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## Smart Democratic Governance - How to use data-analysis+ platform technologies to support + transform democratic governance - - Focus: processes of platform development (Democratic Tech Development) + transformation of political processes

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## Smart Democratic Governance

- How to use data-analysis+ platform technologies to support + transform democratic governance -
- Focus: processes of platform development + transformation of political processes

### Abstract

The paper addresses the question: how to use data-analysis and platform technologies to support and transform democratic governance. Following a short introduction, (1a) why democracy has to be transformed, and (1b) how democracy has to be transformed, it will (2a) present the vision of a platform directed on supporting and transforming democratic governance with data-analysis and platform technologies, and (2b) outline a potential workflow aka process to realize this idea. The last part (3) will address further questions and considerations related to Democratic Tech Development.<sup>1</sup>

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## 1. Setting the Grounds: Democracy + AI

The following first chapter will introduce into the author's thinking about democracy and artificial intelligence (AI), thereby outlining why democratic governance needs to be transformed, and in how far novel technologies might support and benefit the endeavor.

### 1a. Why democracy needs to be supported by AI

Dissent and dissatisfaction with democracy does characterize its development since the very beginning in ancient Greece (Mayer 2009: *Was ist Demokratie?*) and fills the books of political scientists

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<sup>1</sup> There are to many footnotes and references for an easy-reading, and to few for academic honors. Well, I consider every of them relevant to be checked. In honors of Rory Miller (King's College London/ Georgetown University) and his concept of 'sexy footnotes': not necessary (these links are within the text) but relevant to know.

all over the world.<sup>2</sup> Depending on its variations, one might identify divers bugs<sup>3</sup> and problems (Merkel 2003: *Defekte Demokratie*), maybe as divers as democracy itself.

However, fundamental to the following approach are three issues that are primarily based-upon the authors experience working in German politics<sup>4</sup>, and its reflections against the backdrop of intense studies of political, social, and technological sciences,<sup>5</sup> that are: (A) **the inability to coordinate national and international communities to tackle global problems such as climate change or pandemics successfully** by systematic risk minimization (#flattenthecurve); a result she links to the missing accommodation of politics to the revolution in information and communication by digital technologies usually referred to as digitization, especially visible in (B) **the lack of technologies to process information effectively**, and (C) **the lack of technologies to cooperate among the variety of political stakeholders on regional, national, and international level**. Her thesis: Despite revolutionary developments in the way, society collects, combines, processes, and stores information (Spinner 1994: *Die Wissensordnung*), or better socially relevant knowledge (the author takes a constructivist stance in understanding social worlds, cp.: Berger/ Luckmann 1969: *The Social Construction of Reality*; Luhmann 1997: *Die Gesellschaft der Gesellschaft*), most political systems, methods, and workflows (for the organization of politics see Benz/ Dose 20014: *Governance*; Benz 2009: Politik in Mehrebenensystemen) remained mostly stable<sup>6</sup>; resulting in information overload of parliaments, ministries, and courts, and dissatisfaction among the people (details: Krueger 2018: *Algorithmen und KI*; Krueger 2019: *Warum rechte Politik die KI-Entwicklung in die Irre führt*).

Based-upon these personal consideration, she started to think about **how to support and transform democratic governance with AI, or better data-analysis and platform technologies** (for details of her understanding of AI, see Krueger 2020: *Human Security Beyond Trump*), and to imagine a technical system supportive to human policy-making that allows the coordination of (culturally, so-

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2 For an interesting introduction to the birth of British democracy, see: Miller 2019: *The Death of the Gods*, ch. 5.

3 The word ‘bug’ might have different meanings in various disciplines. In here, the word is used to describe whether ‘a defect in the code or routine of a program’ (informational science), or ‘a defect or difficulty, as in a system or design’ (overall systems theory), cp.: wordnik 2020: *bug*. The term is used for two reasons: On the one hand, it is easy to grasp for developers and data scientist\_a who are definitely an audience the paper wants to attract. On the other hand, the author does not know any other good expression for political fails that are related to an inadequate selection of data or methods to reach a certain goal; e.g. when security policies produce insecurities due to the neglect of tech developments and their effects (Krueger 2020: *Human Security Beyond Trump*).

4 During June 2018 and December 2019, the author worked as a legal assistant for Saskia Esken (then Member of Parliament/ Deutscher Bundestag for the Social Democrats), assisting her in all matters of internal and digital affairs and artificial intelligence. Her work included the coordination with other stakeholder and party members.

5 The author holds a German Diplom in political sciences covering politics, economics, public law, and statistics (University of Potsdam/ King’s College London 2012). Beginning with her MA-thesis on content regulation, she never stopped research on digital issues (e.g. content regulation, AI, IT security), thereafter, publishing e.g. for the Bertelsmann Foundation (Krueger/ Lischka 2018: *Damit Maschinen dem Menschen dienen*), the Aspen Institute (Krueger 2018: *Technology in the Context of Geostrategic & Democratic Development*), and [netzpolitik.org](http://netzpolitik.org).

6 Though the thesis of the stability of the political system’s set-up needed further research and proofs (she would happily do herself when the project is running, an adequate PhD exposé is existing), her studies, her interdisciplinary research of internet politics for about ten years, and her experience in the Bundestag gave growing evidence for it. Furthermore, she took part of the *World e-Parliament Conference* of the *Inter-Parliamentary Union* (IPU) 2018, an umbrella organization of the parliaments worldwide, in which the delegates presented the latest tools of their work to each other. During the conference, she got the impression that most parliaments did not differ much from home.

cially, and politically) divers communities up to the international level – based upon de-central networks; focused on the public good (survival 1<sup>st</sup>); in respect of all common human and civil rights.<sup>7</sup>

## 1b. How democracy needs to be supported by AI

### Smart Democratic Governance must be solution-focused respectful of democratic principles

If “democracy is the worst form of Government except for all those other forms that have been tried from time to time...” (International Churchill Society 2020: *The Worst Form of Government*; citing Churchill 1947), how to make it work?<sup>8</sup> For the control of power and the facilitation of innovation and adaptation to changing environments, democratic governance is valued as a superior form of governance (Dewey 1927: *The Public and its Problems*; cp: Pogrebinschi 2016: *Was wir von Dewey für die Demokratie im 21. Jahrhundert lernen können*); irrespective of its problems. Therefore, its transformation must take care of preserving the **fundamental principles of any form of collective self-organization** (democracy), which are: (A) **sovereignty of people** to organize their common issues/ meaningful participation; (B) **representation**, in that professionals assigned to take-over common tasks must act in the interest of people; (C) **legitimacy**, in that democratic governance must e.g. respect common norms, follow legitimate processes, and produce beneficent results (cp. Kleger 2018: *Demokratisches Regieren*).<sup>9</sup> The challenge, however, concerns the question: how to put these principles into technology, or better: how to develop a techno-political system respecting, well, real-

7 In the last years, the world saw existential breakthroughs in technologies of artificial intelligence (AI). Beyond scientific research on logically constructed AI, world system models, or expert systems ongoing for decades, the big break came with high amounts of data and new data analytic, computing power, and the networking things and people, especially by platform technologies. They together realized a human dream; The development of self-learning machines – based upon software that learns from data and hardware able to steer objects – that potentially might take over tasks fulfilled by humans by now. This might include the analysis, assessment, and steering of complex issues. It changes the basics of coordinating society fundamentally. What has to be known to make the best use of these technologies for environmental and security politics, and how could they look like, exactly? In the authors view, the use of AI for analysis (like in cancer assessment) needs to be distinguished from its use for steering objects, whether in simple, statistical systems (like an automated allocation of patients in hospitals) or complex, eventually dynamic systems (like a platform-enabled coordination of patients and doctors considering special needs in language or laws). But it always depends on: (A) base (data, algorithms, machine learning approaches, models/ considered correlations etc.); (B) mode of operation, security/ safety (performance, vulnerabilities, options for manipulation etc.); (C) goals (of optimization), e.g.: shall an automated allocation of patient’s beds in hospital benefit the patient, the doctor’s reputation, or the occupancy rate of the hospital? (for more considerations on the complexity of AI systems (the impact of personalization, scoring, and nudging technologies), the challenge of transparency, IT security considerations (from a systems design and global economy perspective), or further examples see/cp: Krueger 2020: *Human Security Beyond Trump* (summary of insights with links); Krueger/ Lischka 2018: *Damit Maschinen den Menschen dienen* (broad, international overview about challenges and solutions in algorithmic decision-making considering tech, law, and politics), or Krueger/ Beckedahl 2018: *Wie die EU-Urheberrechtsreform die Entwicklung Künstlicher Intelligenz bedroht* (example-based). Apart from these complex considerations and background informations, the term AI inhere is primarily used to for the deployment of data-analysis and platform technology.

8 The author apologizes to quote a politician currently under extreme critique for his racism. But the quote must be used because there is no better one to point out the flaws and potentials of a democratic government system; well, its defense in 1945 has been an advancement of human development, it might all have gotten worse (Black 2001: *IBM and the Holocaust*). Moreover, the author takes a general political-normative position inhere, a general support of inclusive, liberal-progressive politics, because any national-conservative approach links to borders and exclusion of people, requiring protection and surveillance. Considering the availability of AI experts worldwide, their deployment in security issues is perceived as a waste of resources, preventing the development of tech and AI for the common good (Krueger 2020: *Human Security Beyond Trump*; Beckedahl/ Krueger 2018: *EU-Innenminister*).

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izing these fundamental principles, finally (Twitter/ @MicroSFF 06 January 20, 4:35 pm CET), while still producing efficient results (#flattenthecurve matters in climate for common survival)?

### **Smart Democratic Governance must focus on supporting the information throughput in politics, thereby transforming established processes completely**

Most attempts in digital democracy have whether focused on

- the transformation of policy-input (E-voting, liquid democracy, idea jams etc.);
- the transformation of policy-output (automation of administration by algorithmic decision making; the vision to put law into code etc.);
- the transparency of policy-throughput (machine-readable government, open government etc.)

There might be more approaches to transforming democracy if one considered the visions of Mark Zuckerberg expressed in his Manifest early 2017 (Krueger 2017: *Zuckerberg stellt die Machtfrage*; cp.: Hindman 2009: *The Myth of Digital Democracy*); the indirect influence of people via tracking devices (Christl 2017: *Corporate Surveillance in Everyday Life*), or the indirect influence of link-networks influencing what people see in social networks, influencing how people will develop their political opinion (Albright 2016: *Left + Right: The Combined Post-#Election2016 News "Ecosystem"*; Schweiger 2017: *Der (des)informierte Bürger im Netz*).<sup>10</sup>

But none of them put the throughput of politics in focus; whether in political science nor tech development.<sup>11</sup> But the blackbox in democratic governance (Kleger 2018: *Demokratisches Regieren*) equals the famous blackbox in algorithm studies; rarely is known or documented publicly. The well-known policy-cycle (Easton 1957: *An Approach to the Analysis of Political Systems*) is comparable to the explanatory power of traditional algorithm auditing in AI (Krueger/ Lischka 2018: *Damit Maschinen den Menschen dienen*); it does not fit reality.

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9 In his later works, the Swiss political sciences professor rewrote the history of political and democratic theory from the perspective of the so-called *Berlin-Enlightenment* (University of Potsdam). The impressive reflection of political theory is recommended as a must-read for everybody with only one critique: Kleger shed lights on the diffuse processes of *political throughput* aiming on strengthening public deliberation and participation. But from the author's perspective inhere, it is not the lack of voices missing in current democratic government systems, but the lack of technologies making sense of them, transferring the information and positions to relevant stakeholder.

10 All of these approaches are very interesting but irrelevant inhere, because related platforms miss transparency, participation, oversight, and other forms of legitimate governance.

11 The term 'throughput' is related to the idea of a policy cycle (Easton 1957: *An Approach to the Analysis of Political Systems*) taught as one basis in political and administrative sciences, up till now; characterized by the input to the political system (voting, politicization of problems, etc.) and its output (legislation, policies etc.), ideally processed solution-focused (agenda-setting, solution, implementation, evaluation etc.) by political actors. The common model does not only neglect party politics or the very diffuse development of political agendas by politicians, but the complexity of the information processing and negotiation as a whole (the 'throughput'), and the impact of modern technology in general: The ping-pong of media, social media, and party politics mediated via in-transparent platforms, on the one hand; the opportunities posed by social media to seriously engage and include the public, on the other hand (for an example related to Obama's election campaign see Miller 2018: *The Death Of the Gods*, pp. 173ff.; for an impression of public bodies ignoring the citizens online, consider the public resistance related to the latest EU copyright's directive (Beckedahl 26 March 2019: *Chance verpasst*). The throughput has not attracted much scientific attraction apart from policy-filed studies. Therefore, it is compared to the term 'blackbox' in AI studies used to describe the lack of information about how AI processes input to output (urban dictionary 2020: *blackbox*).

Putting the throughput in focus, based upon personal experience and tech insights without any alternative, does change everything: Therefore, and in valuing the importance of previous contributions especially in the area of transparency of governments (it's a shame these have not been realized, so far), the following approach suggests a complete techno-political transformation of democratic politics, starting with the support of information throughput with AI, first, but thereby impacting input and output seriously. Though the project is currently under immense time pressure, the issue and its implications cannot be discussed here exhaustively but might trigger further research, the author of this paper is happy to support and more: The detailed concept includes cooperation with academia, both in political and tech research as well as public law.

For the time being, it must be emphasized that during the concept development, various democratic theories and principles have been researched and reflected. As a result, the central principles of democratic government as outlined in Kleger (2018: *Demokratisches Regieren*) – covering the sovereignty of people, representation, legitimacy – are chosen to back-up tech-development in theory, because they preserve the essentials of collective self-organization while offering flexibility for its concrete manifestation. More explanation will follow by way of example in part 3.

### **Smart Democratic Governance must take platforms into consideration to transform global economies sustainable for good, combining principles of cooperation + competition**

In summary, the vision outlined so far, aims on creating a democratic governance system able to facilitate a competition over ideas – instead of power only.<sup>12</sup> To complete the concept, economy needs to be considered, as an object of regulation and a prerequisite of politics, yet, society in general.

If man was to perceive climate change as an essential risk to humanity, we were in urgent need of a sustainable economy, worldwide, that includes material resources to run it (like water, energy, metals and so on) as well as cash, or rather the prevention of future burdens of debts. A simple method to redesign the global economy on providing essential goods and services sustainably and affordably to all was to make the right use of platforms like Amazon. In that they coordinate more-sided markets via data-analysis efficiently (Dewenter/ Lüth 2018: *Datenhandel und Plattformen*), they do a deed no state has ever accomplished, so far, potentially on reasonable costs. At the moment, of course, they produce high-level external effects for people and environments, because they seem to be optimized for business benefits only.

One way to realize the potential of platforms like Amazon was to develop a novel **ECO-scoring**,

- including ecological risks like ecological footprints data-based into ranking + market trends;
- optimizing the platform and connected markets on successive risk reduction; and
- transforming demand + supply towards the provision of essential goods and services sustainably and affordable for all, step-by-step – without further state control, penalties, or subsidies.

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12 Of course, power is considered to be one essential element within social organization that cannot be neglected, in various forms (Bourdieu 1984: *Distinction: A Social Critique of the Judgment of Taste*). The concept, however, to make it the distinctive currency for the political system (Luhmann 1997: *Die Gesellschaft der Gesellschaft*) seems to describe certain aspects of social development that are dis-functional to human survival, and one-sided, at least, in describing human behavior (Benkler 2011: *The Penguin and the Leviathan*), even in politics and administration.

This solution linked competition to the social benefit and solved a long-standing problem of communities focused on cooperation, for the first time in human history: Centrally planned economies are doomed. Any societies, especially communities in transformation, need a steady communication about demands and supplies in an ever-growing production chain to prevent market failures (Beniger 1989: *The Control Revolution*). This was provided only by open market-economies, so far, with its inability to link competition to beneficial goals. But with the potential combination of competitive (market) and cooperative (ranking for human good) elements to structure societies, necessary information and communication might be provided for cooperative communities, as well— an innovation of immense importance: cooperation might be disadvantageous for a single one, but decisive for survival of a group. Hence, technologies that support cooperation without interfering into individual cost-benefit-analyses shared the burden of essential cooperation quietly among all and render cooperation attractive. The organizational principle of competition, very effective on individual level – people like to play, would thereby re-focused towards common goods and melt together with the principle of cooperation - necessary for communities to survive as a whole (Benkler 2011: *The Penguin and the Leviathan*).

## 2. Towards a *Smart Democratic Governance* (SDG) System

The following second part will outline the vision of a platform directed on supporting and transforming democratic governance with data-analysis and platform technologies, a *Smart Democratic Governance* (SDG) System, and a potential process (work-flow) to realize the idea, thereby inventing and outlining the ideal of a *Democratic Tech Development* (DTD).

### 2.1 The Concept of *Smart Democratic Governance* (SDG)

The concept of *Smart Democratic Governance* aims on developing a platform offering the following modules, or rather features:

**I. data-analysis to identify political problems and solutions [an interface optimized for identifying societal bugs, and potential solutions];<sup>13</sup>**

**II: Platform technology to debate and vote about which problems to solve in what kind of sequence/ order and strategy (policy);<sup>14</sup>**

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13 Initial to the idea of using **data-analysis** in politics was the consideration: What was the value of hate speech, if it was not targeted individually, but aggregated and combined with data characterizing economic or ecologic development, and analyzed with regard to national, regional, or cultural differences? What was the potential of this kind of human expression to understand human suffering, and potential sources (links, correlations) to reduce it? The challenge of how to get the idea more precise will be tackled by part 2.2.

14 If one developed a kind of **democratic government platform** able to identify social problems, it would probably score many hits, right now. Therefore, and in respect of human decision in general, one needed a platform able to **facilitate a discourse and voting** on which problems to solve first, and how.

**III: Platform technology to inform stakeholder assigned to realize political solutions comprehensively, and in-time;**<sup>15</sup>

**IV: Platform technology to effectively coordinate political solutions and infos globally;**<sup>16</sup>

**V: Platform technology to assess political progress to re-design policies if necessary;**<sup>17</sup>

**VI: The use of platform technologies for regulation and socio-ecological transformation.**<sup>18</sup>

It is a rather comprehensive concept including new technologies, methods, and processes, as well as contents, and their debate. It should be developed parallel to existing political systems, potentially be integrated in-there (depending on its development, its results, and its acceptance). It must be developed and explored transparently, based-upon open-source and well documented (see 3.).

The following part (2b.) will describe a potential workflow (process) on how to do that, focusing on the development of a tool realizing the visions of (I.) data-analysis in identifying political problems and potential solutions, (II.) platform technologies for debating and voting about the findings of part I., and (III.) platform technologies to better inform stakeholder.

Thereby, it follows an approach combining induction and deduction (scientifically spoken): the platform will be developed based-upon the exploration of specific problems and solutions, first. The results will be considered, yet, determine the further platform development under certain conditions. A special feature of this kind of new innovation management concerns the crowd-sourcing of most development steps, that include the development of a related governance-system potentially integrated into existing government systems (thereby inventing a *Democratic Tech Development*). Therefore, its development is theory-driven and experience-based, at the same time, strictly interdisciplinary, and open to any comments and suggestions. Cooperation with the crowds is envisioned.<sup>19</sup> Moreover, it might illustrate, how to do AI for good – for communities, transparently, and demand-based. More details on these methodological considerations will be explained in part 3.

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15 If a community decided about a problem to solve and a specific strategy, it would probably assign responsibility to specific people to realize the endeavor (whether in existing systems with MdBs etc. or novel ones). These people need better information than studies, reports, or notes that are usually out-dated when presented, rarely assimilated due to their mode of presentation (papers, many), and seldomly archived in a way that offers the knowledge when its relevant (status-quo). Instead, they should be provided with an **information platform** presenting the most relevant information from various disciplines in an accessible, flexible manner; opposite to Google's echo chambers.

16 Despite of the revolutionary development of worldwide information and communication networks, economies, and platforms (*van Dijk 2006: The Network Society*), and the immense attention and efforts related to the development of international relations and global governance (Wikipedia.org 2020: *International Relations*), the international community did not develop an effective governance system to solve common problems. Despite of uncountable numbers of international actors, conferences, and agreements, rare progress has been made when it comes to climate issues, war, or poverty. Even worse, the international community does not command any **communication infrastructure offering exchange and coordination securely and safely** in cases of emergencies; in cases noone can fly. Social media platforms support everything but multilingual exchange. That needs to be changed.

17 The idea is to assess political progress mixed-methods-based with scoring and ranking technologies; not to put pressure on stakeholder but to enable reaction, if necessary.

18 For an example of the concept, please consider the idea of an *ECO-Score* introduced in 1b. Further examples will be explored and presented in the development of the project. Varieties in platform societies will be a priority of the society realizing the project (for the press), with concrete examples and guidelines. The focus on socio-ecological transformation does relate to a multi-faceted discourse on how to create a sustainable, sufficient economy.

19 For any more info please contact the author.

## 2.2 The Development of *Smart Democratic Governance* (SDG): a *Democratic Tech Development* (DTD)

The following part will describe the potential development of a *Smart Democratic Governance System* in terms of technology, based-upon a concrete example. To illustrate the potential benefit of this tool and processes of action, the example will cover one of the dominant societal challenges, right now, that is the understanding and handling of the Covid19-Virus (also referred to as SARS-CoV-2) considered to have caused a global pandemic threatening people en mass (Robert Koch Institut 2020: *COVID-19 (Coronavirus SARS-CoV-2)*). Since its occurrence in late 2019, researchers try to understand its emergence, effects, and spread to develop methods and substances to protect and cure people, globally. Distinctive features aggravate the endeavor, which include its complicated, non-linear growth, diverse effects (Wallace-Wells 2020: *We Still Don't Know How the Corona Virus Is Killing Us*), and multifaceted mutations (Phoenix 2020: *Kommt das #Corona-Virus wirklich vom Fischmarkt in Wuhan?*). Despite of experiments with hamsters (Cheng 17 May 2020: *Coronavirus: hamster research*) and ferrets (Focus 9 April 2020: *Corona-Infektion über Luft?*), and tests on people (Sheikh 14 May 2020: *Talking Can Generate Coronavirus*) and objects (Johnson 14 May 2020: *Black Light Experiments*), it remains unclear how the virus spreads via air and objects.

This is unfortunate to assess public health reactions and restrictions, and somehow surprising: Though there has been a massive growth and investment in data-analysis and data-based applications – yet, a new wave in face of the virus, their potential to understand and explain the virus and its characteristics interdisciplinary have rarely been explored. Therefore, the issue of how to research Covid19 data-based will be used to exhibit the value of developing a *Smart Democratic Governance System* collectively, illustrating a novel, public innovation-management, as well.

The starting point is the development of an **information and communication platform** with six columns/ modules, which will be described and illustrated below:

**A. Column/ Module: herein, people are supposed to pose problems, questions, or ideas for solutions they deem to be relevant to society, worth of public consideration and cooperative treatment or processing; e.g.:**

- Does Covid19 spread via objects and/ or air, and how? What were the implications for global production and distribution, for air conditioning, or the assessment of restrictions to the free movement of people?

**B: Column/ Module: herein, people are supposed to pose ideas on how to potentially solve the issue via data-analysis, collect resources to tackle the problem etc.; e.g.:**

- Data that facilitate the analysis of links between Covid19-infections, and global economy (production and distribution infrastructures, routes, varieties of goods, packaging, and shipping etc.) or architectures (building plans of houses including air spaces and ducts, proximity of buildings, air conditioning etc.) and public transport (infrastructures, air spaces and conditioning, frequency, and occupancy rate etc.);

- Methods of data-analysis, data-management, and data-storage and visualization.

**C. Column/ Module: herein, people are intended to pose ideas on the potential availability of resources, or potential restrictions; e.g.:**

- Are data publicly accessible, machine-readable, comparable etc.? Mixed-results are to be expected considering e.g.: data of supermarkets and stores, platforms, logistic businesses, public institutions working on economy or statistics, estate companies, public transport, or maker spaces (air sensors).

**D. Column/ Module: herein, people are supposed to pose ideas and offers to overcome obstacles, and to built solution-networks; e.g.:**

- Legal, financial, or other support (e.g. expression of interest in results).

**E. Column/ Module: herein, people are supposed to collect and debate results, in terms of the original problem; e.g.:**

- links, questions and ideas, methods + ideas for reform and further development.

**F. Column/ Module: herein, people are supposed to collect and debate results, in terms of unintended findings; e.g.:**

- links, questions and ideas, methods + ideas for reform and further development.

The key challenge of developing the Columns/ Modules E and G (debates of results) does concern the **design of the men-machine-interaction: the development or integration of a tool facilitating debate and voting (incl. ranking) that complies with democratic standards**; such as the essential principles of democratic government outlined above (sovereignty of people, representation, and legitimacy, see: Kleger 2018: *Demokratisches Regieren*), accessibility (challenge: languages), power control, and a moderation-mode sensitive to the plurality of communities and their importance. Such a tool would transform public participation, more details on its development in part 3.

Last but not least, the envisioned platform does include the development of **oversight and mapping of the debates**, providing e.g.:

**G. oversight about the accumulated knowledge** (what kind of data have been made available, what kind of analysis produced what kind of results?);

**H. oversight about the debate and its development** (what are corner points, what's the trend etc.);

**I. oversight about the links, internal and external resources** (findings), etc.

This oversight and mapping is intended to benefit the transfer of knowledge in general, and the further, problem-based platform development for the information of stakeholder (SDG module III).

### 3. Further Considerations + Conditions for the Democratic Tech Development (DTD)

The concept presented so far aims on a very specific mode to support democratic governance with data-analysis and platform technologies, thereby potentially transforming the whole political system. Therefore, serious attention must be paid to the questions: **how to make it legitimate, how to make it meeting democratic prerequisites?** Though it potentially includes many people by its collaborative design from the very beginning (realizing Kleger's democratic principle: sovereignty of people/ meaningful participation, extending elections), the development of other platforms like *Facebook* or *Reddit* show clearly the risks of gaming of discussion or the manipulation of people, backed by inadequate, in-transparent tech designs. Such risks need to be prevented and researched. But in consideration of previous experiences, the following guidelines should be followed in the development. They are certainly not exhaustive but should invent a *Democratic Tech Development*:

**A. All technologies developed, used, and integrated in here must be open, transparent, and open-source for at least three reasons:** Using technology in politics is a risky endeavor and must be as open to public review as possible, to prevent major IT security risks, to facilitate democratic control (realizing Kleger's democratic principle: (process) legitimacy), and to foster innovation (Grassmuck 2002: *Freie Software*; Krüger/ Lischka 2018: *Damit Maschinen den Menschen dienen*).

**B. All developments in here, including tech and design decisions, need to be documented publicly for at least three reasons:** to provide the base for transparency and legitimacy of the developing and government process (realizing Kleger's democratic principle: (process) legitimacy), to support and speed-up policy-learning, and to foster innovation and education (public benefits).

**C. The development of the Smart Democracy Governance System must include the development of a New Democratic Tech Development System** that integrates democratic checks and balances (realizing Kleger's democratic principle: (process) legitimacy) into the tech development. Thereby it produces new governance, decision, and delegation mechanisms (realizing Kleger's democratic principle: representation) that must be split into at least two periods: the (exploratory) developing and testing phase, and the phase in which the project is run, integrated in existing governance systems, and scaled. The project might be tested in other structures and organizations based upon collective self-organization in advance or parallel. Scientific company and reflection is encouraged and envisioned, in both directions: The project management will happily consider and check all contributions to advance the project, on the one hand; and will support updates in scientific research and theories, on the other one (e.g. in political theory, political economy, or scientific methods in general). Particular attention will need to be paid to the legal sciences, especially public law. The current concept includes the contract for checking the project with national constitution.

- **phase 1:** in the **developing and testing phase**, the tech design will be carefully constructed, documented, and justified by the project management and developing team, under specific consideration of democratic theory. The test and debate of exploratory cases is crowd-sourced, thereby opening it up to public participation and scrutiny. The results of the public debate are to

be considered for further development. The decisions about further development are taken by the developing team in a democratic process that will be specified. Contingent on the public debate, its results are whether to be considered or publicly documented and justified when they essentially differ from public debate.

- **phase 2:** in case of a successful project development, the results need to be **applied in, transferred to, or integrated into real politics**, including the contents, the methods and technology, and the discussion and decision processes. This transfer required a separate discourse including at least the democratic norms preceding the project, governance- and tech development processes that were developed, and a legal check with constitutional norms. It might be done online.

Finally, the project management strongly encourages the support of a new copyright reform, a basic income, and a cooperative data management; to benefit its own development, and in general.<sup>20</sup>

For an impression **how the Smart Democratic Governance (SDG) System and the Democratic Tech Development (DTD) might actually work in reality**, please consider the short story 'Flatten The Curves - Demokratische Politik hacken - für Anfänger und Fortgeschrittene (Krueger 2020: *Flatten The Curves*; currently German only but with a translation envisioned asap.)

## 4. Abbreviations

ADM - Algorithmic Decision-Making

AI - Artificial Intelligence

cp. - compare

DTD - *Democratic Tech Development*

e.g. - for example

etc. - etc. and so forth

SDG - *Smart Democratic Governance*

tech - technology

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<sup>20</sup> The author is happy to further explain these claims, but also justified basics in Krueger 2020: *Human Security Beyond Trump*, and Krueger 2019: *Strategie ohne Perspektive*.

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