



**University of
Zurich** ^{UZH}

**Department of Communication
and Media Research**

THE ROLE OF NEWS RECOMMENDER SYSTEMS IN DIGITAL DEMOCRACIES





Project team

Eliza Mitova, MA, Dr. Sina Blassnig, and Prof. Frank Esser
from the Department of Communication and Media Research (IKMZ),
University of Zurich

Dr. Aleksandra Urman and Prof. Anikó Hannák
from the Department of Informatics (Ifi), University of Zurich

Dr. Edina Strikovic and Prof. Claes de Vreese
from the Amsterdam School of Communication Research (ASCoR),
University of Amsterdam

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The role of news recommender systems in digital democracies

News recommender systems (NRS), based on algorithms, are used on social media platforms and online news portals to recommend content to users based on their previous usage. They are based on what a user has read in the past and what other people with a similar interest have read. NRS also take into account what users indicate as their preferences or what is currently popular.

What role do these systems play for media companies in Switzerland and the Netherlands, and how do users perceive these systems in an international comparison? A project at the University of Zurich and the University of Amsterdam answers these questions now as part of the National Research Program „Digital Transformation“ NRP 77.

What are news recommender systems?

News recommender systems are algorithms that automatically make suggestions for news. These suggestions are based on what a user has read in the past (content-based filters) or what other people with similar interests have read (collaborative filters). These systems also pay attention to what users explicitly state as preferences or what is currently popular. They also consider the content characteristics of news articles, such as topic, length, or format. Such automated and often personalized recommendations can appear in various areas of a news website, such as on the homepage, under articles, in specific sections such as „recommended content for you“ or in customized newsletters.

The most important takeaways

- 1 NRS can positively impact media companies and users if the necessary resources are available and technology demands are balanced with journalistic demands.
- 2 Institutionalized forms of collaboration and regular exchanges between IT, editorial, and business can prevent tensions.
- 3 To ensure that trust in the media is not compromised, it is essential that NRS are aligned with journalistic criteria (such as relevance and diversity) and that transparency and information about algorithms are provided.
- 4 To increase the acceptance of NRS, the benefits for users must be actively communicated, and fears about filter bubbles and data misuse must be avoided.
- 5 The preferences and attitudes of Dutch and Swiss media users are in many ways similar to those of users in other countries. However, Dutch and Swiss media users are more critical than users in countries where the use of NRS is more advanced (such as the US or UK).

In the first part of the project, 36 experts working in media companies in Switzerland and the Netherlands (e.g., NZZ, Ringier, Volkskrant, NU.nl) were interviewed. With their input, the research team gained initial insights into how media organizations use algorithmic recommendation systems, what works and what doesn't, and how these technologies contribute to changing newsroom work dynamics.

Insight 1

Media organizations are still experimenting

Although NRS are a common topic in media research, we wanted to determine their practical significance. We found that most of the media organizations in our study are still in the conceptual or experimental stage of NRS implementation. While most news organizations are moving towards a (more sophisticated) use of NRS on their websites, these systems are not a „game changer“ and do not dominate the discourse within media organizations. The experts acknowledge that readers are used to similar systems from social media and welcome or even expect a more personalized news offering. Nevertheless, journalistic considerations and responsibility toward readers take precedence. We repeatedly heard that editorial considerations should not be sacrificed for the potential benefits that recommender systems offer.

Insight 2

Advantages of NRS from the perspective of media professionals

News providers see the main advantage of NRS in that it allows them to meet users' personal needs regarding their preferences and interests. Not only is there much more space on a news website than in a printed newspaper - the content is also constantly updated. Algorithmic personalization can help users find the content that is relevant to them in this wealth of articles. Most news websites also have a vast online archive of articles that can still be informative and educational even after a long time, allowing users to dive into a topic and explore it more deeply. Of course, readers can search for these articles themselves. But this requires initiative and time. With the help of algorithms, this content can be offered to the right people at the right time. This not only boosts the number of readers, their engagement, and even trust in the news brand but can also help maintain an informed public.

Five advantages of NRS:

- Adaption to user demand
- Improvement of brand perception
- Improvement of the visibility of content
- Contribution to commercial success
- Perception of journalistic responsibility

Insight 3

Concerns about NRS from the perspective of media professionals

As with any new development, there are concerns alongside the temptation of the benefits. For example, there are fears that editorial considerations will become less important and that editorial control will be compromised. While providing up-to-date and relevant content is essential for user engagement, without control, this could lead to filter bubbles and the loss of a common ground for discussion. Following the introduction of NRS, users will inevitably have some influence over what and how content is presented. However, the interviewed experts strongly emphasize that their readers expect the news media to provide them with all the information the editors consider essential. The interviewees also see filter bubbles and polarization as legitimate concerns in social media or news aggregators but less so in their respective news media, as the latter only offers journalistic content rather than personalization based entirely on previous user behavior.

5 Concerns about NRS:

- Compromising of editorial control
- Technological limits of the systems
- Data protection and user privacy
- Undermining of user autonomy
- Loss of a common ground for discussion

Insight 4

Shifting dynamics in news organizations

As the implementation of NRS is still primarily in an experimental phase, the associated processes are still iterative, cautious, and sometimes unstructured and informal. In addition to actors from management, IT and data science collaborators also play an essential role. At the same time, journalists are rarely directly involved in decision-making on technological developments such as NRS. Although we heard that the development processes are collaborative, they are not (yet) always formalized and standardized. Thus, decision-making varies across different organizations and depends on the timing. A general trend is that our surveyed experts emphasize data literacy as a core news production and dissemination competency. Whether this is a popular opinion or not, it seems inevitable that journalists will need to acquire knowledge about algorithmic solutions to keep up with trends in their profession.

Insight 5

Tensions and solutions

The interplay between different actors in developing and implementing NRS can also lead to tensions. Such conflicts are often based on the tension between satisfying user demand on the one hand and adhering to journalistic values on the other, even if these two aspects are not necessarily mutually exclusive. We often heard that there were no serious conflicts.

However, this perception came mainly from people who did not have much contact with the „other side“. Several interviewees used the metaphor of „lacking a common language“ and explained that there is often no common ground between editors and technologists. One interviewee even went so far as to refer to journalists and IT people as “different species”.

However, such references to the editorial and technical staff gap were never meant maliciously. Ultimately, everyone under the same publishing umbrella agreed they were pursuing the same goal. In many organizations, solutions were already in place to defuse potential tensions, such as including players who speak „all languages“. Such strategies can bridge the gap between editorial, efficiency-oriented, and technical considerations (e.g., IT staff with a journalistic background or product managers). Other companies offer various opportunities for exchange between departments through round tables, presentations, Q&A, and joint brainstorming sessions. These measures help to promote understanding, appreciation, and cooperation between employees from different departments involved in NRS projects.

Conclusion

While we found some differences in how NRS are being implemented in different organizations, we repeatedly heard that maintaining editorial control is one of the most important considerations when implementing new technologies. Although NRS are an issue in newsrooms, they are not „the“ issue, as one interviewee emphasized. Many media professionals are skeptical about the concrete benefits of NRS, so the use of advanced NRS in Switzerland and the Netherlands will take some time. However, with the common goal of striking a balance between algorithmic personalization and editorial integrity, the development of NRS can move towards „responsible“ NRS that consider transparency, user control, and diversity. Ultimately, the „collision of worlds“ can also lead to new working practices and forms of collaboration that can positively impact news work.

User Survey in Five Countries

In the second part of our project, we conducted a representative survey of users in Switzerland, the Netherlands, the United Kingdom, the United States, and Poland. We aimed to gain insights into whether users recognize the use of recommender systems for news, to what extent they believe that different media companies already use such systems, how they rate NRS, and how this relates to users‘ trust in news media.

Insight 1

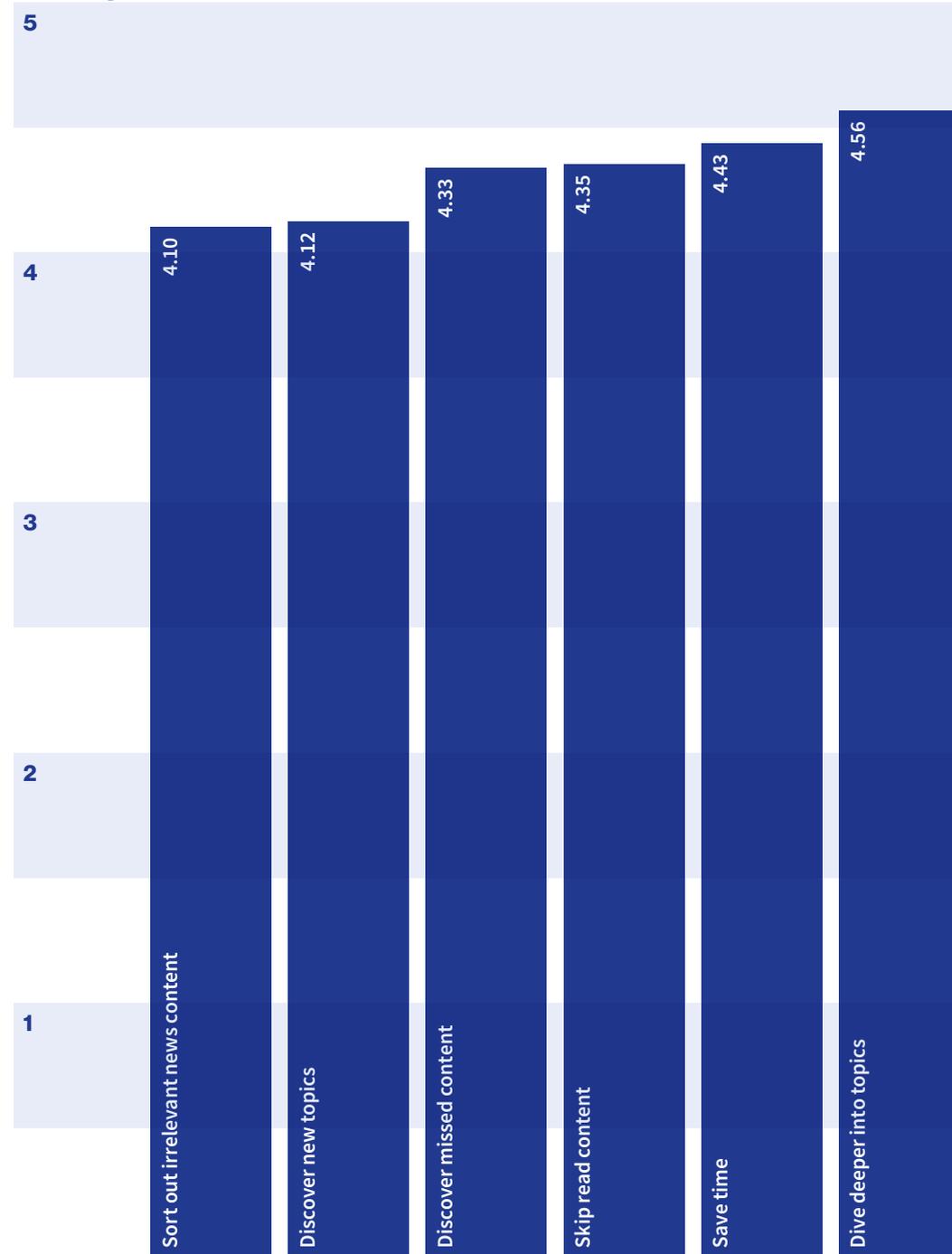
Users have differentiated attitudes toward NRS

Users generally have a positive attitude towards algorithmic news recommendations. Users even rate recommendations from algorithms based on their previous behavior slightly more positively than recommendations from journalists. In contrast, algorithmic recommendations based on collaborative filtering are not rated differently to editorial journalistic recommendations.

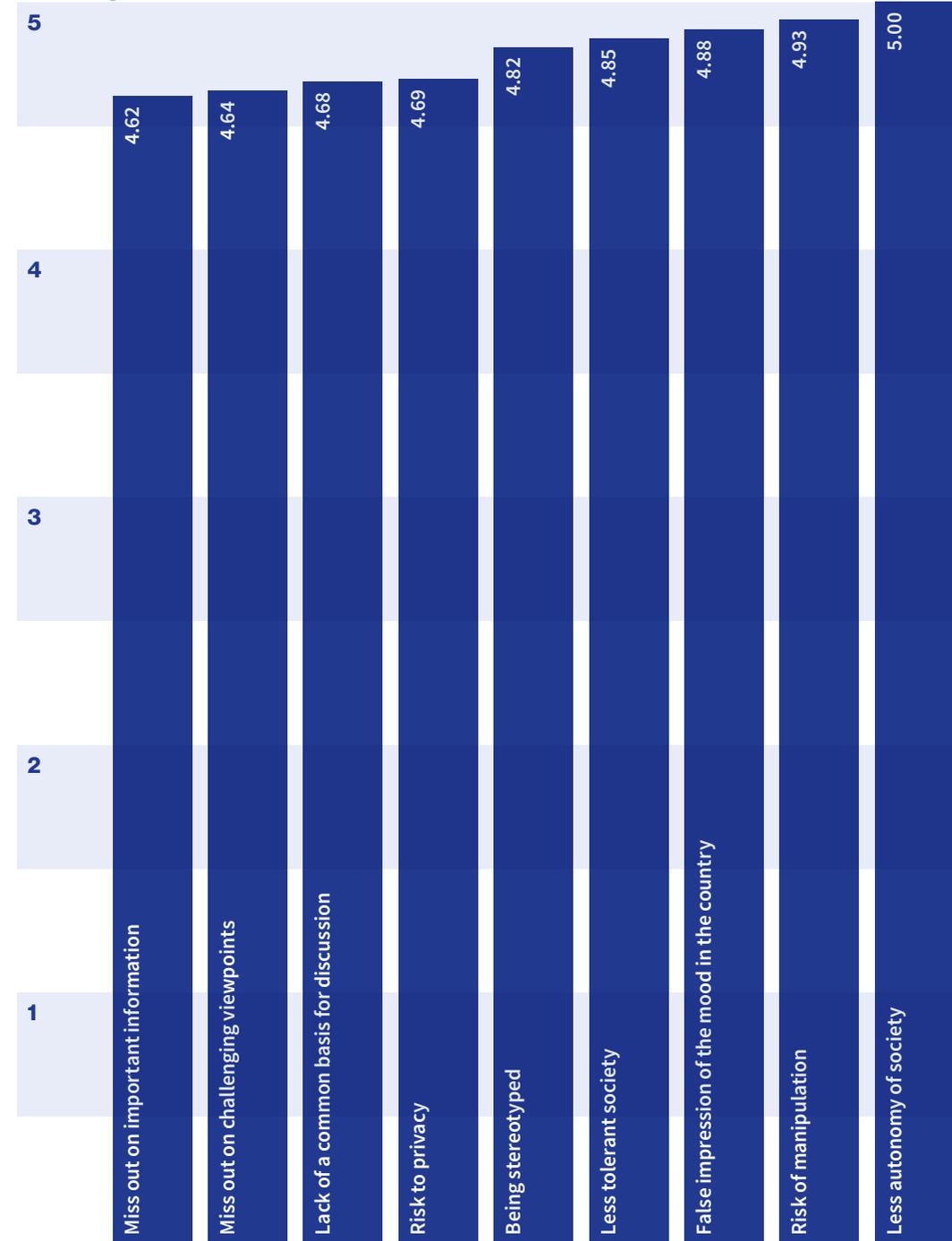
At the same time, there are slight differences in attitudes towards NRS depending on the topic and placement. Algorithmic recommendations are generally seen as more beneficial for topics such as sports, entertainment, and celebrity news. For political and local news, users prefer manual journalistic curation. Users believe that content-based recommendations below articles improve their reading experience the most, followed by personalized recommendations below articles and designated „For You“ sections that contain personalized reading recommendations. However, they are less receptive to personalized recommendations on the homepage and even less to personalized newsletters and push notifications on their mobile devices.

In general, those surveyed believe that the most significant benefit of NRS is that it enables them to explore topics more thoroughly and save time. However, they also express concern that algorithmic recommendations could lead to society losing its ability to make independent decisions regarding its information consumption or leave individuals more vulnerable to manipulation. Respondents perceived the risks to themselves, such as missing out on significant information or opposing viewpoints, as being somewhat less pronounced.

Advantages of NRS from the perspective of Swiss users (on a scale from 1 to 5)
Mean agreement



Concerns about NRS from the perspective of Swiss users (on a scale from 1 to 5)
Mean agreement



Insight 2

Users overestimate and underestimate the use of NRS

Overall, respondents across the five countries believe that news organizations already use NRS extensively. This is especially true for users who are generally more familiar with algorithms or at least think they can recognize and understand them. However, the perception of the extent to which specific media use NRS only sometimes aligns with the reality of their implementation. While the use of NRS by subscription newspapers tends to be underestimated, it tends to be overestimated for others, such as digital native media. One reason could be that users have difficulty recognizing the difference between personalized news and targeted advertising, which is more common in digital native and ad-based media. Another reason could be that users believe digital-native media are more digitally advanced and innovative than traditional quality media.

Insight 3

NRS could undermine trust in the media

Although most respondents believe that algorithmic recommendations for news are helpful, this does not necessarily lead them to trust the news media that use these systems. On the contrary, readers' trust in a media organization is lower the more they believe it uses NRS. However, this also depends on users' attitudes towards NRS: In particular, people with significant concerns about NRS trust the media less if they think they frequently use such algorithmic systems. This correlation is less strong for people who see more advantages in NRS.

Insight 4

Users want diversity, transparency, and control options

Just as news organizations strive for the responsible implementation of algorithmic technologies, users also desire such responsible NRS design. In particular, they expect transparency, i.e., they want information about how their data is collected and processed and how algorithmic recommendations are configured. They also want this to be made clear when algorithms recommend content. In addition, users want more control over NRS, for example, through opt-out options or the ability to actively state their preferences. A variety of viewpoints and topics in personalized news environments is also important to respondents, albeit slightly less so than transparency and control mechanisms.

Insight 5

Attitudes vary slightly from country to country

We find some differences in users' attitudes towards NRS in the five countries. For example, the appreciation of NRS is lowest in the Netherlands, followed by Switzerland. In the UK and the US, where media organizations already use NRS to a greater extent, users, on average, have a more positive attitude towards algorithmic news recommendations. In the Netherlands and Switzerland, the perception that media organizations use NRS, regardless of the perceived NRS benefits, is related to lower trust in media organizations. In contrast, in the UK, US, and Poland, among users with a more positive attitude towards NRS, trust in the media is not influenced by the perceived use of NRS by media companies. Interestingly, respondents

in the Netherlands desire control and transparency more than in the other countries. At the same time, Swiss users do not consider control options as crucial as users in the other four countries. However, the differences in user assessments across the individual countries are not very pronounced.

Conclusion

Even though users generally favor the use of news recommender systems and see many advantages, manual journalistic curation of news is still rated higher than automated recommendations by algorithms. This finding aligns with the experts' assessment, who also emphasize the curation service and the democratic mandate of media organizations in the selection of news. Users also have concerns about the potential negative impact of algorithmic recommendations on their privacy and the breadth and relevance of their news consumption. These concerns could at least partially explain why respondents trust media outlets less when they believe these outlets use NRS more extensively. Integrating transparency, control options, and diversity could alleviate users' concerns about NRS and counteract potentially adverse effects on media trust.

