Beyond Privacy: Learning Data Ethics

European Big Data Community Forum 2019

14 November 2019, Solvay Library, Brussels

Event Report

Contents

1. Introduction

The Beyond Privacy: Learning Data Ethics – European Big Data Community Forum 2019 was held on November 14, 2019 at the Solvay Library in Brussels.

The event, supported by the Big Data Value PPP, was organised by five EU-funded H2020 research projects active in the Big Data field and focused on Privacy-Preserving Technologies, transparency and legal compliance: e-SIDES, MyHealthMyData, SODA, SPECIAL, WeNet.

By bringing together the community active in Big Data research, policy and industry, the event aimed at driving forward the discussion on how best to deal with ethical challenges in Big Data, also in view of the rise of Artificial Intelligence. The occasion was particularly relevant in order to present the most recent discussions and practical guidelines about ethical principles, thus raising attendees awareness around Data Ethics and the research work currently undergoing in this field.

The day was structured along two main sessions. The morning session, titled "Towards Value-centric Big Data", was dedicated to high level keynote speakers, panel discussions and presentations involving representatives from organisations active in the legal, technical and civil society fields. The session also featured presentations from the five EU-funded research projects hosting the event, which provided an overview of the main outputs produced throughout their duration.

The afternoon session, titled "Lessons learned from research and technology for a human-centred Big Data" hosted two parallel breakout sessions dealing with legal and ethical issues in Big Data and focused on the presentation of the research material and tools currently available to the community to explore and tackle these challenges. The breakout sessions called for interaction and attendees' active contribution to the discussion, which was supported through online voting and Q&A sessions.
During the day the audience was further engaged through the support of a graphic animator providing a live visual summary of the key take-aways.

This report describes the event and presents the highlights and key findings stemming from the discussion. It includes links to the presentations, relevant papers and guidelines presented during the day, as well as pictures and visual summaries of the sessions.

1.1 Agenda

09.00	Registration and welcome coffee	

Morning Session: Towards value-centric Big Data

Chair: Richard Stevens, e-SIDES Coordinator, IDC

10.00	Opening session	Richard Stevens, e-SIDES Coordinator, IDC
10.15	Welcome Keynote	Dr Malte Beyer-Katzenberger, Unit G1 – Data policy & innovation, Directorate General for Communication Networks, Content and Technology of the European Commission
10.30	Keynote	Dr Christiane Wendehorst, President - European Law Institute, co-chair of the German Data Ethics Committee
10.45	Panel	**Extracting the value of data: How the research and industry community can best move forward to balance privacy and fairness**

Chair: Gabriella Cattaneo, e-SIDES

- Marina Da Bormida, Ethics Expert and Lawyer
- Maryant Fernandez Perez, Senior Digital Policy Officer, BEUC - The European Consumer Organisation
- Diego Naranjo, Head of Policy, EDRi - European Digital Rights
- Moira Patterson, Global Affairs Program Director, IEEE

11:30	*Coffee break*	

11.45	Projects panel	*Chair: Richard Stevens, e-SIDES*

- *Privacy-preserving technologies in a data-driven society* (Daniel Bachlechner, e-SIDES)
- *Progressing practical privacy-preserving big data analytics* (Paul Koster, SODA)
- *Enhancing transparency in the big data and AI landscape* (Sabrina Kirrane, SPECIAL)
- *Diversity and Privacy: Opportunities and Challenges* (Laura Schelenz, WeNet)
- *A GDPR-compliant blockchain-based system with advanced privacy-preserving solutions* (Edwin Morley-Fletcher, MyHealthMyData)

13.00	*Networking Lunch*	

Afternoon Session: Lessons learned from research and technology for a human-centered Big Data

Chair: Rigo Wenning, SPECIAL & Mosaicrown

14:00

Afternoon Session Introduction

Rigo Wenning, SPECIAL & Mosaicrown

Technology and Data Protection Law – how can software engineering support legal compliance?

(Chair: Eva Schlehahn, SPECIAL):

- Data Privacy Vocabularies to fulfil GDPR Transparency & Compliance Checking requirements (Eva Schlehahn, SPECIAL)
- Anonymisation of personal data leads to the inapplicability of the GDPR – Myth or Reality? (Anna Zsófia Horváth, SODA)
- Why have we preferred to opt for sharing synthetic data and for computation "bringing the algorithms to the data" (Edwin Morley-Fletcher, MyHealthMyData)

14:10   Breakout sessions

Human centric big data governance: responsible ways to innovate privacy preserving technologies

(Chair: Karolina La Fors, e-SIDES):

- e-SIDES lessons for the responsible innovation of privacy-preserving technologies in the era of AI (Karolina La Fors, e-SIDES)
- Data for Diversity-Aware Technology: Some Ethical Considerations (Laura Schelenz, WeNet)
- BDVA TF6.SG4 paper: Data Protection in the era of Artificial Intelligence (Charlotte van Oirsouw, BDVe)

16.00

Wrap up of the breakout sessions

Rigo Wenning, SPECIAL & Mosaicrown

16.30

Closing remarks

Richard Stevens, e-SIDES Coordinator, IDC

2. Morning session: Towards Value-centric Big Data

2.1. Welcome Keynote: Towards a more ethical Data Economy?

Towards a more ethical Data Economy?
Dr Malte Beyer-Katzenberger, Unit G1 – Data policy & innovation, Directorate General for Communication Networks, Content and Technology of the European Commission

Download the presentation

The Beyond Privacy: Learning Data Ethics - European Big Data Community Forum 2019 kicked-off with a Welcome Keynote from Dr Malte Beyer-Katzenberger (Unit G1 – Data policy & innovation, Directorate General for Communication Networks, Content and Technology of the European Commission) discussing the European course towards a more ethical Data Economy from a policy perspective. During the speech particular emphasis was placed on how access to data and data sharing are increasingly gaining importance in the EU path towards the development of a competitive, secure, inclusive and ethical Data Economy. Control and access to data are in fact expected to be the next challenge at European level for the next two years: between fully closed data and fully open data there are shades of shared data on which the European community is currently working on also in terms of future funding initiatives. As a matter of fact, the European Commission, together with the Member States, intends to support the creation of common European data spaces to make data sharing across borders seamless, while ensuring full compliance with the General Data Protection Regulation.

«The EU needs to go further in developing a competitive, secure, inclusive and ethical digital economy with world-class connectivity. Special emphasis should be placed on **access to, sharing of and use of data,** on data security and on Artificial Intelligence, in an environment of trust.»

(conclusions of 21/22 March 2019 the European Council)

## 2.2. Keynote: Opinion of the German Data Ethics Commission

Opinion of the German Data Ethics Commission
Prof Dr Christiane Wendehorst, President - European Law Institute, co-chair of the German Data Ethics Commission

Download the presentation

The second Keynote of the day given by Prof Dr Christiane Wendehorst (President - European Law Institute and co-chair of the German Data Ethics Commission) focused on the presentation of the work carried out by the German Data Ethics Commission established in 2018 with the mission to develop, within one year, an ethical and regulatory framework for data, algorithm-based decision-making (ADM) and AI. In particular, the speech focused on the Opinion the Commission presented on October 23, 2019 to the German Federal Government. The document includes ethical guidelines and 75 concrete recommendations for dealing with data and algorithmic systems with the aim to strengthen European values such as freedom and democracy, protect individual rights and promote social cohesion and prosperity in the digital age.
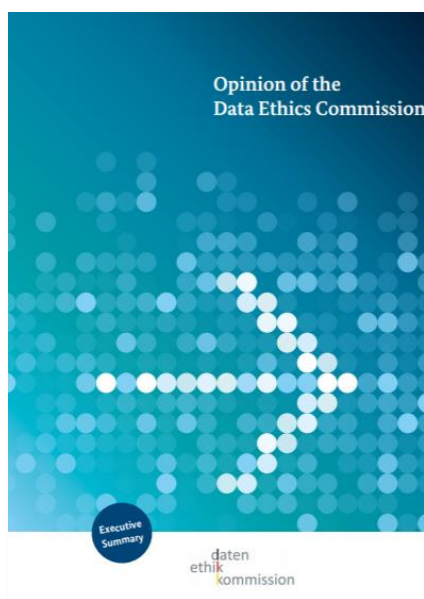
Download the Executive Summary
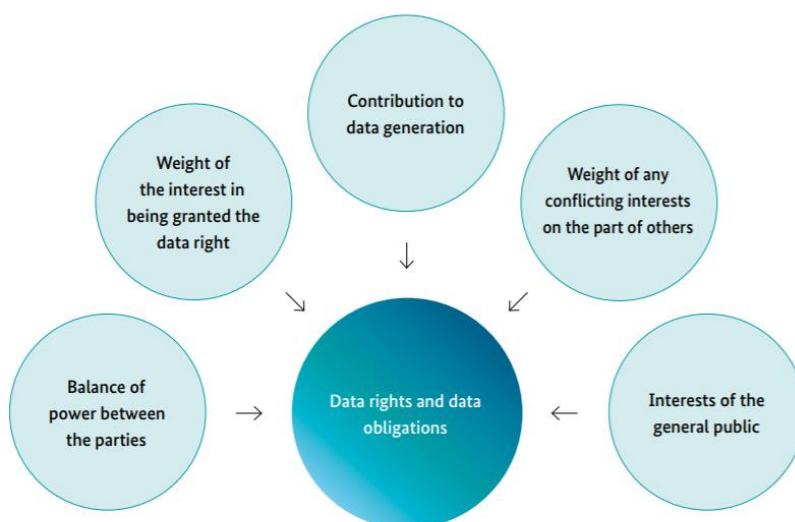
«Ethics, law and democracy must serve as a **shaping force for change**, both in the broader sense and more specifically in the field of technology. To achieve this goal, interdisciplinary discourse in politics and society is required, and care must be taken to ensure that any rules and regulations adopted are open enough to retain their regulatory clout and their ability to adapt, even in the face of fast-paced changes to technologies and business models»

Opinion of the German Data Ethics Commission, October 2019

2.3. Panel: Extracting the value of data - How the research and industry community can best move forward

The two Keynote speeches were followed by a panel discussion chaired by Gabriella Cattaneo (Associate Vice President – IDC4EU European Government Consulting at IDC and e-SIDES project member) involving representatives from organisations active in the legal, technical and civil society fields:

- Marina Da Bormida, Ethics Expert and Lawyer
- Maryant Fernandez Perez, Senior Digital Policy Officer, BEUC - The European Consumer Organisation
- Diego Naranjo, Head of Policy, EDRi - European Digital Rights
- Moira Patterson, Global Affairs Program Director, IEEE

The panelists presented their different viewpoints around the theme "extracting the value of data", discussing how the research and industry community can best move forward to balance privacy and fairness.

Each panel speaker also highlighted any relevant publicly available papers or guidelines in their field complementing the information presented during the day or offering further insights. References and direct links to the documents have been provided in the following pages.
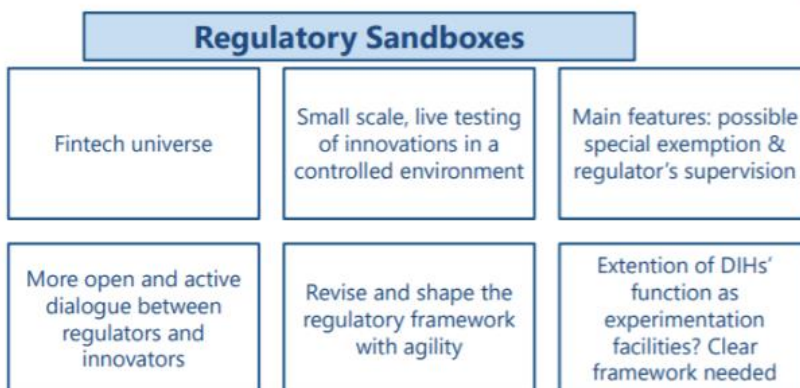
Operationalizing Data Ethics:
Which barriers, opportunities and facilitating factors for SMEs?
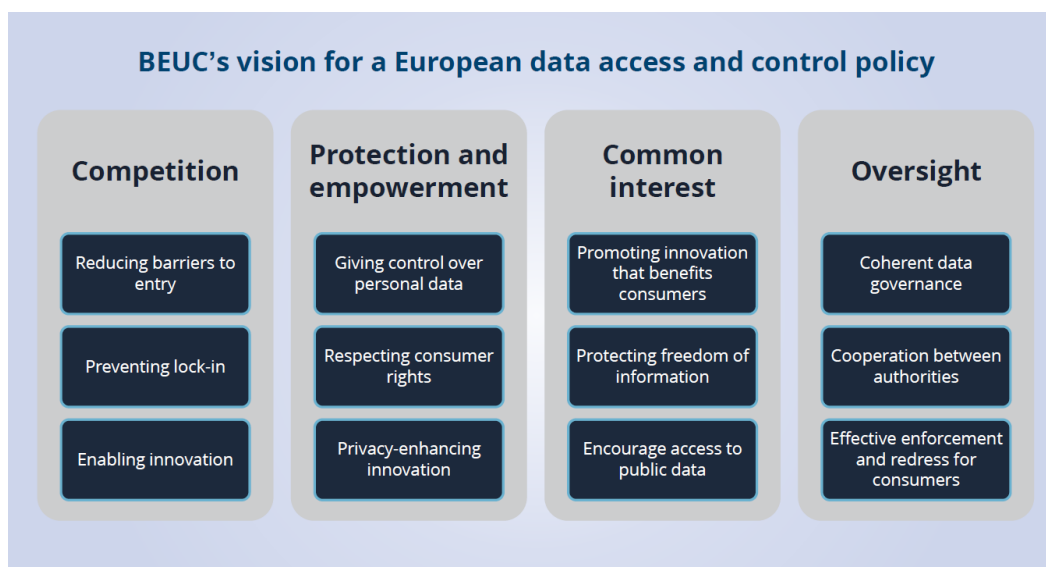Marina Da Bormida, R&I Lawyer and Ethics Expert

Download the presentation

The way forward…reflecting on facilitating measures/ 1

Regulatory Sandboxes

Fintech universe	Small scale, live testing of innovations in a controlled environment	Main features: possible special exemption & regulator's supervision
More open and active dialogue between regulators and innovators	Revise and shape the regulatory framework with agility	Extention of DIHs' function as experimentation facilities? Clear framework needed

Consumer-friendly EU policies on Artificial Intelligence and the Data Economy
Maryant Fernández Perez, Senior Digital Policy Officer, BEUC – The European Consumer Organisation

Download the presentation

BEUC's vision for a European data access and control policy

Competition	Protection and empowerment	Common interest	Oversight
Reducing barriers to entry	Giving control over personal data	Promoting innovation that benefits consumers	Coherent data governance
Preventing lock-in	Respecting consumer rights	Protecting freedom of information	Cooperation between authorities
Enabling innovation	Privacy-enhancing innovation	Encourage access to public data	Effective enforcement and redress for consumers

Find more - BEUC's position papers:
On AI and algorithm decision-making:
AI Rights for Consumers
Automated Decision Making and Artificial Intelligence - A Consumer Perspective
On data access and control:
 Access to Consumers Data in the Digital Economy

Protecting Digital Freedom
Diego Naranjo, Head of Policy, EDRi – European Digital Rights

In his presentation, Naranjo underlined the essential elements needing to be taken into account in order to balance privacy and fairness while extracting the value of data:
1. Legal consent
2. Data minimization (future of AI)
3. GDPR: not for preventing but to ensure the correct use of data
4. AI: before regulating on AI we might want to be sure not to overregulate on AI
5. Ethical use of algorithms

IEEE SA - Advancing Technology for the Benefit of Humanity
Moira Patterson, Global Affairs Program Director, IEEE

Download the presentation

IEEE ACTIVITIES IN A/IS AND ETHICS
Our Work: Putting principles into practice

Community
- 3000 members from all continents
- 40% women
- Participation & endorsement by industry
- Recognition by governments & international organizations

IEEE SA STANDARDS ASSOCIATION

Ethically Aligned Design
- Provides guidance for standards, certification, regulation, & serves as a reference for the work of policymakers, industry members, technologists, & educators

"EAD For" Series
- Business
- Artists
- Health
- Parenting
- Advertising

Standards
- Nearly 30 AI/AS standards projects in development of which 15 are ethically oriented
- Included in the ethically oriented standards is IEEE P7000, which establishes a process model by which engineers & technologists can address ethical considerations

Certification
Criteria and process for Certification / marks addressing:
- Transparency in A/IS
- Accountability in A/IS
- Algorithmic Bias in A/IS

Education and learning
- AI & Ethics in Design Business Course
- EAD University Consortium
- Engagement and collaboration with governments, municipalities and intergovernmental fora (EU, EC, CoE, OECD, UN orgs, NYC, Vienna, Espoo, ...)

◆IEEE

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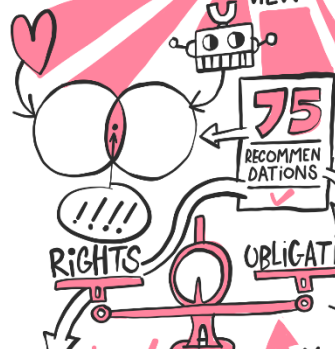
2.4. Projects Panel

The second panel held during the morning session was dedicated to the presentation of the five EU-funded research projects hosting the European Big Data Community Forum 2019: e-SIDES, MyHealthMyData, SODA, SPECIAL, WeNet. The panel, chaired by Richard Stevens (Consulting Director at IDC4EU – European Government Consulting, IDC and e-SIDES Project Coordinator), focused on the discussion of the projects objectives and main achievements in the research fields of privacy, data protection, ethics and legal compliance.

About the project

Data-driven innovation is deeply transforming society and the economy. Although there are potentially enormous economic and social benefits this innovation also brings new challenges for individual and collective privacy, security, as well as democracy and participation. The main objective of the CSA e-SIDES has been to complement the research on privacy-preserving Big Data technologies, by analysing, mapping and clearly identifying the main societal and ethical challenges emerging from the adoption of Big Data technologies, conforming to the principles of responsible research and innovation; setting up and organising a sustainable dialogue between industry, research and social actors, as well as networking with the main Research and Innovation Actions and Large Scale Pilots and other framework programme projects interested in these issues.

Privacy-preserving technologies in a data-driven society
Daniel Bachlechner, Fraunhofer & e-SIDES

Download the presentation

About the project

More and more data is being generated, and analysing this data drives knowledge and value creation across society. Unlocking this potential requires sharing of (often personal) data between organisations, but this meets unwillingness from data subjects and data controllers alike. Hence, techniques that protect personal information for data access, processing, and analysis are needed. To address this, the SODA project has aimed to enable practical privacy-preserving analytics of information from multiple data assets using multi-party computation (MPC) techniques. For this data does not need to be shared, only made available for encrypted processing. The main technological challenge has been to make MPC scale to Big Data, by embedding MPC into a comprehensive privacy approach, demonstrated in an ICT-14.b and a healthcare use case.

Progressing Practical Privacy-Preserving Big Data Analytics
Paul Koster, Philips research & SODA

Download the presentation

About the project

The SPECIAL project aims to address the contradiction between Big Data innovation and privacy-aware data protection by proposing a technical solution that makes both of these goals realistic. To this end it has developed technology that: (i) supports the acquisition of user consent at collection time and the recording of both data and metadata (consent, policies, event data, context) according to legislative and user-specified policies; (ii) caters for privacy-aware, secure workflows that include usage/access control, transparency and compliance verification; (iii) demonstrates robustness in terms of performance, scalability and security all of which are necessary to support privacy preserving innovation in Big Data environments; and (iv) provides a dashboard with feedback and control features that make privacy in Big Data comprehensible and manageable for data subjects, controllers, and processors. SPECIAL thus aims to allow citizens and organisations to share more data, while guaranteeing data protection compliance, enabling both trust and the creation of valuable new insights from shared data.

Enhancing Transparency in the Big Data and AI Landscape
Sabrina Kirrane, Vienna University of Economics and Business & SPECIAL

Download the presentation

About the project

Diversity permeates our everyday life and covers many dimensions, such as competence, culture, gender or economic across humans and social relations. Technology has evolved to a point where humans from diverse backgrounds, cultures, and experiences have an unprecedented ability to connect with each other. Yet technology does not in-and-by-itself provide support for developing and maintaining the social relationships that transcend geographical and cultural backgrounds. WeNet addresses this gap by providing a diversity-aware, machine-mediated paradigm of social relations. The goal is connecting people that can support each other, and the key is leveraging their diversity. The WeNet paradigm includes a family of computational diversity-aware models supporting human interaction. Learning models construct diversity profiles based on people's past behaviour and interactions. A diversity-aware search builds upon these profiles to connect the "right" people together. To support people's interactions, a diversity alignment mechanism lifts communication barrier to ensure that messages between humans are interpreted correctly, and a diversity-aware incentive mechanism generates incentives to motivate people to support each other.

Diversity and Privacy: Opportunities and Challenges
The project WeNet – The Internet of Us
Laura Schelenz, International Center for Ethics in the Sciences and Humanities, Tübingen & WeNet

Download the presentation

About the project

Issues of data subjects' privacy and data security represent a crucial challenge in the biomedical sector more than in other industries. The current IT landscape in this field shows a myriad of isolated, locally hosted patient data repositories, managed by clinical centres and other organisations, which are subject to frequent and massive data breaches. Patients are disenfranchised in this process, and are not able to have a clear understanding of who uses their personal information and for what purposes. This makes it the ideal field to build and test new models of privacy and data protection, and the technologies that encode them. MyHealthMyData (MHMD) has aimed at changing the existing scenario by introducing a distributed, peer-to-peer architecture, based on Blockchain and Personal Data Accounts.
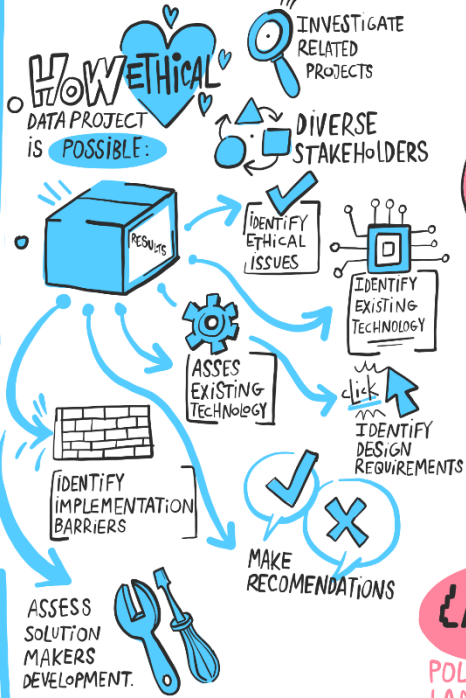
A GDPR-compliant blockchain-based system with advanced privacy-preserving solutions
Edwin Morley-Fletcher, Lynkeus & MyHealthMyData

Download the presentation

PROJECTS PANEL

HOW ETHICAL DATA PROJECT is POSSIBLE:

INVESTIGATE RELATED PROJECTS

DIVERSE STAKEHOLDERS

RESULTS

IDENTIFY ETHICAL ISSUES

IDENTIFY EXISTING TECHNOLOGY

ASSES EXISTING TECHNOLOGY

click IDENTIFY DESIGN REQUIREMENTS

IDENTIFY IMPLEMENTATION BARRIERS

MAKE RECOMENDATIONS

ASSESS SOLUTION MAKERS DEVELOPMENT.

INTERNET OF US

We Net

WORLDWIDE PARTNERS

MULTIDISCIPLINARY APPROACH

TECHNICS

STUDENTS

SCIENTIST

DIVERSE NETWORK

DIVERSITY AWARE DATA SOURCE

TRANSPARENCY

HELPING TO COMPLY REGULATION

consent

SPECIAL MOBILE CONSENT

G.D.P.R.

GDPR IS JUST THE TIP OF THE ICEBERG

LANGUAGE

POLICY LANGUAGES

CHALLENGES:

STANDARIZATION

A.I. COGNITIVE LIMITATIONS

ENSURING WELL BEHAVING IS CRUCIAL

EMBRACE DECENTRALIZATION & ITS COMPLICATIONS

BIG DATA

A.I.

BLOCK CHAIN

BIG DATA

VISITING MODE

HOMOMORPHIC ENCRYPTION

GENERATE DIFFERENTIALLY SYNTHETIC DATA GDPR.

HELLO!

AAHHH
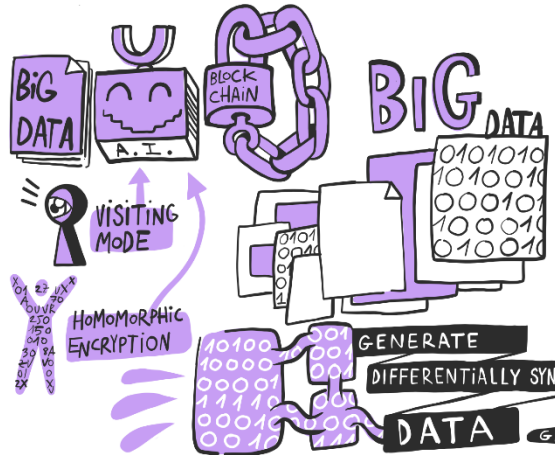
TONI @simplydrawitBIG

3. Afternoon Session: Lessons learned from research and technology for a human-centered Big Data

The afternoon session focused on the presentation of the lessons learned from research and technology for a human-centered Big Data. It hosted two parallel breakout sessions calling for interaction and attendees' active contribution to the discussion.

The breakout sessions were moderated by facilitators from the projects team, asking questions to the participants and facilitating the group discussion. Inputs from the participants were collected through online polls and visually summarised by the graphic facilitator on two wallboards presented to the plenary audience during the wrap-up session.

3.1. Breakout session: Technology and Data Protection Law – how can software engineering support legal compliance?

This breakout session, chaired by Eva Schlehahn from the Independent Centre for Privacy Protection Schleswig-Holstein & SPECIAL, involved representatives from the SPECIAL, SODA and MyHealthMyData projects with the aim to explore privacy, transparency and compliance issues from a legal perspective, with a specific focus on GDPR requirements.

Data Privacy Vocabularies to fulfil GDPR Transparency & Compliance Checking requirements
Eva Schlehahn, Independent Centre for Privacy Protection Schleswig-Holstein & SPECIAL

Download the presentation

Anonymisation of personal data leads to inapplicability of the GDPR – Myth or Reality?
Anna Zsófia Horváth, University of Göttingen & SODA

Download the presentation

Why have we preferred to opt for sharing synthetic data and for computation "bringing the algorithms to the data"
Edwin Morley-Fletcher, Lynkeus & MyHealthMyData

Download the presentation

TECHNOLOLOGY & DATA PROTECTION LAW

HOW CAN SOFTWARE ENGINEERING SUPPORT LEGAL COMPLIANCE.

IMPORTANCE

- MORE TRANSPARENCY 6
  ?
- AUDIENCE IS DOUBTFUL 1
  ?

- LOGS OF DATA 10

- TAXONOMY

- DATA HANDLING POLICIES 6

BIG DATA & PRIVACY ARE NOT MUTUALLY EXCLUSIVE

✓ AGREE 14

✓ PARTIALLY AGREE

✗ DISAGREE

GREY ZONE: PERSONAL / NOT PERSONAL WOULD BE PRACTICAL?

DIFFICULT!

IMPORTANT NOT TO MIX UP

ANONYMIZATION ?

ENCRYPTION

- VISITING MODE APPROACH?

SYNTHETIC DATA CAN BE MADE ANONYMOUS?
· THIS HAS TO BE PROVED

WHAT IS DIFFERENTIAL PRIVACY?

TONI
@simplydrawit BIG

3.2. Breakout session: Human-centric Big Data governance – responsible ways to innovate privacy-preserving technologies

This breakout session, chaired by Dr Karolina La Fors from eLaw - Leiden University & e-SIDES, involved representatives from the e-SIDES, WeNet and BDVe projects with the aim to explore human-centric Big Data governance. In particular, the session focused on responsible innovation of Privacy-Preserving Technologies, diversity-aware technologies and ethical challenges in Big Data.

The occasion was also particularly relevant to announce the publication og a new paper by the BDVA:

Timan, T. & Z. Á. Mann (eds) (2019) "Data protection in the era of Artificial Intelligence. Trends, existing solutions and recommendations for Privacy-Preserving Technologies", October 2019. BDVA

Download the paper

e-SIDES lessons for the responsible innovation of privacy-preserving technologies in the era of AI
Karolina La Fors, eLaw - Leiden University & e-SIDES

Download the presentation

Data for Diversity Aware Technology: Ethical Considerations
Laura Schelenz, International Center for Ethics in the Sciences and Humanities, Tübingen & WeNet

Download the presentation

Data Protection in the era of Artificial Intelligence
Charlotte van Oirsouw, TNO & BDVe

Download the presentation

4. Wrap-up

During the plenary wrap-up session chaired by Richard Stevens (Consulting Director at IDC4EU – European Government Consulting, IDC and e-SIDES Project Coordinator) the moderators of the parallel break-out sessions were invited on stage to present the key outcomes from the discussion and the results of the online polls.

Break-out sessions key Take-aways
Eva Schlehahn, Independent Centre for Privacy Protection Schleswig-Holstein & SPECIAL
Karolina La Fors, eLaw - Leiden University & e-SIDES

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The audience was also presented with the wallboards realised by the graphic facilitators and featuring the visual summaries of the day, which guided the wrap-up by the moderators as well as the closing remarks.

All the presentations, including links to the papers and guidelines presented during the day, are available at: https://e-sides.eu/resources

If you would like to contact any presenter with questions, please write us at the following email address: info@e-sides.eu

We look forward to keeping the dialogue going and working with you on this topic in the future