



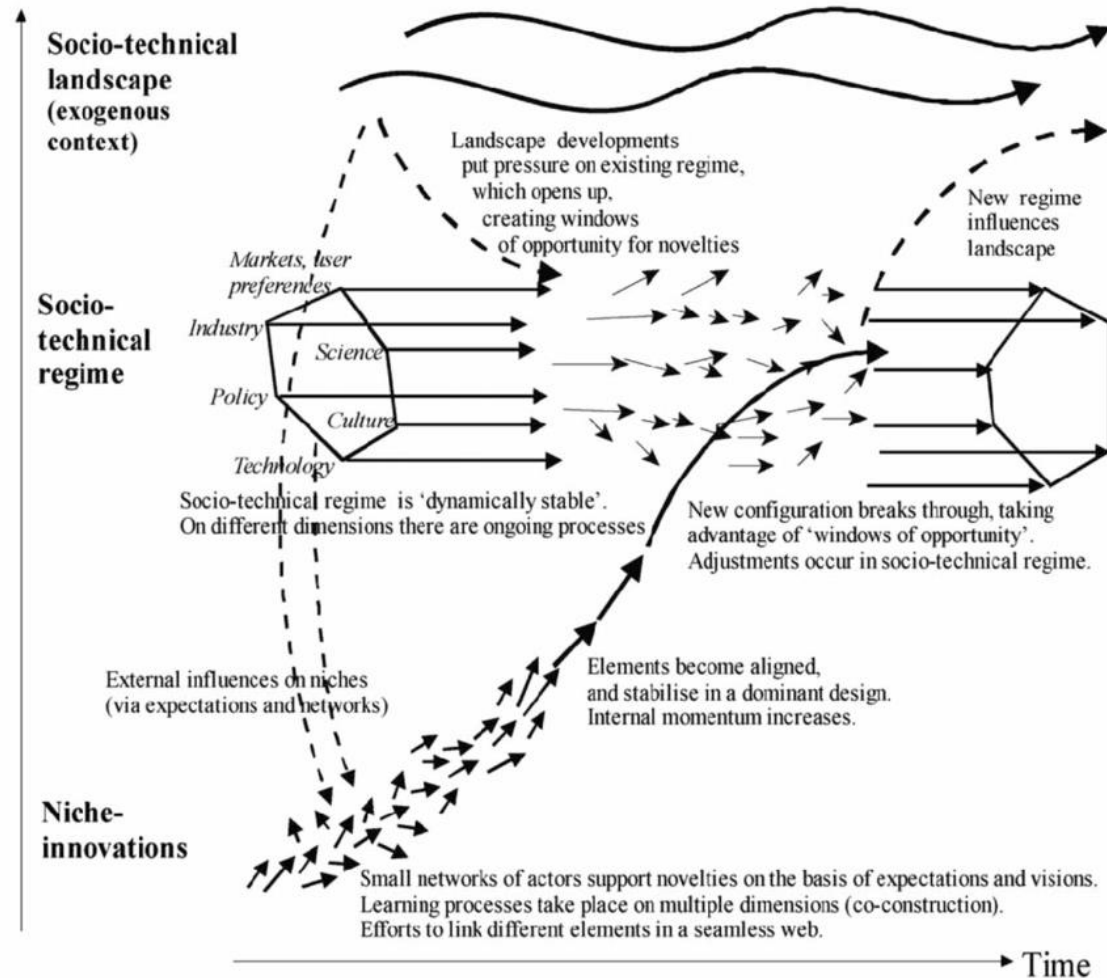
Opportunities of a AI-based data analysis for mission-oriented, transformative innovation policy

Dr. Carsten Schwäbe

Information Day on a new era of STI policy making with AI, 14th December 2023, Brussels

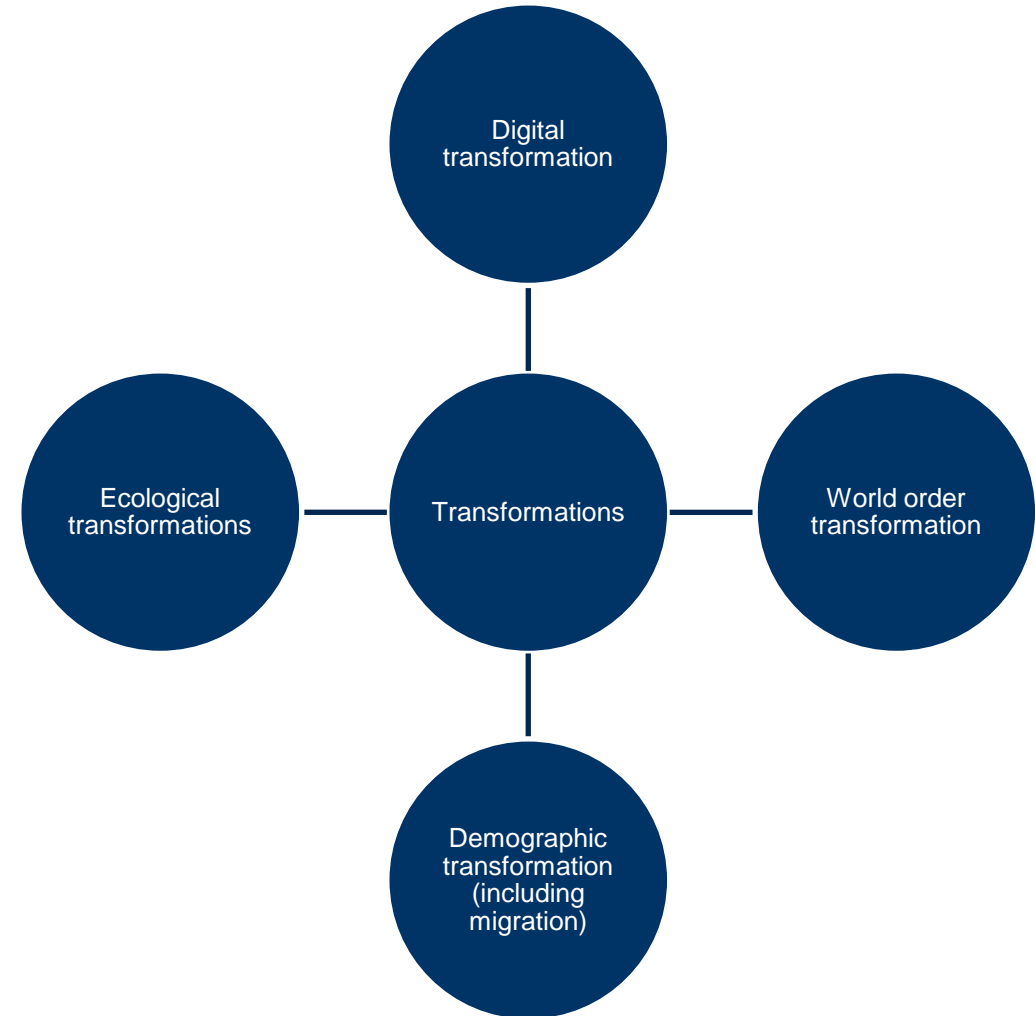
Transformations require agility from STI policy making...

Increasing structuration of activities in local practices

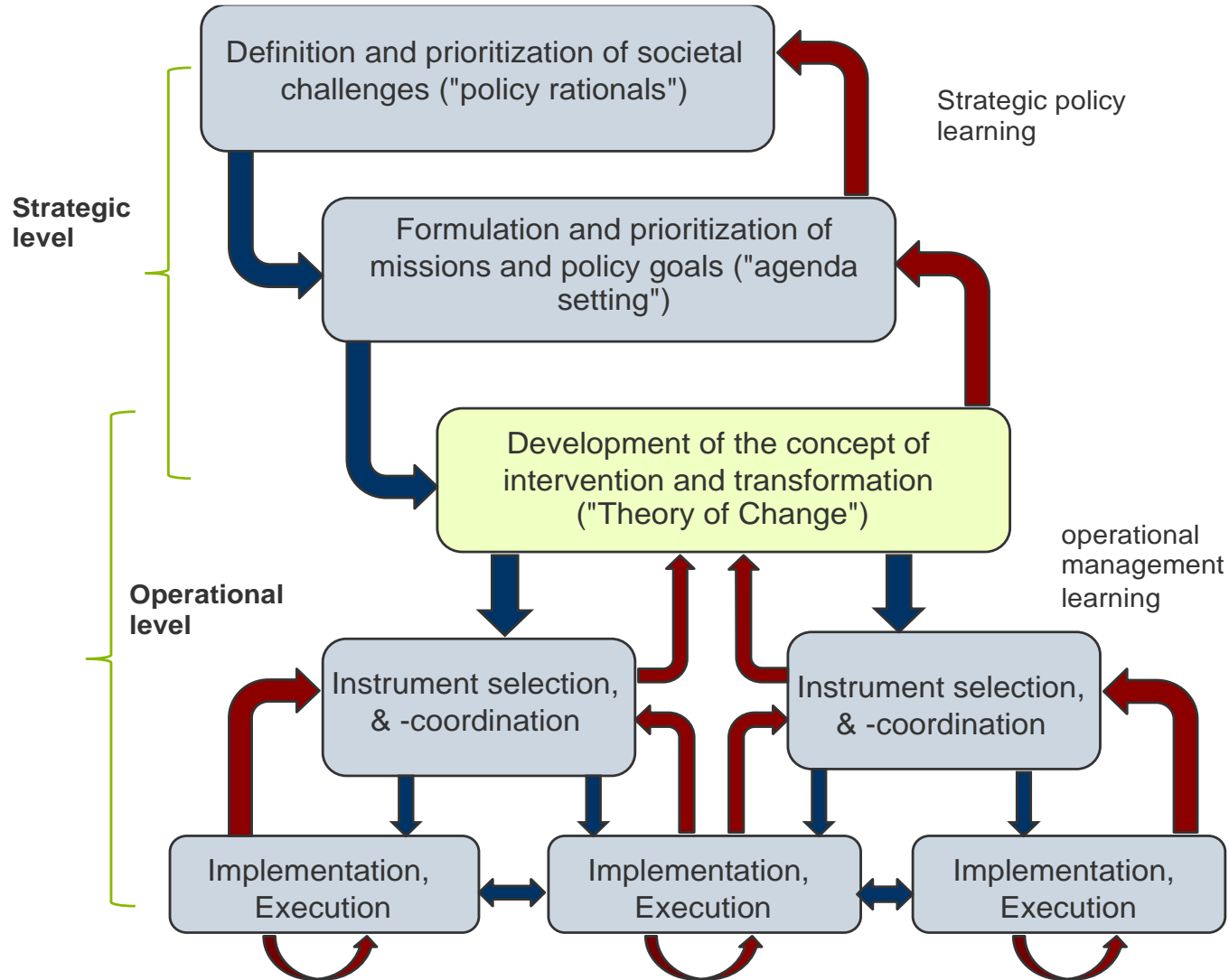


Geels (2002)

...because of their uncertainty and interdependence.



Agility at different levels of governance (Weber et al. 2021)



- Overcoming failure logics for STI policy making is a necessary for governing transformations (Schmidt, 2018)
- Interdependence of strategic and operative dimension crucial for an evolutionary perspective on innovation policy (Witt, 2003)
- A transformation concept prescribes which instruments can be used under certain circumstances to achieve missions.

Five dimensions of an agile STI policy (Weber et al., 2021)

Criteria	Definitions
1 Flexibility	sufficient rapidity and scope of policy making to shape transformations or react to dynamics
2 Proactivity	ability to provide guidance towards the future including normative decisions on dominant designs and socio-technical lock-ins
3 Participation	coordination with relevant stakeholders and policy making actors for capturing relevant information and disseminating guidance
4 Ambidexterity	ability to experiment with existing or new organisational structures in public administration
5 Reflexivity	monitoring, evaluation and feedback-loops for policy learning to keep pace with new knowledge and socio-technical dynamics

Can AI increase the rapidity of instrument implementation, coordination and adaption?

Opportunities?	Limitations?
<ul style="list-style-type: none"> Operative implementation of instruments (including coordination as a chance for AI) Rule-based innovation policy making (dependence of subsidies to cost development of a technology) Analysis and preparation of decisions on proposals for R&D funding programmes 	<ul style="list-style-type: none"> Strategic development of transformation concept and the choice of instruments as a normative democratic debate How far does AI still need a human control to avoid hallucinations?



AI can prepare proactivity, but should it be proactive?

Opportunities?	Limitations?
<ul style="list-style-type: none"> Monitoring of potential socio-technical alternatives to address a mission/ challenge in the transformation process Proposition of policies for experimenting and implementing socio-technical alternatives – including risk analysis 	<ul style="list-style-type: none"> AI cannot completely cope with “Knightian Uncertainty”[*] of innovation processes Choice of alternatives depends on normative perspective on specific risks and uncertainties

“I was elected to lead, not to think.”
(translation of German version)

“I was elected to lead, not to read.”
(original version)

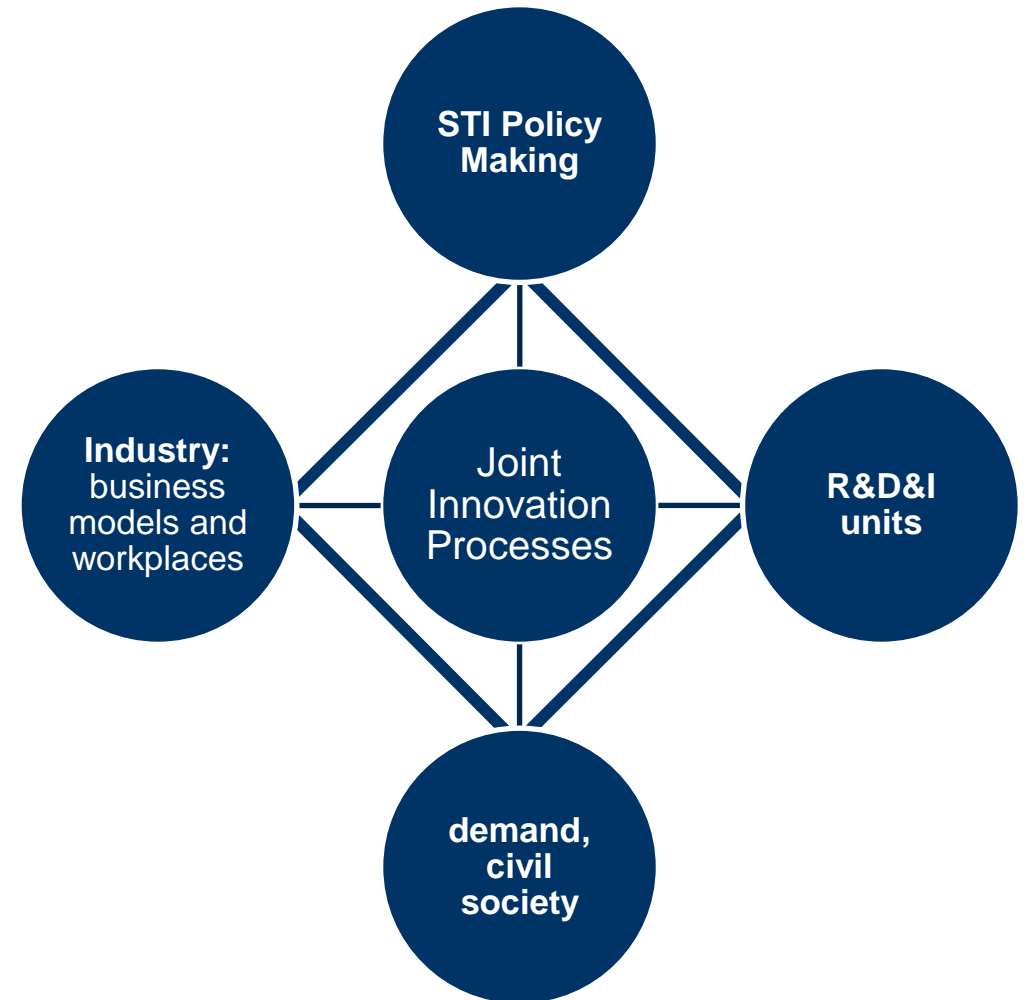


^{*}Impossibility to know all possible realisations of a random variable and their probabilities

Source: <https://www.pinterest.de/pin/315744623847783987/>

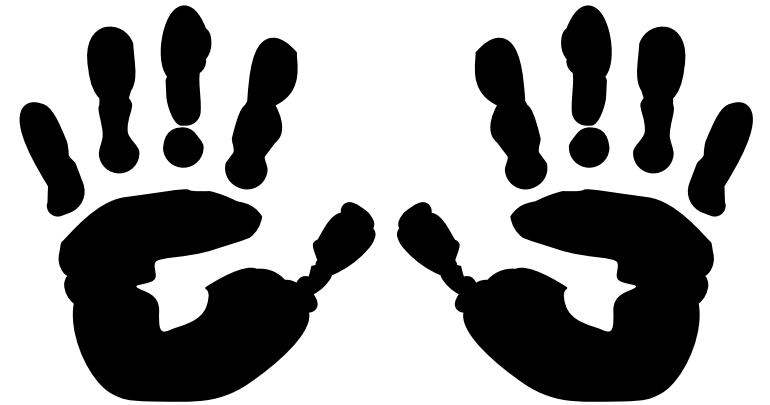
Can AI organise interaction and participation processes within the innovation system?

Opportunities?	Limitations?
<ul style="list-style-type: none"> • Analysis of large text-based documents coming from stakeholders to explain their position in foresight and scenario processes • Interaction with stakeholders to explain and collect knowledge? 	<ul style="list-style-type: none"> • Does the interaction between AI and human beings work for participatory processes?



Can AI replace or create organizational structures in (and between) public organisations?

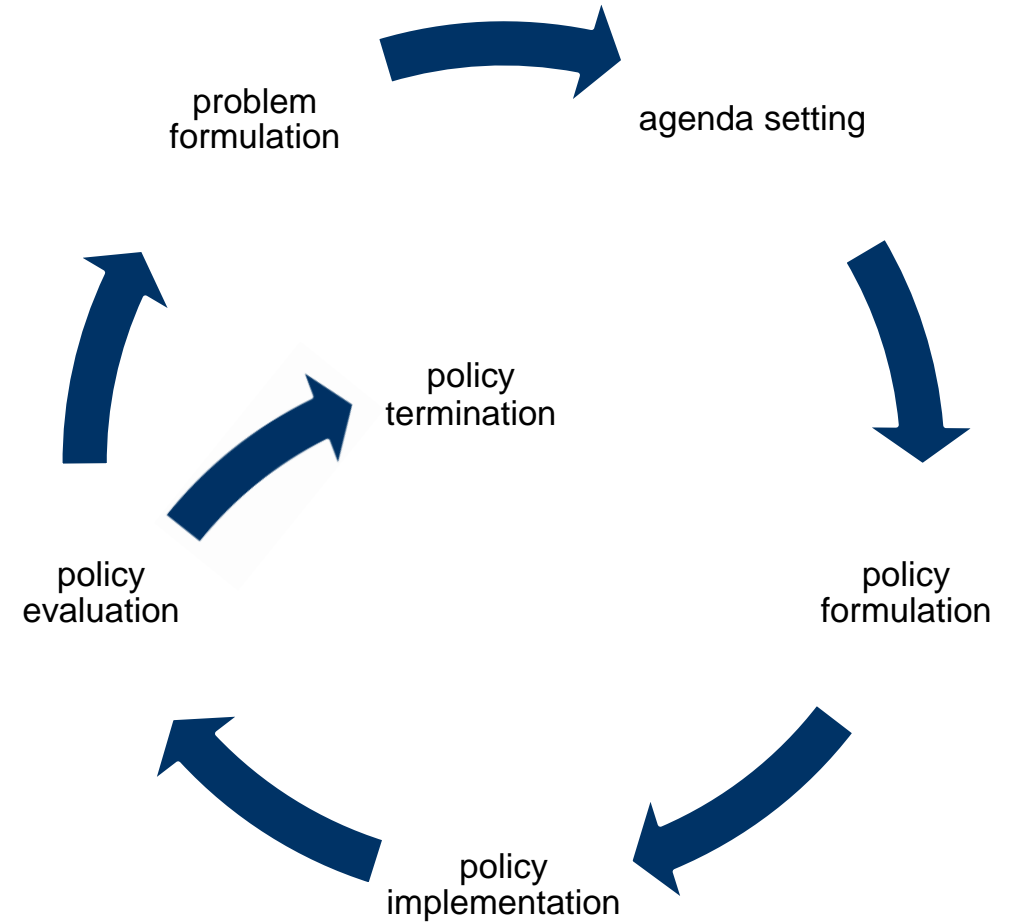
Opportunities?	Limitations?
<ul style="list-style-type: none"> • Replace existing organisational structures: project operators, audit offices, monitoring and control systems • Create new organisational structures: mission-oriented innovation policy agencies? 	<ul style="list-style-type: none"> • How to organise interaction between AI and humans or human-based organisations? • How far does AI still need a human control to avoid hallucinations?



Ambidexterity as balance between exploiting existing and exploring new organisational structures

Can AI support or replace monitoring and evaluation processes and initiate policy learning?

Opportunities?	Limitations?
<ul style="list-style-type: none"> Better data collection and analysis processes for monitoring, adaption and evaluation processes. AI can initiate policy learning processes based on politically given criteria (such as specific quantitative and qualitative KPIs) for the evaluation of policy instruments or technologies. 	<ul style="list-style-type: none"> AI hallucinations in the collection of data need to be overcome. AI can prepare evaluations, but not necessarily interpret them politically?



Howlett and Giest (2012) and Haddad (2022: 20)

There are opportunities and limitations for the use of AI. How can we guarantee that AI follows normative democratic principles, when not AI but the public needs to discuss and decide?



Source: https://images.gutefrage.net/media/fragen/bilder/wie-wuerdet-ihr-die-karikatur-deuten-2/0_full.jpg?v=1698042077000

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Thank you for your attention!

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