

RESEARCH OUTPUTS / RÉSULTATS DE RECHERCHE

Development of a Prioritization Matrix for EU authorities (Datathon Report)

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REPORT

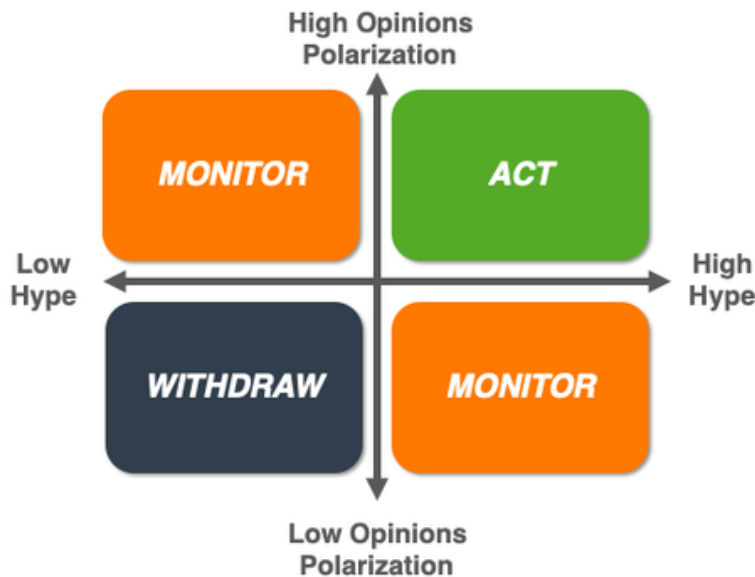
COFE Datathon: Challenge 5 - Open Task

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FROM DATA TO ACTION PRIORITIZATION



"What proposals should be prioritized?"

"Where should resources be invested?"

We propose a unique tool to **classify** citizen's ideas based on two dimensions, helping EU authorities to **prioritize** decisions and actions.

OUR PROPOSITION

We decided to focus on the development of a tool to address one major problem that the EU authorities could encounter while wanting to implement an action plan on the basis of citizens' proposals: **Where to start ?** Facing the huge amount of data, we propose a tool to determine the priority level of all proposals. Concretely, EU authorities that wish to value these proposals, will first face a visual that classifies all topics in terms of priority. The EU authorities can then chose one topic. For this specific topic, a visual then shows the priority level of all its categories. Finally, for a given category, the tool presents a visual proposing a priority among all of the proposals.

METHODOLOGY

The visual we propose is a two-dimensional matrix* that covers:

- the **hype**: *Does the subject spark discussion? Are citizens involved?*
- the **polarization**: *Are opinions clear-cut (positive or negative) or rather neutral? Is the discussion well established?*

To create these dimensions, we first proceeded to a **descriptive analysis** of the data to understand which columns can generate value. Afterwards, we carried out **data cleaning**: management of missing values, features selection, quality assessment. With a cleaner dataset, we then produced new features necessary for the matrix creation. The next challenge was to create the two dimensions of the matrix, namely:

- **Hype** - composed of the *number of comments*, the *number of endorsements*, the *number of meetings*, the *number of days*.
- **Polarization of opinions** - composed of the *average depth* of comments, the *number of positive, negative and neutral comments*.

**Inspired by Eisenhower matrix*

To determine the weight of each underlying variables, we created an algorithm based on the method proposed by the Joint Research Centre-European Commission (2008) to ensure these weight are compliant from a mathematical perspective. The first step of the algorithm was to **standardize data** to make sure different units in the data did not induce some bias in the final result. Then, we applied a **Factor Analysis** (FA) method with a Varimax rotation to assess the variables loadings in the FA components. This algorithm returned, for each variable, its weight within the dimension. This technique and weights are used to fix overlapping information of the variables captured by the two dimensions. The algorithm returned the following equations:

$$Hype = 0,33 * number_{comments} + 0,28 * number_{days} + 0,20 * number_{meetings} + 0,19 * number_{endorsements}$$

$$Polarization = 0,5 * comments_{depth} + 0,5 clearcut_{comments}$$

Note that the weights do not represent the importance of each variable. We can enrich our proposition with inputs from experts of the field through, for instance, qualitative studies.

The final step was the **computation of Hype and Polarization** value for each proposal, category and topic (depending on the granularity level that is targeted). This allowed to produce the final matrix. To get the coordinate on each axis we followed the methodology of BCG (Growth Share Matrix), namely:


- The hype coordinate of a proposal consists of its hype value divided by the average proposal hype.
- The polarization coordinate of a proposal consists of its polarization value divided by the average proposal polarization.


The same principle is applied for the topic and category matrix.


RESULTS

Our tool is able to evaluate the two dimensions hype and polarization on three levels: the **topic** level, the **category** level and the **proposal** level. To prioritize the different proposals, one can first identify the topic(s) with the highest priority level, then the category(ies) with the highest priority level within that topic(s) and finally the proposal(s) with the highest priority level within this category(ies). An example of this process is presented in appendices 1, 2 and 3.

Our matrix then recommend **3 different types of action** regarding a topic, a category or a proposal based on its position:

 **Act** — Topics/Categories/Proposals are considered as hype relatively to other Topics/Categories/Proposals and the opinions are clear-cut. These Topics/Categories/Proposals should be the **main priority** of the EU authorities's action plan.

 **Monitor** — Topics/Categories/Proposals are either considered as hype relatively to other Topics/Categories/Proposals but not (yet) clear-cut or the other way round. These Topics/Categories/Proposals should be monitored by the EU authorities for **future secondary actions**.

 **Withdraw** — Topics/Categories/Proposals which are not considered as hype relatively to other Topics/Categories/Proposals and for which the opinions are not (yet) polarized should be **withdrawn from the priority list** of actions and reevaluated later.

BIBLIOGRAPHY

- Joint Research Centre-European Commission. (2008). Handbook on constructing composite indicators: methodology and user guide. OECD publishing.
- Introducing the Eisenhower Matrix. Available at www.eisenhower.me/eisenhower-matrix, consulted on 17/03/2022
- What Is the Growth Share Matrix? <https://www.bcg.com/about/overview/our-history/growth-share-matrix>, consulted on 17/03/2022

APPENDIX 1

RESULTS: TOPIC PRIORITIZATION AMONG ALL TOPICS

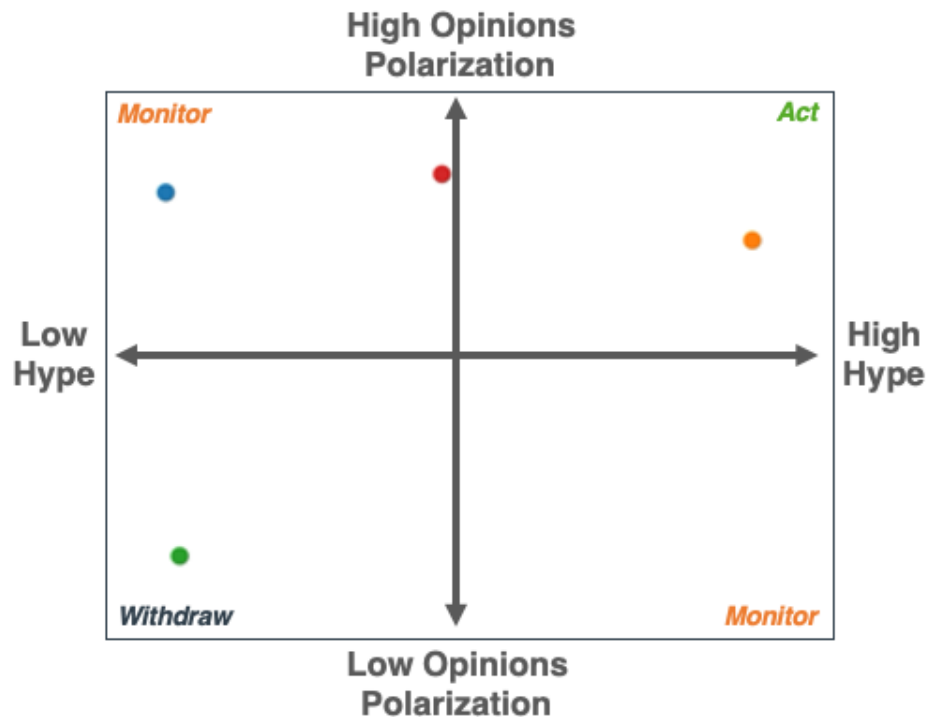


- Topic
- Democracy
 - Digital
 - EUInTheWorld
 - Economy
 - Education
 - GreenDeal
 - Health
 - Migration
 - OtherIdeas
 - ValuesRights

Among all topics, two of them (Democracy and Green Deal) should be carried out in priority by the EU authorities. Three topics should be monitored (Migration, Values Rights and Other Ideas). The other topics should be set aside in terms of priority.

APPENDIX 2

RESULTS: CATEGORY PRIORITIZATION FOR THE DEMOCRACY TOPIC



- Category
- Disinformation
 - Have your say on European Union policies
 - Media
 - Protecting our democracies

Within the Democracy topic, we classify the priority of its categories. One of them, "Have your say on EU policies" should be taken into account in priority. "Disinformation" and "Protecting our democracy" should be monitored while "Media" is not a current priority.

APPENDIX 3

RESULTS: PROPOSAL PRIORITIZATION FOR THE "HAVE YOUR SAY ON EUROPEAN UNION POLICIES" CATEGORY



- Proposal Name
- The future of European democracy — The contribution of regions
 - 9 May as public holiday & European Elections Day
 - Truly European Elections: Transnational EU-wide electoral lists
 - Right to vote from 16
 - For a single and elected President of the EU
 - Reform of EU elections and injunctions
 - Run General Elections in Member States Concurrently
 - Evolution: Democracy
 - Direct election of the President of the Commission
 - Removing the barrier to political involvement for non-nationals in EU Member States

We only display the first 10 proposals of the category "Have your say on the EU policies" for clarity purpose. The proposal to put in priority for the EU authorities is "Truly European Elections: Transnational EU-Wide electoral lists". Five other proposals have to be monitored while the last four proposals should be currently withdrawn from the priority list.