



UNIVERSITY OF AMSTERDAM

A|S Amsterdam School of  
Co|R Communication Research

# News for you!

**The influence of algorithmic personalization on news production and consumption**

Guest lecture | Informatics  
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# News & Media: what is it good for?



## “Gatekeeping”

Process through which information is filtered before it's disseminated.

But who are the gatekeepers?

What criteria do they use to filter information?

# News & Media: what is it good for?



## “Gatekeeping”

In the past: journalists and editors select news

→ perspective of the news organization that defines criteria

Any problems with this?

# News & Media: what is it good for?



# News & Media: what is it good for?



# News consumption: average engagement time

News source	Engagement time per day
Print paper	⌚ 25-40 minutes
Mobile	⌚ 15 seconds – 2 minutes



# News & Media: moving towards the future

Production/ Distribution



Consumption



# Digitalization of news: consumption

## Consequences for readers

- Access to an almost infinite number of information sources
- Information overload – how do you prioritize interests and time spent?
  - Competition for attention – also with other platforms
  - Possibility to read about the same thing only
  - Readers want diversity and objectivity
  - Also: expect personalization (like SoMe)
  - Technically: a curated news site is possible
  - Is this already a reality?

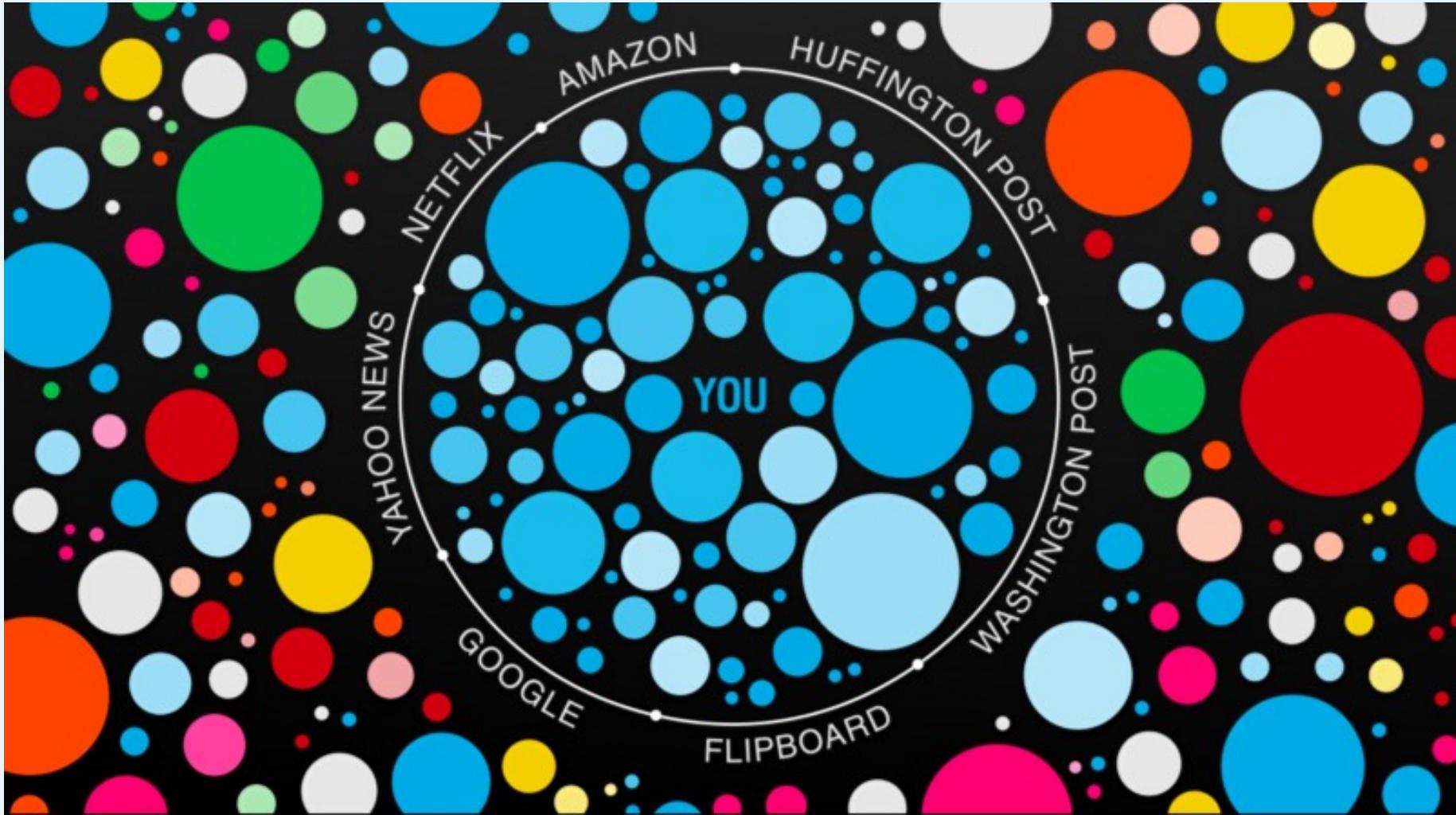


# Algorithmic sorting of media content

**Filtering:** Sorting and prioritizing according to specifically chosen principles e.g.  
*match on key criteria with previously chosen content, collaborative filtering*

**Optimization** towards specifically chosen goals (key performance indicators):  
*e.g. Clicks, time spent, reading article until the end, coming back to the website*

These two mechanisms of algorithmically curated news have an important – at least imagined – affordance. They are supposed to create **filter bubbles**.



# Digitalization of news: consumption

## Bubble trouble

- What's the problem with filter bubbles?
- How can it impact news consumption?
- What are the implications of those impacts?
- How is **algorithmic gatekeeping** different from traditional gatekeeping?

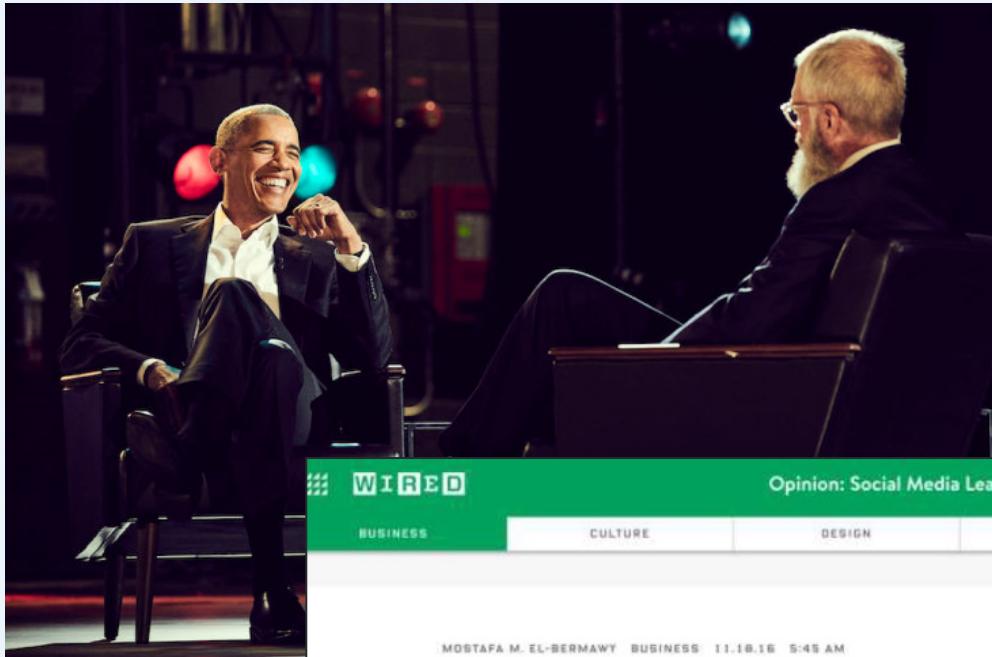


# Filter bubbles and polarization



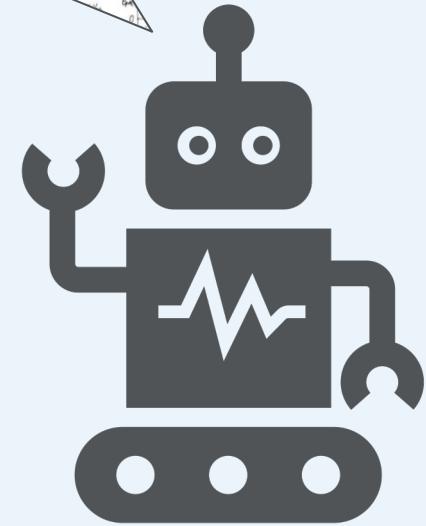
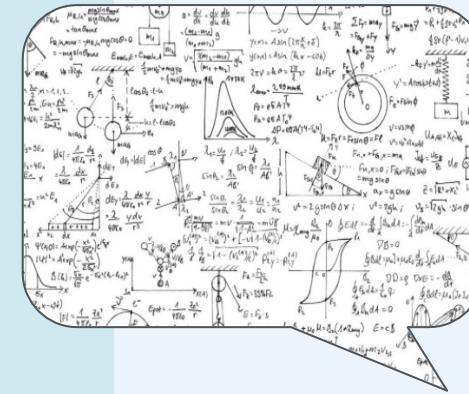
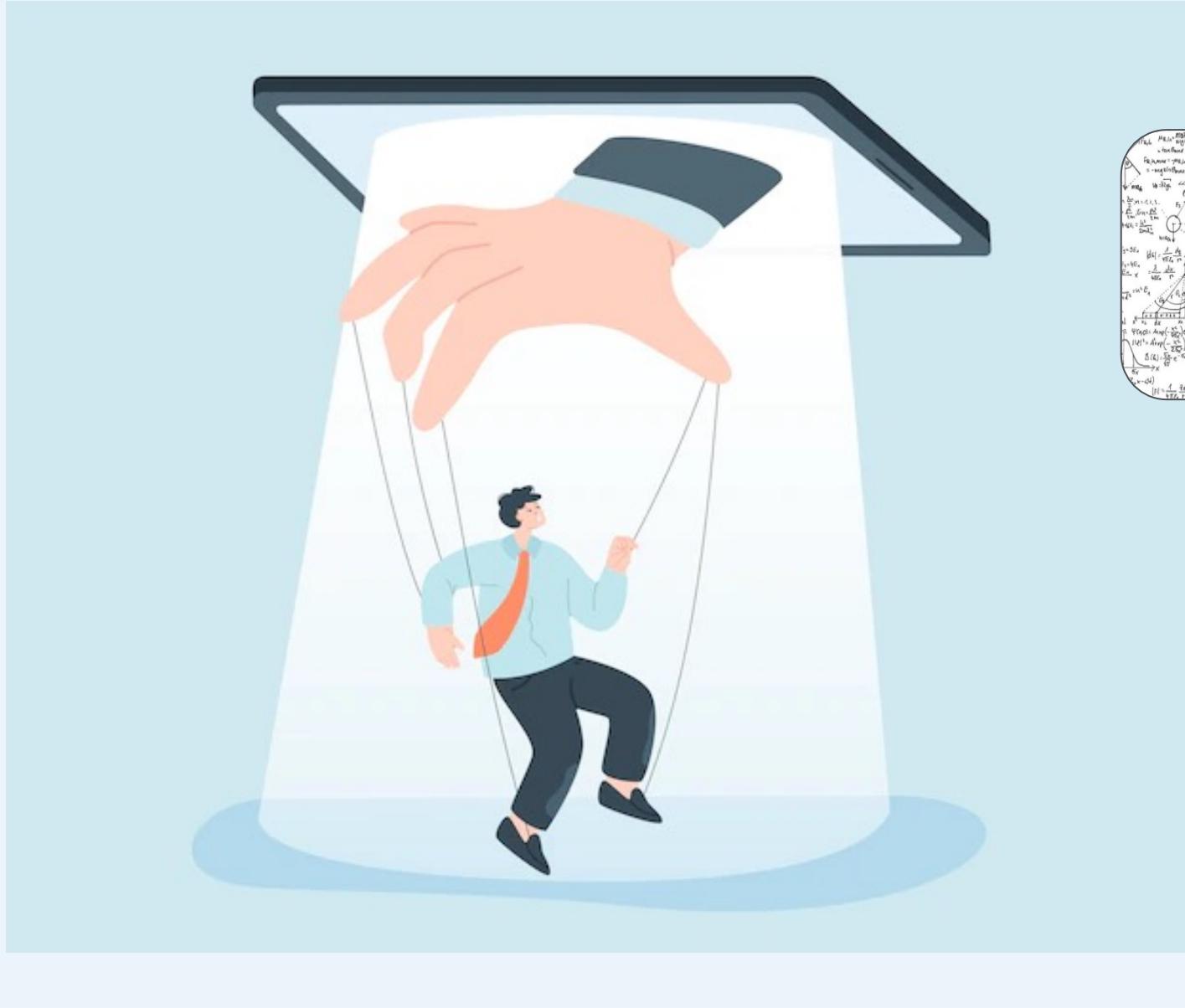
**Threats:** polarization, decreased diversity and the erosion of a common core

# Digitalization of news: consumption



A screenshot of the guardian.co.uk homepage. At the top right is the logo 'the guardian' with the tagline 'website of the year'. Below the logo are links for sport, football, opinion, culture, business, lifestyle, fashion, environment, tech, travel, society, law, scotland, wales, northern ireland, and education. A navigation bar with three horizontal lines and the text 'browse all sections' is also visible. The main article headline is 'The truth about Brexit didn't stand a chance in the online bubble' by Emily Bell, with a small photo of her to the right.

A screenshot of a WIRED magazine article. The header is green with the WIRED logo and the title 'Opinion: Social Media Leads Us to Become Victims of Our Own Biases'. Below the header is a navigation bar with categories: BUSINESS, CULTURE, DESIGN, GEAR, SCIENCE, and SECURITY. The author's name is MOSTAFA M. EL-BERMawy and the date is BUSINESS 11.18.16 5:45 AM. The main title of the article is 'YOUR FILTER BUBBLE IS DESTROYING DEMOCRACY'.



# Empirical evidence – Filter bubbles

Observed in **lab settings** (e.g. Dylko et al. 2017) --> "selective exposure"

But not ***in vivo***:

- A majority of users perceives to receive *more diverse news* through social media (e.g. Fletcher & Nielsen, 2017)
- Exposure to news on social media can be linked to less extreme viewpoints and *depolarization* (e.g. Beam et al., 2018)
- **On the contrary:** Strong partisan preference is associated with higher levels of polarization after exposure to counter-attitudinal messages on Twitter (Bail et al., 2018)

# Recommender systems: News flash!

## News recommender systems (NRS)

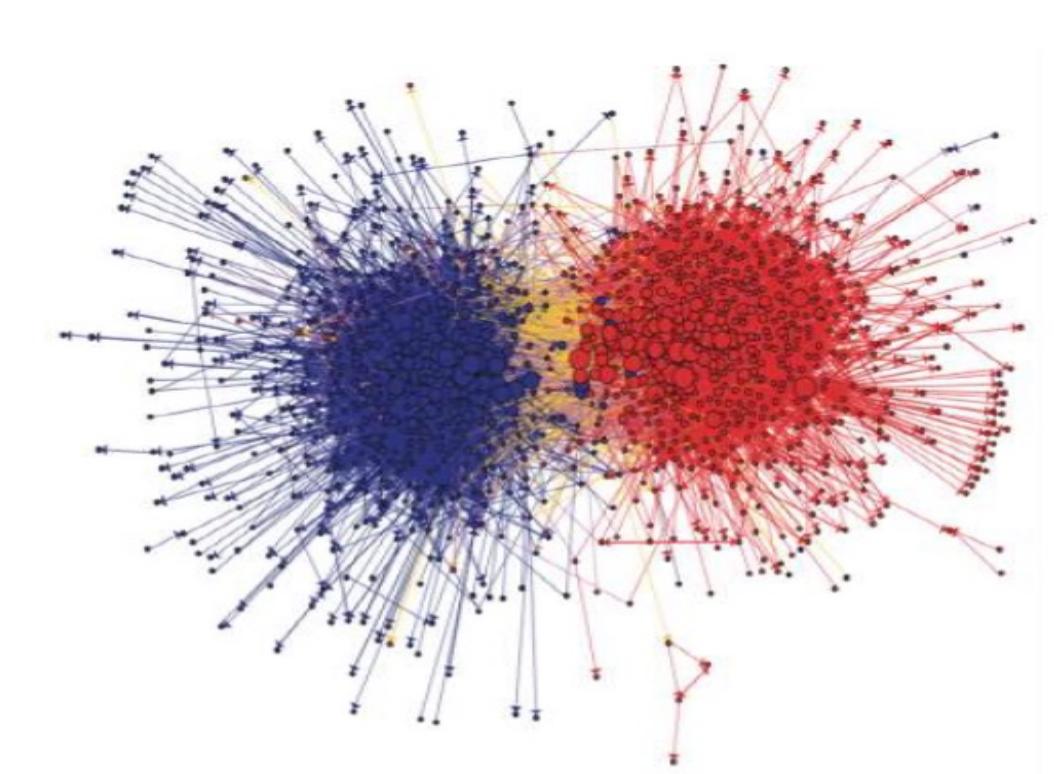
- Couldn't we just take the algorithms we know from Netflix and Social Media and apply them to the news?
  - Different from recommenders on social media
    - Selecting a news website is “filtering” in and of itself
    - Once you’re in the news environment, different rules, expectations, responsibilities and regulations apply
- Can you reflect on some of these?

# Digitalization of news: production

## Echo chambers vs. Filter Bubbles

Presidential blogs during the 2004 election: Liberal and conservative link to the same sources

- Internal filtering
- Little to do with technology
- Human decision making



Adamic & Glance (2005)

# Recommender systems: News flash!

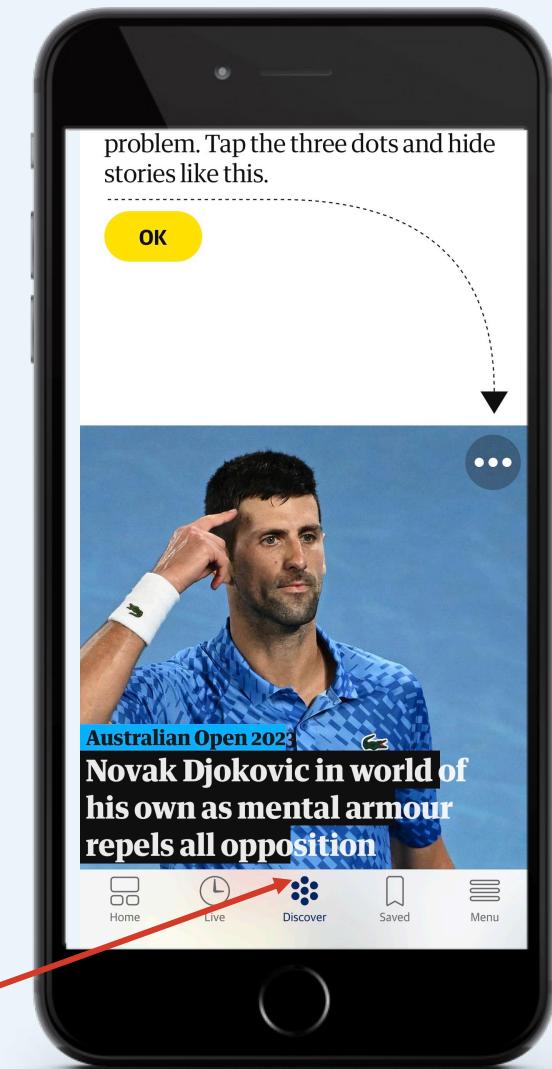
## News recommender systems (NRS)

- Algorithms that can make automated and/or personalized recommendations based on metadata, past behavior, and/or ratings of similar users (Ricci et al., 2011)
- NRS can be used anywhere from recommendations below articles, embedded within content, in special sections, for newsletters, etc.

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# Recommender systems: News flash!



## News recommender systems

- **Yes:** they are used in news production/distribution
- **No:** they are not as powerful/dangerous as we think they are (at least not yet...)

# Current state of NRS: the experts weigh in

**Interviews with experts in Journalism revealed that...**

- Most news organizations are still in a **conceptual phase**
  - Algorithmic recommenders are a topic but by far not *the* topic
- There are many **benefits** of NRS to the newsroom
  - Better value to the reader, responsiveness, exposure of archive, in-depth reading, and ultimately: more subscriptions
- Yes, there are **concerns**: Loss of editorial power, becoming too user focused
  - Mostly, there are only theoretical

# Current state of NRS: the experts weigh in

**Interviews with experts in Journalism revealed that...**

- There is a shift within **organizational dynamics** in the newsroom
  - New crop of people (data scientists)
  - Lack of a “common language”
- Any concerns and tensions are minimal in practice
  - Retention of **editorial control** will (at least for now) be the priority



**“It is called Artificial *Intelligence*, but these things are quite stupid, actually.”**

- Dutch editor-in-chief

# NRS: looking to the future

## Focus on “Responsible NRS” – what does that mean?

- Overall goal: inform the public (in a way that reflects the org's values)
- Increase visibility of content (new & old)
- Better user experience
- Cooperation between departments
- Economic success through responsiveness
- “Bilingual” experts

Production/ Distribution



# NRS: looking to the future

## Focus on “Responsible NRS” – what does that mean?

- Use recommenders to increase diversity
- Encourage critical thinking and engagement with content
- Lure people out of their bubble
- Facilitate exchange and discussion

Consumption



# The future of NRS – Your turn!

## News diversity through algorithms

- News organizations have different business model than on-demand platforms that use recommenders - such as Netflix. Netflix wants you to watch the same sort of content and genres and seduces you into binge-watching.  
→ Everyone's happy(ish)!
- News organizations, on the other hand, want to broaden your viewing habits. They would like to show you different perspectives and offer you **a greater diversity** instead of the same kind of information – but they would still like to keep you interested and keep you reading.  
→ Recommending the same sort of content might keep readers active  
→ Danger of polarization

# The future of NRS – Your turn!

## News diversity through algorithms

- “Develop” a suitable recommendation system that will both keep the reader **engaged and interested** but also encourage them to read outside of their own bubble.
  - What would this look like?
  - What information could you use?
  - How could you ensure that readers don’t get put off by content other than their preferences?
  - How could you encourage diversity in topics/opinions?



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