NGI FORWARD

TOWARDS A HUMAN-CENTRIC INTERNET: A MULTI-LANGUAGE ANALYSIS OF KEY TECH AND POLICY TOPICS

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NEXT GENERATION INTERNET
INTERNET OF HUMANS

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EXECUTIVE SUMMARY

This report continues the analysis presented in "Towards a Human-Centric Internet: Challenges and Solutions". Similarly to our prior work, text documents shared on Twitter are examined for six wide umbrella topics: Environment; Sustainability and Resilience; Decentralizing Power and Building Alternatives; Public Space and Sociality; Privacy, Identity and Data Governance; Trustworthy Information Flows; Cybersecurity and Democracy; and Access, Inclusion and Justice.

Our main aim is to expand the exploration of key technology challenges and related policy issues by focusing on various languages beyond English. By collecting online articles in German, Polish, Portuguese and Spanish, we examine discussions across various European and Latin American countries, including:

- German-speaking countries
  - Poland
  - Spain
  - Brazil
- Spanish-speaking Latin American countries

The previously presented text-mining methodology is implemented to identify the specific topics discussed in these countries and regions. For each region, interactive maps highlight clusters of articles covering related issues, enabling their exploration and analysis. Following the analysis of the maps, various case studies are presented for each region that summarize local perspectives on global technology issues, such as the spread of fake news, concerns about privacy or the use of facial recognition software.

INTRODUCTION

Our increasingly connected world is strongly shaped by the current technological paradigms and information ecosystems. The majority of Internet users are connected via social media platforms like Facebook and Twitter, search the web with Google, and use mobile devices with operating systems such as Android or iOS. Whenever any issue or risk arises with these services and products, the problem becomes global. Numerous social challenges, such as the spread of fake news, discriminating algorithms or the misuse of personal data, affect people all over the world.

In our prior works, we focused on English-language sources to track trends and examine policy issues.[1] As much of the discussion around these matters is conducted in English, the analysed sources have been satisfactory for gaining an overview of developments and identifying crucial events, actors and related sentiments. However, the global nature of the challenges also means that a wide range of discussions and debates take place across the world in different languages. Therefore, by restricting the analysis only to English, we might be losing valuable country-specific information on the analysed topics.

In this report, we aim to complement our previous research with insights from non-English sources. To maximize the reach of the study and collect insights from a diverse set of societies, we focus on the following languages:

- German
- Polish
- Portuguese
- Spanish

Therefore, we collect news, blog posts, opinion pieces and expert analyses from various European countries, including Germany, Austria, Poland and Spain. Moreover, we further expand the scope of our analysis by including documents from countries in Latin America. In analysing the results, we focus on novel ideas and local developments that were less prevalent or missing from the English-language analysis. To emphasize the local perspectives of the research, the report is structured to present maps and insights separately for each of the following regions:[2]

- German-speaking countries
- Poland
- Brazil (Portuguese)
- Spanish-speaking Latin American countries
- Spain

The analysis continues the threads of the report "Towards a Human-Centric Internet: Challenges and Solutions",[3] focusing on six broad areas in regard to regulatory issues (Environment, Sustainability and Resilience; Decentralizing Power and Building Alternatives; Public Space and Sociality; Privacy, Identity and Data Governance; Trustworthy Information Flows, Cybersecurity and Democracy; and Access, Inclusion and Justice). We use the same data collection procedure to collect relevant articles shared on Twitter, and implement the previously introduced text-mining methodology to organize and map information.[4]

As the results demonstrate, the methodology based on the t-SNE algorithm can be applied to any language. Each map presents the articles published in the analysed region: documents covering the same or similar issues are neighbours on the map, forming clusters. First, we identify and tag the underlying topics based on the analysis of clusters visible on the maps. These topics are highlighted on the visualizations and briefly summarized.

Second, we select three case studies for each region that provide new insights relative to the global English-language debate. We focus less on widely reported news, such as the Cambridge Analytica scandal, but concentrate instead on local regulatory debates (e.g., the Brazilian General Law on the Protection of Personal Data) and ideas for solutions (such as the transition to open-source technologies assessed in Germany).

All maps are available for further research in interactive form online: https://ngitopics.delabapps.eu. For easier usage, the maps include both the original titles, as well as the English translations.

How to read this report:

- If you are interested in the results, jump to the sections presenting insights for the various regions

- If you would like to read about the sources and data collection, head to the dataset and methodology section

- If you are interested in data science and natural language processing (NLP), we invite you to read the supplementary methodology paper.[5]

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1 See: https://ngitopics.delabapps.eu/ and https://fwd.delabapps.eu/
2 As the number of documents was relatively low from Portugal, we present the results in the interactive presentation online.
3 See: https://ngitopics.delabapps.eu/report.pdf
4 See: https://ngitopics.delabapps.eu/methodology.pdf
5 https://ngitopics.delabapps.eu/methodology.pdf

DATASET AND METHODOLOGY

The methodology for the data collection and analysis was already developed for our analysis based on English-language media.[6] A short summary is provided here regarding the adoption of these methods with a multi-language approach.

DATASETS

The first challenge is related to identifying the sources of text data. To include as many ideas and opinions as possible, text documents attached to social media posts were collected. This approach did not require the preparation of a selected list of sources, but instead we could rely on what users of social media platforms deemed to be important. Our previous study was based on articles shared on three platforms: Twitter, HackerNews and Reddit, with Twitter providing almost 80% of the final sample. For this analysis, we focused only on Twitter due to the large representation of non-English content.

The second dilemma concerns the thematic scope of the study. Throughout our research in Next Generation Internet Forward, we presented two approaches: one based on the analysis of term frequencies, the other based on the analysis of topics.[7] In short, it is possible to identify trends for a limited number of sources that contain well-structured data, such as all articles published by a website. In such a case, the dataset contains the complete data for the analysed time period, and changes in term frequencies can be calculated. Analysing the usage of terms over time, trending keywords can be identified, highlighting the most important news stories.

However, if our aim is the collection of insights regarding a set of identified problems, it is more important to collect only relevant articles from as many sources as possible. In the case of such an exercise, the time dimension is less meaningful, as we lack the complete history of documents, and gather only a subset that is restricted to the areas of interest.

The main example for such an approach is our previous report presenting the conclusions for six wide umbrella topics: Environment, Sustainability and Resilience; Decentralizing Power and Building Alternatives; Public Space and Sociality; Privacy, Identity and Data Governance; Trustworthy Information Flows, Cybersecurity and Democracy;

6   See: https://ngitopics.delabapps.eu/report.pdf
7   See: fwd.delabapps.eu

and Access, Inclusion and Justice. The six areas were identified in a project-wide brainstorming session in February 2021. The aim of the exercise was to map all critical NGI areas and find a shared understanding of the NGI field based on the consortium's previous works.

In order to make the analyses consistent and comparable, we continued the exploration of the six umbrella topics. Therefore, similarly to the English-language study, we restricted the collection of Twitter posts based on keywords and retrieved only the posts which included media links (e.g., articles, blog posts, etc.). The selection of the original list of English keywords was informed by the workshop and the previous results of the project. Table A1 in the Appendix provides an overview of the umbrella topics, along with the keywords used for the collection of data for the four languages analysed in this work. For the collection of data, the official Twitter API and the Python package Newspaper3k[8] were used.

For each language we have created a separate dataset of articles shared on Twitter. The processing pipeline was in many aspects similar to the one used in the methodological report.[9] The differences are related to the fact that language-specific tools had to be used: for example, an English-language stemmer (modifying the words to their base form) cannot be applied to Portuguese. Consequently, transforming words to their base form was performed with spaCy's lemmatizer using the *core_news_md* model for each particular language. We had also removed language-specific stop words according to the spaCy list. Due to using a tokenizer built in spaCy instead of *nltk*, we removed newline characters and spaces, which were present in the list of tokens. For Spanish and Portuguese, we have additionally identified which articles come from European and which from Latin American sources based on the website domains. Some websites, like elpais.com or globo.com, do not have a national domain despite originating from Spain and Brazil respectively. Such websites were assigned manually to a country wherever possible, if they were present in at least 50 links for the Spanish-language dataset and 15 links for the smaller Portuguese-language dataset. Some domains, which were not country-specific (like bbc.co.uk) were skipped and such articles are not present in the final dataset.

Table 1 summarizes the dataset in terms of the number of articles and unique sources. We have gathered 38000 articles from almost 7000 sources. German texts are the most prevalent, while Polish ones are the scarcest. However, the ranking cannot be interpreted solely as a proxy for the intensity of discussions on topics related to the NGI. Our data collection process is susceptible to the wording of the keywords. We have mitigated this issue by including multiple versions of a keyword, taking into account different spellings and parts of speech, e.g., "nachhaltige" (sustainable), "Nachhaltigkeit" (sustainability) or "bańce informacyjnej" ([in] filter bubble), "bańka informacyjna" ([a] filter bubble). In certain cases we have also added a requirement that along with our keywords the articles had to include the words: "online", "tech", "technology" or "Internet" (example query: "Klimakrise + Technologie", i.e., "climate crisis + technology"). This procedure was introduced in order to filter out articles beyond the scope of our study.

Table 1 Main dataset statistics

Country/ Region	Number of articles	Number of unique sources	Mean number of articles per source
Germany	12091	2474	4.9
Spain	8673	760	11.4
Brazil	7948	1638	4.9
Latin America (Spanish)	6652	1232	5.3
Poland	2733	623	4.4
Total	**38097**	**6727**	—

METHODOLOGY

The methodology of the study has been described in detail in the supplementary methodology paper.[10] The approach based on the t-distributed stochastic neighbour embedding (t-SNE) is language-agnostic: following the tokenization and lemmatization of the text, the algorithm can be applied to any language. t-SNE assigns each article to a point in a two-dimensional space, placing articles about similar or identical topics closer to each other. Tokenized articles are transformed into a bag-of-words matrix, counting the number of occurrences for each word in each article. The importance of the most commonly occurring words is reduced thanks to *tf-idf* weighting. To reduce computational complexity, t-SNE is performed on a 250-dimensional normalized SVD matrix. The single-perplexity (50) t-SNE method, clustered with Gaussian mixtures, is superior to all the other methods – as we have shown in the methodological report. To be consistent with the report, we had also prepared HDBSCAN clustering as suggested in the robustness check, but we rejected it, as with the default settings, almost all articles in some countries are assigned to one cluster, even though specific clusters can be distinguished, as we show below.

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10   See: *https://ngitopics.delabapps.eu/methodology.pdf*

RESULTS

For every region or language, a separate map was prepared that contains all articles posted on Twitter featured in our dataset. The interactive versions of maps that enable the exploration of clusters and reading of articles are available online: https://ngitopics.delabapps.eu/.

The interpretation of the maps is identical to our previous analysis. Each dot represents a text document: documents close to each other on the map cover the same or related issues. Therefore, the maps visually organize the collected articles, enabling us to highlight thematic groups. For easier use, the maps contain not only the titles in the original language, but also the translations into English.[11] Users can also open and read the articles: for the English versions, we recommend the use of the built-in translation services of popular web browsers, e.g., Safari or Chrome.

Using qualitative analysis, we have examined the texts and titles of articles to select the most relevant clusters and assigned the tag descriptions. These topics are highlighted on the maps: each arrow indicates the subject and the location of the article cluster.

A further dimension of the maps is represented by colours assigned with the use of a clustering algorithm: Gaussian mixtures. The colours highlight documents that belong together based on their location on the map. Therefore, the colours indicate the wide topic clusters containing multiple narrower and more specific topics. With the online tool, users can also view characteristic keywords for the identified wide clusters.

In the following sections, we provide a list of the most relevant narrow topics identified in each map. To facilitate further analysis, research questions are highlighted for each narrow topic.

For each region three case studies are included. These case studies present local perspectives, debates and solutions, augmenting our prior analyses based on English-language documents. The case studies have been prepared based on the articles on the map, highlighting the potential of the dataset and the robustness of the methodology to organise and explore the articles.

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11   *The translations of titles were prepared with the use of DeepL Translate API.*

DISCUSSIONS IN GERMAN
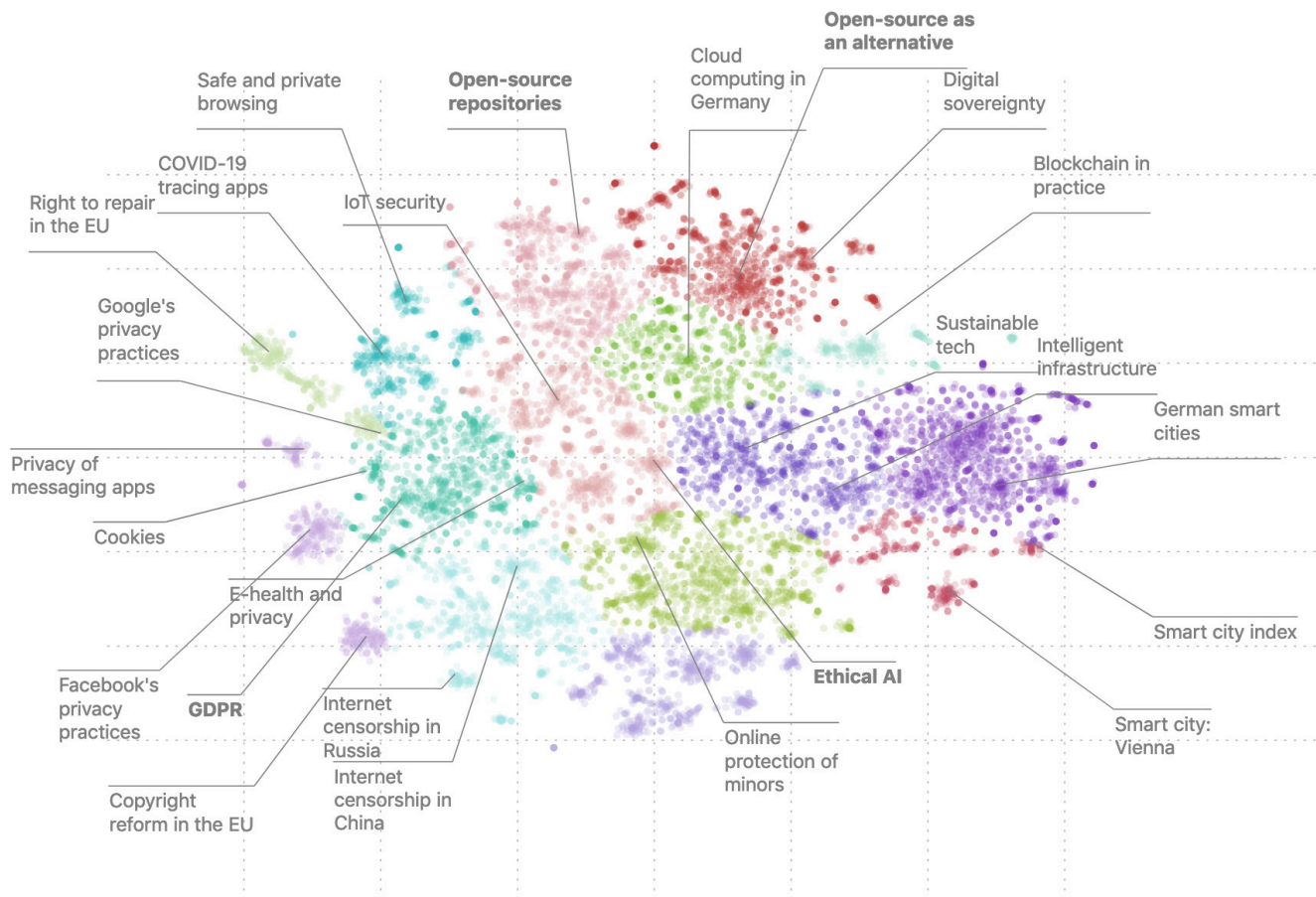
German-language technology discussions included many distinctive areas, such as the role of open-source technologies in public services, the economic impact of the General Data Protection Regulation (GDPR) or the importance of monitoring and assessing the social effects of AI development. These areas are described in greater detail below, following the list of the identified topic clusters.

Open-source repositories

What are the promising open-source projects around the world and in Germany?

Open-source as an alternative

What are the benefits of open-source software? Will open-source technology play a greater role in the future?

Digital sovereignty

What are the dangers of a dependence on proprietary technologies? Should public spending facilitate the development of open-source tools?

Blockchain in practice

What are the promising use cases for blockchain? Which German companies are experimenting with blockchain solutions?

Cloud computing in Germany

Which software services are available in the cloud? What are the popular areas for implementation?

Sustainable tech

How can technologies support sustainable production and transportation?

Intelligent infrastructure

What are the technological requirements for the energy transition in Germany?

German smart cities

What are the benefits of digitalization in cities? What initiatives have been implemented in German cities?

Smart city index

Which are the most digitalized cities in Germany? What are the strengths and weaknesses in the adoption of digital technologies?

Smart city: Vienna

What are the innovations and practices adopted in Vienna? Why is Vienna listed among the smartest cities in the world?

Ethical AI

What are the ethical challenges related to AI technologies? How can we ensure that AI supports social development?

IoT security

What are the recent security challenges related to the Internet of Things?

Safe and private browsing

What developments have been introduced in web browsers? What are the best practices for safely surfing the web?

COVID-19 tracing apps

What are the data protection and privacy challenges related to contact tracing?

Right to repair in the EU

Why is the right to repair devices an important cause for sustainable development? What are the EU and German initiatives?

Google's privacy practices

What are the recent developments in Google services? Is the protection of personal data always ensured?

Privacy of messaging apps

What are the alternatives to the messaging apps owned by Facebook?

Cookies

What is the role and importance of cookies?

Facebook's privacy practices

What are the main issues and concerns regarding Facebook?

GDPR

What are the main benefits and challenges of the GDPR implementation?

E-health and privacy

What are the risks and challenges connected to health data?

Copyright reform in the EU

Why did the copyright reform raise concerns among Internet users? What are the expected benefits of the reform?

Internet censorship in Russia

What are the restrictions faced by Internet users in Russia?

Internet censorship in China

What ambitious international technology projects are being pursued by China? What online services are blocked in China?

Online protection of minors

What are the dangers of Internet use by children and how can parents mitigate them?

OPEN-SOURCE TECHNOLOGIES AND DIGITAL SOVEREIGNTY

Users of online services are vulnerable to the power of major tech platforms. In most cases, it is extremely difficult to leave service providers such as Facebook due to the accumulated benefits of belonging to social networks with all our acquaintances. While the GDPR provided a solid foundation for users to regain control over their personal data, they are still locked into platforms determining what content and information is shown to them. Similarly, the pandemic revealed the dangers of a dependence on proprietary tools and platforms. The security and reliability of online collaboration tools, such as Zoom, have become essential for maintaining education and office work online. However, in the absence of code and data transparency, it is challenging to verify the claims of software developers regarding security features and privacy.[12] The danger related to the dependence of public administrations on private software, such as Microsoft Office, is also recognized by the Federal Government in Germany.[13] The use of proprietary solutions is a matter of digital sovereignty that can be defined as the ability to determine who can access data, how and under what conditions, and for what purpose.[14]

A potential route towards greater digital sovereignty is the use of open-source solutions. Open source eliminates blind trust in software, as the source code can be viewed and analysed, determining how the software works and what data it collects.[15] Open-

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12 https://osb-alliance.de/featured/digital-souveraen-distanzen-ueberwinden
13 https://www.cio.bund.de/SharedDocs/Kurzmeldungen/DE/2019/20190919_strategische_marktanalyse.html
14 https://dinacon.ch/rueckblick/dinacon-2019/interview-mit-peter-ganten/
15 https://www.chip.de/news/Europas-Tech-Dilemma-Was-wir-den-Datenkraken-entgegensetzen-muessen_138394715.html

source solutions also offer greater freedom for users, such as the choice to run software on their own infrastructure or cloud providers. This is especially important for greater resilience and scalability. There are multiple examples of successful transitions to open-source solutions in public administration in Europe, such as the case of schools in Hannover and Köln,[16] or by the city of Barcelona.[17] Suggestions for further action include the use of funds devoted to software procurement for the development and distribution of open-source solutions[18] and the release of software developed with public funds under an open-source licence.[19] However, it is important to note that there are critical opinions towards such a commitment to open source. The author of an opinion piece summarized the potential pitfalls of public engagement in software development that include failed projects from the past, such as the Quareo and Theseus search engines.[20]
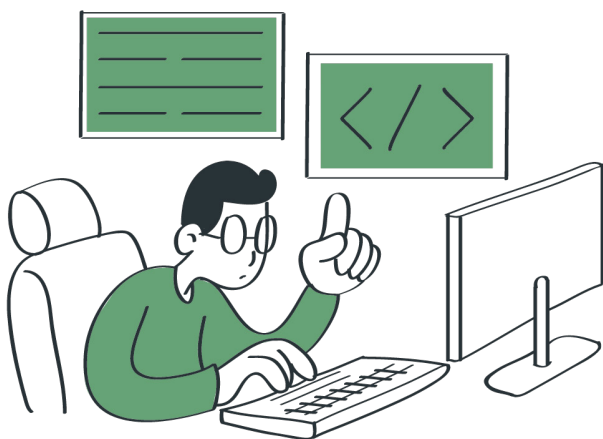
GDPR: IMPLEMENTATION AND RESULTS

The General Data Protection Regulation, in force since May 2018, had a significant impact on European users and companies. The regulation brought various benefits in the area of raising awareness about personal data: according to a survey, around one in five Germans had made a request for information from companies by January 2020.[21] [22] The uniformization of data protection rules across EU member states also made international operations

easier for companies.[23] On the other hand, the GDPR also created various challenges. Bitkom, an association of companies from the different fields of
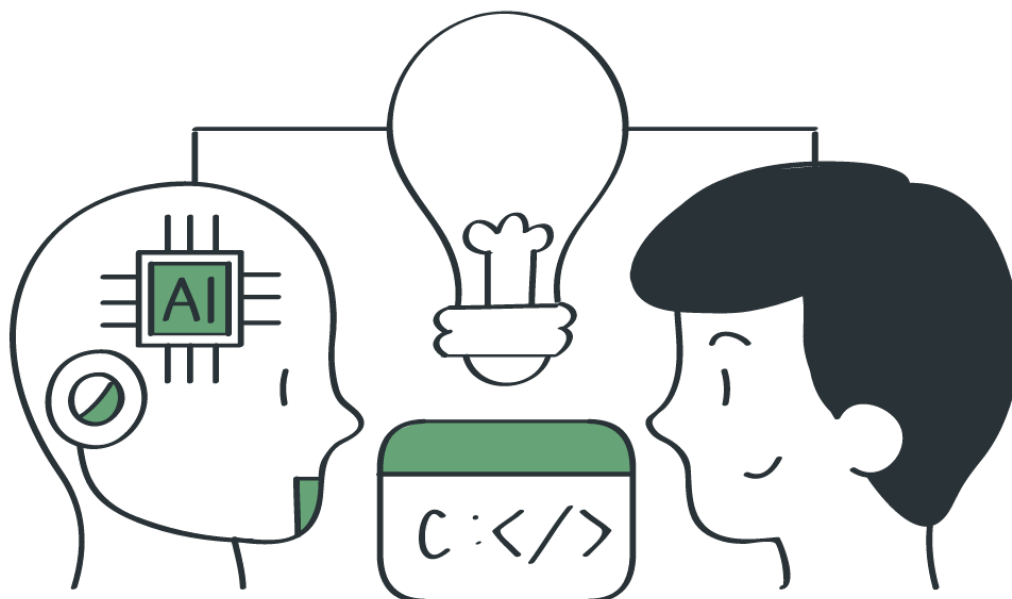
the digital economy, prepared a report following the introduction of the data regulation and summarized the main results for the economy. According to the survey, a problematic area of the GDPR is that it does not differentiate between companies based on size. Therefore, while global corporations benefit the most out of the uniform framework, the administrative burdens are relatively large for small companies. The implementation of the GDPR also meant minor annoyances for Internet users and webmasters as well, including pop-ups prompting users to accept cookies and other terms and conditions.[24]

Further questions are related to what extent the GDPR is future-proof. While the GDPR includes technology-neutral rules, the advent of AI technologies may be a challenge for preserving privacy. As an example, future AI systems may autonomously decide on which data must be preserved for analysis, endangering the "right to be forgotten".[25]

16 https://dinacon.ch/rueckblick/dinacon-2019/interview-mit-peter-ganten/
17 https://www.chip.de/news/Europas-Tech-Dilemma-Was-wir-den-Datenkraken-entgegensetzen-muessen_138394715.html
18 https://www.chip.de/news/Europas-Tech-Dilemma-Was-wir-den-Datenkraken-entgegensetzen-muessen_138394715.html
19 https://publiccode.eu/de/
20 https://www.mobilegeeks.de/news/open-source-strategie-der-eu-zwischen-planlosigkeit-und-groessenwahn/
21 https://www.eco.de/presse/datenschutztag-28-01-verbraucher-wuenschen-sich-schnellere-reaktionen-auf-daten-auskunftsersuchen/
22 https://www.it-business.de/datenschutz-in-europa-a-898641/
23 https://www.horizont.net/medien/nachrichten/datenschutz-bitkom-zieht-gemischte-dsgvo-jahresbilanz-174915
24 https://www.julianstock.de/posts/dsgvo-datenschutz-ja-aber
25 https://computerwelt.at/news/kommentar/dsgvo-wie-kann-die-gesetzgebung-mit-der-technologie-schritt-halten/

ETHICAL AI

Advanced algorithms have a huge potential in various fields. However, such technologies also include risks. Examples of the dangers of AI were discussed in the "AI Traps" conference held in Berlin in 2019.[26] First, AI models require enormous datasets, with only a select few companies having access to sufficiently large-scale data. This data hunger drives a process of monopolization and concentration of power. Additionally, popular training datasets have been often collected in an unethical way, e.g., facial recognition data without the consent of individuals. Second, existing requirements for transparency are not sufficient to force major tech players to follow public interest. Third, AI models have also been tested for the creation of risk profiles and social scoring for children and adolescents. While data methods may supplement the work of social workers and experts, there is a danger of allocating too much trust to black-box solutions.[27] Further challenges are related to privacy: as more data are collected and used by AI models, the risk of data misuse or data theft rises.[28]

In light of the dangers related to socially harmful applications of AI, a new institution was founded to monitor AI development.[29] The AI Observatory performs impact assessments, participates in the formulation of a regulatory framework, and facilitates social dialogue.[30]

Finally, an important part of the discussion concerns the potential of AI in managing climate change. While AI and machine learning techniques are essential in climate change research, these tools are not enough to address structural problems. Although AI facilitates efficiency gains in transportation, agriculture, energy production and other sectors, these improvements may remain marginal.[31] Moreover, training AI models and running data centres are also environmentally costly.[32]

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26   https://www.disruptionlab.org/ai-traps
27   https://www.heise.de/newsticker/meldung/Datenforscherin-Kuenstliche-Intelligenz-ist-kaputt-4447500.html
28   https://t3n.de/news/ki-privatsphaerendilemma-koennen-1323718/?utm_source=twitter.com&utm_medium=social&utm_campaign=social-buttons
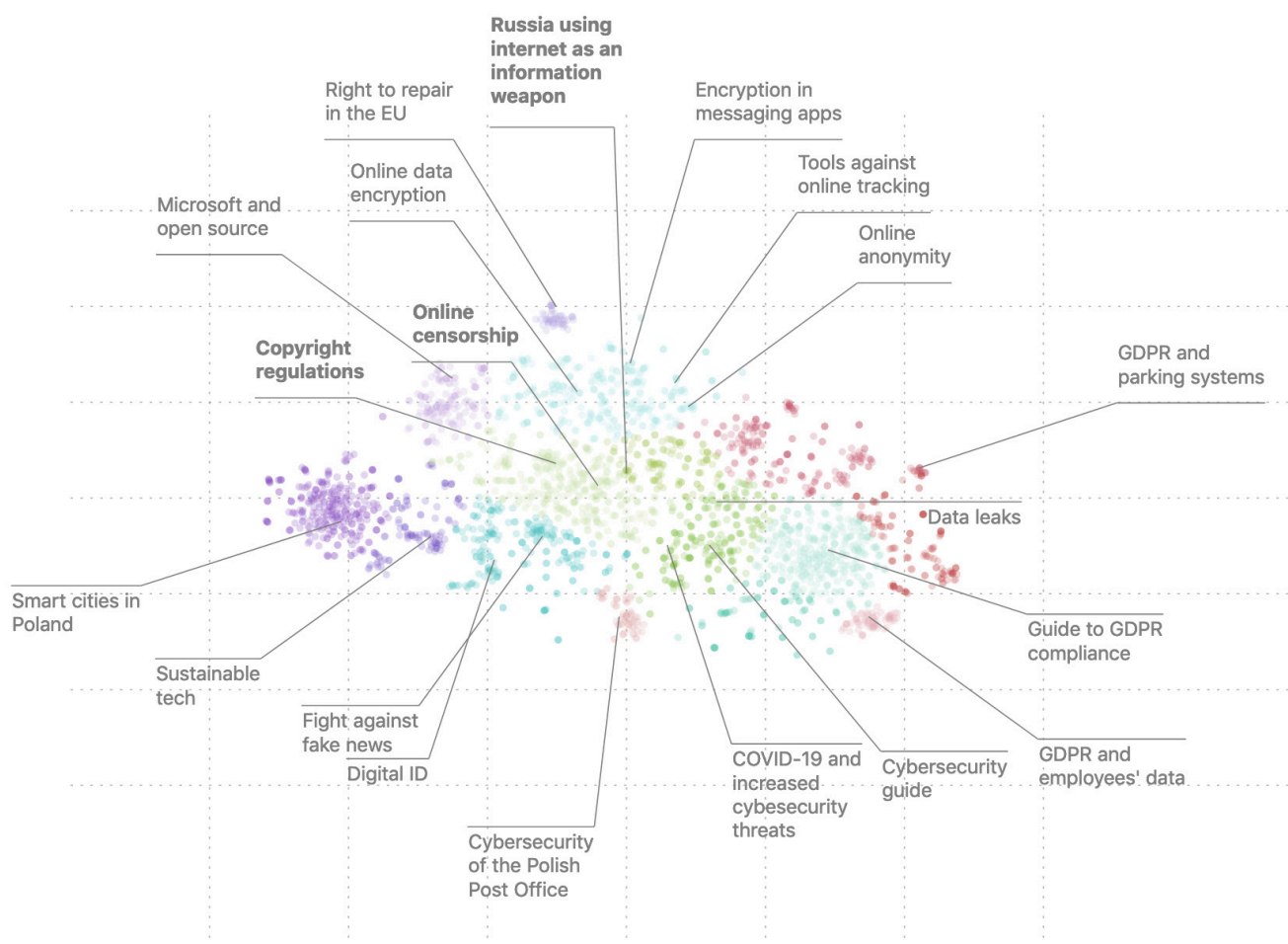29   https://www.heise.de/newsticker/meldung/KI-Observatorium-Arbeitsminister-Heil-will-Maschinen-fuer-alle-4674484.html?wt_mc=nl.red.ho.ho-nl-daily.2020-03-04.link.link
30   https://www.ki-observatorium.de/en/
31   https://netzpolitik.org/2020/kuenstliche-intelligenz-gemeinwohl-und-nachhaltigkeit-statt-nur-profit/#spendenleiste
32   https://www.heise.de/newsticker/meldung/Missing-Link-Kuenstiche-Intelligenz-und-Nachhaltigkeit-und-ewig-gruesst-der-Rebound-Effekt-4687039.html?seite=all

DISCUSSIONS IN POLAND

The collected Polish media coverage highlights various hot topics in tech and policy debate. In the following sections, we focus on three case studies widely discussed in Poland: the strategic use of the Internet by Russia, a regulatory proposal with the aim of controlling the censorship policies of major tech platforms, and the copyright directive in the light of the infamous ACTA protests.

Online censorship

Gab.com instead of Facebook, Parler instead of Twitter, Brand New Tube instead of YouTube –far-right groups are moving to "censor-free" platforms. What are the reactions of politicians to more rigid practices of blocking hate speech and flagging fake news by traditional social media platforms?

Copyright regulations

The EU copyright reform faced a lot of public criticism. More than 5000000 signatures made the petition against Article 13 the biggest in EU history. What

controversies has the EU copyright directive caused in Poland? How was the requirement for online content filtering discussed by Polish digital activists, NGOs and politicians?

Microsoft and open source

What were the recent steps taken by Microsoft to embrace the open-source software paradigm? What are the consequences of the Redmond tech giant acquiring GitHub?

Online data encryption

What are the recent developments in data encryption? What encryption mechanisms do contact tracing apps use? What are the cybersecurity and privacy concerns related to the Polish ProteGO Safe contact-tracing app?

Right to repair in the EU

How may the EU right to repair laws impact manufacturers, consumers and the environment?

Russia using the Internet as an information weapon

What methods does the Russian government use to censor the "domestic" online sphere? The case of an online anonymity ban. How do Russian trolls and bots influence online conversations abroad?

Encryption in messaging apps

How are messaging and VoIP apps adopting end-to-end encryption?

Online anonymity: Tools against online tracking

What are the recent developments aimed at avoiding online tracking? The examples of Brave, DuckDuckGo and Tor-Mozilla cooperation.

GDPR and parking systems

Are vehicle registration plates personal data? The history of opposing decisions by Polish courts and the Polish Personal Data Protection Office.

Data leaks

What were the most notorious personal data breaches in recent years in Poland?

Guide to GDPR compliance

What are the GDPR consequences for the Polish SMEs?

GDPR and employees' data

Is the GDPR making recruitment more difficult for companies? What are the challenges related to employees' personal data processing after the GDPR implementation?

Cybersecurity guide

In recent years we have been observing a rise in personal data breaches, often utilizing new techniques. How can users and organizations defend themselves?

COVID-19 and increased cybersecurity threats

How does COVID-19 make us more vulnerable to cyber threats? How are hackers cashing in on the pandemic?

Cybersecurity of the Polish Post Office

What were the controversies and challenges related to the organization of postal voting during the (eventually postponed) presidential election in Poland

during the COVID-19 pandemic? The issues regarding data encryption and privacy.

Digital ID

How are digital IDs introduced in various sectors? Examples from the Polish banking system, electronic payments, e-government solutions and vaccination certificates.

Fight against fake news

Who "cleans" the Internet? Examples of Polish fact-checking initiatives. What are the guiding ethical principles they follow?
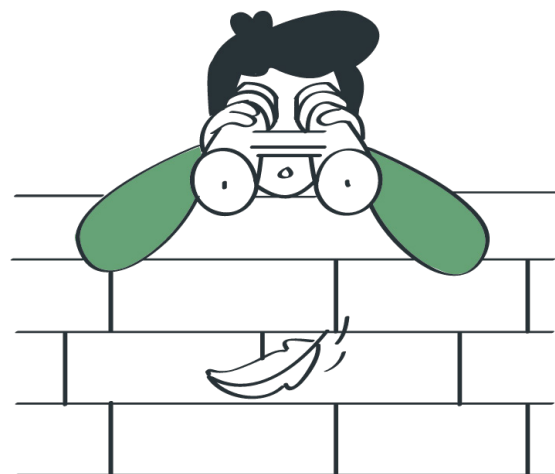
Sustainable tech

How can technologies like autonomous vehicles, AI and blockchain help fight climate change?

Smart cities in Poland

Is the future of Polish metropolises to become smart cities? What is the impact of the COVID-19 pandemic on the development of Polish smart city concepts?

RUSSIA USING THE INTERNET AS AN INFORMATION WEAPON

The Internet is one of the most important battlegrounds of a hybrid war in which Russian hackers and trolls sow chaos in Western societies.[33] Moreover, Russian officials expend great effort to meticulously control the online information flow in their own country.[34] The Polish media, being one of the main targets of Russian disinformation campaigns,[35] puts a lot of focus on the development of online censorship in Russia.

33   https://www.cyberdefence24.pl/infrastruktura-krytyczna/rosja-przyjela-ustawe-w-sprawie-runetu-internet-w-izolacji-od-globalnej-sieci
34   https://pism.pl/publikacje/Walka_z_rosyjska_dezinformacja_w_Unii_Europejskiej
35   https://forsal.pl/artykuly/1403522,jakie-cele-chce-osiagnac-rosyjski-troll-w-polskim-internecie.html

The Russian government is using the experience of China – known for the most effective online censorship in the world – to block access to the Internet for its citizens. The aim is to create a "sovereign" Internet, which would be cut off from the global network.[36] Recently (February 2021) the Russian Security Council announced that it had achieved the technical ability to control the traffic on the national Internet (the so-called RuNet) and may operate it in isolation from the global network.[37] However, international experts doubt that this is feasible on a large scale.[38]

For many years, Russian authorities have tried to restrict access to independent news and social media. In 2016 they managed to block LinkedIn when it did not obey the Russian legislation requiring social networks to store the personal data of Russian citizens on domestic web servers.[39] In the years 2018–2020 the Russian Internet regulator Roskomnadzor banned the social media app Telegram. However, despite blocking IP addresses, it was unable to carry out its threat, with Telegram continuing to thrive in Russia, where it remains a leading service for news channels.[40] This year (2021) Roskomnadzor admitted to slowing down the speed of Twitter, accusing the platform of failing to remove illegal content.[41] In recent years, various social media and messaging platforms have been fined for failing to follow orders from the Russian administration. Fines have been administered for various reasons, but the recurring rationale is that the platforms have not been complying with the instructions to remove content deemed illegal by Russian authorities, e.g., inciting political demonstrations against the government.[42]

However, the restrictive legislations and fines target not only the media, but users as well. In recent years, the Duma, the Russian parliament, prepared two bills – against "insulting authorities" and against spreading "fake news". Both actions are penalized with heavy fines and arrest for up to 15 days. The Polish media outlet *Polityka* called the introduction of these legislations the opening of "an internal front in the Russian hybrid war" and cites independent Russian journalists calling the law "barbaric" and "crushing freedom of speech".[43]

ONLINE CENSORSHIP

Gab.com instead of Facebook, Parler instead of Twitter, Brand New Tube instead of YouTube – far-right groups are moving to "censorship-free" platforms. As traditional social media platforms fight falsehoods and misinformation more forcefully, new platforms attract users fearful of being banned.[44] Among Parler's early adopters in Poland were controversial conservative politician Janusz Korwin-Mikke (banned from Facebook) and the right-wing party Solidarna Polska. However, neither could build a user base comparable to the one of "traditional" social media.[45] Right-wing journalists in Poland also complained about the new policies of social media platforms that allegedly censor conversative content.[46] Their discontent resulted in a petition sent to the Polish PM (January 2021), signed by around 2000 people.[47] The Polish government offered a helping hand as it started preparing a "freedom act". The main assumption of the new legislation is that social media platforms will not be able to remove content or block their users unless the posted content violates Polish law. "Poland will always uphold democratic values, including freedom of speech. The owners of social media networks cannot act above the law" wrote PM Mateusz Morawiecki on Facebook, while Polish MEP and former Deputy Minister of Justice Patryk Jaki commented on Twitter,

36 https://www.polityka.pl/tygodnikpolityka/swiat/1785248,1,rosja-ocenzuruje-internet.read?src=mt
37 https://pism.pl/publikacje/Przyszlosc_rosyjskiego_suwerennego_internetu
38 https://www.reuters.com/technology/russia-disconnected-global-internet-tests-rbc-daily-2021-07-22/
39 https://www.money.pl/gospodarka/wiadomosci/artykul/linkedin-sprzeciw-rosja-ustawa-o-danych,48,0,2275376.html
40 https://beincrypto.pl/ban-na-aplikacje-telegram-w-rosji-zostal-zniesiony/
41 https://www.pap.pl/aktualnosci/news%2C846294%2Crosja-dzialanie-twittera-bedzie-spowolnione-do-15-maja.html
42 https://spidersweb.pl/2021/09/rosja-kary-facebook-telegram.html
43 https://www.polityka.pl/tygodnikpolityka/swiat/1785248,1,rosja-ocenzuruje-internet.read?src=mt
44 https://krytykapolityczna.pl/swiat/szach-mat-lewaki-radykalna-prawica-ma-wlasny-internet/
45 https://antyweb.pl/parler-swiatynia-teorii-spiskowych-czy-szansa-na-lepsze-social-media
46 https://www.onet.pl/informacje/visegradinsightew/w-duchu-orwella-wolnosc-slowa-po-polsku/rclk7x9,30bc1058?fbclid=IwAR3uLfpFqB5svjSdWlIhIfLZpPpZ3x3_50AMCT5krwzglkk1Kguivz2--tQ
47 https://www.salon24.pl/newsroom/1105814,stop-cenzurze-w-internecie-petycja-do-premiera-morawieckiego

"#FreedomAct will make Poland raise the banner of freedom in the times of rampant censorship in the world".[48]

The new law proposal has been criticized by organizations operating in the Polish Internet industry (e.g., Business Center Club, Cyfrowa Polska and the Polish Chamber of Information Technology and Telecommunications) who wrote an open letter to the Polish Ministry of Justice calling for it to abandon work on the draft.[49] Industry experts indicate that the legislation project duplicates the emerging EU law – i.e., the Digital Services Act, which may lead to legislative chaos.[50] Moreover, they claim that the lack of a precise definition of what "illegal content" is, in combination with high fines (up to 50000000 PLN ~ 10700000 EUR) and the creation of a new regulatory body, the Freedom of Speech Council, might increase the dissemination of hate news in the Polish online sphere.[51]

COPYRIGHT REGULATIONS

The copyright directive aims to safeguard the interests of online creators and strengthen their position against tech giants like Facebook or Google.[52] Its opponents, however, claim that its provisions will lead to online censorship. The directive has a particularly bad press in Poland, where it was repeatedly referred to as "ACTA2".[53] The ACTA (Anti-Counterfeiting Trade Agreement) – a multilateral treaty for establishing international standards in the area of intellectual property rights enforcement – faced harsh opposition in Poland, leading to mass demonstrations and voluntary blackouts of 800 online portals in 2012.[54]

The memory of those protests is linked by some commentators to the critique of the directive presented by the Polish government.[55] After the European Parliament backed the directive on 26 March 2021, the Polish PM wrote that "We were, we are and we will always be for the online freedom", and he also thanked all MEPs who voted against the new

law.[56] The Polish government actively opposed the introduction of the directive, voicing its concerns in the coalition with the other Visegrad Group countries[57] and by filing a complaint against its Article 17 to the Court of Justice of the European Union.[58] Poland is among a large group of member states which did not implement the directive into the domestic legal system, which according to some commentators might lead to the imposing of EU sanctions.[59]

A large number of articles in the Polish debate focused on the potential negative consequences of Articles 15 and 17 of the directive.[60] Article 15 enables the press to receive a share of the earnings received by information aggregators and social networks from their content.[61] Article 17 states that "online content-sharing service providers need to obtain an authorisation from right holders for the content uploaded on their website. If no authorisation is granted, they need to take steps to avoid unauthorized uploads".[62] The former article was criticized when in the early stage of development due to the regulation that was supposed to tax links and short excerpts of articles.[63] In the final version, hyperlinking and including snippets of press publications are explicitly excluded from the scope of the directive.[64] The latter article was criticized on the basis that it necessitates a use of automatic content filtering which might lead to algorithmic bias and general technological imperfections.[65]

Interestingly, in March 2019, just before the directive was voted on in the EP, one of the major Polish news outlets, *Rzeczpospolita*, published the results of a poll supporting the directive: the majority of Polish respondents claimed that MEPs should vote in favour (strongly in favour: 31.8%, in favour: 34.7%).[66] Nevertheless, analysts pointed out that almost 20% of respondents answered that they had no opinion, which might mean that a large number of Poles do not know either the specifics of the regulation or the current rules guiding the information flow across the Internet.[67]

48 https://biznes.radiozet.pl/News/Ustawa-wolnosciowa.-PiS-chce-walczyc-z-cenzura-w-sieci
49 https://www.telepolis.pl/wiadomosci/prawo-finanse-statystyki/ustawa-wolnosciowa-wprowadza-zapisy-szkodliwe-dla-rynku-internetowego
50 https://www.money.pl/gospodarka/ustawa-wolnosciowa-dubluje-europejskie-przepisy-spowoduje-balagan-prawny-6701524387613248a.html
51 https://www.infor.pl/prawo/nowosci-prawne/5190841,Ustawa-wolnosciowa-wysokie-kary.html
52 https://www.rp.pl/internet-i-prawo-autorskie/art1463261-dyrektywa-o-prawie-autorskim-polacy-chca-zeby-koncerny-dzielily-sie-z-wydawcami
53 https://www.euractiv.pl/section/instytucje-ue/news/dyrektywa-o-prawach-autorskich-wolnosc-czy-cenzura-w-sieci/
54 https://pl.wikipedia.org/wiki/Anti-Counterfeiting_Trade_Agreement#cite_note-81
55 https://www.rp.pl/opinie-prawne/art9332901-filtrowanie-to-nie-cenzura-marek-kobylanski-komentuje-zaskarzenie-przez-rzad-dyrektywy-autorskiej
56 https://www.euractiv.pl/section/instytucje-ue/news/dyrektywa-o-prawach-autorskich-wolnosc-czy-cenzura-w-sieci/
57 https://www.euractiv.pl/section/gospodarka/press_release/branza-cyfrowa-panstw-grupy-v4-wspolnie-przeciwko-podatkowi-od-linkow-i-filtrowaniu-sieci/
58 https://www.wirtualnemedia.pl/artykul/wdrozenie-dyrektywa-ws-praw-autorskich-w-polsce
59 https://www.legalnakultura.pl/pl/prawo-w-kulturze/prawo-w-praktyce/news/3621,dyrektywy-o-prawie-autorskim
60 https://centrumcyfrowe.pl/reforma/
61 https://www.leadersleague.com/fr/news/european-copyright-directive-what-do-articles-15-and-17-mean
62 https://ec.europa.eu/commission/presscorner/detail/en/IP_21_1807
63 https://tech.wp.pl/olaboga-unia-zabiera-nam-internet-jak-google-i-facebook-walcza-o-swoje-naszymi-rekami-6264693149956225a
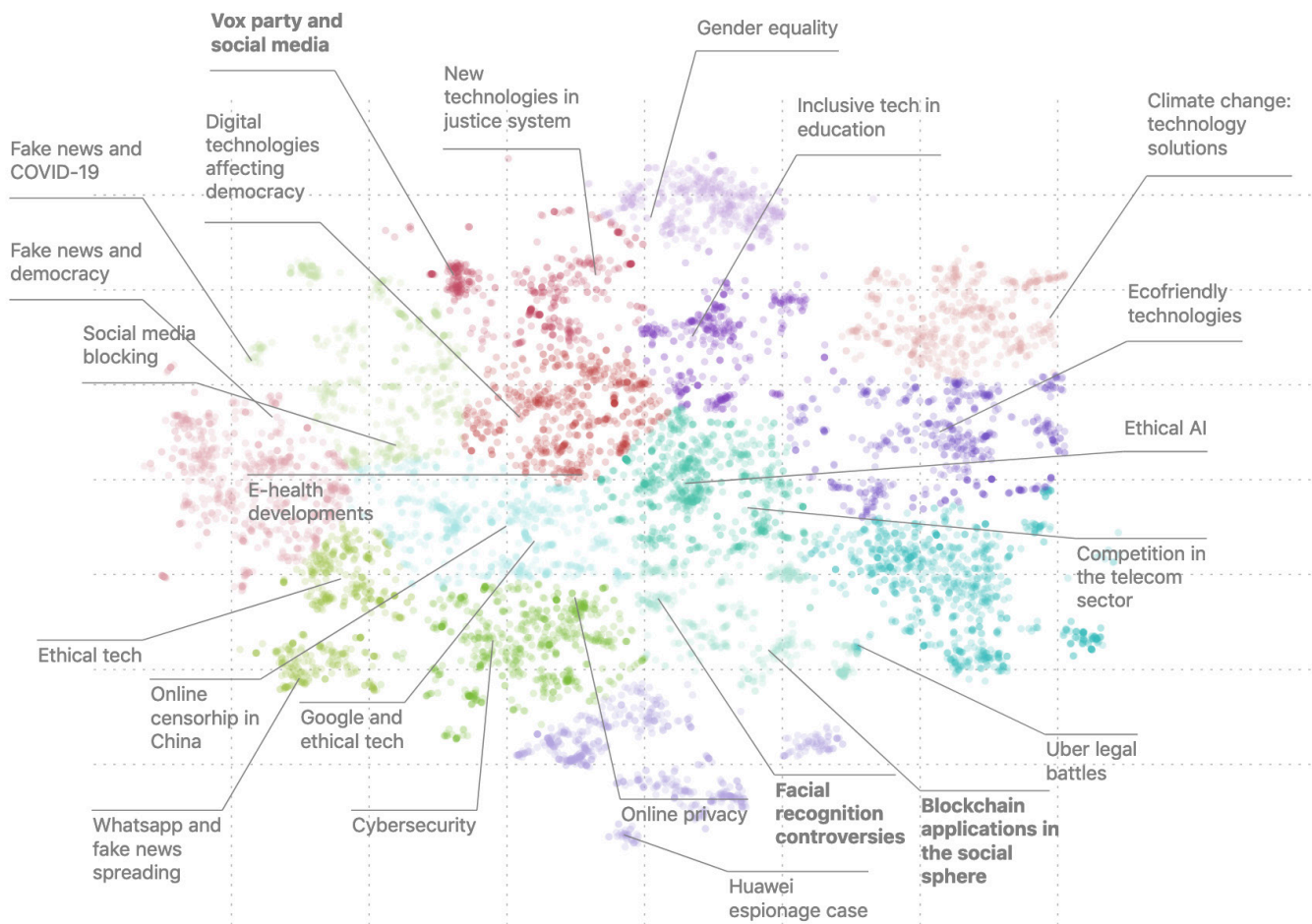64 https://digital-strategy.ec.europa.eu/en/faqs/copyright-reform-questions-and-answers
65 https://centrumcyfrowe.pl/reforma/
66 https://www.rp.pl/internet-i-prawo-autorskie/art1463261-dyrektywa-o-prawie-autorskim-polacy-chca-zeby-koncerny-dzielily-sie-z-wydawcami
67 Idem.

DISCUSSIONS IN SPAIN

The following sections summarizing insights for Spain and Spanish-speaking Latin America are strongly connected to each other. To enhance the comparability between the two maps, it has been ensured that the positions of clusters are identical: as an example, the cluster named "online privacy" is the same on both maps. This has been achieved by first implementing the t-SNE algorithm on the entire dataset of documents in Spanish, and then isolating the observations from the two regions.

In the case of Spain, we focus on local examples for the use of blockchain in public matters, the rise of the populist Vox party with the help of social media and controversies on the use of facial recognition.

Clusters present in both Spain and Latin America

E-health developments

What are the most promising technologies in the e-health field? Will 5G, AI and blockchain transform e-health?

Social media blocking

What can and can't you say on social media? What exactly are the main social media platforms' banning policies?

Fake news and democracy

What strategies and regulations do countries have for tackling fake news affecting their election processes?

Fake news and COVID-19

What measures do tech giants take to limit fake news spread on their platforms by anti-vaccine groups?

Digital technologies affecting democracy

Are digital technologies killing democracy? How could states develop a new model of digital governance to curb the monopoly that tech giants have over users' personal data and the flow of online information?

New technologies in the justice system

How are digital technologies improving access to the justice system? What is the role of Big Data, AI and mobile apps in the transformation of courts?

Gender equality

What is the scale of gender inequality in the economy? What are the initiatives for reducing the gender gap in access to the Internet and promoting digital empowerment programmes for women?

Inclusive tech in education

How can innovations such as VR and AR enrich the learning process and make it more inclusive? What is inclusive programming and how are its principles applied to education systems?

Climate change: Technology solutions

What are the regional challenges related to climate change? What are the latest innovative technologies for monitoring and studying climate change?

Blockchain applications in the social sphere

Can blockchain realize its enthusiasts' dream of digital democracy? Could blockchain replace central banks as a trusted third party?

Huawei espionage case

What are the repercussions of Huawei's espionage for the development of a global 5G infrastructure and users' privacy?

Online privacy

How do tech giants' adaptation to the European standards set by the GDPR translate into actions in different parts of the world? Which companies collect the most personal data from their users?

Cybersecurity

What are the recent cybersecurity threats? What are the online concerns of users?

WhatsApp and fake news spreading

What functionalities has WhatsApp implemented to prevent the viralization of fake news?

Online censorship in China

What measures does the Chinese government take to censor the online sphere and how do the big tech companies comply with them?

Eco-friendly technologies

Can renewable technology help reduce energy costs? What are the challenges of energy storage? Is hydrogen the energy solution of the future?

Clusters specific only to Spain

Competition in the telecom sector

What does the competition between large companies and SMEs look like in the telecommunications sector?

Facial recognition controversies

What are the concerns around facial recognition? What are the main approaches towards regulating this technology?

Vox party and social media

How has Vox become a third political force in Spain? What was the role of social media in their success?

Google and ethical tech

What are the ethical concerns related to Google's cooperation with the Chinese government and the US Pentagon? Issues with online search censorship and the military use of AI.

Uber legal battles

How is Uber competing with Spanish ride-sharing app Cabify? How was Uber driven out of Barcelona due to new taxi regulations?

BLOCKCHAIN APPLICATIONS IN THE SOCIAL SPHERE

Blockchain technology is involved in trading and managing cryptocurrencies like Bitcoin, reinventing the way we think about modern finance. However, its enthusiasts claim that Blockchain technology could be vital for enabling solutions for the emerging environmental, political, social and economic sustainability challenges.[68] It is also seen as an innovation that will restore the trust lost in the Internet.[69]

These hopes are present in the Spanish online debate in which we can find references to various examples of blockchain-related initiatives focusing on the social applications of this technology. Tecnalia – a Bilbao-based blockchain laboratory – is working on a project enabling companies and end users to track the lifecycle of their assets along an entire supply chain or industrial process.[70] Alastria – a consortium of Spanish companies – is working on a blockchain-based digital identity platform that unifies and protects

68   https://elpais.com/tecnologia/2018/09/05/actualidad/1536141664_841072.html
69   https://elpais.com/tecnologia/2020-07-03/blockchain-para-restaurar-la-confianza-perdida-en-internet-europa-cree-que-si.html
70   https://www.tecnalia.com/activos/traceblock-blockchain-para-trazabilidad-de-la-cadena-de-suministro

online personal data in compliance with the GDPR.[71] They are developing a sovereign digital identity (SSI) model and aim to make it the Spanish and European benchmark.[72] A further example for the use of a blockchain application boosting citizen participation is the EU-funded DECODE project.[73] DECODE has been involved in the development of an e-petition software in Barcelona, allowing petitions to be signed anonymously, but still in line with authentication requirements.[74]

At the other end of the spectrum, blockchain can be an essential enabler in countries implementing censorship. Access to verified information secured by blockchain's decentralized approach is discussed using the example of Everipedia – a fork[75] of Wikipedia.[76] Everipedia runs on decentralized servers which, according to its representatives, makes it not possible for governments to censor the site through its assigned server IP addresses.[77]
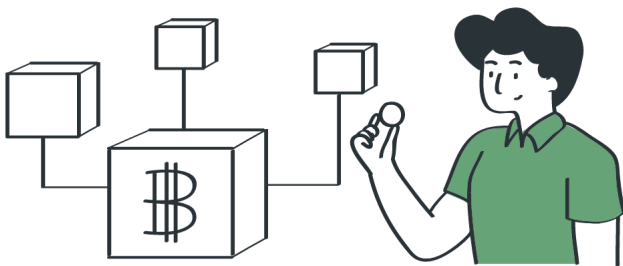
THE VOX PARTY AND SOCIAL MEDIA

For a long time, Spain was considered an exception within the EU due to the lack of a far-right political party represented in the parliament.[78] However, this has not been the case since 2019, when the ultra-right party Vox became the country's third political force.[79] Political analysts stress the importance of a smart social media campaign for its impressive election results.[80]

Experts compare the strategy of Vox to the tactics of Donald Trump and Marine Le Pen, shunning

traditional media and targeting potential voters on social networks using a hard-line rhetoric.[81] According to social media analysis group Social Elephants, Vox's messages on Twitter and Facebook generated the most interactions before the general election in 2019.[82] Carmen Aguilera-Carnerero from the University of Granada calls Vox "the absolute king in the Spanish political Instagram kingdom".[83] El País cites an 18-year-old Vox voter who believes that part of the party's success comes from their presence on social media: "They always have their Instagram account bang up to date", she says, "We find out about everything because this is part of our day-to-day lives. A rally here, a rally there… And we all attend".[84]

According to Anne Applebaum, the story of Vox "belongs to a larger global story about the online and offline campaign tactics developed by the American alt-right and the European far right, which are now used throughout the world".[85] She notes the similarities between the Vox and Trump campaigns, including the importance of private fan groups and conspiracy theories exacerbating the polarization and proliferation of language that "deliberately undermines trust in mainstream politicians and journalists".[86]

However, the relationship of Vox with social media also has another side. Similarly to far-right parties in other countries, Vox grapples with platform policies against hate speech. In 2020, its Twitter account was

71 https://elpais.com/economia/2018/04/20/actualidad/1524242724_942975.html
72 https://alastria.io/id-alastria/
73 https://www.criptonoticias.com/aplicaciones/ayuntamiento-barcelona-blockchain-identidades/
74 https://tecnopolitica.net/es/content/digital-democracy-and-data-commons-dddc
75 A fork is an independently developed copy of a source code.
76 https://www.europapress.es/portaltic/internet/noticia-everipedia-enciclopedia-alternativa-wikipedia-funcionara-blockchain-evitar-censura-bloqueo-20171207125259.html
77 https://www.naiz.eus/eu/hemeroteca/gara/editions/2017-12-18/hemeroteca_articles/everipedia-una-enciclopedia-virtual-contra-la-censura
78 https://blogs.lse.ac.uk/eurocrisispress/2019/01/10/spain-is-no-longer-exceptional-mainstream-media-and-the-far-right-party-vox/
79 https://www.eldiario.es/andalucia/vox-medidas-negociacion-andalucia_1_1756925.html
80 https://www.thelocal.es/20190427/spains-far-right-vox-party-has-won-the-internet-campaign/
81 https://www.thelocal.es/20190427/spains-far-right-vox-party-has-won-the-internet-campaign/
82 Idem.
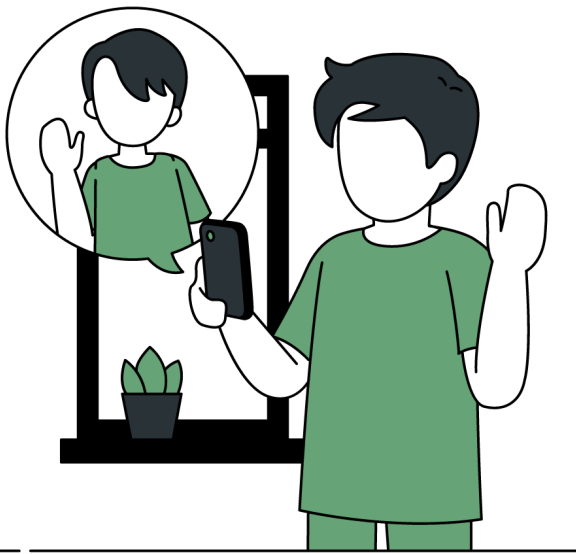83 https://www.opendemocracy.net/en/countering-radical-right/beers-spain-and-instagram-vox-and-their-links-youth/
84 https://english.elpais.com/eps/2020-02-21/why-i-voted-for-vox.html
85 https://elpais.com/ideas/2021-09-11/anne-applebaum-vox-se-creo-desde-cero-como-se-forma-a-ciertas-bandas-de-pop.html
86 Idem.

banned for 24 hours for a tweet in which a party official referred to a gender equality programme for schoolchildren as using public money to encourage paedophilia.[87] Vox has filed a criminal complaint in a Spanish court against Twitter, alleging that the social media platform violated its freedom of expression rights.[88]

FACIAL RECOGNITION CONTROVERSIES

Recent developments in machine learning have revolutionized facial recognition technologies.[89] It is high time for a debate on the ethical and legal aspects of a technology that is particularly present in Spanish society.

Spain lacks specific regulation on facial recognition and adheres to the GDPR which, although it is very strict in safeguarding the rights of citizens, is considered to leave some loopholes regarding the treatment of biometric data.[90] The EU High-Level Expert Group on AI has worked on adapting the current regulation to the challenges of processing biometric data.[91]

Facial recognition systems have been tested in various

institutions and private companies in Spain.[92] There are two main controversial cases: first, a public school in Badalona installed a system for controlling the students' attendance, using fingerprints and facial recognition.[93] Second, the Mercadona supermarket chain used facial recognition to identify customers with restraining orders or convictions.[94] The latter was given a 2500000 EUR fine by the Spanish data protection agency due to its insufficient legal basis for data processing and unlawful processing of sensitive personal data.[95]

The Spanish academic community recently (March 2021) issued an open letter to the Spanish government asking for a moratorium on the use of facial recognition systems.[96] The signatories indicate that the current implementations of facial recognition algorithms involve significant biases (e.g., racial bias) and could widen existing social inequalities.[97]

87 https://www.cope.es/actualidad/tecnologia/redes-sociales/amp/noticias/vox-carga-contra-twitter-por-censurar-cuenta-durante-horas-han-recibido-presiones-del-gobierno-20200122_600826
88 https://www.eldiario.es/tecnologia/vox-trump-twitter-reiteramente-expresion_1_6047177.html
89 https://www.xataka.com/privacidad/tecnologia-esta-preparada-para-reconocimiento-facial-multitudes-ahora-toca-a-sociedad-tener-debate-etico-privacidad?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+xataka2+%28Xataka%29
90 https://www.diariodesevilla.es/tecnologia/reconocimiento-facial-uso-espana-mundo_0_1484851934.html
91 https://www.europarl.europa.eu/RegData/etudes/IDAN/2021/698021/EPRS_IDA(2021)698021_EN.pdf
92 https://www.diariodesevilla.es/tecnologia/reconocimiento-facial-uso-espana-mundo_0_1484851934.html
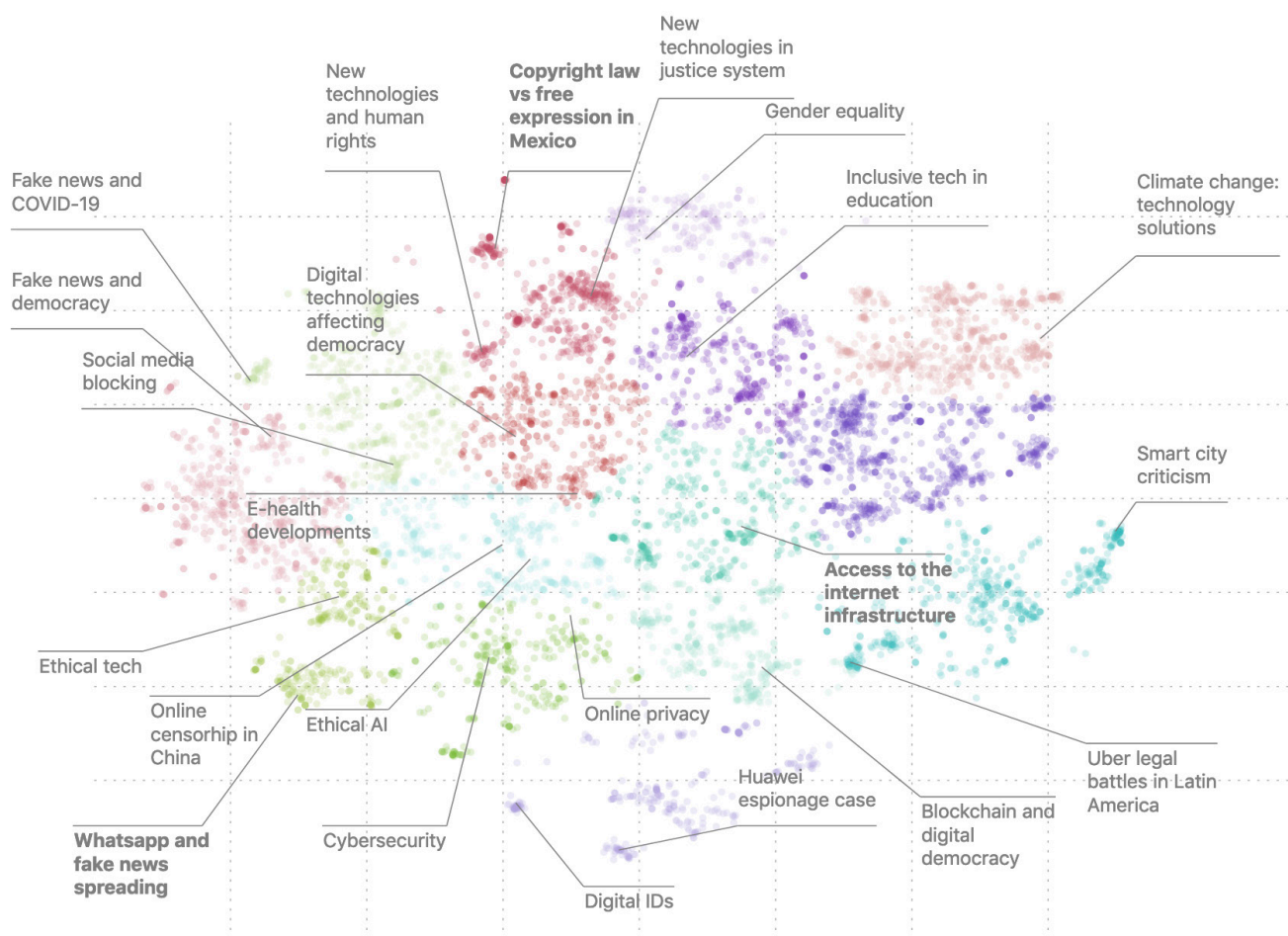93 https://gdprhub.eu/index.php?title=APDCAT_(Catalonia)_-_PS_49/2019
94 https://www.thelocal.es/20200702/spains-mercadona-supermarkets-install-facial-recognition-systems-to-keep-thieves-at-bay/
95 https://www.theolivepress.es/spain-news/2021/07/23/mercadona-gets-e2-5-million-fine-for-installing-facial-recognition-cameras-in-their-supermarkets-in-spain/
96 https://www.lavanguardia.com/tecnologia/20210324/6605266/profesores-universitarios-piden-gobierno-moratoria-sistemas-reconocimiento-facial.html
97 Idem.

DISCUSSIONS IN LATIN AMERICA

Following the analysis of articles published by Spanish websites, we continue the analysis of Spanish documents from various countries in Latin America. In the following sections, only the topics characteristic to this region are highlighted, while the topics also prevalent in Spain are not listed. The spread of fake news via WhatsApp, projects facilitating access to the Internet and copyright law in Mexico are discussed in greater detail.

Clusters specific to Latin American countries

Access to the internet infrastructure

What are the innovative initiatives tackling the uneven Internet access in Latin America?

New technologies and human rights

How can machine learning systems affect human rights, such as the rights to equality, non-discrimination, privacy, data protection, freedom of expression and equality before the law?

Copyright law vs free expression in Mexico

Are the changes in the Mexican copyright legislation leading to online censorship? What is the impact of the United States-Mexico-Canada Agreement on the Internet regulation in Mexico?

Uber legal battles in Latin America

What challenges does Uber face in Latin American countries from unions, regulators and competitors?

Digital IDs

One billion people around the world lack an official ID. How can digital IDs make it easier and safer for individuals to bank, vote, travel, obtain government services and safeguard their social media profiles and interactions? On the other hand, how can they be used to restrict freedoms and increase surveillance?

Smart city criticism

What are the controversies related to the smart city development in Mexico? A history of political corruption and money defrauding.

COMBAT AGAINST THE SPREAD OF FAKE NEWS: THE CASE OF WHATSAPP

WhatsApp is very popular across Latin American countries, used not only for communicating with friends and family, but also for business purposes.[98] The application's global reach was one of the reasons for its purchase by Facebook back in 2014.[99] According to digital activists, WhatsApp might pose a threat to democracy in some parts of the world equal to Facebook itself.[100] The platform is considered vulnerable to malicious use, because many of its users are digitally illiterate or less experienced in using the Internet. For a few years, WhatsApp has been accused of an inability to curb the spread of fake news, control the illegal content shared via the platform and block automatic submissions.[101]

Facing global criticism, WhatsApp has introduced new functions, such as limiting the number of people to whom one can send messages or verifying images and messages by using third-party fact-checking services. For the latter function Mexico was selected as one of the pilot countries.[102]

However, journalists, governments and NGOs in Latin American countries have experimented with their own ways to monitor WhatsApp content. In Colombia, political news site La Silla Vacía launched WhatsApp Detector, a service that fact checks viral chain messages that circulate on the platform.[103] During the

2018 election, digital rights activists in Mexico created Verificado, a collaborative fact-checking "hotline". Verificado set up a WhatsApp group where users could send information for verification.[104]

ACCESS TO THE INTERNET INFRASTRUCTURE

Poor and uneven Internet coverage, coupled with high data and device costs, continue to hamper access to digital services in Latin America, where less than 50% of citizens have a fixed broadband connection.[105] With Internet costs weighing disproportionately on vulnerable populations, uneven digital access increases inequality in what is already the world's most unequal region.[106] While around 70% of Latin America's urban population have Internet access, in rural areas it is only one in every three people.[107]

Various small- and large-scale innovative solutions have been developed to tackle this problem by both state and non-state actors. In the Peruvian Amazon, the Alphabet subsidiary Loon collaborated with local telecommunications companies to provide mobile Internet connectivity using high-altitude balloons.[108] In the Chilean Atacama, the DemocraciaWifi initiative is providing solar-powered high-speed Wi-Fi equipment to isolated communities and schools. In Paraguay

98   https://www.panoramas.pitt.edu/news-and-politics/whatsapp%E2%80%99s-popularity-abroad-vs-us
99   https://www.bloomberg.com/news/features/2020-12-09/facebook-fb-plans-to-turn-messaging-app-whatsapp-into-a-moneymaking-business
100   https://www.lanacion.com.ar/el-mundo/politica-y-tecnologia-whatsapp-se-perfila-como-un-mayor-reto-que-facebook-para-las-democracias-nid2135240/
101   https://www.milenio.com/tecnologia/whatsapp-dejara-buscar-imagenes-google-evitar-fake-news
102   https://heraldodemexico.com.mx/tecnologia/2020/8/3/whatsapp-agrega-boton-para-verificar-si-mensajes-reenviados-son-reales-fake-197483.html
103   https://www.lasillavacia.com/historias/silla-nacional/la-silla-lanza-su-detector-de-whatsapp
104   https://verificado.mx/categoria/verificaciones/
105   https://www.weforum.org/agenda/2021/07/latin-america-caribbean-digital-access/
106   https://www.latinamerica.undp.org/content/rblac/en/home/presscenter/pressreleases/2021/trapped--high-inequality-and-low-growth-in-latin-america-and-the.html
107   https://latinamericareports.com/at-least-77-million-in-latin-americas-rural-areas-have-no-internet-access/4785/
108   https://www.larepublica.co/responsabilidad-social/telefonica-y-facebook-se-alian-con-google-para-llevar-internet-a-la-amazonia-2935452

and Argentina governments are funding free Internet access points in digitally excluded areas.[109] [110]

COPYRIGHT LAW VS FREE EXPRESSION IN MEXICO

When Mexico's Congress passed a new copyright law as part of its adoption of the United States-Mexico-Canada Agreement (USMCA), it largely copied the US copyright statute.[111] However, the modifications that were introduced to the legislation made the law detrimental for human rights, according to digital activists (e.g., those from Red en Defensa de los Derechos Digitales de México[112] and Electronic Frontier Foundation).

While the big tech companies in the US have voluntarily adopted algorithmic copyright filters, the new Mexican law states that "measures must be taken to prevent the same content that is claimed to be infringing from being uploaded to the system or network controlled and operated by the Internet Service Provider after the removal notice".[113] Activists warn that this means that any online service in Mexico has to apply algorithms that capture everything posted by a user, compare it to a database of forbidden materials and, if it finds a match, must block this material from public view or face potential fines.[114] Such a mechanism harms freedom of online expression, according to Derechos Digitales, as it disproportionately affects smaller online companies and initiatives.[115]

109 https://eltrueno.com.py/2020/10/23/habilitan-en-pedro-juan-caballero-el-primer-punto-de-internet-gratuito-ademas-de-dos-telecentros/
110 https://enacom.gob.ar/redes-comunitarias-roberto-arias_p5049#contenedorSite
111 https://piedepagina.mx/reformas-a-la-ley-de-derecho-de-autor-criminalizan-y-fomentan-la-desigualdad/
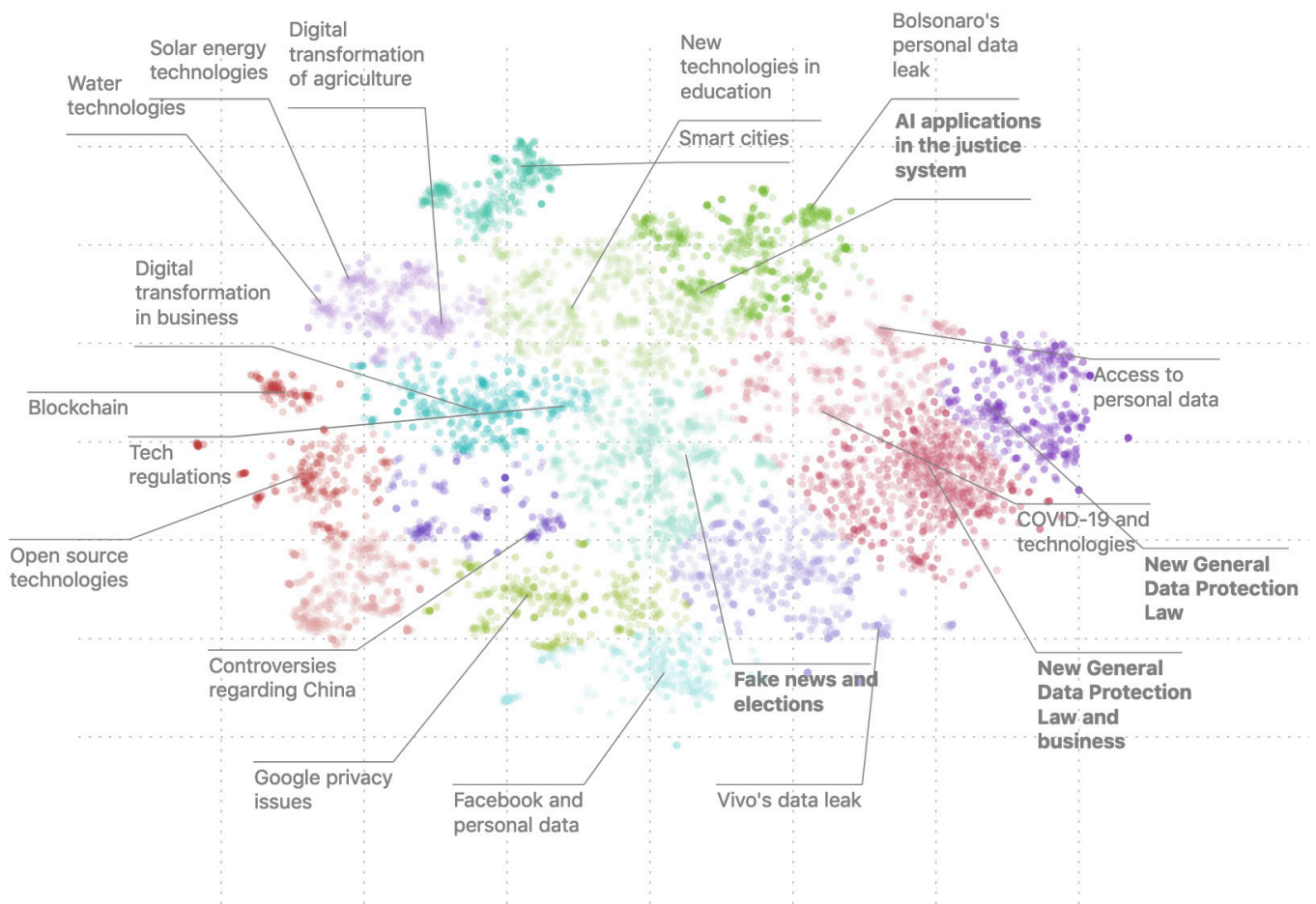112 https://www.fayerwayer.com/2020/06/mexico-censura-digital/
113 https://www.eff.org/pl/deeplinks/2020/07/legal-deep-dive-mexicos-disastrous-new-copyright-law
114 https://piedepagina.mx/reformas-a-la-ley-de-derecho-de-autor-criminalizan-y-fomentan-la-desigualdad/
115 https://piedepagina.mx/reformas-a-la-ley-de-derecho-de-autor-criminalizan-y-fomentan-la-desigualdad/

DISCUSSIONS IN BRAZIL

Following the analysis of Spanish-speaking Latin America, we continue the report with Portuguese-speaking Brazil. The map for documents from Portugal is presented online only due to the low number of articles.[116]

Various unique perspectives were highlighted in the discussions from Brazil. First, in 2020 Brazil introduced its comprehensive legal framework for preserving privacy, the General Law on the Protection of Personal Data. The complicated process of adopting "Brazil's GDPR" shows the importance of institutions responsible for setting standards and enforcing them. Second, a large share of Internet users in Brazil are locked into Facebook services, making society even more vulnerable to fake news. The analysed opinion pieces and interviews provided unique insights on protecting democracy from misinformation campaigns. Third, the experimentation with digital tools in the judiciary system provides an interesting case study.

Water technologies

What novel technologies are being tested for sustainable water management?

Solar energy technologies

What are the promising energy production innovations in Brazil and around the world?

Digital transformation of agriculture

How is digitalization transforming agriculture?

Smart cities

Which start-ups from Brazil are developing ground-breaking technologies for cities? What are the main ideas and strategies for smart cities in Brazil?

New technologies in education

How can digital tools improve education and reduce social inequalities?

AI applications in the justice system

How can AI improve the functioning of the judiciary?

Bolsonaro's personal data leak

What kind of data was exposed about the president?

Access to personal data

What have been the most important debates and events related to data protection in Brazil?

COVID-19 and technologies

How has the pandemic changed the discussion about privacy? What kind of citizen data was used in Brazil?

New General Data Protection Law

What is included in the LGPD? What were the main points of debate during the lengthy legislative process?

New General Data Protection Law and business

How should companies and organizations collect and process personal data?

Vivo's data leak

What happened with Vivo, a major telecommunications company in Brazil?

Facebook and personal data

What were the main controversies regarding the collection of data by Facebook in Brazil and around the world?

Fake news and elections

What are the main concerns regarding the flood of fake news in Brazil? How can the manipulation of the public during elections be avoided?

Google privacy issues

What were the privacy concerns related to Google? What actions were taken by authorities in Brazil and around the world?

Controversies regarding China

Which actions by China in the world of tech are controversial? What is the role of Huawei?

Open-source technologies

What are the main developments in the open-source community? What are the examples from Brazil?

Blockchain

What is the attitude of the public sector towards the application of blockchain?

Digital transformation in business

What are the best practices in cybersecurity for companies? How can businesses make the most out of data?

Tech regulations

What dangers and risks are associated with AI algorithms?

ELECTIONS AND FAKE NEWS

Brazil is the third-largest market for Facebook with 130000000 active users.[117] Facebook is a key means of communication for a wide share of the society, as millions of Internet users access the Internet via small mobile data plans that include zero-rating for Facebook and WhatsApp.[118] Therefore, the Facebook algorithm decides what information is visible and what is hidden once the data plan is used up. In such an environment, coordinated manipulation campaigns can be even more effective than in countries with wider access to information and data.

Important changes were introduced in the electoral law in 2017, limiting the channels for electoral advertisements. While the law reduced the duration of election time on TV and radio, it also banned the placement of paid advertisements online. However, the law contained a crucial exception, allowing the boosting of content on social media platforms. Therefore, the law seems to stimulate and promote the dissemination of electoral propaganda on Facebook, while at the same time

117 https://diplomatique.org.br/quem-da-mais-na-campanha-eleitoral-na-internet/
118 https://flavialefevre.com.br/pt/capitalismo-de-vigilancia-e-o-esgarcamento-da-democracia

making other conduits of information less relevant.[119] [120] Unfortunately, the 2018 elections proved these concerns to be right, as fake news and misinformation campaigns were widely used.[121]

These experiences fuelled a wide discussion on potential solutions in Brazil, such as the Disinformation Coping Program, an initiative of the Superior Electoral Court ahead of the 2020 elections.[122] Numerous social media platforms adopted tools: WhatsApp enabled users to report accounts flooding messages, while Twitter and Facebook notified users with official information about the elections.[123] These changes are in line with the assumption that the true threat to democracies is the "disinformation economy" that uses social media platforms to spread fake news.[124] According to Rafael Zanatta, a researcher in Law and Digital Societies, there are three main regulatory models that can restrict the spread of fake news. The first idea is the implementation of peer control tools, enabling users to flag harmful content. The second method is referred to as "regulated self-regulation", when companies aim at achieving objectives set by the society. For example, social media platforms can remove bots spreading defamatory content. Finally, the third model is "regulation by architecture", e.g., a reduction in the number of users in WhatsApp groups.

LGPD: BRAZILIAN GENERAL LAW ON THE PROTECTION OF PERSONAL DATA

The tide regarding personal data is changing in Brazil, with greater responsibility required from the private sector, including tech companies as well.[125] The LGPD is Brazil's framework for unifying rules regarding data handling, matching Europe's GDPR. The law has been in preparation for several years and was finally approved in 2020.[126] The LGPD guarantees access and transparency regarding the use of personal data in the public and private sectors, providing citizens with the opportunity to request the data be copied,

transferred or deleted. While the adoption of the law was a lengthy procedure, the final date of entry was also debated, due to the complexity of the framework and the effect of the COVID-19 pandemic, among other reasons.[127] The period of administrative sanctions was postponed to August 2021.[128] Further controversies were linked to the funding of a new supervising body called the National Data Protection Authority.[129] The NDPA was finally established, with the aim of managing new standards, procedures and applying fines in cases of non-compliance.[130]

The protection of personal data raised further controversies in relation to President Bolsonaro, whose private information was leaked by the hacker group Anonymous Brazil in June 2020.[131] The data exposure contained personal data relating to the president, his family and members of the government.

119   https://flavialefevre.com.br/pt/capitalismo-de-vigilancia-e-o-esgarcamento-da-democracia
120   https://diplomatique.org.br/quem-da-mais-na-campanha-eleitoral-na-internet/
121   https://www1.folha.uol.com.br/poder/2020/11/redes-sociais-foram-principal-alvo-de-acoes-por-fake-news-e-desinformacao-nas-eleicoes-de-2018-aponta-estudo.shtml
122   https://noticias.r7.com/tecnologia-e-ciencia/eleicoes-contra-fake-news-tse-faz-parceria-com-mais-de-50-entidades-13102020
123   https://noticias.r7.com/tecnologia-e-ciencia/eleicoes-contra-fake-news-tse-faz-parceria-com-mais-de-50-entidades-13102020
124   http://www.ihu.unisinos.br/585561-economia-politica-da-desinformacao-e-a-principal-ameaca-a-democracia-entrevista-especial-com-rafael-zanatta
125   https://porta23.blogosfera.uol.com.br/2019/02/08/a-era-do-uso-irresponsavel-de-dados-esta-chegando-ao-fim/
126   https://noticias.r7.com/brasil/governo-sanciona-hoje-lei-de-protecao-de-dados-14082018
127   https://congressoemfoco.uol.com.br/temas/saude/em-tempos-de-covid-19-lei-de-protecao-de-dados-e-ainda-mais-urgente/
128   https://gizmodo.uol.com.br/lgpd-setembro-governo-anpd/
129   https://noticias.r7.com/brasil/governo-sanciona-hoje-lei-de-protecao-de-dados-14082018
130   https://cio.com.br/gestao/lgpd-promete-tornar-o-brasil-o-pais-mais-auditado-do-mundo/
131   https://odia.ig.com.br/rio-de-janeiro/2020/06/5927130-carlos-bolsonaro-admite-vazamento-de-dados-e-fala-em--tentativa-de-intimidacao.html

DIGITALIZATION OF THE JUSTICE SYSTEM

The judiciary system in Brazil is facing challenges related to a significant accumulation of cases.[132] The average time to reach a decision at first instance is 2.5 years, while the execution phase stretches to more than six years. Against this landscape, digital technologies can be utilized for greater efficiency and quicker processes.

A potential way to save time is to reach an agreement before the final decision. LawTech solutions can facilitate conciliation between sides with data analysis, e.g., by providing statistics related to prior cases, such as the amount of compensation.[133] Besides automating repetitive tasks, digital tools can also support courts by classifying actions, highlighting relevant cases or suggesting types of sentences.[134] Digitalization would also support greater interoperability, as currently there is a lack of data integration between courts.[135] Such tools based on AI have already been implemented by the Supreme Court and numerous courts in Brazil.[136] Finally, during the pandemic, courts were authorized to go online, proceeding cases remotely.[137]
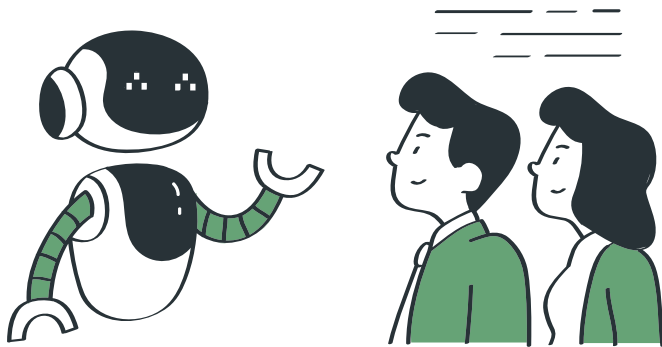
132 https://www12.senado.leg.br/noticias/materias/2018/01/11/proposta-tenta-desafogar-o-judiciario-hoje-com-quase-100-milhoes-de-processos?utm_source=midias-sociais&utm_medium=midias-sociais&utm_campaign=midias-sociais
133 https://julianajennifer.jusbrasil.com.br/artigos/732545682/lawtechs-a-revolucao-da-justica
134 https://www.focus.jor.br/tribunais-de-justica-do-pais-investem-em-robos-contra-acumulo-de-processos/
135 https://julianajennifer.jusbrasil.com.br/artigos/732545682/lawtechs-a-revolucao-da-justica
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CONCLUSION

This report continued the exploration of policy and technology topics based on online articles shared on Twitter. Our main goal was to shift the focus from Anglo-Saxon sources to other European and Latin American perspectives, capturing more diverse insights. Four languages were included in the study: German, Spanish, Polish and Portuguese. Similarly to our previous work,[138] we focused on six wide umbrella topics: Environment, Sustainability and Resilience; Decentralizing Power and Building Alternatives; Public Space and Sociality; Privacy, Identity and Data Governance; Trustworthy Information Flows, Cybersecurity and Democracy; and Access, Inclusion and Justice.

The study presented several important advantages in analysing non-English sources. First, the insights revealed the local perspectives on global challenges. For example, the results informed us about the fight against the spread of fake news in Latin America, the Polish debate on the power of social platforms and censorship, and the use of facial recognition in Spain, highlighting local problems and initiatives for solutions as well. Moreover, the presented case studies provided details on issues less prevalent in English-language media. Such examples include the emerging blockchain development in Spain, Brazil's GDPR-equivalent privacy regulation, and the discussion in Germany towards moving to open-source technologies.

The study also demonstrates the robustness of the developed methodology for text analysis and the exploration of topics. The results show that the methodology can be implemented with different languages and text sources, indicating that it can be used for a wider range of cases. A general use case is the organization and categorization of documents: e.g., policy proposals, research papers or other text data.

All results, including the English-language analyses, are available in the form of interactive maps online at: https://ngitopics.delabapps.eu. As the data collection methodology has been consistent for the different languages, users can find relevant articles for a topic of interest across all languages. A recommended approach is to begin research with the maps based on the English language, enabling the user to gain a general and global view of the issues, and proceed with the maps prepared for the different languages.

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138   https://ngitopics.delabapps.eu/report.pdf