Governance innovation for accelerated sustainable transitions

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The basic aim for this conceptual paper is to outline how innovations in governance relate to and can accelerate sustainable system transitions.

Climate change and the destruction of ecological systems threaten our planet, and our society cannot continue to operate as usual. Society needs to deal with systemic challenges such as pandemics, migration waves, health, combined with growing income gaps and political instability. The challenges are urgent and increasingly complex, and in a dynamic world with interlinking systems, change is taking place rapidly, but not always towards a preferred more sustainable future.

The ongoing paradigm shift in society puts higher demands on institutions and organizations, decision-makers and citizens. Structural changes because of artificial intelligence, digitalization and globalization create technical challenges for business and the public sector, as well as increasing demands of a legal, ethical and governing nature. Whole societies of liberal democracies also risk being undermined by extremism and terrorist threats, propaganda and misinformation. We need new ways of governance.

Governance innovation is about addressing challenges in today's institutional processes, policy and decision-making, resource integration, management and leadership, organizing, and resilience. Innovation in these processes increase societies capacity to make use of radical innovations, respond more rapidly to external and internal changes or threats, and increase the pace of sustainable system transitions. New frameworks for governance, anticipatory capacity and data-driven solutions, as well as innovation in regulations and steering models, enable a holistic approach to the challenges facing society in the short and long term.

People and organizations are expressing frustrgovernance_ation across society with today's outdated governance, managing and organizing. Decisions are too slow or outdated. Or both. Citizens are expressing their frustration that existential threats are not met with systemic reforms, or that they are not involved when extensive changes are to take place in the local environment. There are decision-makers with great ambitions, but also a range of societal actors who often pull in different directions, according to their own logics.

There are societal transformations that indicate that our forms for governance, management, organizing, and cooperating need to be updated for the 21st century, to ensure a sustainable, prosperous society. A determined and directed effort is needed around governance. New types of knowledge, new types of cooperation for innovation and a strategic overall picture around society's processes, organizing and administration for decisions and (self) governance are needed to be able to tackle the great challenges of our time.

Today, the transition to a more sustainable society is too slow.

Governance innovation will enable an accelerated sustainable transition

System transitions are long term, often initially slow but accelerating, processes when change start to occur. One of the most widely used models to understand system transition is the Multi-level perspective (MLP) framework, developed by Frank Geels in the early 2000s[1]. The MLP theory outlines how system transition comes about through dynamic interactions in three levels: niche, regime and landscape.

[1] Frank Geels together with a number of other scholars has been influential in the formation of the research field of sustainability transitions. For more information Köhler et al. (2019) provides and extensive outline of the current knowledge

The *niche* level are areas in society not part of mainstream society – it is a place where new technology, practices, or even new types of lifestyles can emerge and start to develop. The actors who inhabit these areas are not by definition always trying to change the system, they are responding to needs or changes in the local context or are seeing openings that could be exploited. They are however critical in changing the system, providing possibilities for other to follow. Technology or practice within niches are more likely to gain traction if they can link into the outlined problems or needs in the current mainstream society, in MLP termed as the *socio-technical regime.* The regime is composed of various actor groups, institutions and infrastructures aligned around the secure and predictable delivery of a particular societal function, e.g., heating, mobility, or food. Geels (2011)[2] defines the regime as '*the semi-coherent set of rules that orient and coordinate the activities of the social groups that reproduce the various elements of socio-technical systems'*. Activities in niches and regimes are influenced by an external landscape, which is largely beyond the control of the system actors, e.g., the public discourse on climate change. Given the right landscape conditions, radical niche innovations or practices can begin to influence and potentially overthrow the dominant regime. These socio technical systems are viewed in dynamic-evolutionary terms as the causal interactions between actors, institutions and material infrastructure that shape system change. This dynamic process that can lead to transition from one regime type to another involves a fundamental reordering and realignment of both the social and technical components. An illustration can be seen in figure 1 below.

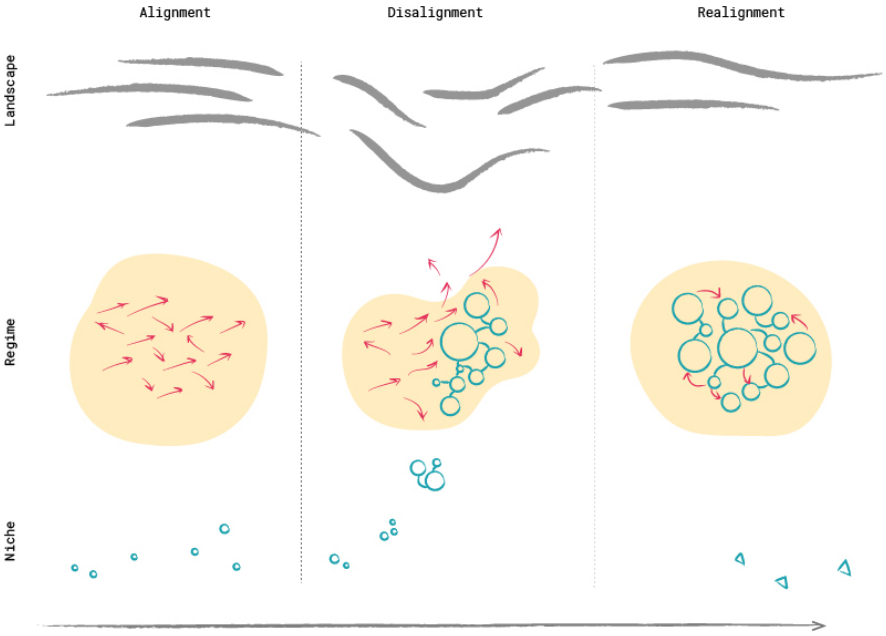

Figure 1: the dynamics of how system change comes about (adopted from Leadbeater & Winhall 2020[3])

MLP helps us in understanding how, on a conceptual level, large system transitions come about; it is a way to frame how societies change on a large system scale. Here it becomes useful as a conceptual tool to explain what role innovation in governance can play for sustainable transitions.

[2] Geels, F. W. (2011). The multi-level perspective on sustainability transitions: Responses to seven criticisms. Environmental innovation and societal transitions, 1(1), 24-40.
[3] Leadbeater & Winhall (2020). Building Better Systems - A Green Paper on System Innovation [available at systeminnovation.org/green-paper]

As governance can be said to involve all parts of the regime (actor groups, institutions and infrastructures), both in isolation and as whole, albeit in different variations depending on where we are looking, it is clearly so that governance is a central part of the regime. The semi-coherent set of rules that orient and coordinates actor within the regime are the same rules that are at the core of innovations in governance. The processes involved in governance innovation, from policy to cooperations or organizing or decision-making, involve changes in the rules that forms the foundation for the reproduction of elements of socio-technical systems. For example, if actors within the regime can increase their anticipation capability it can allow them to use the future to envision a desirable future and empower them to act towards changes in governance, thus leading to system changes. Or, if actors engage with changes in the regulatory framework for a particular technology, it can enable the emergence and acceptance of that technology from a niche into the regime and allow for a sustainable sociotechnical system transition. Another example is the use of data, that from a MLP point of view should be seen not as a static flow of information but instead as a functional resource that flows throughout the system allowing for links between system parts to either connect more efficiently, or in new ways. Working with data-driven solutions provides a resource that both can reconfigure the system in itself or can allow for radical new innovations or practices to emerge, and change, the system.

Three areas to support governance innovation

We have identified three strategic approaches or areas that can assist in efforts to innovate governance. These three do in no way encompass all that governance innovation is or should be. It is only a starting point that helps us in understanding what and how we can address system transitions from a governance perspective with governance innovations.

Anticipation accelerator - envisioning a sustainable future

If transition to a more sustainable society is to be made, we need to be able to envision it. The need to be able to imagine and move towards a sustainable society, and at the same time act proactively in an increasingly complex and dynamic world, requires the ability to act on and think in "alternative futures" – to awaken and use one's imagination in a constructive way to envision new paradigms and values. Anticipation Accelerator gathers the knowledge forefront of future knowledge, future literacy and anticipation capacity.

Anticipation means the ability to use ideas or visions about the future in the everyday of the present. Anticipation also forms the capability for being able to formulate theoretical and practical frameworks for using the future, what is known "futures literacy". Accelerated proactive capacity and future literacy connects future scenarios, external analysis and system thinking to meet the need for better preparedness in decision making and strategic directions.

Anticipation accelerator is based on the field of future studies. Anticipation as a subject means developing, sorting and disseminating descriptions of processes/systems for expectation of how the "future" affects the present. Anticipation contains two parts:

a) Foresight, or what is commonly referred to as future studies, which is about systematically imagining alternative futures in an often creative and participatory process,
b) The ability to use anticipation (in practices meaning to engage with foresight work) in the operational, tactical and strategic work to prepare an organization to steer towards and act in different possible futures, with unexpected developments, i.e., the ability to understand and act on a non-linear future horizon.

Proactive capacity can support actors/constellations during periods of great uncertainty, or to establish permanent organizational capacity for anticipation (i.e., functions with allocated organizational resources), as part of organizational development, as basis for decision making, or as part of emergency preparedness or strategy development. Examples of areas where this capacity can be utilized are advocacy work, cooperations and coordination's (formations of clusters), processes for change or innovation, organizational culture and structure, co-creative processes, knowledge management, knowledge dissemination, problem identification or policy work (for principles, guidelines, orientations, strategic documents, R&D resources, etc.), regulations and legislative work.

When proactive capacity along with future literacy is built into a capability it will enable actors to both respond to system changes and take purposeful actions towards a sustainable transition.

Anticipation needs to be a central piece of the puzzle for exploring Governance innovation.

Data-driven society - achieving a sustainable transition with data as a resource

More and more of society is being digitized. At the same time, citizens' expectations of data management and good planning of data are increasing. Everywhere in society, more data than ever before is being collected, but a large proportion end up in locked systems, even though the same data can be useful in completely different contexts. If we want to seize opportunities in management and governance, avoid uninformed decisions and negative consequences in achieving the vision of a data-driven society, we must address the basic mechanisms to be able to collect and make data available in a controlled way, and apply independent interdisciplinary and applied research about the data-driven society.

Digitalization is an equally broad and profound ongoing change in our civilization. It touches on countless disciplines from engineering-driven natural science-mathematically oriented areas to social sciences and humanities. It also makes the computer-driven society difficult to delimit. Some concerns are about the role of data and analysis in how political decisions are made and followed up. Others are more about how digitalization enables more automation and easier interactions with citizens. Through the digital transformation of society and the increasing amount of data collection, new challenges arise regarding data management and utilization.

A fundamental part of the data-driven society is about ensuring a good and ethically sustainable access to data and information, among other things to design and evaluate future regulation and other interactions between authorities, municipalities and regions, citizens, business and civil society. With a well-functioning basic information infrastructure, there are great opportunities to innovate, streamline and reform significant parts of the public sector. Getting there requires technical and organizational solutions for data management, new ways to implement artificial intelligence to streamline processes and decisions, but also to develop mechanisms to avoid negative consequences with digitized services and decisions.

Creating new data-driven services requires data, but the area has most often been overshadowed by digital services and digital tools (such as AI/machine learning). These are indeed central parts of a data-driven society, but innovative work at the service level and AI applications are most often hampered by a lack of access to data.

There is also "soft digital infrastructure" which is an essential part of data governance and includes issues in law, policy, legislation, regulation, and ethics. These knowledge domains are also included in aspects of governance innovation, in this context it more concerns digitalization and data interoperability, it is more about technical and organizational abilities and the prerequisites for being

able to collect and make data available. The technical parts include data sharing platforms with associated standards as well as principles of transparency (as opposed to lock-in) at every levels. The organizational parts include data ownership, information classification (including security classification) and chains of responsibility from data provider all the way to service provider. These organizational skills are required to be able to make data available. An issue beyond the organization is how and on what conditions the individual should interact digitally with new social structures based on digital innovation, as well as business and the public sector.

A data-driven society has the potential to contribute insights and capabilities towards system levels at every level of society. The individual citizen can be given control and access to his or her data allowing for a citizen empowerment. Authorities can make more informed decisions and involve citizens in a better way in the design of effective and more dynamic regulations. AI can be applied for processes, quality and integrity-assured data management, digital community services for citizens and IoT for increased knowledge of the current situation and environmental goal fulfillment etc. The business community can have a competition-neutral resource in the form of public data and new niches thanks to more dynamic regulation. However, it is important to understand that there are also risks in introducing data-driven processes, especially if they have not been fully understood.

Effective use of data as a resource, a framing of the governance innovation puzzle, will enable us to move towards sustainable solutions and sustainable sociotechnical systems.

Policy lab – a method for innovating governance for a sustainable transition

Policy Lab contributes to the transition towards a more sustainable society by providing a method for innovating in governance. Policy lab can be a temporary initiative based on an individual project or a long-term permanent structure. All policy labs are also uniquely based on their specific context in which they operate, but there are some common denominators, and the EU-commission defines Policy labs as:

- *Policy Labs approach policy issues through a creative, design, or user-oriented perspective.*
- *Policy Labs strive to organize experiments to test proposed policies.*
- *Policy Labs work for or within a government entity or public administration and contribute to the shaping or implementation public policies.* [1]

Policy is a broad concept but can generally by defined as a deliberate system of principles to guide decisions towards a specific outcome. A policy is a statement of intent and is implemented as a procedure or protocol. The difference between policy and regulations is that regulations can be binding, while policy is not binding from a legal perspective. 'Code is law – law is code'[3] is an descriptive example of the difference between policy and regulations. As an example: it is not democratic decisions that shapes how citizens forms their everyday life. It can be determined instead by the code (i.e. technology) from multinational companies e.g. the number of characters on Twitter, which is a policy. Regulations are stringent mandates that communicates what can be done.

The concept of policy also includes many areas other than regulations, such as communication, standards, and coordination. Therefore, there are many areas where innovation in policy can make a big difference. Policy is also about "governance" and how decision-making can take place in different networks where different actors in the ecosystem are involved, in the process of breaking silo structures. Governance in relation to policy can be described as processes, customs, policies, laws and institutions that together affect how a society is governed, administered and controlled. It includes norms, principles and political methods that influence decision-making and thus also social and economic behavior of actors. Policy lab also works with regulatory innovation, which in this context means exploring:

- how existing legislation can be used as it is,
- if there is a need to reinterpret existing legislation,
- if there is something in existing legislation that prohibits the phenomenon under question,
- and if there are parts lacking in an existing regulation.

In summary, policy and regulatory innovation within a policy lab aims to:

- analyze challenges/problems that arise in connection between innovation/market development and regulations,
- develop possible solutions, and
- collaborate with relevant actors to determine the next step.

Policy and regulatory innovation also aim at the “what if” question, towards more innovative and more forward-looking processes.

Policy lab fulfills many functions and has many different roles. Firstly, the policy lab is a place for cooperation. This means that a policy lab becomes a facilitator for a certain phenomenon. A policy lab can get different stakeholders to cooperate with each other and help them “move together” at the same pace, and thus facilitate in forward with an issue. A challenge with innovation may otherwise be that one player in the ecosystem wants to move faster, while another has other priorities and wants to wait. Many of today's challenges are also complex and at a system level. A public organization may find it difficult to operate outside its given frame. Policy lab, on the other hand, which can act independent, may take on challenges that lie within the areas of several institutions and establish a cooperation area across sectors.
Secondly, the policy lab provides a neutral meeting place for public organizations. The lab can be placed outside any specific organization and become a place for the public and private sectors to meat. Policy labs are interesting for public organizations because academia/business are there. But policy labs are also interesting for business/academia because the public organizations are there. Being a neutral meeting place also means that the policy lab cannot take on the role of lobbyist.

Thirdly, the policy lab can act as an interpreter between different actors. For example, it is not always the case that industries and public organizations understand each other. A policy lab may bring those difficulties to the surface and with the help of facilitators act as an interpreter and "translate" what is being said.
Forth, the policy lab becomes an expert on a phenomenon, especially if the policy lab has similar projects and can reuse lessons learned from one project to another and create synergy effects.
Fifth, policy lab a prototype. A challenge/problem within the policy lab is meant to lead to action/result. Policy lab, independent of a public organization, is also freer to shape the question and thus becomes a prototype on its own by experimenting around and exploring an issue.

Policy Lab is for the reasons above another piece of the Governance innovation puzzle.

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