

The WARCnet network: The second year

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WARCNET PAPERS



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WARCnet Papers
Aarhus, Denmark 2022

WARCnet Papers ISSN 2597-0615.

Niels Brügger: *The WARCnet network: The second year*
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Published by the research network
WARCnet, Aarhus, 2022.

Editors of WARCnet Papers: Niels
Brügger, Jane Winters, Valérie Schafer,
Kees Teszelszky, Peter Webster,
Michael Kurzmeier.

Cover design: Julie Brøndum
ISBN: 978-87-94108-10-2

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The WARCnet network is funded by the
Independent Research Fund Denmark |
Humanities (grant no 9055-00005B).



WARCnet Papers

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Sophie Gebeil, Valérie Schafer, David Benoist, Alexandre Faye and Pascal Tanesie: *Exploring special web archive collections related to COVID-19: The case of the French National Library (BnF)* (Dec 2020)

Karin de Wild, Ismini Kyritsis, Kees Teszelszky and Peter de Bode: *Exploring special web archive collections related to COVID-19: The Dutch Web archive (KB)* (Nov 2021)

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Niels Brügger: *The WARCnet network: The second year* (Dec 2022)

The WARCnet network: The second year

Niels Brügger

Abstract: This WARCnet Paper provides an overview of the WARCnet network's many activities in 2021, including dissemination of results.

Keywords: web, WARCnet, activities, 2021

NAVIGATING A NETWORK IN THE SHADOW OF COVID-19

Apparently, it is the WARCnet network's destiny to exist in the shadow of COVID-19. The outbreak of the pandemic was only a few months before the planned kick-off meeting in the Spring of 2020, and since then (almost) all network activities have been caged by a Zoom screen. This has implied planning and re-planning of network meetings, but nevertheless network and Working Group meetings in 2021 have worked surprisingly well, probably because network members have learned how to navigate the troubled waters of COVID-19.

However, nothing compares to meeting in person, and therefore it was a high point in WARCnet's brief history that the fourth network meeting could be held as a hybrid session, where 13 network members were able to meet in Aarhus begin November 2021. Unfortunately, not all members could travel, but with the right technical setup and preparation the hybrid format worked well.

The limited travel opportunities have also implied that one of the funding instruments of WARCnet, the so-called Short-Term Network Stays, has not been used, and therefore an application was made to the funding body to extend the project period by half a year. Thanks to the kindness of the funder, the Danish Independent Research Fund Denmark | Humanities, this second extension was granted, and WARCnet now continues until 30 June 2023, thus ending one and a half year later than initially planned.

The following paragraphs outline the network activities that has taken place in 2021.

NETWORK PARTICIPANTS, MEETINGS, AND WORKING GROUPS

By the end of 2021 WARCnet had 38 participants, including 29 researchers, 7 web archives, 1 IT developer, and a transnational international web archiving organisation, the

International Internet Preservation Consortium (IIPC). In 2021 one member has left the network, and one researcher has been invited in. The primary organisational entities of WARCnet is network meetings and Working Groups (WGs).

Network meetings

In 2021 two network meetings were organised, one 20-22 April ‘in’ Aarhus (Zoom), and one 3-5 November, also in Aarhus (onsite/Zoom), both meetings were organised by Aarhus University, the School of Communication and Culture, Department of Media and Journalism Studies.

The April meeting took place under the heading ‘Diving deeper into web archives in difficult times’, and the aim was to: (a) report and discuss preliminary results from the four Working Groups, (b) debate some of the challenges that WGs have encountered, including questions related to providing data and preparing and managing data for analyses, (c) outline potential next steps, including possible ways of collaborating across WGs. There were seven types of presentations: (a) keynotes by people from outside the network, (b) WG sessions, including a joint brainstorming session with WG exchange of challenges and solutions, (c) WGs’ presentations to other WGs about their work, (d) a workshop on Web Archives — Skills, tools and knowledge, (e) Pitching of future presentations where two network members did pitch ideas or an early version of a conference presentation to get feedback from the network, (f) an introduction of SolrWayback, a new tool for exploring web archives, (g) a roundtable on Web archives in teaching. All in all 18 presentations were made by network members.

Also, a new round of the Twitter challenge (cf. below) of which the first round was launched at the network meeting in November 2020, was initiated, under the heading ‘Web design and culture (Raiders of the lost WARC)’.

The April meeting included two keynotes, “Towards an Infrastructural Description of Archived Web Data” by Emily Maemura, PhD Candidate at the University of Toronto’s Faculty of Information, Canada, and “Correct application of OAIS to the preservation of websites and things that they may contain” by David Giaretta, Lead author of the OAIS Reference Model and ISO 16363. Both keynotes were open for an audience outside the network.

The heading for the hybrid meeting in Aarhus in November was ‘Consolidation, reflection and transformation’, and the aim was to: (a) provide a status of the network, regarding approaches, methodologies, challenges, case studies, and achievements, (b) launch new projects, including two new WGs (cf. below) and a book project (cf. also below), (c) discuss challenges that web archives are currently facing, including questions of deletion and inclusion, the lack of activity and infrastructure in some countries, etc., (d) encourage all network members to come up with new ideas related to the points above, and consider next steps both for the field and for WARCnet. Therefore, within the meeting there were four types of sessions: (a) keynotes, (b) WG brainstorming sessions, (c) WG presentations to other WGs, gathering together all WARCnet participants (research questions, methodologies, case studies, challenges, achievements, future work and planned

outreach), (d) common sessions, gathering all WARCnet participants together, to promote coordination between WGs and address key issues such as public engagement and the ethics of deletion. WARCnet members gave 23 presentations.

A third round of the Twitter challenge was launched, under the heading ‘Offline internet culture, digital born time travellers and internet culture in old analogue history. (Dr. Jones and the Wayback Machine)’.

The November meeting included two keynotes, “Asian Internet & mobile media histories: Reflections for (trans)national web heritages” by Professor Gerard Goggin, Nanyang Technological University, Singapore, and the keynote panel “Digital preservation in countries that do not have or are only beginning to develop a web archive”, by Nadezhda Povroznik (Perm State University), Moisés Rockembach (Universidade Federal do Rio Grande do Sul), Chiara Storti (Biblioteca Nazionale Centrale Firenze), and Arif Shaon (Qatar National Library).

Working Groups

Each network participant has been invited to join one (or more) of the existing Working Groups. In 2021, the four WGs that were initially established were supplemented by two new WGs:

- WG5: The WARCnet Code Book of web archive data formats (chairs: Karin De Wild, PhD, Assistant Professor, Centre for the Arts in Society (LUCAS), Leiden University, and Sharon Healy, MA, PhD Candidate and Irish Research Scholar in Digital Humanities, Maynooth University, Ireland), 3 participants,
- WG6: Post WARCnet (chairs: Jane Winters, PhD, Professor of Digital Humanities, School of Advanced Study, Institute of Historical Research, University of London, and Karin De Wild, PhD, Assistant Professor, Centre for the Arts in Society (LUCAS), Leiden University), 7 participants.

The aims of these two new WGs are to:

- WG5:
 - discuss and formulate possible data formats that can be used to make web archive data useful for researchers, and thereby create a shared language between web archiving institutions and research communities,
 - investigate and map existing data formats of relevance for web archive studies,
 - formulate a systematic description of data formats for web archive studies to be used by web archives and web archive researchers (a joint ‘Code Book’),
 - test the usability of the ‘Code Book’ in the WARCnet network’s research projects about comparing entire web domains, and analysing transnational events,
- WG6:
 - initiate discussions about if/how the WARCnet network can/shall continue after 2023,
 - map the opportunities of applying for international researcher networks in other countries,
 - identify potentially relevant calls within the Horizon Europe framework,

- Investigate the possibility of applying for an ITN network (for PhD scholars).

All WGs, including their aims and tasks, are described in detail on the network's website at <https://cc.au.dk/en/warcnet/working-groups>.

By and large WGs have been working independently, but potential overlaps, collaborations, and inspiration were exchanged at regular meetings in the Coordination Group. The following points outline some of the achievements and plans for each WG:

- *WG1, Comparing entire web domains.* WG1 met online four times in 2021, and one time at a hybrid meeting. To prepare for transnational research comparing national web domains WG1 changed its focus in 2021. Instead of finding out what we wanted to get and which metrics to study, it was decided to investigate what could relatively easily be provided with a view to testing what this data could be used for. Inspired by WG2 WG1 decided to 'dive' into some data at two datathons, and to that end available metadata CDX files from the Internet Archive and from CommonCrawl were used. These tests indicated that there were a lot of insights to be gained from tinkering with the CDX files, and they provided a template for how to ask web archives about data, and maybe even have them run analytical scripts. WG1 has 10 members.
- *WG2, Analysing transnational events.* The research group met numerous times online in 2021 and notably 5 five times for a datathon on the COVID-19 metadata and derived data from several European web archives. The results of this collective work led to a WARCnet paper, entitled *Chicken and Egg: Reporting from a Datathon Exploring Datasets of the COVID-19 Special Collections* and to an application to the call the Archives Unleashed team launched for cohorts. Six members of the WG2 have successfully submitted a project AWAC2 (Analysing Web Archives of the Covid Crisis) that allows them to cooperate with Archive-It and the Archives Unleashed team, in order to analyse in more depth the huge amount of international data that the IIPC gathered from more than 30 partners during the COVID-crisis. A blogpost on netpreserve, the blog of the IIPC, gives a first overview of the AWAC2 project. The WG continued the series of interviews with web archivists on the COVID-19 crisis as well as the preparation of the survey targeting GLAM. WG2 also gave several presentations related to its work, at the RESAW 2021 conference in June 2021 and at the Oral History Conference held at the University of Siegen in September 2021, and organized several panels, at the Tensions of Europe remote Festival on July 2, and at the "Pandemic Grief" workshop organized by the Ludwig Maximilian University of Munich in October 2021. WG2 has 14 members.
- *WG3, Digital research methods and tools.* Web Archive Researcher Skills&Tools Survey (WARST) project report to be published in coming months. The study explores the skills, knowledge, and tool ecologies in web archive research, and focuses on individuals around the globe who participate in web archive research, in the context of web archiving, curation, and the use of web archives and archived web content for research or other purposes. A preliminary report was presented at WARCnet meeting in November. Annotated bibliography published as WARCnet ToyChest 4 Web Archive Research, as an output of the WARST project report:

https://www.zotero.org/groups/4394230/warcnet_toychest_4_web_archive_research/library. WG3 has 25 members.

- *WG4, Research Data Management across borders.* WG4 prepared semi-structured interviews with researchers who use web and social media archives, to better understand their current research practices. These interviews will provide a basis for WG4's WARCnet Paper on 'Research Data Management Support for Research using Web Archives'. During a series of brainstorm sessions, a number of key topics (Access to web archives; Creating datasets; Data citation practices; Ethical and legal issues; Data management practices; Technical issues and Digital Preservation) were identified as a framework for structuring the interviews. A list of potential interviewees, including criteria for their selection (e.g., expertise, career stage, gender, discipline) was prepared and validated. Additionally, in collaboration with BE-Social, WG4 co-organised a pre-conference workshop at RESAW 2021 on User requirements for working with social media and web archives.
- *WG5: The WARCnet Code Book of web archive data formats.* Initially starting with 3 members, WG5 met two times in 2021, and one time at the hybrid meeting in November with 9 participants in attendance. The aim of this working group is to explore a controlled vocabulary to improve searching and finding data in web archives and making it easier to share with researchers, who are requesting data from different European Web archives. Currently, the group is compiling existing resources for vocabularies, thesauri, glossaries, and technical registries, as part of the WARCnet ToyChest 4 Web Archive Research, a project in development by WG3.
https://www.zotero.org/groups/4394230/warcnet_toychest_4_web_archive_research/collections/2STMID5K. WG5 has 9 members.
- *WG6: Post WARCnet.* WG6 has met twice in 2021, once online and once in hybrid form. The key role of the group is to consider how to continue some or all of the WARCnet activities in the medium to long term. Four priorities were agreed at the first WG meeting in September 2021: to plan how to sustain momentum after the cessation of the current funding; to collate and share information about national, European and international funding opportunities; to identify shared topics of interest to the network (or subsets thereof) which might form the focus of future activities and funding bids; and to consider whether to expand the scope and range of the network. The first activities of the WG have been concerned with information gathering, drawing on the knowledge and experience of the wider network. As an initial step, a shared, 'living' document with information about new and established funding opportunities has been set up. The WG has seven members.

DISSEMINATION AND OUTREACH

In 2021 the WARCnet network has continued disseminating knowledge about past, ongoing, and planned activities. Communication has taken place on the project website at warcnet.eu, on social media platforms, and in a Newsletter, whereas results have been disseminated in the network's publication series WARCnet Papers, and network initiated

conference presentations have been submitted and accepted. In 2021 the network also initiated discussions about the drafting of a book proposal for an edited volume about the results of the network activities. Finally, WARCnet's Twitter Challenge has constituted an example of outreach to a wider public.

warcnet.eu, social media, and Newsletter

On the website warcnet.eu (hosted by Aarhus University) one can find relevant information about the project's life, including presentations from all meetings. In 2021 warcnet.eu had 4,324 visitors which is an increase of approximately 25% compared to 2020 (3,087 visitors). In 2020 a quarter of the visitors came from Denmark, and then followed the United Kingdom (13%), the United States (13%), France (9%), and the Netherlands (9%). However, as shown in Figure 1 this has changed in 2021 where the number of visitors from the five most visiting countries is more evenly distributed with the majority coming from the United States (15%), followed by Denmark (14%), France (14%), the United Kingdom (11%), and the Netherlands (7%).

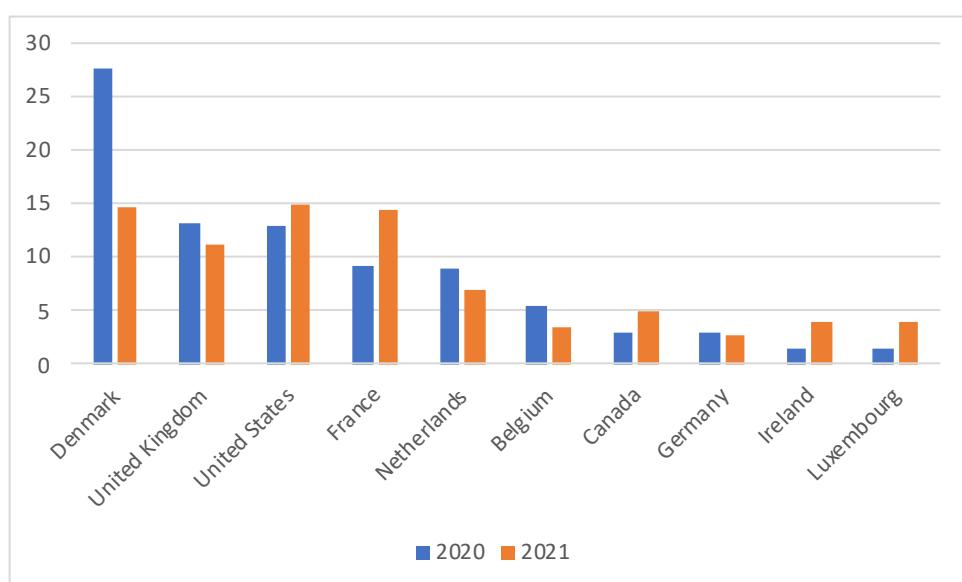


Figure 1: Visitors on warcnet.eu, 2020-2021, countries (% of total).

Compared to 2020, in 2021 even more users accessed the website from a stationary computer (91% compared to 85%), and only 9% (15% in 2020) used either a mobile phone or a tablet. Not surprisingly the landing page is the most popular, and then follows the web page with the WARCnet Papers, the About page, and the WARCnet Team page. Apparently, most visitors want to know what WARCnet is all about which makes perfectly sense. This distribution is almost identical to 2020, but it is worth noting that further down the list the web pages with information about network meetings and all presentations are only half as popular in 2021 compared to 2020.

In addition, the landing page and the web page with WARCnet Papers are still the most used entry points to the website, 37% of the visitors start on the front page, 9% start on the WARCnet Papers page (45% and 9%, respectively in 2020).

Users first came to the website in different ways, the vast majority simply typed in the web address in their browser, and as for the rest most of them came from a search engine, and very few from social media and from external referrers. As shown in Figure 2 in 2021 social media and search engines have swapped place compared to 2020: in 2020 14% came from social media, and 5% from search engines, whereas in 2021 these figures are 5% and 11%, respectively. Among those coming from social media almost all of them came from Twitter, which has not changed since 2020.

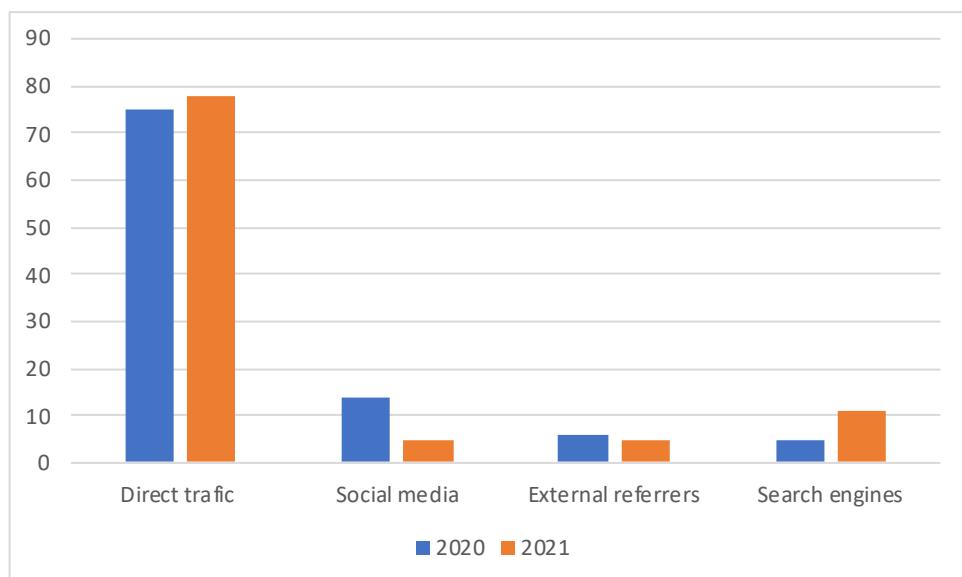


Figure 2: Visitors come to warcnet.eu from various sources, 2020-2021 (% of total).

Finally, when looking at the distribution of visitors over the year (Figure 3) it is clear that in 2020 as well as in 2021 the main visitor activity is related to network meetings — May and November in 2020, and April and November in 2021 — but in 2021 the interim period between meetings has a slightly higher number of visitors compared to 2020.

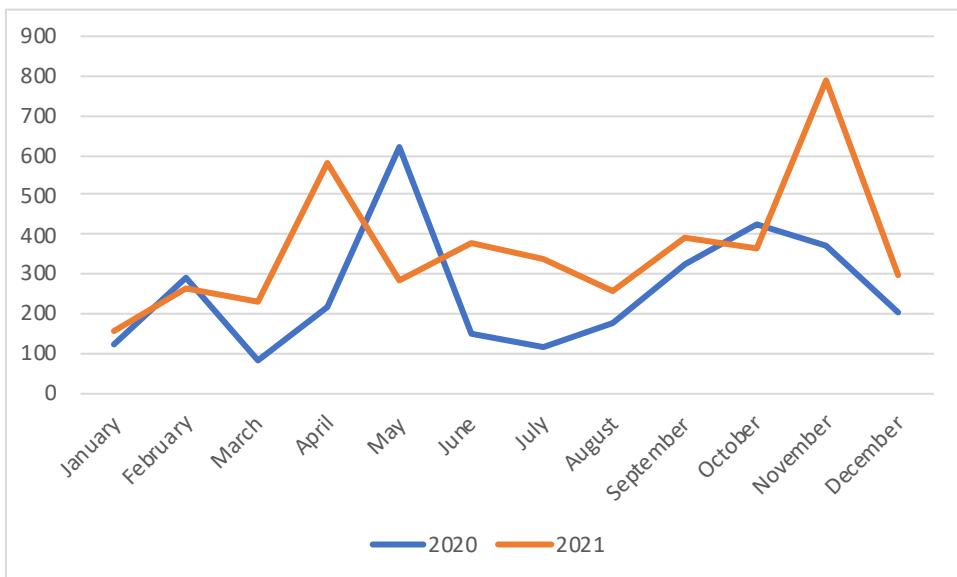


Figure 3: Visitors on warcnet.eu per month, 2020-2021 (number of visitors).

WARCnet has a presence on Facebook, Twitter, YouTube, and Slideshare of which the latter two are mainly used for disseminating presentations from network meetings. The Facebook page has 15 followers, and the Twitter profile has 278 followers (194 in 2020). The YouTube channel has 9 subscribers (same as in 2020) and has been viewed 511 times which is a decrease of 38% compared to 2020; viewing is closely related to network meetings, and most viewed videos on these dates are the keynotes. Finally, the Slideshare page has been viewed 6,032 times (7,262 times in 2020), including 2 downloads.

Finally, WARCnet publishes a 3-4 pages Newsletter with information about the network. Two issues have been sent out in 2021 to 92 subscribers (70 in 2020) from all over the world.

WARCnet Papers

Before the kick-off meeting in May 2020 it was decided to launch a publication series, WARCnet Papers, with the aim of offering a home for network related material that for different reasons does not fit well into the more traditional publication outlets such as academic journals or edited books.

In 2021 three papers have been published, including a paper that provides an overview of the WARCnet network's organisation and of the network's different activities in 2020, and the series of interviews about how web archives select and collect web material related to the COVID-19 pandemic continued (the series was launched in 2020 by WG2); as of today 10 WARCnet Papers have been published with interviews about the COVID-19 pandemic in web archives in 2020-21.

It is interesting to know if the WARCnet Papers are actually read, and although download figures are only indicative of an interest they show if there is any interest at all. The three WARCnet Papers published during 2021 have been visited 66 times on

warcnet.eu in 2021. If we look at number of visits of all WARCnet Papers (Figure 4) issues published in 2020 remain relevant to readers, and for the most recent ones the interest increases compared to when they were initially published.

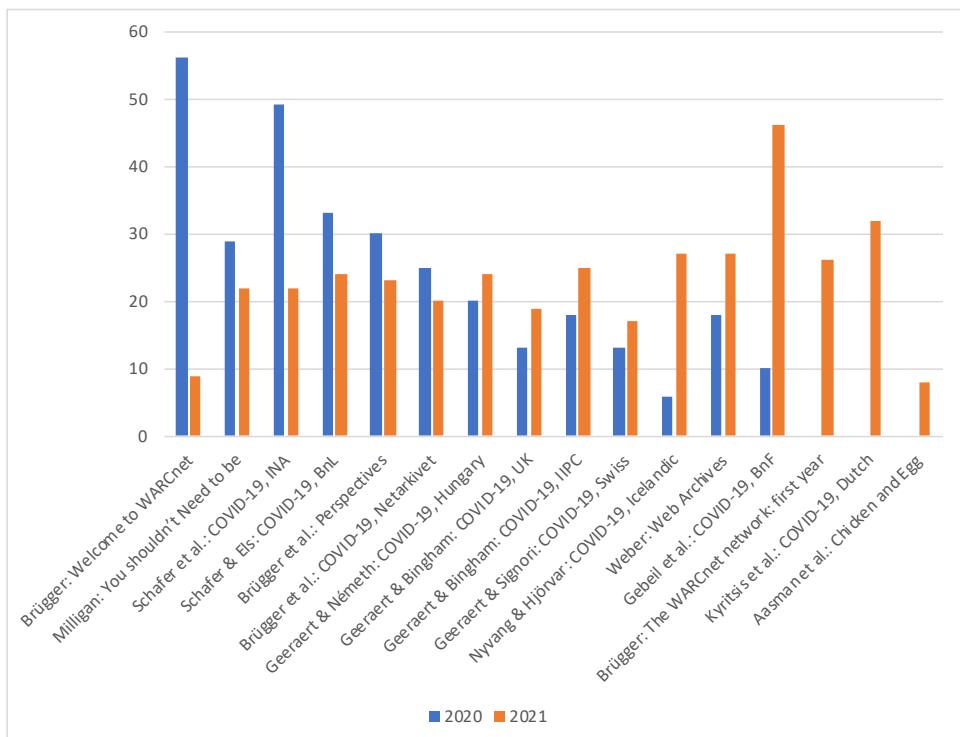


Figure 4: WARCnet Papers, number of visits on warcnet.eu, 2020-2021
(publications in chronological order, from left to right).

Conference papers and publications

In 2021 network members initiated a number of conference papers, panels, and publications have been published, and other were submitted and accepted (cf. the list at the end).

One new publication initiative deserves to be singled out, namely a planned edited volume to be published at a leading international publisher after the project period ends. An editorial team of three network members has been formed, and at the network meeting in November initial ideas for organisation of the book, Open Access, etc. were discussed. The work with the book proposal continues in 2022.

Outreach: WARCnet Twitter Challenge

With the aim of reaching out to a wider community outside academia and to raise awareness about the archived web and web history in general WARCnet launched the 'WARCnet Twitter Challenge' in relation to the network meeting in November 2020, and as mentioned above the Twitter Challenge continued in 2021 at the two network meetings. All submitted entries, nominees, and more related information can be found on [twitter.com](#), #WarcnetChallenge, or on the project website at

<https://cc.au.dk/en/warcnet/warcnet-twitter-challenge>.

The challenge continues during 2022, with different themes, and with a final winner elected at the closing conference in October 2022.

MANAGEMENT

The WARCnet network is headed by three PIs, and together with three network members (one Early Career Researcher, one web archive representative, and one IT developer) they form the Steering Group. The purpose of the Steering Group is to oversee the management of the WARCnet network, including, among others, defining, planning and approving network activities, establishing and implementing a procedure for the addition of new members to the network, and monitoring the project budget. In 2021 the Steering Group has met six times.

Also, to ensure the coordination between the WGs a Coordination Group has been formed, consisting of all Steering Group members and the six WG chairs. In 2021 the Coordination Group has met four times. Finally, a Short-Term Network Stay Committee is set up to manage the allocation of funded network stays. Last but not least the administration and management of the project is supported by two student helpers, both from Aarhus University.

COMING YEARS

Because of the COVID-19 pandemic the WARCnet network has been able to extend its activities by one and a half year. One network meeting is planned in 2022 (London in June). The closing conference is scheduled to take place in October 2022, in Aarhus, and it will be open to participants from outside the network.

Hopefully, travel will be made easier in 2022, thus enabling the planned Short-Term Network Stays where network members can visit one of the institutions of another network member. Finally, the six individual WGs continue to meet and plan activities, as indicated above.

Hopefully, 2022 will be the year when the WARCnet network does no longer have to navigate in the shadow of COVID-19.

BRIEF OVERVIEW OF DISSEMINATION RELATED TO NETWORK ACTIVITIES IN 2021

Conference presentations

Aasman, S., Bingham, N., Brügger, N., Gebeil, S., Geeraert, F., Mussou, C., Schafer, V., de Wild, K., Winters, J. Panel Web archiving of the COVID crisis in Europe: Infra-

- structures, agencies, challenges and tensions. Tensions of Europe Digital Workshop Festival 2021, July 2021.
- Bingham, N., Brügger, N., Gebeil, S., Mussou, C., Schafer, V., Winters, J. Panel Web Archives of the COVID crisis: Digital Voices, Preservation and Loss. Conference Pandemic grief I: Grief in Public, Vulnerability, and the Political "We", Ludwig Maximilian University Munich, September 2021.
- Brügger, N. Link structures between small, medium size, and big websites on the Danish web in 2006 and 2015. The 4th RESAW Conference 'Mainstream vs marginal content in Web history and Web archives', Luxembourg June 2021.
- Brügger, N. Web Archives Studies network. Humboldt-Universität zu Berlin, Universität Bern, Yale University, GESIS Institute, workshop entitled 'Digital Archiving of Memorial Activities', October 2021.
- Brügger, N., Chambers, S., Kurzmeier, M., Schafer, V., Winters, J. Roundtable on the WARCnet project. The 4th RESAW Conference 'Mainstream vs marginal content in Web history and Web archives', Luxembourg June 2021.
- Brügger, N., Schafer, V., Winters, J. WARCnet. Web ARChive studies network researching web domains and events. Engaging with Web Archives 4 Digital Humanities (#EWA4DH), Maynooth University Arts and Humanities Institute, September 2021.
- Geeraert, F., Winters, J., Bingham, N., Brügger, N., Clavert, F., Gebeil, S., Nanni, F., Nyvang, C., Schafer, V., Strandgaard Jensen, H., de Wild, K. Representation, participation and inclusivity: European web archives collecting the digital traces of COVID-19. The 4th RESAW Conference 'Mainstream vs marginal content in Web history and Web ar-chives', Luxembourg June 2021.
- Healy, S., Holownia, O., Kurzmeier, M., Webber, J. WARST Project Team: Web Archives – Researcher Skills & Tools Survey, 'Engaging with Web Archives 4 Digital Humanities, Maynooth, Republic of Ireland, September 2021.
- Mechant, P., Vlassenroot, E., Chambers, S., Brügger, N., Aasman, S., Geeraert, F., Pranger, J. User requirements for working with social media web archives, Pre-conference workshop. The 4th RESAW Conference 'Mainstream vs marginal content in Web history and Web ar-chives', Luxembourg June 2021.
- Schafer, V. Intertwining Distant Reading of Web Archives and Oral Histories of the COVID Crisis. Workshop Interviewing in Practice and Theory, University of Siegen, September 2021.

Publications (except for WARCnet Papers listed below)

Royal Danish Library (2020). Udleveringsaftale: Til brug for udlevering af digital kopi fra Netarkivet, Det Kgl. Bibliotek [Delivery agreement for digital copy delivery from the Netarchive, the Royal Danish Library]. Aarhus/Copenhagen: Royal Danish Library. kb.dk/webarchiveaccess.

WARCnet Papers published

- Brügger, N. (2021). *The WARCnet network: The first year*. Aarhus: WARCnet.
- Kyritsis, I., de Wild, K., Teszelszky, K., de Bode, P. (2021): *Exploring special web archive collections related to COVID-19: The Dutch Web archive (KB)*. Aarhus: WARCnet.
- Aasman, S., Bingham, N., Brügger, N., de Wild, K., Gebeil, S., Schafer, V. (2021): *Chick-en and Egg: Reporting from a Datathon Exploring Datasets of the COVID-19 Special Collections*. Aarhus: WARCnet.

Outreach

- Aasman, S., Bingham, N., Brügger, N., Clavert, F., Gebeil, S., Schafer, V., de Wild, K. (2021). Analysing Web Archives of the COVID-19 Crisis through the IIPC collaborative collection: early findings and further research questions. Netpreserve blog.
- WARCnet Twitter Challenge (2021). WARCnet, <https://cc.au.dk/en/warcnet/warcnet-twitter-challenge/>

Resources

- WARCnet ToyChest 4 Web Archive Research (2021),
https://www.zotero.org/groups/4394230/warcnet_toychest_4_web_archive_research/library

WARCnet Papers is a series of papers related to the activities of the WARCnet network. WARCnet Papers publishes keynotes, interviews, round table discussions, presentations, extended minutes, reports, white papers, status reports, and similar. To ensure the relevance of the publications, WARCnet Papers strives to publish with a rapid turnover. The WARCnet Papers series is edited by Niels Brügger, Jane Winters, Valérie Schafer, Kees Teszelszky, Peter Webster and Michael Kurzmeier. In cases where a WARCnet Paper has gone through a process of single blind review, this is mentioned in the individual publication.

The aim of the WARCnet network is to promote high-quality national and transnational research that will help us to understand the history of (trans)national web domains and of transnational events on the web, drawing on the increasingly important digital cultural heritage held in national web archives. The network activities run in 2020-22, hosted by the School of Communication and Culture at Aarhus University, and are funded by the Independent Research Fund Denmark | Humanities (grant no 9055-00005B).

WARCNET PAPERS

