%	20.0%	7.1%
Never	0.0%	0.8%	0.0%	0.0%	0.0%	0.3%
Not relevant	11.8%	4.7%	1.6%	5.8%	10.0%	4.7%
Total	34	127	125	69	10	365

32. Is communication with your professional network important for <u>the completion</u> of new research projects?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Always	5.9%	24.2%	38.4%	15.9%	10.0%	25.4%
Often	67.6%	60.9%	52.0%	62.3%	40.0%	58.2%
Seldom	20.6%	10.2%	5.6%	15.9%	40.0%	11.5%
Never	0.0%	0.8%	1.6%	1.4%	0.0%	1.1%
Not relevant	5.9%	3.9%	2.4%	4.3%	10.0%	3.8%
Total	34	128	125	69	10	366

The general observation is that a professional network seems to be important for both the initiation (Q31) and completion (Q32) of new research project for the majority of the researchers.

However, for Arts and Humanities and the Natural Sciences, the initiation rather than the completion process tends to a greater extent to be dependent on the professional network (The size of the 'Seldom' group increases for these two groups). For the Health and Social Sciences no such distinction can be observed

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G. Communication with professional network (Q33-Q35)

33. A. Does your professional network consist of colleagues from - your own organisation/institute?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Exclusively	2.9%	8.7%	4.8%	13.0%	0.0%	7.4%
Partly	91.2%	88.9%	92.7%	82.6%	100.0%	89.5%
Not at all	2.9%	0.8%	0.8%	4.3%	0.0%	1.7%
Not relevant	2.9%	1.6%	1.6%	0.0%	0.0%	1.4%
Total	34	126	124	69	10	363

Only a very small proportion of the population has a professional network composed entirely of members from their own organisation/institute. Thus, the main trend is that the professional network only 'partly' is composed of members from the respondent's own organisation/institute. The Social Sciences seem to represent a slight deviance from this trend.

33. B. Does your professional network consist of colleagues from - your own country (national network)?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Exclusively	0.0%	5.7%	4.8%	1.4%	0.0%	3.9%
Partly	90.6%	85.2%	88.7%	89.9%	90.0%	88.0%
Not at all	3.1%	4.1%	3.2%	8.7%	10.0%	4.8%
Not relevant	6.2%	4.9%	3.2%	0.0%	0.0%	3.4%
Total	32	122	124	69	10	357

Perhaps a bit surprising the Natural and Health Sciences have the largest proportion of 'exclusively' national networks. The Social Sciences have the largest proportion of entirely international networks (=Not at all). We would expect a confirmation of these findings from the answers to the next question:

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33. C. Does your professional network consist of colleagues from - countries other than your country (international network)?

Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Exclusively	0.0%	0.8%	0.8%	0.0%	0.0%	0.6%
Partly	97.1%	87.3%	81.5%	87.0%	100.0%	86.5%
Not at all	0.0%	8.7%	14.5%	13.0%	0.0%	10.5%
Not relevant	2.9%	3.2%	3.2%	0.0%	0.0%	2.5%
Total	34	126	124	69	10	363

The 'Not at all' answers to this question in 33. C should correspond to the 'Exclusively' answers in 33. B, which it obviously does not. Likewise, the 'Not at all' answers in 33. B should correspond to the 'Exclusively' answers in 33. C. On the other hand the proportion of 'Partly' answers to both questions remain roughly the same.

The discrepancies at least partly may be explained due to the fact that Question 33. C. is in its essence identical to 33. B, and this may have caused confusion among the respondents.

To sum up the results of the analysis of the composition of the professional networks:

- *The professional networks are not limited to the individual researcher's own organisation/institute. That the networks are cross-organisational/institutional is valid for on the average 90% of the respondents.*
- *Parallel to these findings the networks are for the absolute majority - almost 90% - cross-national.*

34. Do you use digital medias (e-mails, blogs etc.) in communication with your professional network?

Crossed with: 33. Does your professional network consist of colleagues from - your own country (national network)?

	Exclusively	Partly	Not at all	Not relevant	Total
Always	14.3%	33.5%	11.1%	16.7%	31.1%
Often	78.6%	65.5%	77.8%	66.7%	66.7%
Seldom	7.1%	0.6%	5.6%	0.0%	1.1%
Never	0.0%	0.3%	5.6%	8.3%	0.8%
Not relevant	0.0%	0.0%	0.0%	8.3%	0.3%
Total	14	313	18	12	357

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Perhaps it would be reasonable to assume that the more national the professional network the less dominant the use of digital communication. This assumption cannot be confirmed: the respondents who have either an 'Exclusively' national network or a network, which does 'Not at' all contain members from the respondents' own country show almost identical patterns of use of digital communication medias. Of course the relative small size of the two groups in question should be taken into account. The main trend is – as demonstrated by the group with a 'Partly' national network - that one third 'Always' uses digital medias and two thirds use them often.

This is confirmed by the distribution of answers regarding mediated communication with networks consisting of colleagues from the respondent's own organisation or institute. There is no significant difference in the use of medias with regard to the composition of the professional networks.

The main results are that the composition of the professional networks - local (organisational) or international - is not related to the use of digital medias in the communication, this remains unchanged. Likewise, face-face communication appears to be quite important (see below).

35. Do you communicate face-to-face with your professional network?
Crossed with: 6. Which is your primary research field?

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
Always	2.9%	0.8%	1.6%	1.4%	0.0%	1.4%
Often	82.4%	85.2%	85.6%	82.6%	80.0%	84.4%
Seldom	14.7%	13.3%	12.8%	15.9%	20.0%	13.9%
Never	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Not relevant	0.0%	0.8%	0.0%	0.0%	0.0%	0.3%
Total	34	128	125	69	10	366

31

H. Importance of different information resources (Q36)

The questions on the importance of the various information sources (professional network, Wikipedia, libraries, official institutions, private companies, Google or another search robot and scientific databases) was designed in order to assess the value added to them by the respondents. We chose to split the ranking into seven separate variables, each for one source of information instead of combining the seven into a total relative ranking. The advantage of this strategy is its greater sensibility to assessments of the importance of the individual information source. The cost of this however is the loss of a total ranking

36. How important are the following sources to you in relation to your research? To each of the listed sources please assign an appropriate number from 1 to 5 (1=essential, and 5=not important)
Crossed with: 6. Which is your primary research field?

36. Libraries (1=essential, and 5=not important)

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
1	76.5%	29.9%	38.4%	57.4%	50.0%	42.9%
2	11.8%	28.3%	24.8%	26.5%	30.0%	25.3%
3	0.0%	22.0%	20.8%	14.7%	0.0%	17.6%
4	5.9%	11.8%	16.0%	1.5%	0.0%	10.4%
5	5.9%	7.9%	0.0%	0.0%	20.0%	3.8%
Total	34	127	125	68	10	364

If we look at the distribution of the ranking 1 (essential), it is obvious that to researchers from Arts and Humanities, libraries are more important in relation to their research than libraries are to researchers from the Natural Sciences. If we look at the distribution of the rankings 1 and 2 together, the same picture is seen: in the field of Arts and Humanities, libraries are more important than they are in the fields of Natural and Health Sciences. The Social Sciences occupy the middle position.

36. Professional network (1=essential, and 5=not important)

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
1	58.8%	62.2%	74.4%	54.4%	40.0%	64.0%
2	20.6%	26.8%	20.8%	35.3%	40.0%	26.1%
3	17.6%	5.5%	3.2%	8.8%	20.0%	6.9%
4	0.0%	1.6%	0.0%	0.0%	0.0%	0.5%
5	2.9%	3.9%	1.6%	1.5%	0.0%	2.5%
Total	34	127	125	68	10	364

It is clear that the assessment of the importance of the social network in relation to research differs between the groups of researchers looking at the distribution of the ranking 1 (essential). From the Health Sciences, 3/4 of the researchers regard the network as essential, while a little more than half of the researchers from the Social Sciences agree. Combining the distribution of the rankings 1 and 2 together, the overall picture is confirmed, but in a weaker form: the Health Sciences still top the ranking of the professional network, while the Natural and Social Sciences are on par.

36. Wikipedia (1=essential, and 5=not important)

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
1	3.0%	3.1%	1.6%	0.0%	0.0%	1.9%
2	9.1%	11.8%	12.9%	2.9%	0.0%	10.0%
3	9.1%	24.4%	20.2%	25.0%	11.1%	21.3%
4	33.3%	43.3%	34.7%	36.8%	55.6%	38.5%
5	45.5%	17.3%	30.6%	35.3%	33.3%	28.3%
Total	33	127	124	68	9	361

By researchers from all fields Wikipedia is not regarded as important: on the average roughly 10% rank Wikipedia as a 1 and 2.

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36. Information provided by official institutions (1=essential, and 5=not important)

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
1	9.1%	10.9%	11.2%	22.1%	10.0%	12.9%
2	30.3%	21.9%	32.0%	29.4%	10.0%	27.2%
3	36.4%	32.8%	33.6%	25.0%	10.0%	31.3%
4	18.2%	22.7%	18.4%	20.6%	40.0%	20.9%
5	6.1%	11.7%	4.8%	2.9%	30.0%	7.7%
Total	33	128	125	68	10	364

Here, the Social Sciences differ from the general trend: twice as many as the average of the other fields of science regard 'Information provided by official institutions' as 1 (essential). This picture is confirmed if we add 1 and 2, although in a weaker form. The importance of this type of information for the Social Sciences is probably due to the widespread use of statistical macro data (electoral data, population data, other social statistics etc. which are normally provided by various government agencies).

36. Information provided by private companies (1=essential, and 5=not important)

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
1	3.0%	4.8%	5.6%	0.0%	0.0%	3.9%
2	12.1%	14.3%	12.1%	10.4%	0.0%	12.2%
3	18.2%	27.8%	25.8%	16.4%	20.0%	23.9%
4	21.2%	29.4%	40.3%	41.8%	40.0%	35.0%
5	45.5%	23.8%	16.1%	31.3%	40.0%	25.0%
Total	33	126	124	67	10	360

In general, private companies are not considered very important as sources of information. A small difference may be observed for the Natural and Health Sciences, which both hold the highest score on 1 and 2 added. This could be due to the fact that larger private corporations within the fields of bio- and health sciences provide access to databases relevant to research. But still the difference is marginal.

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36. Google or another search robot (1=essential, and 5=not important)

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
1	24.2%	34.4%	22.8%	20.9%	20.0%	26.6%
2	18.2%	29.7%	30.1%	37.3%	40.0%	30.5%
3	27.3%	25.0%	25.2%	22.4%	20.0%	24.7%
4	18.2%	10.2%	17.9%	14.9%	10.0%	14.4%
5	12.1%	0.8%	4.1%	4.5%	10.0%	3.9%
Total	33	128	123	67	10	361

Google (or another search robot) is considered a source of some importance. On the average more than half of the respondents rate this source as a category 1 or 2.

36. Scientific databases (PubMed, Web of Science etc.) (1=essential, and 5=not important)

	Arts and Humanities	Natural Science	Health Science	Social Science	Other	Total
1	43.8%	79.7%	89.6%	51.5%	60.0%	74.1%
2	12.5%	10.2%	6.4%	23.5%	10.0%	11.6%
3	21.9%	3.1%	0.8%	11.8%	0.0%	5.5%
4	15.6%	1.6%	0.0%	11.8%	0.0%	4.1%
5	6.2%	5.5%	3.2%	1.5%	30.0%	4.7%
Total	32	128	125	68	10	363

The importance of the scientific databases is obvious. On the average 3/4 of the respondents rate this type of resource as 1 (essential). This average, however, spans the less than 50% (Arts and Humanities) and the almost 90% (the Health Sciences). Including rating 2, this picture persists: 90% or more of the respondents from the Natural Sciences and Health Sciences rate this type of resource as 1 or 2. To the Social Sciences this is somewhat less important (75%) and to Arts and Humanities less (56%).