Empowering stakeholder engagement and social science with next-gen Al

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Building social license for industries like advanced recycling of plastic starts with understanding community views and concerns. We are developing AI text-analysis tools to augment and accelerate this process.

Online text data, such as news articles and social media, provide rich and up-to-date information on community attitudes to emerging industries. This can be used by:

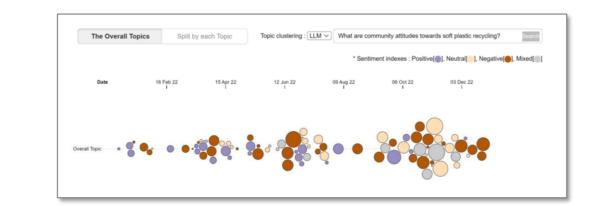
- Stakeholder engagement practitioners seeking to inform how they engage the community.
- Social scientists researching the mechanisms of social license

However, existing text analysis approaches are limited:

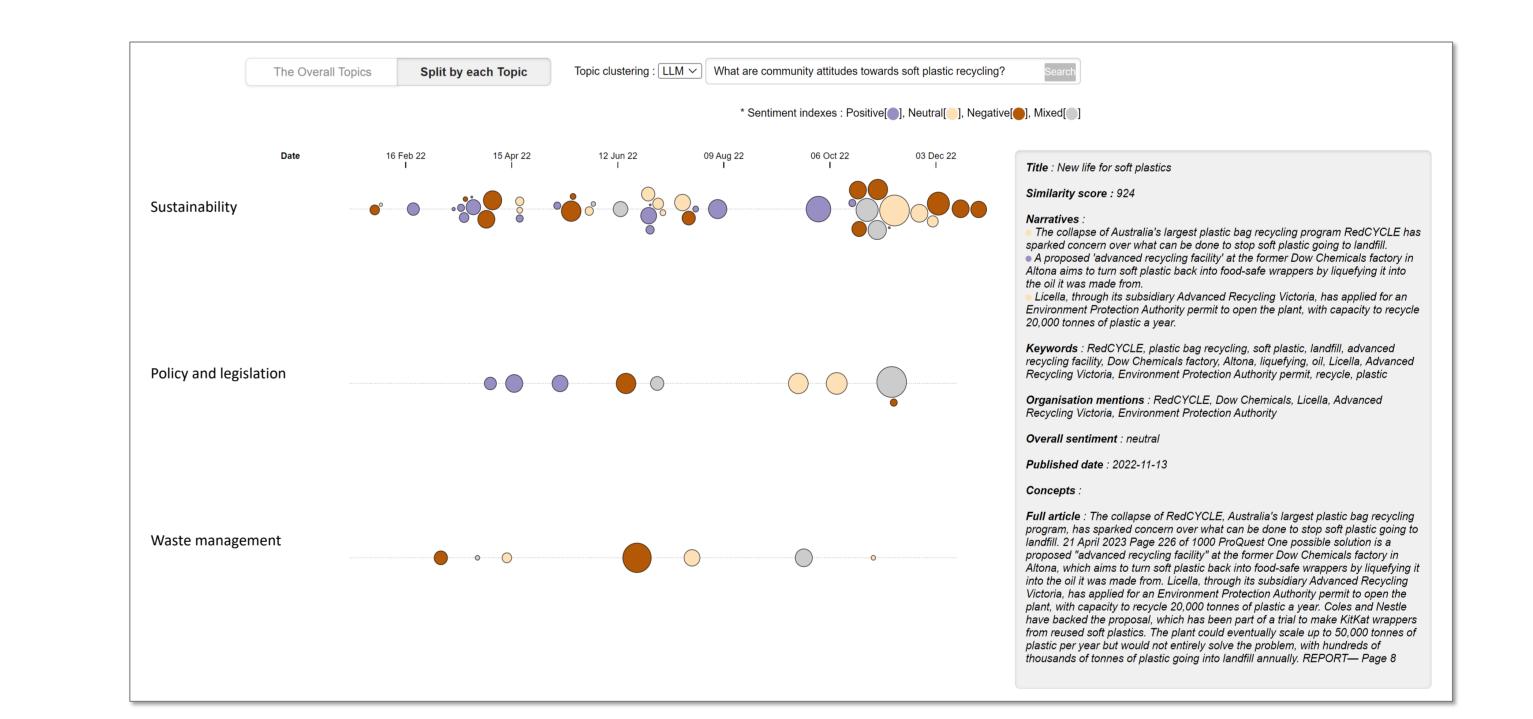
- Manually text summarisation
 - *Time & resource intensive*
 - Lack flexibility

Narrative Navigator

An interactive tool utilising a natural language processing pipeline with a large language model and dense retrieval techniques to:

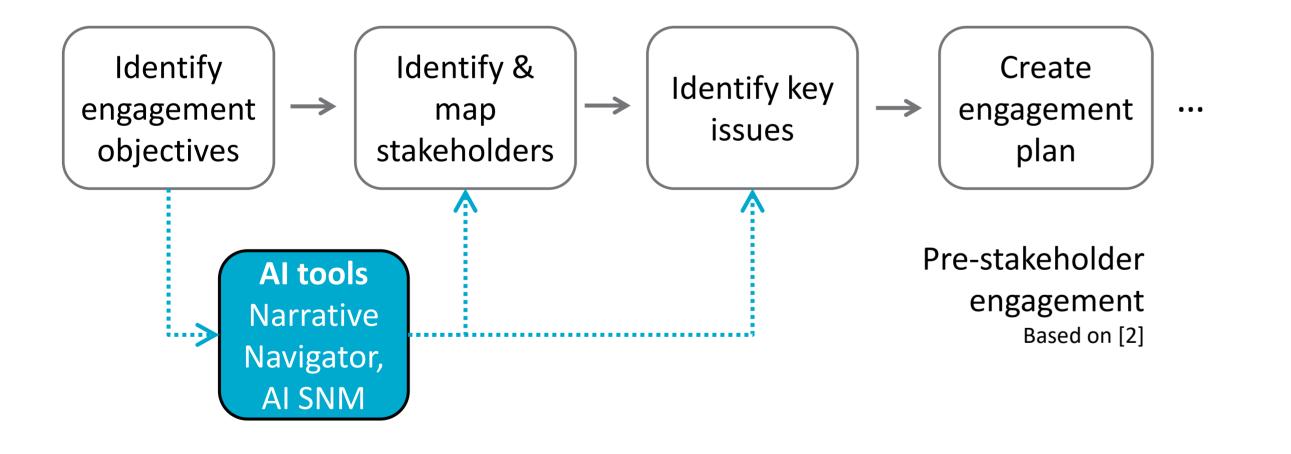


- Identify topics by clustering key terms
- Visualise topic-clustered articles over time
- Generate article narratives and sentiments
- Retrieve relevant documents for a given query



Off-the-shelf text-Not suitable for nuanced mining software analysis (e.g. narratives)

Stakeholder engagement practitioners see high potential in tailored, AI-based tools to streamline the pre-engagement phase.^[1]



Application: Advanced recycling of plastic ^[1]

What are the current & emerging public narratives on ARP, and how do they relate



Al-driven Stakeholder Network Mapping

Combining large language model (GPT4) with social network modelling (Neo4J) to deliver stakeholder insights.

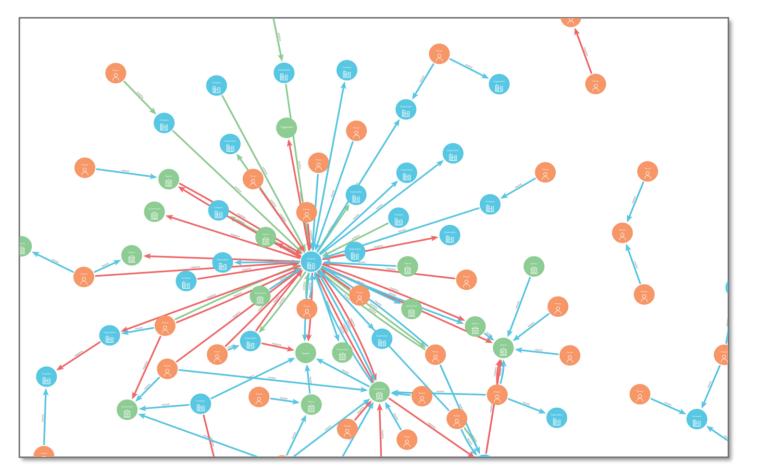
- Identify key groups

SELEDI ADDING -TO ADD TO DATABASI

DESURPTION

- Explore how narratives shape networks ullet
- Identify issues that bind or polarise communities

Planned development



to Australian stakeholder networks?

Working with social scientists, develop tools to Aim: help extract key **topics**, **narratives** and **networks**.

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2200+ media articles from 2019-2022 Dataset:

Support exploration of changing and emerging narratives THE

- Extract high-level narratives across full dataset
- User interface design and user testing



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FOR FURTHER INFORMATION

REFERENCES

[1] Walton, A., McCrea, R., Terhorst, A., Skidmore, M., & Krumpholz, A. Early prediction to enable responsible implementation of emerging Australian industries. (2023). [2] Department of Industry, Science and Resources. APS framework for engagement and participation. (2019)

