DiDaT NEWSLETTER 04

17 August 2020

Responsible use of digital data:
Digital Data as a Subject
of a Transdisciplinary Process

Project Status Summer 2020

1. A White Book for the responsible use of digital data as a product of a transdisciplinary process

Roland W. Scholz (IASS Potsdam and Danube University Krems) and
Ortwin Renn (IASS Potsdam)

The main product of the first year of the DiDaT project is the White Book *"Orientations for a responsible use of digital data: Results of a transdisciplinary process"*. Based on the DiDaT rough plan and the discussions at the second stakeholder conference on January 22, 2020, currently (about) 70 practitioners and 60 scientists are in the process of completing the White Book and an additional volume with supplementary materials to the White Book.

Newsletter 04: Contents

The seven main chapters of the White Book provide orientation, guidance and guard rails for a sustainable handling of digital data in the impact-oriented vulnerability spaces (mobility, health, future of SMEs and agriculture), the value-oriented vulnerability space (social media) and the regulation-oriented vulnerability spaces (trustworthiness of information, digital law). The starting point of the DiDaT project was the key message of a European science roundtable, in which the contested interrelation between

(i) ownership,
(ii) economic uses,
(iii) access, and
(iv) application

of digital data was identified as the central cause for negative (side) effects[1]. In simple terms, this can be formulated in such a way that Europe and Germany will be negatively affected by too weak a participation in the shaping of the digital transformation.

At the 2nd DiDaT Stakeholder Conference in January 2020, each working group of the above-mentioned vulnerability spaces presented specific unintended negative side effects (so-called unseens). For each of these unseens, sub-groups were formed within the vulnerability spaces, which provided detailed descriptions of the unseens and the reasons for their formation. In order to develop socially robust orientations, they also identified goals that are tailored to different parts of society (individuals, organizations, the government, and various stakeholder groups) in dealing with these

---

[1] Scholz, R. W., Bartelsman, E. J., Diefenbach, S., Franke, L., Grunwald, A., Helbing, D., ... Viale Pereira, G. (2018). Unintended side effects of the digital transition: European scientists' messages from a proposition-based expert round table. *Sustainability, 10(6), 2001;* https://doi.org/10.3390/su10062001.

Responsible use of digital data:
Digital Data as a Subject
of a **T**ransdisciplinary Process

unseens. Furthermore, they developed options for possible countermeasures to handle the unseens more effectively. The overall goal is to develop a socially robust orientation that meets the various criteria summarized in Box 1. A socially robust orientation indicates which measures could be taken in the near future by civil society, economic and/or political actors.

Box 1 *Criteria of socially robust orientations*

(Scholz, 2011, p. 378[2] based on Gibbons & Nowotny, 2001)[3]

1. The orientations are derived from a process of integrating or relating profound experience-based practitioner knowledge (from representatives of the main stakeholder groups) and coherent and/or empirically validated scientific knowledge.

2. They are generally understandable and have the potential to obtain the consent of a large proportion of those who are affected.

3. They are compatible with recognised, current (i.e. state-of-the-art) scientific findings.

4. They fairly contain not only the uncertainties, but also the limitations and incompleteness for each type of knowledge employed.

5. They convey in detail through which process they were derived or designed and with what effort.

The 35 or so descriptions of socially robust orientations for the selected Unseens developed by the groups will be published in an additional volume with supplementary material (supplementary information, SI) in a separate book.

This supplementary information for a vulnerability space such as mobility serves as a foundation for the *development of a core message on how to handle digital data*. This core message also meets the criteria of socially robust orientations. The core message is formulated and explained in the summary at the end of the White Book. A major challenge for the groups has been to work out the "specifics and generics" (i.e., what is special for individual unseens and what are unintended side-effects in a general sense) from the set of developed orientations. This can be seen as a "bottom-up" approach to the core message of the White Book. There will also be a "top-down" approach or access. Each working group was instructed to specify to what extent the unseens in a vulnerability space can be described by general characteristics of the existing digital infrastructure (technological, economic, or other special features) and to what extent changes have to be made to the design conditions and regulations so that the relevant unseens discussed can be eliminated or at least reduced in the long term.

---

[2] Scholz, R. (2011). *Environmental Literacy in Science and Society: From Knowledge to Decisions*. Cambridge: Cambridge University Press. doi:10.1017/CBO9780511921520

[3] Gibbons, M., Nowotny, H. (2001). The Potential of Transdisciplinarity, in: Klein, J. T et al. (Eds.), Transdisciplinarity: Joint Problem Solving among Science, Technology, and Society: An Effective Way for Managing Complexity, Birkhäuser Basel, pp. 67-80, ISBN 978-3-0348-8419-8, DOI 10.1007/978-3-0348-8419-8_7, URL https://doi.org/10.1007/978-3-0348-8419-8_7

Responsible use of digital data:
Digital Data as a Subject
of a Transdisciplinary Process

Comprehensive quality control

The entire process of preparing the White Book and the accompanying book on socially robust orientations is subject to extensive quality control. After extensive and sometimes very controversial discussions in the working groups, all chapters were subjected to a preliminary review. The aim here was to examine the extent to which the documents produced meet the requirements and objectives of the project in terms of form and content. The preliminary review was followed by a transdisciplinary review. One scientist, one sustainability expert and one practitioner from the field provided feedback on the guidelines developed in the accompanying book. The same procedure is used for the White Book. This ensures that science and practice are involved not only in the process of drafting the White Book, but also in the process of review and feedback in order to accomplish high synergy effects.

Delayed production due to the Corona Pandemic

The White Book was originally scheduled for completion by 23 June 2020 (see Fig. 1). This timetable could not be met, partly because of the effects of the corona pandemic. The cooperation of a large number of participants (practitioners and scientists) was blocked or severely impaired for several weeks. We are currently planning the completion of the volumes for summer 2020.

Transdisciplinary consultation

After completion of the two books, the respective chapters go into the consultation process. This participation process, rooted in the Helvetic democracy, is explained in more detail in an article in this newsletter by Scholz & Albrecht (p. 11). The seven chapters of the White Book and the supplementary materials with a more detailed description of the selected Unseens and the orientations for measures based on them are to be sent out to 30-50 persons, organisations and institutions in the first week of August. The aim here is to ask a broad spectrum of experts, affected persons, causers and regulators, who could be affected by the unseens, for written feedback. This feedback should be available by 30 September 2020.

After a detailed review and discussion in the working groups/author teams, it is planned to arrange virtual or, if possible, physical meetings with the stakeholder groups. The content of these meetings should be to correct essential missing, wrongly or distortedly portrayed content in order to obtain additions, modifications or corrections to the listed orientations. The aim is that the finally adopted orientations are considered acceptable or even desirable by a large part of the stakeholder groups. The written and verbal feedback is then incorporated into a careful revision of the documents. The two volumes are to be published in German and English at the beginning of next year. The results are of interest not only for Germany. The DiDaT project was already planned in its early stages as a follow-up project to the European Science Experts Roundtable (*see footnote 1*). It is obvious that the results of the DiDaT project will be of interest throughout Europe, but also worldwide. A renowned, internationally operating publishing house has already declared its interest in publishing an English version.

We are sure that the two volumes will be significant milestones in the elaboration of the desired and undesired consequences of handling digitally stored data for the scientific discussion and for the further development of the rules and institutional framework.

Responsible use of digital data:
Digital Data as a Subject
of a Transdisciplinary Process

Pre Corona - DiDaT *time plan*, (Dirk Marx, 01.07.2020)

Material rough plan, + revision, fine plan with U & O x table		
Step 1 28.02.2020	*Responsible: Coordination*	Template for creating the "Supplementary Information" short "SI", the Unseens x Orientation Table
Template SI with reference to the socially robust orientations "SROs"		
Step 2 u. 3 15.03.2020	*Facilitators*	(2) Establishment of the working groups (author teams of **2-5 persons** from science and practice for each SI of an SRO) (3) Convening of **at least two VR group meetings**
Draft SIs (in their final form, target size 2000 words); **3-4 reviewers from the Steering-Board** for the preparation of the written reports per SI are found and determined		
Step 4 15.04.2020	*Facilitators, SI-Author groups*	• *Small SI authoring teams work on the SIs for orientations* • *VR group meeting **convenes in full** & **discusses the drafts of the SIs*** • *Elementary work consolidation and **Td knowledge integration***
First complete draft of all SIs is also discussed in one step with the steering board		
Step 5 ~~15.05.2020~~ **23.06.2020**	*Facilitators, SI-Author groups, Steering-Board*	• The author groups **have revised the SIs** • The **contents** of the SIs on the orientations provide the **basis** for the **chapters of the white book**
Die inhaltliche Vorlage „Weißbuch" wird für die Textstellung der Kapitel genutzt		
Step 6 ~~14.06.2020~~ **23.07.2020**	*Facilitators, Network Coordination and reviewers*	• **Final editorship** Reviewers (at least 2 reviewers per Unseen) and DiDaT team • The first complete version is **not** allowed to be **cited**
The written peer-reviewed SIs (contributions from the VR) are revised by the teams of authors and are compiled together with the management team as the first version of the white book and made available to 30-50 persons, organizations, etc. relevant to the VR in the transdisciplinary consultation process. **Note**: Chapters that are not available in sufficient form/quality by the deadline will not be considered.		

Goal: Preparation of the VR contributions (5000 words incl. Tab. & Fig.) of the DiDaT white book as a result of the various collaborative processes and products, in particular the preparation of SIs as explanatory comments on the orientations and chapters of the white book
• **Preparation of the 50 word abstracts per SI**

On ~~23.06.2020~~ the **first version** of the white book will be presented at the 3rd DiDaT-Stakeholder conference in Berlin.
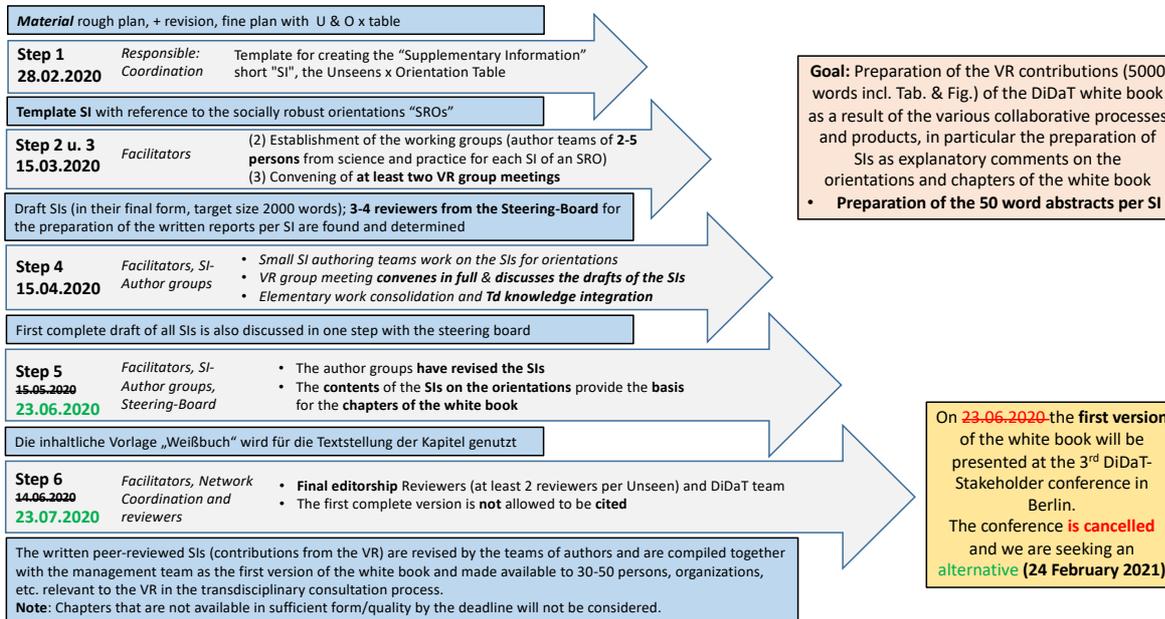The conference **is cancelled** and we are seeking an alternative **(24 February 2021)**

Figure 1: *DiDaT adjusted schedule and timetable.*

2. Report on the meeting of the Monitoring Group from the political sphere - Dialogue with Members of the German Parliament

Ortwin Renn (IASS Potsdam) and **Roland W. Scholz** (IASS Potsdam and Danube University Krems)

The research project "Digital Data as Subject of a Transdisciplinary Process" is characterized by the fact that it addresses research questions on how to deal with undesired side effects of digitisation in seven working groups. DiDaT aims to develop socially robust orientations (SROs) for the responsible handling of digital data in impact, value and institution-related areas for politics, economy and society. The results will be presented in a comprehensive White Book on digitalisation as a reflective working basis by autumn 2020. A subsequent consultation (transdisciplinary qualification process) is planned, the results of which will be integrated into the White Book.

The final version of the White Book is expected to be available in February 2021. The first phase of the transdisciplinary research project will focus on seven topic-related working groups. Half of the groups are composed of practitioners and half of scientists and are supported, but also advised and accompanied by subject-specific monitoring groups. Of particular importance for the project is the monitoring group of the political experts of the German Bundestag. A first video conference took place on April 30, 2020, in which most of the participants in the monitoring group were able to participate (see Table 1).

The focus of the deliberations and discussions was the thematic orientation of the overall project and the scientific discourse spaces in the seven working groups (divided into main areas of a modern society). Introductory information was provided on the topics, the status of the work and on some critical conflicts of interest between stakeholder groups. During the discussion, it became clear that the seven scientific discourse spaces are compatible with the focal points of everyday political work in the Bundestag (brief characterisation of the seven rooms in Table 2).

After Prof Roland Scholz's presentation of the discourse spaces, Prof Ortwin Renn emphasized the special role of political shaping and governance in dealing with the side effects of digital data handling and above all emphasized the balancing act between data solidarity and data sovereignty. Stephan Noller, spokesman for the practical implications within DiDaT, pointed out the opportunities offered by digitalisation. He emphasized, however, that the exploitation of these opportunities requires an intelligent and competent regulatory framework.

The presentation of the project was followed by a lively discussion on all seven discourse spaces. Many of the questions could not be answered immediately - also due to time constraints. Thus, the focus was on collecting the extensive questions, concretizing their content and reflecting them back to the working groups in the discourse spaces. All participants welcomed the project. In some of the statements, the transdisciplinary approach, the broad spectrum of stakeholders and relevant scientists as well as the inclusive discourse were particularly appreciated. Both the organizers and the members of the monitoring group were satisfied with the first meeting and have agreed to a second meeting after the presentation of the White Book.

Responsible use of digital data:
Digital Data as a Subject
of a Transdisciplinary Process

Statement from the transdisciplinary management committee of Stephan Noller

- Comment from the point of view of the practice management
- Courageous - to invite me as a fan of digitisation as a "clear proponent of the doer side - to design digitalisation more cleverly and to set guard rails, monitoring - better than to be on the prevention side".
- But perceives the potentially dystopian side
- Welcomes critical discourses and inter/transdisciplinary approach
- Example: Ubirch Proposal: Blockchain fingerprints (Corona)
- School during Corona, absurd situation
- see also interview of May 3rd

→https://www.jungundnaiv.de/2020/05/03/constanze-kurz-ueber-die-corona-app-folge-460/

DiDaT Websites:
- http://www.didat.eu/homepage.html
- https://www.iass-potsdam.de/en/research/didat

DiDaT short brochure:

https://www.iass-potsdam.de/sites/default/files/2020-03/DiDaT%20Kur-zbroschu%CC%88re%20V13_EN.pdf

Responsible use of digital data:
Digital Data as a Subject
of a Transdisciplinary Process

***Table 1: Participants** (in the process) of the **political monitoring group**.*

Name	Parliamen- tary Group	Function
Dr Jens Zimmermann	SPD	Digital policy spokesperson
Manuel Höferlin	FDP	Spokesperson for Digital Policy and Chairman of the Digital Agenda Committee
Tabea Rößner	Green Party	Spokeswoman for network policy
Tankred Schipanski	CDU	Digital policy spokesperson
Maik Beermann	CDU	Chairman of the CDU Digital Agenda Committee
Dr Petra Sitte	Left Party	Member Digital Agenda Committee
Dr Anna Christmann	Green Party	Member Digital Agenda Committee
Marc Biadacz	CDU	Member of the Enquete Commission "Artificial Intelligence"

Note: Dr P. Sitte and Manuel Höferlin could not attend the meeting, but were involved in the process.
Participants DiDaT (transdisciplinary management and staff) and **IASS representatives** (Communications Department): Ortwin Renn (IASS), Roland W. Scholz (IASS, BTU and DUK), Stephan Noller (DiDaT Head of Economic CEO Ubirch GmbH & BVDW), Markus Beckedahl could not attend, Dirk Marx (DiDaT - BTU), Verena van Zyl-Bulitta (DiDaT - IASS); Jonas Brandhorst (IASS), Matthias Tang (IASS)

Figure 2: *Participants of the meeting on 30th April 2020: Tabea Rößner, Dr Anna Christmann, Dr Petra Sitte, Maik Beermann, Dr Jens Zimmermann, Manuel Höferlin, Tankred Schipanski, Marc Biadacz.*

Responsible use of digital data:
Digital Data as a Subject
of a Transdisciplinary Process

Table 2: *Brief characterization of the seven discourse spaces.*

VR 01 – Mobility
• Very strong disruptive changes in the transport system • Transformation of the system of the German automotive industry • How are platforms organised and innovative mobility services provided, and to what (in)favour is the mobility chain changing • Question of data allocation, how should it be designed or constructed from a social point of view? • What will the reliable infrastructure operators of the future look like?

VR 02 – Health
• Digital health applications are highly controversial, norm-led • Digital patient file vs. own condition, assessment of the doctor, what counts more? • Weaknesses and strengths of digital systems and health services • Quality certification of digital health services • National Health Portal - as a kind of clearinghouse, for performance of services • Good models for the interaction between digital data and health technologies

VR 03 – Future of SME
• Risks posed by platforms; willingness and ability to adapt to digitalisation is limited, but knowledge is also only available to a limited extent • IHK, companies need new strategies that are useful for SMEs • Industry 4.0 – SMEs become an extended workbench, production processes, much outsourcing • This requires a more comprehensive development of competence in small and medium-sized enterprises • Role of the platform economy • GWB – Unfair Competition Act - "we are mostly addressing this issue by considering this law" • Monopoly and competition law are central alongside liability law (RS reply)

VR 04 – Agriculture / Agro-food chain
• Fears of parts of nature conservation groups that some players (BASF, VDMA) are driving further automation and intensification with digital agriculture • Technologies for nature conservation, sensors, quality of ecosystems • Farmers' federation, DLG - different interpretations of agricultural objectives • Discourse in a broadly diversified group

VR 05 – Social Media
• Clearly structured through restriction to effects on the individual • Internet addiction or overuse and effects on well-being is a major problem • Digital violence, social pressure, polarization • Impairment of the capacity for democracy • A kind of "data pervasion law" would make sense to create interfaces to large providers • One would have to think about … • … advisory councils, mixed forms of discourse, and • … institutionally about new forms of intersection (social and technical possibilities)

VR 06 – Trustworthiness of information & 07 Cybercrime were presented together
• Trustworthiness • Law enforcement is at risk • Legal system is called into question • Ways to assess the correctness and falsity of digital data are lacking • Deep fake, fake news • Blockchain, retraceability • Amazon has started to use a very hidden, slowly accessible data layer • verification of forgery, civil law, handling such things

3. Deepening research and transdisciplinarity laboratories

Roland W. Scholz (IASS Potsdam and Danube University Krems) und **Magdalena Mißler-Behr** (Brandenburg University of Technology Cottbus-Senftenberg)

In the second year of the DiDaT project, the **participatory deepening research** on central and insufficiently answered questions on dealing with unintended side effects of digitalisation is planned. On the other hand, examples and models for dealing with the requirements of adapting to digital worlds will be tackled in a constructive manner within the framework of **Transdisciplinarity Laboratories (Td-Labs)**.

The difference between participatory deepening research and Td-Labs is that the former focus on a scientific treatment of unresolved questions. For example, it is unclear what negative effects arise from nutritional recommendations based on genetic analyses. A further issue for deepening research is the unclear statements about digital players in the health market. When and how will digital actors replace which traditional health professionals?

For the Td-Labs, various (practically relevant) research questions will be dealt with that have arisen in the process of project work in the first two years of DiDaT and are important for the well-founded derivation of socially robust orientations. The DiDaT project has **developed the Participatory Scenario Analysis and Evaluation Tool** within the framework of the **DiDaT Method Laboratory**,

which can support deepening research and activities in the Td-Labs.

In **participatory deepening research**, the construction of the research question, the planning of the project, etc. is mainly determined by the researchers. Thus, under the direction of Dr C. Sindermann, members of VR'5 Social Media and VR07 Cybercrime have submitted a major research proposal together with researchers from IASS (Dr Schweizer). In the **transdisciplinary action research** in the Td-Labs a joint definition of project goals, procedure and results for tasks planned with the participating companies and other stakeholders is planned. We use the term action research here because the project should also have a direct local benefit. 3-5 Td-Labs are planned. One of these labs will deal with the adaptation performance of SMEs. Another lab will be placed in the area of data economy. For an exchange of further ideas for Td-Labs, please contact the project management.

Due to the somewhat delayed preparation of the White Book, which was extended by the consultation process, these projects will probably extend beyond the duration of the DiDaT project (end of October 2021).

Responsible use of digital data:
Digital Data as a Subject
of a Transdisciplinary Process

4. How is DiDaT transdisciplinary?

Dirk Marx (Brandenburg University of Technology Cottbus-Senftenberg)

In the context of this newsletter, from the perspective of the accompanying project management, I am particularly interested in writing about where, in my subjective view, we currently find ourselves in the transdisciplinary process. However, in the context of the project phase - preparation of the SIs - the question of how the process is to be understood is, in my view, more obvious than ever, since all those involved are in what is usually a "new environment" for them and are facing the tasks of DiDaT.

This devotion ranges from someone's head under water to someone who has hardly gotten wet. This does not make it easy to write about it, because it is obvious that different temperaments, starting from different worldviews, fight, argue and wrestle for a goal. As the next step after the generation of the first 2000 words of each SI, the White Book chapter follows.

The subject of this project DiDaT combines what I am now trying to concretize through words in such a way that it is scientifically but also practically easy to read and understand. The following tripartite structure is intended to create transparency, so that it can be recognized that actually separate ways of working in and by DiDaT are "ways and means" or modalities.

1. combine individual, systemic (inter)disciplinary or typical professional working methods
2. to use knowledge from theory and practice as new common experience in such a way that **new knowledge is generated and evaluated in a common process**
3. crossing borders and inviting people to continue to do so for particular reasons

I am now concerned with legitimizing the reference of different categories of knowledge (cognitive, experienced, intuitive, cultural) in front of the face of society (and the criteria of scientific compatibility) in such a way that we are aware, within the framework of DiDaT, to recognize and experience an individual and special also common way, with the aim that such knowledge is placed and put together by us. Mere joining is not the same as the knitting of a pattern. No, many a fine thread (representing a thought) does not stand up to the urgently strong thread (the always already resilient concept), but wants to be woven into the common pattern. This attitude of insisting on it is a first transformative addition to the points 1 and 2 above. Like a bridge, the arguments fixed there are visibly connected to a record. However, connectedness is a rather unscientific than emotional tendency to want to put things together and because it pleases, to leave it that way.

In today's transdisciplinary approach, the border is a final metaphor for the fact that there can never be enough courage and audacity. Misunderstandings require tolerance - perhaps they are part of the system and are quickly considered normal. Corrections in the transdisciplinary process become less necessary with each step, if the Td-Review process takes place in a non-subversive way. But, as if not drowning and always wanting to get safely to another shore, it takes a sea voyage and the courage to want to reach new islands with the crew that has been on board from the beginning.

Finally, allow me to express my gratitude to you all. Only you have made it possible for me to create this first reflection - and if it pleases you, others will follow. For it is only through our cooperation that "new" thoughts and experiences come into being, and I consider this to be a special transdisciplinary achievement for science in the context of co-creative processes and because of our special encounter.

Responsible use of digital data:
Digital **Da**ta as a Subject
of a **T**ransdisciplinary Process

DiDaT

.5. Transdisciplinary consultation of the DiDaT White Book

Roland W. Scholz (IASS Potsdam and Danube University Krems) and **Eike Albrecht** (Brandenburg University of Technology Cottbus-Senftenberg)

The seven main chapters of the **DiDaT White Book "Orientations for a responsible use of digital data: Results of a transdisciplinary process"** provide socially robust orientations (SRO) for users, decision-makers and political regulators of the digital infrastructure on the topics of vulnerability spaces in the White Book.

The development of the contents and the SROs was carried out in a transdisciplinary manner. In all groups and at all levels of the project, an equal number of scientists and practitioners worked together on an equal footing with their respective formal competences. Thus, a balance in the process was lived out and was not just on paper. The selection of the scientists was based on the thematic competences. An extensive stakeholder analysis was carried out to fill the position of the practitioner bank. Each relevant stakeholder group was to be represented by a delegate. Stakeholder groups were generally defined as **groups of actors**[4] who are **affected** by the use of digital domains in a specific area (e.g. mobility or agriculture), who were **responsible** for the negative (while there might also be positive) impact of the use of digital data or who can **contribute to reducing the consequences** (regulatory function).

A **pluralistic approach** was thus followed in the stakeholder analysis. The aim was to consider the various interests and perspectives in the formulation of socially robust orientations. In some extensive vulnerability spaces, however, it was difficult or impossible to achieve this in a balanced and complete way due to the small number of only six practitioners. In principle, however, care was taken to ensure a balanced staffing.

On the objectives of the discursive consultation of the White Book

In order to support the balance, the factual accuracy and the practicability/feasibility of the SROs, which is necessary for broad acceptance, the first complete version of the DiDaT **White Book**, which has been reviewed by academics and practitioners, and the supplementary materials (**Supplementary Information, SI** for short) to the White Book will be submitted to a **participatory consultation process**. We use the Swiss term for consultation, "Vernehmlassung" (in the broader sense), since it corresponds very well to the deliberative transdisciplinary process in terms of procedure and basic ideas.

The origins of the consultation concept (in the broadest sense) date back to the nineteenth century. The aim was to involve not only state actors (such as cantons and municipalities) but also associations and estates in the definition and formulation of social regulations and laws, and thus "to include" historically established structures in the analysis, also in order to do better justice to a "social factual situation" (Blaser, 2013). Thus, the collection of practical and scientific knowledge can be seen in the light of this idea of Swiss grassroots democracy.

---

[4] In VR02 Health, the stakeholder groups were defined on the basis of a system model.

DiDaT

**Responsible use of digital data:
Digital Data as a Subject
of a Transdisciplinary Process**

*In Switzerland, the purpose of the consultation process is to enable different stakeholders to deal with a defined issue, to read and understand it, to evaluate it, to identify false statements and to formulate arguments for them, which are then incorporated into the decision-making process "
(Roth-Godat, 2020)*

Consultation procedures (in the broad sense) are not only carried out in the phase of the preliminary proceedings for constitutional amendments or draft laws, etc., but also in the phase of the preparation of the draft laws. (Confoederatio Helvetica, 2020), but are also applied in other[5] contexts.[6]

Since the DiDaT White Book is not used to prepare laws by an appointed commission of experts, but rather to develop SROs for a responsible handling of data through the interaction of science and practice, we use the term **transdisciplinary consultation** (Td-VI).

Features of the transdisciplinary consultation on the DiDaT White Book

A transdisciplinary consultation is a specific form of discursive consultation. It includes **written statements** from a large circle of stakeholders, companies, associations, other organizations, personalities and public institutions. The written comments on a main chapter of the White Book are made the subject of a discussion forum, in which the representatives of various positions have the opportunity to check the factual accuracy and to introduce additional points of view and arguments and contribute to improving the SRO.

In order to achieve this, all chapters of the DiDaT White Book are to be sent to 30 to 50 companies, organisations and individuals (stakeholder groups) with the request for a written statement.

The aim of SROs is to describe a framework (and measures), based on a common problem definition supported by as many people as possible, which outlines or describes/limits the scope of future solution strategies/problem solutions. This space can be described in a certain way as a kind of **negotiation space**. In the theory of conflict resolution, the negotiation space is considered to be those possible future states which are either equally or more beneficial to all participants than the current state (the status quo).

The organisations and persons involved in the consultation process are appealed to not exclusively (or primarily) represent their interests and positions (i.e. to lobby in extreme cases), but also to look specifically for solutions in which the overall profile of the solutions leads to very good benefits for almost everyone, if this is associated with minor losses for individual parties. We believe that by including such solutions, which send out strong cooperative signals, the scope for problem-solving can be positively expanded.[7]

---

[5] In the German legal system, the procedures that are closest to this type of consultation are those of consultation in the legislative process or the participation of public bodies (so-called TöB) as well as, if applicable, public participation in administrative proceedings (Krause, 2017). These also exist in German law. A special feature of the Swiss legal system is, however, that the consultation process is intended to make known counter-positions to the legislative or other plans in order to integrate them into the law. In this respect, there is a much greater incentive in Switzerland to balance opposing positions, because otherwise a referendum is likely to threaten the process, or there is a risk of (mis)success in a referendum.

[6]. We would like to point out that the consultation procedure in Switzerland was strongly criticised in the 1990s (Müller, 1997). Consideration was even given to abolishing this form of preparing laws and regulations. The reason for this was that the consultation procedure had not managed to develop from a "Helvetic ritual" into a (modern) participatory instrument of democracy (Müller, 1997, p. 17). In particular, the lobbying of associations was viewed critically from various sides.

[7] We propose here, following the term "close to Pareto optimal" coined by Joseph E. Stiglitz, the term "almost optimal, highly cooperative" Pareto optimal solution. This means, for example, that in such a procedure one party refrains from

Procedure of the consultation procedure

Originally it was planned to hand over the chapters of the DiDaT White Book including their supplementary information to the targeted public on **23 June 2020** and to start the consultation process. This date had to be postponed, primarily due to the Corona crisis and the unexpected considerable additional burdens on a large part of the transdisciplinary process. We first planned for a **postponement of one month**, i.e., until July 23, 2020, which was partly feasible for some working groups. The reviewed and revised supplementary information and the equally reviewed chapters of the handbook should be completed in such a form.

The first step after this is to identify the 30-50 stakeholder groups (in the coming weeks). This process will take into account aspects of plurality, opinions, the importance of those who take a stand, and the need for vulnerable and sensitive groups to be especially heard and given a voice. Of course, the selection cannot be complete, but at best a robust representativeness can be aimed for. The selection should be designed in such a way that even if individual important stakeholders are not included, a robust overall picture is still maintained (Scholz, 2017). All stakeholders of the DiDaT process will be involved in this process.

The process of selecting the representatives of stakeholder groups will begin in the coming weeks. Requests should be sent and a written feedback from the representatives of the stakeholder groups should be sought.

In order to achieve this, a consultation process will be started, which is in principle open to all stakeholder groups. This means that, as is customary in a Swiss consultation process, **anyone can in principle participate in the process with objections, suggestions, comments, etc.** At the start of the consultation process, companies, organisations and individuals for whom the SROs are of particular importance and which include sensitive stakeholder groups are requested to submit written comments.

The first step of sharing the information that forms the basis of the discursive consultation, is the request to participate. With this request, an overview of others that are also requested at that time will also be sent. This should serve to make further suggestions for other participants, if necessary, for example if a better balance can be achieved among the respondents.

Written feedback should be provided in the same structured form for all participants. The format and the length of the statement should be limited by its scope/length, so that a response can be made in a timely manner and its processing in the DiDaT project team and in the author teams remains feasible and straightforward.

By sending the request, the organisations and persons can decide whether they want to receive the DiDaT White Book and supplementary materials in electronic and/or printed form for readability preferences. Feedback will be provided in electronic form on a special template or via a platform.

A summary of the feedback will be compiled in a booklet and made available in electronic form to all those involved. At workshops to be held for each vulnerability space, the feedback received will be discussed in November/December. For this purpose, participants will be selected to represent specific positions. The teams of authors of the chapters of the handbook will present suggestions for redesigning statements, sections or possibly individual chapters of the handbook. On this basis, a revision of the chapters will take place by 15 January 2021.

The questions, problems and points of view for which no formulations/solutions acceptable to all are found or with which individual key parties do

---

achieving the status quo while accepting a small loss if all other parties can achieve a (large) profit.

not agree are presented in a special section following the revised chapters.

The 3rd Stakeholder Conference, at which the final version of the White Book will be presented to the public, will take place in February 2021.

Literature

Blaser, J. (2013). *Das Vernehmlassungsverfahren in der Schweiz: Organisation, Entwicklung und aktuelle Situation* (Vol. 191): Springer-Verlag.

Confoederatio Helvetica. (2020). Vernehmlassungsverfahren. Retrieved from https://www.admin.ch/ch/d/gg/pc/index.html on 20th June 2020.

Krause, J. (2017). Partizipation und Beteiligung bei kommunalen Verkehrsprojekten. In *Handbuch der kommunalen Verkehrsplanung* (pp. 77. Ergänzunglieferung). Frankfurt: VDE.

Müller, H. M. (1997). Vernehmlassungsverfahren-helvetisches Ritual oder modernes partizipatorisches Instrument der Konkordanzdemokratie? *Gesetzgebung heute, 8*(2), 17-41.

Roth-Godat, c. (2020). Die Vernehmlassung als ein wesentliches Element der Schweizer Diskurskultur. In *DiDaT Newsletter* (pp. 8). Potsdam: IASS.

Scholz, R. W. (2017). Managing complexity: from visual perception to sustainable transition management. Contributions of Brunswik's Theory of Probabilistic Functionalism. *Environment Systems and Decisions, 37*(4), 381-409. doi:DOI 10.1007/s10669-017-9655-4

6. White Book contents and excerpt

Responsible use of digital data: Orientations of a transdisciplinary process

Editors: Roland W. Scholz, Markus Beckedahl, Stephan Noller, Ortwin Renn[8]

Part 1: Unintended side effects of ownership, economic value, access, and use of digital data – a sustainable development perspective

A major 15.000 Word paper on the digital transformation, coupled human × digital environment systems, and the specific role of digital Data

Part 2: Unintended side effects in impact, value, and regulation-oriented vulnerability spaces (with respect to digital data use)

(i)   Impact-oriented spaces
    (1) Mobility
        SI1.1 Data culture
        SI1.2 Mobility offers
        SI1.3 Spatial effects
        SI1.4 Resource consumption
        SI1.5 Added value
    (2) Public Heath
        SI2.1 Shift of interests
        SI2.2 Quality v. Diagnostics
        SI2.4 Data-driven personalization
        SI2.6 Communication
        SI2.8 Patient Expectations
        SI2.9 Healthcare system
    (3) Future of SMEs
        SI3.1 Platform Dependence
        SI3.2 Cloud providers
        SI3.3 Production networks
        SI3.4 IoTization
        SI3.5 Organizational Change
        SI3.6 Employee qualification
    (4) Agriculture
        SI4.1 Ecological effects
        SI4.2 Diversity of actors
        SI4.3 Data rights
        SI4.4/5 Loss of knowledge/full automation
        SI4.6 loss of value added
        SI4.7 Food Security

---

[8] Ortwin Renn and Roland Scholz are scientists; Science and Technology Studies (STS) and coupled human environment systems; Markus Beckedahl (https://en.wikipedia.org/wiki/Netzpolitik.org; https://de.wikipedia.org/wiki/Markus_Beckedahl) leading civil society activist; Stephan Noller (https://en.wikipedia.org/wiki/Stephan_Noller) pioneering digital economist and designer.

Responsible use of digital data:
Digital Data as a Subject
of a Transdisciplinary Process

(ii) A value-oriented space

    (5) Impact of social media use on the individual

        SI5.1 Overuse

        SI5.2 Digital violence

        SI5.3 Capability for democracy

        SI5.4 Interaction capability

(iii) Institution and regulation-oriented spaces

    (6) Socio-technological design of trustworthiness

        SI6.1 Unreliable techniques

        SI6.2 Distrust

        SI6.3 Disorientation

        SI6.4 Undermining

        SI6.5 Reliance on government

    (7) Cybercrime

        SI7.1 Protection of availability

        SI7.3 Security and reliability of legal and evidence transactions

        SI7.4 Protection of the digital infrastructure

Part 3: Socially robust orientations: Emergence, countermeasures, goal conflicts, and goal-conditional strategies

Short descriptions of some SIs

Verna van Zyl-Bulitta (IASS Potsdam) and **Roland W. Scholz** (IASS Potsdam and Danube University Krems)

The description of four to seven **socially robust orientations** for each of the unseens (acronym for "unintended side effects") presented at the 2nd DiDaT Stakeholder Conference form the fundamental basis for the preparation of the White Book *RESPONSIBLE USE OF DIGITAL DATA: ORIENTATIONS OF A TRANSDISCI-PLINARY PROCESS*. These explanations - called **Supplementary Information (SI)** - will be published in a volume of supplementary materials to the White Book.

In order to convey the core of the socially robust orientations well, the essence of the Supplementary Information (Unseens and orientations for their handling) is brought into a short form (which also appears in the last sections of the White Book chapter).

The reader will find in the following pages a set of the Socially Robust Orientations as a brief insight into the issues dealt with in the vulnerability spaces.

SI #	Title	Short descriptions VR 01 Mobility
1.1	*Secure data culture*	**Authors**: *Karl Teille, Katharina Jahn, Thomas Waschke, Christoph Wust, Yulika Zebuhr, Klaus Markus Hofmann* The collection, storage and use of mobility-related data and the exchange of mobility data between public and private actors require socially robust institutions in terms of a secure data culture to prevent misuse. This includes non-discriminatory access to mobility data and platforms, compliance with European data protection directives and fall-back levels to ensure mobility that is independent of networks.
1.2	*Digital mobility offers*	**Authors**: *Johanna Tiffe, Florian Krummheuer, Klaus Markus Hofmann, with the participation of Weert Canzler* Digitalisation can contribute to the desired mobility transition, provided that innovative mobility offers and existing mobility systems are integrated in a user-friendly way. Availability of mobility services via platforms and data on system usage promote allocation efficiency and seamless intermodal links. Digital network effects can increase disparities and establish new barriers to entry. If efficiency gains are compensated for by increased traffic and the use of transport space is intensified, rebound effects for the environment and society are likely to result.
1.3	*Mobility and space*	**Authors**: *Wolfgang H. Serbser, Meike Levin-Keitel, Michael Prytula, Thomas Waschke, Yulika Zebuhr, Klaus Markus Hofmann* Strong interactions between digitalised mobility systems and spatial developments on the micro and macro scale are evident. Digital mobility takes up physical space and simultaneously changes spatial resistance and mobility patterns and social structures. For a strongly sustainable development of digital mobility, digitisation should not be promoted primarily as a technology, but rather to respond to individual social and societal requirements and the consequences in the systemic context of space, environment and society, and socially robust solutions should be preferred.
1.4	*Resource use and digitalisation*	**Authors**: *Liselotte Schebek, Susanne Hanesch, Elke Fischer, Johanna Tiffe, Christoph Wust, Klaus Markus Hofmann* Digital mobility requires additional resources (raw materials, energy) for the production of networked infrastructures, vehicles and the operation of data storage devices and platforms. Efficiency potentials of digital mobility systems are to be evaluated on the basis of a life cycle approach to sustainability. To evaluate adaptation measures, the energy and resource requirements of necessary background systems for digitalisation as well as possible additional traffic through behavioural adaptations are to be included.
1.5	*Change in value creation*	**Authors**: *Christoph Wust, Karl Teille, Klaus Markus Hofmann* The digitalization of mobility is changing the value added of manufacturers, public and private mobility providers and the patterns of use. In order to remain internationally competitive, the players in the European mobility sector must be enabled to develop and operate digital business models. Mobility infrastructures in Germany must be upgraded in line with transport and energy policy objectives and business processes must be designed to be digitally compatible and sustainable.

Responsible use of digital data:
Digital Data as a Subject
of a Transdisciplinary Process

SI #	Title	Short description VR 02 Health
2.4	*Data Driven Personalization / Personalized Applications*	***Authors***: *Lisa Rosenberger, Michael Weller* In the second health care market, the effectiveness of digital applications is increased by individual adaptation (personalization) of these applications. Inappropriate data-driven personalization can have a negative impact on the health of the users. In order to avoid such side effects, institutional support measures are needed to make good use of digital health skills with regard to data-based profiling and to realize equal health opportunities.

SI #	Title	Short descriptions VR 03 SME
3.1	*Online Platforms*	***Authors***: *Thomas Schauf, André Reichel* SMEs are threatened by dependency and substitutability on a few providers of closed platforms. Therefore, in order to maintain their ability to innovate, their digital skills need to be strengthened in order to reap their own benefits and ward off global threats. This requires their own platforms and cooperations as well as regulatory measures to minimise data-based market power.
3.2	*Cloud Providers*	***Authors***: *Thomas Schauf, Rahild Neuburger* SMEs are bound to cloud providers by the vendor lock-in, which massively increases any possible switching costs. For this reason, their digital skills must be strengthened to develop their own cloud strategies in order to avoid dependencies. This requires (politically promoted) federated multi-cloud offers in Europe, which keep switching costs low with open standards and thus minimise the risks for SMEs.

Responsible use of digital data:
Digital Data as a Subject
of a Transdisciplinary Process

SI #	Title	Short descriptions VR 05 social media
5.1	Overuse	**Authors**: *Cornelia Sindermann, Sina Ostendorf, Christian Montag* In order to reduce the risk/Unseen of overuse of social media, there is a need for both general awareness-raising measures such as newspaper articles and generally accessible expert lectures as well as help services for prevention and intervention, for example through school courses, the establishment of help hotlines, training of trusted teachers and parents and the establishment of psychological help centres, and technical/system integrated support possibilities that reflect, for example, the time spent on social media.
5.3	Democracy capability	**Authors**: *Philip Freytag, Lisa-Maria Neudert, Roland W. Scholz, C. Sindermann* In order to permanently ensure the individual prerequisites of a democratic model of society under the premises of the information architectures of social media, measures must be taken.

SI #	Title	Short description VR 07 Cybersecurity and -criminality
7.3	Security and reliability of legal and evidence transactions in cyberspace	**Authors**: *Dirk Labudde, Eike Albrecht, Veselko Hagen, Dirk Marx, Bernhard Otupal* Because the analogue original does not clearly relate to the "digital twin", the processes around providing evidence are at risk. In order to maintain trust and enforceability, adaptations of the penal framework (e.g. § 269 StGB), good practice in digital standards (e.g. for electronic signatures), pre-judicial AI-based document verification and dispute resolution, and the capability of law enforcement agencies are needed.

Responsible use of digital data:
Digital Data as a Subject
of a Transdisciplinary Process

- 20 -

Responsible use of digital data:

Digital Data as a Subject of a Transdisciplinary Process (DiDaT)

Authors:
Roland W. Scholz, Magdalena Mißler-Behr, Verena van Zyl-Bulitta, Eike Albrecht, Dirk Marx, Ortwin Renn

Contact:
Ortwin Renn: Ortwin.Renn@iass-potsdam.de
Roland W. Scholz: scholzr@emeritus.ethz.ch or Roland.Scholz@donau-uni.ac.at or Roland.Scholz@iass-potsdam.de
Verena van Zyl-Bulitta: vzb@iass-potsdam.de
Dirk Marx: Dirk.Marx@b-tu.de

ViSdP:
Prof. Dr. Ortwin Renn,
authorised to represent the institute