



Research Agenda 2023-2026

Colophon

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Table of Contents

	8	Digital Accessibility	7
1	3	9	8
2	4	10	8
2.1	4		
2.2	5	11	10
3	6		
4	6		
5	6		
6	7		
7	7		

1 Introduction

The KB, the National Library of the Netherlands, connects people and words, contributing to a smarter, more skilled and creative Netherlands, now and in the future. We make research, reading, discovery and lifelong learning possible for everyone in the Netherlands. As a broad and multifaceted organisation, we ensure that the national library collection remains visible, usable and sustainable for the Dutch populace and for every type of use, now and in the future. In addition to tasks in the domains of science and heritage, in 2015 the KB was given a role in the area of public libraries.

To realise these ambitions, in this Research Agenda we have identified eight themes on which we will focus in the coming years. We intend to maintain a dialogue about these themes with our partners from academia, public libraries, national heritage organisations and the business community. This will enable us to expand our knowledge of these themes and derive workable solutions from it. The Research Agenda helps us to make informed choices and to put on the agenda the themes and issues that will affect the KB in the medium and long term.

The Research Agenda is exploratory in nature and is intended to provide input for the future policy plan beyond this agenda period. Accordingly, this Research Agenda 2023-2026 provides input for the policy plan from 2027 onwards. The themes provide space for future

exploration focused on the possible consequences of developments, blind spots and uncertainties that exist for a national library such as the KB. It provides direction concerning which research questions might be relevant to the KB, allowing us to conduct demand-driven research and engage in collaborations with our partners. The themes in the previous Research Agenda remain relevant and have become part of our core tasks.

The five themes of the Research Agenda 2018-2022 were: Information Society, Publications, Disclosing & Sharing, Customer, Impact.

2 Creation

The Research Agenda is a dynamic document, updated on the basis of findings and new developments. To update the Research Agenda, we met with all the process leaders and theme managers of the research groups. Reports, scenarios and research agendas from various research and policy fields were also consulted. This ongoing [trend forecast](#) underpins the Research Agenda, which anticipates the KB's 2027-2030 policy plan.

In a joint session with representatives of the research groups, the themes of the Research Agenda were redefined. The themes fall within two overarching strands:

- Tasks that deal with issues that go beyond our organisation;
- Tasks related to KB *collections and sources*.

2.1 KB-transcending issues

The large volume of information that reaches us daily requires a new way of dealing with news and other sources. Traditional news channels are losing out to the rise of platforms and channels where people can obtain their own news personalised and tailored to them and share it immediately with others. The deliberate or inadvertent spread of misleading information and the rise of deepfakes, synthetic media and immersive technologies such as virtual reality,

augmented reality and voice software in everyday applications are increasingly blurring the distinction between real and fake, true and false, real and virtual.

Techniques that enable mass surveillance, such as large-scale facial recognition, mean that values around privacy and autonomy need to be revisited. The wide application of artificial intelligence and machine learning offers opportunities, but also requires us to rethink our values and desires regarding the design of our society. The large-scale volumes of data and the opportunities that artificial intelligence is deploying to process, analyse and interpret the data are ushering in a new phase of digital transformation.

The Covid pandemic has taught us to use digital technologies better than before. Furthermore, the KB offers its collection to be built on through creative expressions. Thus, creative makers are focusing on reusing heritage data. In this way, we are translating our heritage into the present. This brings challenges, for example in the area of copyright. At the same time, reusing collections reevaluates national heritage, encourages more creative reuse and provides a creative stimulus that transcends sectors and disciplines.¹

In this rapidly changing information landscape, libraries play an important role. As trusted institutions, they guarantee access to public information and freedom of expression. They do this partly by

¹ Erasmus University Rotterdam (2021). [Trilce Navarrete Hernandez investigates the creative \(re\)use of data](#). Consulted on 25-7-2022.

providing access to a variety of resources - from scientific articles to public journals - and by providing a physical place where people can freely access information, interact and engage in conversation. The library is a place where citizens can use and contribute to existing and new collections. It is a place where artificial intelligence is deployed ethically and where citizens are equipped to move freely in an increasingly digitalised information society.

We concentrate the KB-transcending developments on three research themes for the KB: Online Public Space, AI and Ethics and Searching for Collections and Data.

2.2 Issues concerning collections and sources

As a national library, the KB's mission is to preserve Dutch written heritage permanently, to disclose it up and make it publicly available. However, the form of the written word is changing. Digitisation is causing shifts in the chain of publisher, creator and consumer. New technology is becoming more readily available, so that anyone who wishes can take on all those roles themselves. Boundaries between creative disciplines and media are blurring. This raises several questions. For example, who bears responsibility for storing and accessing all those expressions? How can we contribute this to the collective memory of the Netherlands? And how can the national library reach a wider and more diverse audience with all that information? We want not only to preserve our collections sustainably, but also to make them optimally available to the public. How do we ensure continuous improvement in the quality of digital

content, metadata creation, content enrichment and the dissemination of it?

The conservation of our physical collections also require for new knowledge and insights. Consider, for example, the shelf life of paper stores. Immersive technologies, such as augmented and virtual reality, create new opportunities for the creative use of our sources and collections. Thus, we can allow makers and researchers to carry out their own projects, but can also enrich our public spaces and make collections visible.

We divide the challenges posed by digitalisation and changing uses of collections into four research themes: Quality Digital Content, Automated Metadata Tagging, Digital Accessibility and Conservation.

Finally, as a national library, the KB wants to make its contribution to the Paris Agreement and the ambition for the Netherlands to be circular by 2050. The KB believes that public organisations can play an important social role in this. We therefore see this challenge reflected in the final research theme: Sustainable Development Goals.

3 Online Public Space

How do we contribute to safeguarding an online public space?

In society, you can organise something in three ways: through the community, through the market or through the government. Even in the digital society, it is important to properly shape the public space in which the KB acts together with many others. We face increasingly pressing issues, for example around how to set up an online public space, how to deal with information overload and disinformation, how to ensure privacy and security, and our changing news consumption. We are also at the dawn of other new developments, such as quantum computing, the application of artificial intelligence and the development of the metaverse, which we as a national library like to look at from the perspective of public values.

4 AI and Ethics

How can we use existing and new applications of artificial intelligence in an ethical way?

The Scientific Council for Government Policy (WRR) calls artificial intelligence a systems technology, having an impact similar to the invention of electricity in the 19th century or the internal combustion engine in the 20th century. And just as the arrival of the car as a new means of transport did not go smoothly, necessitating new traffic

rules, safety measures and adjustments in public spaces, so too does the deployment of artificial intelligence. The application of artificial intelligence and *deep learning* raises practical questions as well as ethical issues. How should we position ourselves in collaborating with parties that use artificial intelligence for public applications, such as recommendation systems? How do we ensure that we work according to our AI principles when managing and (re)using our collections and when developing software? We are working towards a situation whereby we can test new initiatives with a machine learning component against this.

5 Searching for Collections and Data

How can we make our digital and physical collections discoverable and searchable in new ways?

Different target groups are finding it increasingly easy to find our collections. Experienced researchers are familiar with our catalogues and metadata. But other types of target groups, such as creative makers, search for different features of collection pieces and require different search inputs. New technologies from the area of the semantic web, *knowledge representation* and artificial intelligence offer increasing opportunities to make our collections findable and usable in new ways. At the same time, we must also bear in mind developments in copyright, intellectual property, open access and sustainable accessibility.

6 Quality Digital Content

How do we define and measure the quality of our digital content?

As our users start to use of our digital collections in new ways, their demands on the quality of those collections are also changing. For example, requirements for text analysis by computers are different from those for viewing material.

In the context of new digitisation projects and potentially for improving existing digital collections, it is important to understand what users require for which applications. In practice, defining and measuring quality turns out to be something many organisations struggle with. Together with knowledge institutes such as Huygens ING and TU Delft, but also with network partners from the IMPACT Centre of Competence, we want to make progress on this topic in the coming years.

The Digital Quality research group is working on this issue. We want to develop (or embrace) a practical measurement method which outcome we can use to explain to users which sub-collections are suitable for which applications. In this, we align with the FAIR principles.

7 Automated Metadata Tagging

How do we create automatic metadata in order to describe content in a smarter and richer way?

Thanks to artificial intelligence, such as language technology and image recognition, computers are increasingly able to interpret texts. For example, they can recognise the characters and genre of a publication and add them to the metadata for that publication. This data offers huge potential, as it will enable us to make it even easier for our customers to find the content they are interested in in the future.

Currently we still describe many titles manually. We are exploring ways in which computers can support this work, for example with AI. We are also looking at opportunities to automatically generate metadata to enrich texts with information that we do not currently add, for example information about the reading level.

8 Digital Accessibility

How can we make our digital services suitable for as many users as possible?

Developments in digital publishing decreases the need to create separate publication formats for different users. People with reading

disabilities are increasingly able to use the same publications as everyone else. The new European Accessibility Act, which will soon become part of Dutch legislation, wants to stimulate this.

To comply with the new legislation by June 2025, KB services will also have to be adapted. The research group is investigating what will be needed. Changes can relate to the processing and display of additional metadata, but can also lead to, for example, modifications of reading apps. Through pilots with publishers and software vendors as well as end users, attempts are being made to implement this as practically as possible. As the new regulations are Europe-wide, we look for international cooperation via European Digital Reading Lab (EDRLab) and working groups within the International Federation of Library Associations and Institutions (IFLA).

Special attention will be paid to make our digitized collections more accessible. Small steps will explore what is feasible, for example in making the e-books we offer through the Digital Library of Dutch Literature (DBNL) accessible. Ultimately, making our collections more accessible to people with reading disabilities will also increase machine readability, making our collections increasingly usable by both humans and computers.

9 Conservation

How can we use new and existing research techniques regarding materiality and preservation to conserve physical collections and make them more accessible?

Conservation research has made great strides in recent decades and has become an important part of the cultural heritage sector. Research techniques are in full development and non-destructive analysis of movable heritage is becoming increasingly sophisticated. This research tells us how objects were made and makes visible what is invisible to the naked eye. For example, it shows how materials age and what we can do to slow down that process. This information is essential for conservators, curators and researchers, but also offers customers an enriched experience. The costly infrastructure and specialisations required to carry this out make it important to link up with existing scientific infrastructures for research.

10 Sustainable Development Goals

What will it take to embrace the sustainable development goals?

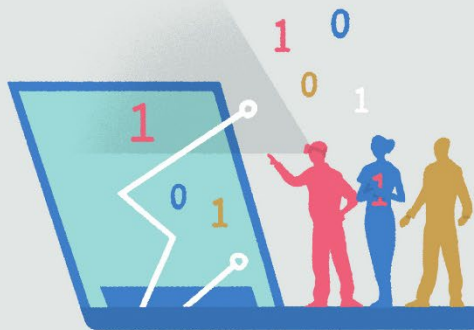
Public institutions can move society forward. In 2015, the United Nations set out humanity's to-do list in the form of global Sustainable Development Goals. These goals are meant to put an end to extreme poverty, inequality, injustice and climate change. Libraries

saw from the start they could contribute towards these goals. In this research group, we aim to explore what public institutions can do in the area of sustainable development goals. This concerns both the social foundation that libraries can lay, for example by promoting literacy and science, and the ecological ceiling that our planet can tolerate, such as climate action focused on the measures necessary for climate and energy goals.

11 Conclusion

The KB is hard at work. We have a unique amount of very high-quality data, are experts in connecting digital collections, and present these collections on diverse platforms for everyone to use. We are also trying to increase interaction with our audience and to creatively make the relevance of the national library visible to all. We therefore have a lot to offer scientists, makers and researchers and are happy to share knowledge and experience. At the same time, we like to engage with other experts and partners on new developments and improvements so that we can strengthen each other.

Interested in further collaboration with the KB? Contact Rosemarie van der Veen-Oei, Head Research Department at the KB, at Rosemarie.vanderVeen-Oei@KB.nl. For more information on the Research Agenda, visit kb.nl/researchagenda.



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