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WHITE PAPER

Exploring the Blackbox of Innovation by Governance Tools – learning from North Sea Islands

Simon Tijsma², Bonnie Lewtas³, Cormac Walsh⁴, Han Brezet⁵

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¹ <https://www.interregnorthsea.eu/freia>

² Corresponding author. Former Head of the Department of Economics & Tourism of the Province of Fryslân, Netherlands.
s.tijsma.1@kpnmail.nl

³ TurtlCo, Amsterdam, bonnie@turtlco.com

⁴ Dr. Cormac Walsh Research and Consulting E. drcormacwalsh@gmail.com
W: cormacwalsh-consult.eu

⁵ Prof. Dr. at Aalborg University (Denmark), Department of Sustainability & Planning, E: brezet@plan.aau.dk

Summary

The paper discusses the unique challenges and opportunities faced by North Sea islands. These islands struggle with issues such as population decline, climate change, and energy dependence but also possess natural assets, unique biodiversity, and a strong sense of community, which can drive innovation.

Governance plays a critical role in fostering innovation, particularly on comparatively isolated islands where a do-it-yourself culture prevails. The FREIIA EU project aims to develop specific governmental roles to support sustainable innovation using the 'RUDDER' model. This model is designed to guide public officials in driving innovations aligned with the EU's Grand Challenges and Sustainable Development Goals (SDGs).

The project employs historical research, literature reviews, interviews, focus groups, and action research to test and refine the RUDDER model. This comprehensive approach ensures a well-rounded understanding of the governance of innovation on islands. The T-Model for governance integrates Weberian bureaucratic stability with Schumpeterian innovation, creating a balanced approach to governance. This combination provides both stability and flexibility, enabling effective governance to address complex societal challenges.

The RUDDER model outlines specific roles and actions for public officials to foster sustainable innovation:

1. Leadership:

- Leaders with "soul in the game" prioritize ethical decisions and inclusivity, align initiatives with SDGs, and assemble skilled teams to foster innovative thinking.

2. Connector:

- Connectors foster collaboration across academia, industry, government, and civil society. They integrate policy-making with project execution and ensure multi-level governance.

3. Facilitator/Creator:

- Facilitators create supportive environments for innovation, advocate systematic project development approaches, organize collaborative spaces, and encourage unconventional problem-solving.

4. Provider:

- Providers identify and offer funding, share best practices, facilitate systematic methods, and promote resource-sharing.

5. Ambassador:

- Ambassadors promote innovation initiatives, develop bottom-up narratives, market exemplary projects, and organize events to showcase progress.

6. Leverage/Capitalize:

- Leveragers employ innovative evaluation methods, integrate successful projects into broader programs, and develop internal capabilities for sustainable innovation.

7. Network Orbiting:

- Network Orbiters connect various networks to enrich projects, actively participate in relevant networks, and combine internal and external value chains.

8. Procurement Trendsetter:

- Procurement Trendsetters engage early with innovators, incentivize innovative solutions, and provoke procurement innovation to address societal challenges.

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The development process underlying the RUDDER model employs standard design thinking methods and tools. This process is structured into four phases: Discover & Define, Design, Strict Development, and Deliver. Each phase involves activities like stakeholder interviews, problem framing, ideation workshops, detailed planning, and implementation. These design thinking activities ensure that the innovation projects are user-centered, iterative, and grounded in real-world needs and constraints.

The model is tested on various North Sea islands to validate its effectiveness in fostering sustainable innovation. These islands serve as experimental bases for developing and honing governmental roles in innovation efforts.

Future steps include consolidating the model, expanding its application, and systematically evaluating its effectiveness. Continuous learning, collaboration among participating islands, and promoting the model through training and knowledge exchange are also emphasized.

Conclusion:

The FREIIA project, through its T-Model and RUDDER roles, aims to empower civil servants and governance actors to drive sustainable innovation effectively. By integrating Weberian stability and Schumpeterian innovation, the project seeks to address complex societal challenges on North Sea islands and beyond. The RUDDER model provides a structured framework for public officials, fostering collaboration, creativity, and flexible governance to tackle the multifaceted challenges of the 21st century. Future steps involve further testing, training, and expanding the model's application to ensure its widespread adoption and effectiveness.

I. Introduction

Distributed across the North Sea islands share various specific challenges with respect to their future development, ranging from population decline caused by a lack of job opportunities, particularly for young and talented people and the impacts of climate change, to energy dependence. At the same time, certain aspects of islands' geographic specificity may be regarded as opportunities: they range from natural assets, unique biodiversity, reliance on their own resources (e.g. the potential for renewable energy production and a circular economy), intensive involvement of the local communities and an appealing climate for tourism.

In the past, innovation policy has proven to support islands in coping with these challenges and has let them tap into new horizons. A strong evidence base for this is provided in the pioneering programs like the Energy Autonomy of Samsø (DK), the ZeroWaste Lighthouse of Bornholm (DK) and the frontrunning nature education role of various North Sea national parks.

North Sea islands -and their national parks- are particularly well-positioned to apply, accommodate and communicate these transitions via their capabilities for bottom-up initiatives, smart connections with the coastal mainland/ urban centres, digitization and the islands' sense of community. Various North Sea islands have demonstrated their capacity to act as special places for so called "spark type innovations": forced by the special circumstances, e.g. relative isolation and unique nature assets, the envisaged high impact of sea level rise on lower positioned islands, hyper-tourism and youth leaving the islands, applied innovations emerge as 'sparks', offering modest implementation possibilities on the islands themselves but with great potential for the mainland. These islands -each in a different, special way- have proven to be a fruitful basis for the engagement in sustainable innovation best practices, also making monitoring and progress over time quite visible and applying practical innovation tools, such as benchmarking. They are demonstrably well-positioned to set relevant and highly visible first steps for the grand transitions, with an applied and social focus. Particularly, island and marine national parks, have the potential to become forerunners of a sustainable regeneration paradigm, linking ecosystem restoration, social and environmental sustainability.⁶

Moreover, in addition to these assets, islands can also have an institutional advantage in promoting social innovations. In general, the role of governance is considered crucial for innovation-based transitions. However, the role of civil servants -and the governance teams they are operating in and with- in innovation processes has been eroded by neo-classical thinking over the past 40 years. In this philosophy, the role of the civil servant was mainly aimed at removing market disruptions and optimally facilitating the market. This was the road to success. However, relatively isolated and often semi-autonomous by nature as islands are, this neo-classical way of thinking has been less able to take root on islands. The size, the need to act creatively and enterprisingly and the nature of the challenges

⁶ Hammer, T., I. Mose, D. Siegrist, and N. Weixlbaumer, eds. 2016. Parks of the future: protected areas in Europe challenging regional and global change. Oekom Verlag: München.

Walsh, C. (2021) Protected area management in a post-natural world: negotiated governance at the Danish Wadden Sea, *Maritime Studies*, 20, 255-266.,

Liburd, J.J. & Walsh, C. (2022) Beyond Sustainable Development at the Wadden Sea: Towards A Regenerative Paradigm, *Trilateral Wadden Sea Cooperation Annual Report 2022*, 4-9.

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they face have contributed to a different -do-it-yourself- organizational culture in local administration, which can be advantageous in the light of the necessary social innovations. At the same time, we are keenly aware that many smaller North Sea islands are part of larger coastal municipalities and often struggle to have their distinctive island perspectives and voices heard. We anticipate that this paper and the work of FREIIA, more broadly can also benefit the fostering of island innovation in these more challenging governance contexts also.

In a series of EU-Interreg funded projects, we are studying these governance of innovation phenomena, stimulated by some of the best -world- practices. In the EU-project 'Islands of Innovation'⁷ we already elaborated a systematic, design-oriented process of government facilitated sustainable project development, resulting in the 'Tipping' approach⁸, as a fast-track tool for the ideation phase, resulting in innovative transition ideas and concepts. In the design-based development process, this can be considered as the first creative phase, leading to a rich variety of sustainable project ideas, the inclusion of stakeholders from the Quintuple helix, particularly from universities, new ventures, the creative disciplines etc. However, the next development steps towards the strict design, the effectuation, realization and diffusion of several of the most promising projects, a program and/or roadmap were missing. That's why in a follow-up EU-project, 'FREIIA'⁹, we are aiming at the next, effectuation phases.

The FREIIA project is centered around developing and honing distinct governmental roles in innovation efforts, with North Sea islands as an experimental base. This leads to the formation of the 'RUDDER' model, which is designed to provide public officials and their teams with the necessary resources to effectively guide their sustainable innovation initiatives from conception to fruition. It also serves to direct societal innovations within the context of the EU's Grand Challenges¹⁰, the Sustainable Development Goals (SDGs), as well as national and regional objectives.

The FREIIA objective is to create skills, resources, competences, capabilities & structures that support the public sector in becoming effective and successful in transformative policies and in building resilience, with a focus on GSCs/SDGs.

The aim is to achieve synergies in three areas:

- Shaping a bottom-up approach within the context of top-down EU's GSC's
- Connecting government's different levels (multi-level governance)
- Connecting Quintuple Helix's different actors (multi-actor).

The specific **goal of the project** is to explore and further elaborate the roles and actions of public officials from 'best practices in the Grand Transitions' islands and put these into an organizational and economic-sociology theoretical perspective.

⁷ <https://projects2014-2020.interregeurope.eu/islandsofinnovation/>

⁸ TIPPING: The Innovation Program's Perspective for Islands' New Governance. See the TIPPING Guide in: https://projects2014-2020.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1576490901.pdf

⁹ FREIIA in: <https://www.interregnorthsea.eu/freia>

¹⁰ See Kuhlman & Rip (2014) The challenge of addressing Grand Challenges: A think piece on how innovation can be driven towards the "Grand Challenges" as defined under the prospective European Union Framework Programme Horizon 2020, https://ris.utwente.nl/ws/portalfiles/portal/5140568/The_challenge_of_addressing_Grand_Challenges.pdf.

The main assumption in the FREIIA project is that the governance of sustainable innovation on small 'Lighthouse' transition islands is characterized by the application of a balanced toolbox, of on the one hand, the necessary standard-bureaucratic planning tools and on the other hand, entrepreneurial and design-oriented roles and actions of local government teams actively steering and facilitating project development. We elaborate this assumption, by studying the literature and proposing the so-called T-model for balanced governance of innovation. The first part of the T-model perspective goes back to organizational sociologist Weber¹¹, while the creative innovation perspective is largely inspired by the entrepreneurial philosophy and principles of Schumpeter (Schumpeter, 1934¹²).

Furthermore, we will argue that the driving force for applying the T-model in today's islands' community practice is the urgency to address and start actions in view of the Grand Challenges, such as climate change, biodiversity loss, circularity and water scarcity. Small North Sea islands are in the frontline of confrontation in this respect and their -local- governments have the overall responsibility to anticipate, act and innovate, since business and other stakeholders usually focus on their self-interests. (Mazzucato, 2013¹³ & 2018)

Historical research, literature studies, interviews with key persons, focus group meetings and action research, including testing the RUDDER model in practice, are all key components of the research methodology.

In this White Paper¹⁴ we wish to give some insights into the FREIIA-project, the RUDDER-model and its first applications, aimed at practitioners in the field, as part of a Rudder Guide. However, soon we envisage to enrich the governance of innovation scientific field with more in-depth-findings and results, based on our FREIIA-study of and close cooperation with North Sea and other islands.

Terminology

The term governance, understood in broad terms, refers to all processes through which public institutions manage resources, provide services and give strategic direction to society. Governance, thus plays an integral role in managing and regulating societal affairs. Governance can occur through hierarchical rules and regulations, networks of actors, markets, or a combination of the above. Governance takes place at various levels including, local, regional national and international and involves a wide range of both public and private actors. The term innovation¹⁵ refers to new ideas or methods and their practical implementation. Governance for innovation is thus concerned with the

¹¹ Weber, M. 1864-1920. Max Weber, the Theory of Social and Economic Organization. New York: London :Free Press ; Collier Macmillan, 1947.

¹² Schumpeter, J. A. (1934). The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle. Harvard University Press.

¹³ Mazzucato, M. (2013 & 2018) The Entrepreneurial State: Debunking Public vs. Private Sector Myths. Anthem Press.

¹⁴ In this paper, all concepts, notions, new insights and in particular the T-model, the TIPPING approach, the RUDDER model, RUDDER roles and RUDDER actions have been designed and formulated by the writing team, based on both theoretical considerations and empirical data collected over more than 4 decades from daily practical experiences with local innovation governance. When drawing up literature reviews and summaries, such as on pages 5-7, 8-10, 13, the ChatGPT program has helped to make the final texts more comprehensible and readable, especially to explain the main points briefly and concisely.

¹⁵ We have purposely applied the term 'Innovation' in this paper, but of course realize ourselves that Technology and -both incremental and radical types of- Technology Development, next to other factors, can be -and usually are- substantial drivers of Innovation and Change. In a forthcoming, separate paper, we aim to explore the black box of Spark Innovation on North Sea islands and the role of technology experimentation in this process.

management of processes of change or renewal. This can encompass, for the example, the development of new products, new means of service delivery, new processes of community engagement or the transition to a circular economy. Governance processes tend to be highly *path-dependent*, as current patterns of decision-making are strongly influenced by the legacy of past rounds of decision-making. Public institutions are thus slow to change. We are concerned with facilitating processes of innovation that can move beyond established path-dependent governance patterns to deliver *path-shaping* -transformative- change¹⁶. This part of the White Paper sets out fundamental aspects of governance and its various stages, forming the framework to understand its influence on innovation.

Key Aspects of Governance

Governance extends beyond mere rule-making; it encapsulates how power is exercised, decisions are made, and actions are carried out. This section explores the critical components that make governance a multifaceted concept.

1. *Structures and Institutions*: How governmental bodies and organizations are structured, including centralized or decentralized systems, the separation of powers, and the division of responsibilities.
2. *Decision-Making Processes*: Decision-making mechanisms in line with an iterative, design-oriented project development process, including governance team building, divergent and convergent sub-processes, stakeholder involvement, public participation, and the choice between consensus-building or majority rule.
3. *Accountability Mechanisms*: Holding power accountable through checks and balances, transparency, monitoring, and evaluation.
4. *Policy Formulation and Implementation*: Development of policies through expert involvement, public consultation, evidence-based decision-making, and cross-government coordination.
5. *Citizen Engagement*: Methods to involve citizens in governance, including participation, consultation, and feedback mechanisms.
6. *Collaborative Governance*: Collaboration among various stakeholders like governments, NGOs, businesses, and communities to tackle shared problems.
7. *Adaptive Governance*: Adaptation of governance systems to changing circumstances through flexibility, learning, and responsiveness.
8. *Values and Ethics*: Guiding principles of governance, including transparency, accountability, fairness, equity, and sustainability.

These key aspects of governance provide the structural and ethical frameworks that influence societal decision-making process, policy development, and implementation.

¹⁶ See Leach, M., Bloom, G., Ely, A., Nightingale, P., Scoones, I., Shah, E. and Smith, A. (2007) *Understanding Governance: pathways to sustainability*, STEPS Working Paper 2, Brighton: STEPS Centre:
<https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/2440/Understanding%20Governance.pdf?sequence=1>

II. Stages of Governance

Governance has evolved through distinct historical stages, reflecting changes in societal structures, political ideologies, and economic paradigms. This section explores these different stages, offering a chronological perspective¹⁷.

1. Classical Approaches

- a) Ancient Greece and Rome: The city-state model of governance emphasized citizen participation and direct democracy, paving the way for modern democratic ideals.
- b) Monarchical Systems: Centralized power held by a monarch or ruler often lacked significant checks and balances, leading to absolute rule.

2. Enlightenment and Liberalism

- a) 17th and 18th centuries: This period saw the emergence of liberal democratic thought, advocating individual rights and limiting government intervention, setting new standards for governance.
- b) Influential Thinkers: Thinkers like John Locke and Montesquieu shaped governance by emphasizing the consent of the governed and the separation of powers.

3. Bureaucratic Governance

- a) Late 19th and early 20th centuries: Development of bureaucratic models, influenced by Max Weber, led to a focus on rational-legal authority and specialization.
- b) Formal Rules and Efficiency: This era stressed the importance of meritocracy and efficiency in public administration, introducing systematic governance.

4. Welfare State and Social Democracy

- a) Early to mid-20th century: The rise of the welfare state marked an increased government role in social protection and public services.
- b) Government Intervention: Influenced by thinkers like Keynes, governments sought to address social and economic inequalities through active intervention.

5. Neo-classical and New Public Management (NPM)

- a) Late 20th century: The shift towards market-oriented approaches emphasized free markets and limited government intervention, reshaping the public sector.
- b) Market-Oriented Approaches: Neo-classical ideas and NPM emphasized efficiency and results-oriented management, steering governance towards performance measurement.

6. Governance for Sustainable Development

- a) Late 20th century to present: The recent focus on governance for sustainable development recognizes the need to tackle global challenges like climate change.

¹⁷ see DeLong, J. B. (n.d.). Slouching Towards Utopia?: The Economic History of the Twentieth Century.

- b) Entrepreneurial & Design Thinking Governance: Incorporating Schumpeterian principles, this approach acknowledges the importance of entrepreneurship, creative destruction, and -Neo-Schumpeterian- design driven innovation in addressing sustainability issues.
- c) Global Challenges and Participatory Approaches: Emphasis on participatory approaches and adaptive governance reflects a holistic view, integrating economic, social, and environmental considerations.

The stages of governance present an evolutionary roadmap of governmental ideologies and methods. Each stage and its corresponding elements reflect the shifting paradigms and principles that have shaped governance over time. Understanding these stages provides insight into the complex and ever-changing nature of governance, laying the groundwork for how these principles can be applied to innovation. Governance today, increasingly occurs through multi-stakeholder partnerships. The state continues to play a central role in the act of governing but within the context of a quadruple or quintuple helix¹⁸ (interactions between government, society, universities and research institutes, and business). Vertically-integrated hierarchical structures, characteristic of traditional government are increasingly being supplemented or indeed, in some cases, superseded by horizontal networks, involving multiple actors. The normalisation of public participation and stakeholder engagement responds to the increased diversification of society. The public interest is no longer self-evident (if it ever was) and must be understood as continuously negotiated through concrete governance episodes. We no longer see a strict separation of neatly stacked local, regional, national and international layers of governance. Contemporary governance is multi-level with, for example, EU programmes and policies influencing decision-making in local contexts, and at times blurred divisions of competences and responsibilities among a wider range of governance actors. Interactions across sectors and levels of government, create windows of opportunity for innovation. The complexity of contemporary governance arrangements can, however, also lead to a sense of confusion, particularly among actors with less resources and experience in the craft of negotiated governance.

It is furthermore, important to note, however, that governance cultures or, 'ways of doing governance' differ significantly from one jurisdiction to another¹⁹. Despite the influence of international trends and policy developments and the achievements of European integration, marked differences continue to exist, even among neighbouring European countries, with, for example a strong tradition of negotiated bargaining among stakeholders in the Netherlands, a marked persistence of Weberian bureaucratic public administration in Germany, and a comparatively strong emphasis on local, community-based dialogue and decision-making in Denmark and Sweden. Although we can identify commonalities and the influence of successive waves of governance thinking across international borders, it is still the case, that each national system follows its own trajectory. Within the context of FREIIA, we explicitly recognise this diversity and seek to understand how governance structures are embedded in particular,

¹⁸ Carayannis, E.G. & Campbell, D.F.J. (2010) Triple Helix, Quadruple Helix and Quintuple Helix and How Do Knowledge, Innovation and the Environment Relate To Each Other? : A Proposed Framework for a Trans-disciplinary Analysis of Sustainable Development and Social Ecology, International Journal of Social Ecology and Sustainable Development, 1 (1), <https://www.igi-global.com/gateway/article/full-text-pdf/41959&riu=true>.

¹⁹ Bevir, M., Rhodes, R.A.W., Weller, P. (2003) Traditions of governance: interpreting the changing role of the public sector, Public Administration, 81 (1), <https://doi.org/10.1111/1467-9299.00334>

local places. In the case of small islands, we can assume that collective memory and community perceptions will play an important role. How governance processes and outcomes are perceived will be influenced by the legacy of past decision-making. The capacity for open and productive relations between island communities and decision-making bodies will be influenced by perceptions of how relations were in the past, as well as how they can be in the future.

III. The Weberian Approach

When we think about the government, we often conjure the image of the Weberian bureaucrat: perceived as boring, sluggish, old-fashioned, and gray, and we've heard many jokes about this stereotype. However, it is essential to recognize that the classical bureaucracy, as envisioned by Max Weber, has significant strengths and advantages that should not be overlooked. These may be summarized as follows:

1. *Clear Organizational Structure:*
 - a. Highly defined and well-structured hierarchy.
 - b. Clearly outlined powers and responsibilities in job descriptions.
 - c. Efficient communication and coordination within the government.
2. *Reliance on Established Rules and Procedures:*
 - a. All tasks and processes are based on fixed rules and regulations.
 - b. Consistency and predictability in government operations.
 - c. Transparency and easy access to guidelines for all stakeholders.
3. *Benefits of Clear Rules and Guidelines:*
 - a. Standard framework for decision-making.
 - b. Streamlining -standard- operations and reducing ambiguity.
 - c. Ensuring uniformity in the application of policies and regulations.

While the Weberian bureaucracy may face criticism and jokes, it is crucial to recognize that its structured and rule-based approach offers numerous benefits, including efficiency, accountability, and transparency. The Weberian system is intentionally designed to safeguard against arbitrariness, corruption, and undue influence of private interests in the public domain. It is built upon a strong foundation of rule of law and democratic principles, all of which contribute to its legitimacy and effectiveness.

Key Principles of the Weberian System

1. Legitimacy: Derived from the democratic process and adherence to the rule of law, ensuring decisions align with the public interest.
2. Legal Certainty: Focus on clear, stable, and consistently applied laws and regulations, providing confidence in government actions.
3. Equality Before the Law: Ensuring fairness and impartiality in the administration of public affairs, applying the same rules to all individuals.

4. Accountability: Civil servants are responsible for upholding the law and serving the public interest, subject to scrutiny for any breaches of duty.
5. Integrity: Acting ethically and with honesty, ensuring that personal interests do not conflict with public duties.
6. Neutrality: Civil servants are politically neutral, making decisions independent of personal or partisan interests.
7. Impartiality: Treating all individuals equally, without favouritism or discrimination, and ensuring unbiased decision-making.
8. Meritocracy: Promoting merit-based hiring and promotion, selecting individuals based on qualifications, skills, and performance.
9. Formalism: Relying on formal procedures and protocols to ensure consistency and standardization in decision-making.

By embracing these key principles, the Weberian system fosters a stable and transparent public administration intended to serve the best interests of society.

Essential Characteristics of Civil Servants in the Weberian System:

1. Impersonality: Civil servants act impartially and treat all individuals equally, without favouritism or discrimination based on personal preferences.
2. Calculability: Decisions made by civil servants within the Weberian system are based on objective criteria and rational calculations, rather than personal whims or emotions.
3. Formalism: The Weberian bureaucracy relies on formal procedures and protocols to ensure consistency and standardization in decision-making.

Competences: accuracy, discipline, integrity, organizational loyalty and written expression skills.

Within this established civil service hierarchy, civil servants possess defined powers and duties. Their role is to abide by established rules and regulations, avoiding arbitrary decision-making. The Weberian system's emphasis on the rule of law, democratic principles, and the professional conduct of civil servants contributes to a stable and transparent public administration that serves the best interests of society. The combination of the key principles and essential characteristics outlined above ensures the effectiveness and integrity of the Weberian approach to governance.

The Weberian approach prioritises stability, reliability, and accountability in decision-making and service delivery. In this sense, it can be thought of as a large freight ship. It is very stable, it is resilient and durable in the face of severe storms and will reliably reach its destination as planned. On board the ship, everything has its designated place and all crew members clearly defined tasks. In order ensure smooth and sufficient service, all goods must be transported in in standardised containers. The freight ship, is, however, not the fastest ship on the sea and difficult to manoeuvre. Changes of direction take time and must be planned and coordinated well in advance.

IV. Weberian Governance and Small Islands

The Weberian approach as described above prioritises standardisation and uniformity over flexibility and attention to diversity. For this reason, it is often not well attuned to the specific characteristics of particular places or groups within a population. Small islands, on the other hand, are characterised by particularity. They require individual, tailored, place-based solutions and a degree of flexibility that Weberian governance struggles to provide. To take one example, the provision of essential services such as education and healthcare is designed to cater for populations of a certain size. Minimum thresholds must be met to justify the allocation of finite resources and to ensure an equitable distribution of services irrespective of whether people are located on islands or the mainland. Ensuring the future viability and sustainability of island communities thus requires deliberate policies and at times innovative and flexible solutions, based on the prerequisite that the maintenance of island communities is deemed to be in the public interest and that the additional costs involved are justifiable. Similarly, under a Weberian approach, it may be assumed that populations remain broadly stable throughout the year and public authorities may be ill-equipped to respond to the fluctuating demand for services associated with seasonality in addition to increasing tourism and other typical island challenges, such as the impact of climate change, housing shortages, nature protection and regeneration, water use and pollution, food and energy supply and circularity.

V. From Weberian to Schumpeterian Governance

After World War II, the role of government expanded significantly. This period is also known as the "Trente Glorieuses" or the "Glorious Thirty", characterised by optimism and faith in the capacity of modern governments to steer society for the greater good, delivering the benefits of 'progress'. However, by the mid-1970s, this economic development paradigm started to face challenges due to various factors, including the oil crises of 1973 and 1979, resulting in high inflation, and fluctuating exchange rates, leading to increased uncertainty. As societies became more socially progressive, open and diverse, both national and local governments struggled to meet the expectations of citizens. Trust in the ability of governments to provide for the greater good declined and in particular, the role of the state in the provision of social welfare began to be questioned. In the field of urban and regional planning, comprehensive master plans began to be replaced by an incremental approach (also known as 'muddling through'), characterised by smaller projects, less resources and local governments acting as a facilitator rather than driver of urban and regional development²⁰.

The economic course shifted from the early 1980s. Building on the approaches of Hayek, von Mises and Friedman c.s., under the leadership of figures such as Reagan and Thatcher, a new direction emerged known as neo-classical policy²¹. The shift towards the neo-classical approach brought with it a significantly weakened role for government institutions, emphasizing deregulation, privatization,

²⁰ Kühn, M. (2008) Strategische Stadt- und Regionalplanung. *Raumforschung und Raumordnung*, 66, 230–243, <https://doi.org/10.1007/BF03183159>

Albrechts, L. Healey, P. & Kunzmann, K. (2003) Strategic Spatial Planning and Regional Governance in Europe, *Journal of the American Planning Association*, 69, 2, 113-129, <https://doi.org/10.1080/01944360308976301>.

²¹ In: Monbiot, G. & P. Hutchinson (2024). *The Invisible Doctrine – The secret History of Neoliberalism*. Allan Lane, Penguin Books, UK.

and a strong belief in the capacity of the free market to solve society's problems. This shift was heavily influenced by neoliberal ideologies, which aimed to reduce government intervention in the economy. Influenced by the concept of "New Public Management," the focus of governance shifted towards various factors such as performance assessment, competition, considering citizens as customers, efficiency, and breaking down the service delivery chain into various components. This approach introduced a new way of thinking about government management, incorporating elements from the business world into governmental practices. Especially after the financial crisis of 2008, the shortcomings of the neo-classical/new public management approaches became manifest, however without leading to a re-orientation on the government's roles. Indeed, the dominant European response to the financial crisis was to double down on a politics of austerity, reducing public spending where possible and prioritising balanced budgets over long-term investment. The 'wicked' nature and complexity of the myriad challenges societies face today (e.g. climate change mitigation and adaption, biodiversity loss, widening socio-economic inequalities and the rise of right-wing populism) calls for a reassessment of the role of the government in safeguarding the public interest and achieving medium- and long-term societal goals.

This is where the integration of a Schumpeterian approach becomes imperative. The Schumpeterian approach, emphasizing innovation, adaptability, and disruptive change, offers a crucial perspective on how governments can evolve to meet contemporary challenges. We call this approach Schumpeterian because it draws heavily from the ideas and concepts proposed by Joseph Schumpeter, particularly in the realm of economic and social change. Schumpeter's theories on entrepreneurship, innovation, and creative destruction underscore the importance of dynamic adaptation and disruptive change within economies and societies. The integration of Schumpeterian elements into our governance model reflects a recognition of the need for innovation, adaptability, and the embracing of change to navigate the challenges of the contemporary world. Schumpeter's emphasis on the role of entrepreneurs in driving economic progress and the concept of creative destruction aligns with the notion of fostering innovation within governance structures, whether the focus is on economic targets or wider societal objectives.

VI. The Schumpeterian Approach

With the advent of New Public Management (NPM), governance paradigms have shifted towards incorporating business-like methodologies in the public sector. NPM emphasizes efficiency, results-oriented management, and a market-oriented approach to public administration. This shift not only involves the application of business methods but also reflects a growing interest in the underlying mechanisms of business.

This heightened interest arises from the realization that private-sector dynamics, as articulated by scholars like Joseph Schumpeter, offer valuable insights for public governance. Schumpeterian principles, emphasizing innovation, creativity, and adaptability, become particularly relevant. Understanding these dynamics becomes crucial for governments seeking to address contemporary societal challenges and achieve sustainable development goals. With the integration of Schumpeterian principles into the governance toolkit, there emerges a recognition of the value derived from the

dynamism, innovation, and adaptability inherent in private-sector dynamics. Incorporating Schumpeterian principles into the governance toolkit adds value by leveraging private-sector dynamism, innovation, and adaptability. This integration goes beyond application, offering valuable insights for the government to navigate and address evolving societal challenges effectively

The Schumpeterian approach, inspired by the ideas of Joseph Schumpeter, focuses on innovation, dynamism, and disruptive change within the socio-economic landscape. Contrasting the stability-oriented Weberian model, the Schumpeterian approach acknowledges that progress and societal advancement stem from a continual process of creative destruction, where new ideas, technologies, and entrepreneurial ventures replace outdated ones. Key elements of the Schumpeterian approach are outlined below:

1) Embracing Creative Destruction:

- a) Encouraging entrepreneurial initiatives and risk-taking to foster innovation.
- b) Acknowledging that economic growth arises from the constant creation and dismantling of outdated structures.
- c) Welcoming disruptive technologies and market changes as drivers of progress.

2) Entrepreneurial Spirit:

- a) Valuing the role of (social)entrepreneurs as catalysts for change and economic development.
- b) Recognizing innovation and entrepreneurship as crucial elements for societal evolution.
- c) Promoting a climate that encourages experimentation and new ventures.

3) Dynamic Adaptation:

- a) Emphasizing the need for adaptability in response to evolving market demands and technological advancements.
- b) Viewing change as inherent and necessary for economic and societal development.
- c) Prioritizing flexibility and responsiveness over rigid adherence to established norms.

VII. Schumpeterian Governance and Small Islands

Despite the limitations of Schumpeter's theories for small islands, where market scale and diversity are constrained, this approach presents unique opportunities for island contexts. The absence of major factories and limited industrial diversity on islands may challenge the traditional application of Schumpeter's emphasis on industrial and technological advancements. Limited access to capital and resources often hinders significant investments in research and development in such settings. Nevertheless, islands, with their specific contexts, can benefit from Schumpeterian principles. By focusing on small-scale innovations, encouraging entrepreneurship within the local economy, and tapping into niche markets, Schumpeterian governance can offer valuable opportunities for economic development. An adaptation of Schumpeter's concepts to the unique circumstances of small islands, with a stronger emphasis on sustainability, community engagement, and leveraging local resources

and knowledge, can lead to resilient and thriving island economies. In applying Joseph Schumpeter's theories to small islands with populations of up to 10,000 and without major industries, challenges arise due to the distinctive economic, social, and geographical context of these islands. Schumpeter's concepts, particularly those surrounding creative destruction and the entrepreneur's role in fueling economic growth and innovation, may encounter limitations when adapted to environments differing from the large-scale industrial or service economies originally envisioned. The unique characteristics of small islands introduce considerations that may temper the direct application of Schumpeterian principles: While Schumpeter's theories traditionally presume a certain market scale for entrepreneurs to thrive, small islands often contend with limited domestic markets, constraining opportunities for scalable innovation. The absence of major factories and the limited diversity in industries on small islands can curtail the scope for innovation, challenging the applicability of Schumpeter's emphasis on industrial and technological advancements. Innovation on small islands faces hurdles due to constrained access to capital and resources, as significant investments in research and development become difficult in these settings. The theory of creative destruction, fundamental to Schumpeterian governance, may encounter challenges on small islands where disruption could have profound effects on communities reliant on a narrow range of economic activities.

Social and cultural factors unique to small island communities, such as strong community cohesion and the preservation of traditional lifestyles, may influence the acceptance and integration of disruptive innovations in ways distinct from larger, more industrialized society. Despite these considerations, elements of Schumpeter's theories can still contribute to fostering economic development in small islands. Emphasizing sustainability, community engagement, and the strategic use of local resources and knowledge within the framework of Schumpeterian concepts may offer avenues for adaptation that align with the specific economic and cultural contexts of small islands. Additionally, exploring creative and smart cooperation possibilities with relevant stakeholders on the mainland presents an opportunity for mutually beneficial partnerships. Such collaboration can yield advantages for both island communities and mainland stakeholders, contributing to the overall success of Schumpeterian governance in fostering innovation and economic resilience.

While the Weberian model prioritizes stability, structure, and adherence to established rules, the Schumpeterian approach calls for the embracing of change, innovation, and disruption as fundamental drivers of progress. It acknowledges the importance of challenging existing norms and fostering an environment where creativity and dynamism can thrive to address the challenges of an ever-evolving future. To return to our shipping analogy, the Schumpeterian approach may be imagined as a sea-going yacht, with the capacity to navigate turbulent ocean currents and the ability to change course quickly in response to the evolving circumstances.

However, this does not mean that the Weberian approach should be replaced by the new, Schumpeterian approach. Doing this would mean we throw out the proverbial baby with the bathwater. Blending the Weberian approach with the Schumpeterian approach enables organizations to harness the strengths of both paradigms. The stability of the Weberian freighter must be combined with the manoeuvrability and responsiveness to changing circumstances of the Schumpeterian yacht.

This combination empowers organizations to maintain stability, adhere to established practices, and efficiently carry out routine tasks, while also embracing innovation, adaptation, and risk-taking to excel in a dynamic environment. Combining the Weberian approach with the Schumpeterian approach offers a dynamic perspective on organizational governance that considers both the static and dynamic aspects of governance. In this perspective, public authorities can chart a new course and look towards future horizons while maintaining core values of reliability and accountability in the safeguarding of the public interest and the provision of public services.

VIII. A New Model of Governance (the T-model)

From the above, it is evident that both Weberian and Schumpeterian elements must be included in the development of a new governance model. The fusion of Weberian and Schumpeterian principles within government structures holds potential for addressing a broad spectrum of societal challenges. By integrating Weberian bureaucratic stability with Schumpeterian innovation and adaptability, governments can maintain an even keel while navigating complex issues. This combination allows for agile responses to social, economic, and technological shifts, fostering collaboration, creativity, and flexible governance to tackle multifaceted challenges that impact society's well-being and progress into the future. On this basis we have developed the T-model of governance illustrated below.

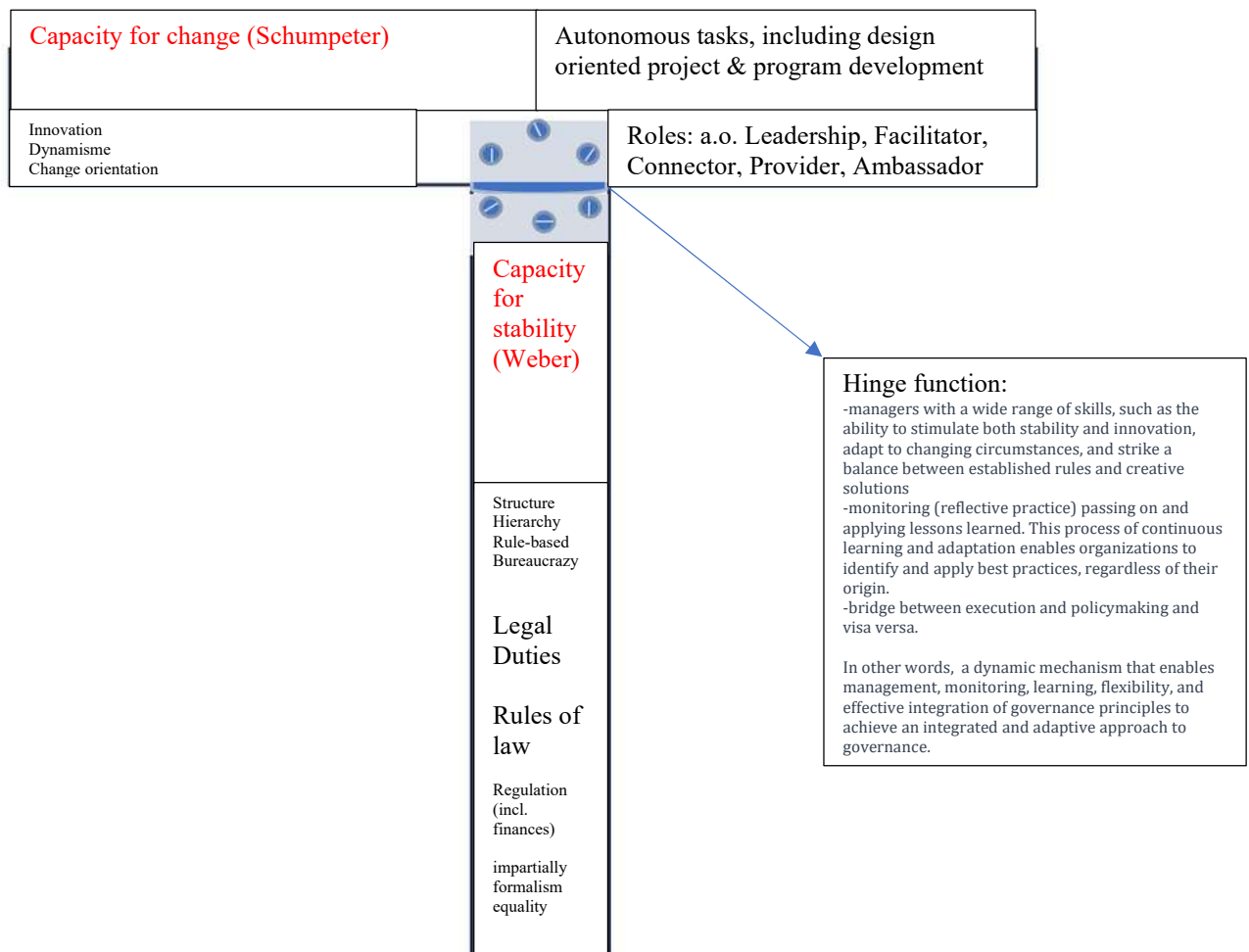


Figure 1. The T-Model for Governance of Innovation

Where the vertical and horizontal lines intersect, we have a hinge, an area of overlap indicating the integration of both approaches. Here, the stability of the Weberian approach meets the innovation of the Schumpeterian approach. This overlapping area represents the synergy between the two approaches, where both structure and flexibility come together to enable effective governance. An effective hinge function integrating both approaches can create synergy effects by combining stability and flexibility to yield more than the sum of their parts. This means that the organization benefits from improved decision-making, quicker responses to changes, more efficient policy execution, and a culture of innovation that enhances overall performance and resilience. In essence, by combining both approaches, the organization can achieve more than what each approach could individually offer. This schematic T-model visually illustrates the combination of the Weberian and Schumpeterian approaches and how they collaborate to provide a balanced and versatile approach to governance and management.

From a spatial planning perspective, the vertical component of the T is focussed on the core tasks of planning, specifically the regulation of land (or sea) uses via zoning, and the allocation of property rights and development consent. This work is governed by formal rules that ensure accountability in decision-making and a degree of certainty for investors, entrepreneurs and other stakeholders. The horizontal component of the T-model, on the other hand, corresponds to the strategic function of planning as an instrument for coordination across policy sectors. Here we find a design-oriented, iterative process of interaction between future-oriented visioning or goal-setting tasks and the realisation of concrete projects. This strategic-oriented design and planning role is fundamentally about responding to challenges of spatial complexity and proactively 'organising connectivity' across multiple governance actors and stakeholder groups²². It requires of planners the capacity to systematically work with a different set of skills (facilitation, mediation, negotiation, strategic thinking, creativity, iteration, research and decision-making) as well as the ability to recognise windows of opportunity, identifying and building on potential synergies across multiple individual projects or activities.²³

To adapt a musical metaphor, in the symphony of governance, the alignment of the drums and the bass sets the rhythm and harmony, creating a solid foundation for the rest of the musicians to flourish. Aligned drums and bass paves the way for other governmental entities and/or policies to thrive. Embracing the strengths of the classical bureaucracy can complement modern approaches, creating a balanced governance model that combines stability and adaptability to meet the complex challenges of the 21st century.

IX. Applying the T-Model within the FREIIA Project

The assumption underpinning this project is that innovations are needed to meet societal challenges and the government has a crucial role to play in this regard (Mazzucato, 2013).

In the context of the European Interreg North Sea project FREIIA, we've introduced the Schumpeterian approach alongside the traditional Weberian model to catalyse societal innovations. This integration forms what we refer to as the 'T-model.' The primary goal of this model is to empower civil servants and other governance actors to accelerate societal innovations. However, for this Schumpeterian approach to take shape and become operational, further development and elaboration are imperative.

At the core of our project lies the definition and cultivation of specific government roles within innovation processes, ultimately leading to the creation of a RUDDER model. This model aims to equip

²² Salet, W., Thornley, A., & Kreukels, A. (2003) Practices of metropolitan governance in Europe: Experiences and lessons, in Salet, W., Thornley, A., & Kreukels, A. (eds.) *Metropolitan Governance and Spatial Planning: Comparative Case Studies of European City-Regions*, London: Routledge.

²³ Healey, P., Cars, G., Madanipour, A. & De Magalhaes, C. (2002) Transforming Governance, Institutional Analysis and Institutional Capacity, in Cars, G., Healey, P., Madanipour, A. & De Magalhaes, C. (eds) *Urban Governance, Institutional Capacity and Social Milieux*. Aldershot: Ashgate, 6-28.

civil servants with the tools to navigate efficiently, effectively, and steer societal innovations within the framework of the Grand Challenges and SDGs.

Simultaneously, this effort involves the identification and deployment of suitable instruments while enhancing the necessary competencies and skills among our staff. By adopting a hierarchical approach, with roles and actions forming the foundation, supported by instruments, and fortified by competences, we aim to implement a purposeful Schumpeterian strategy for driving societal innovation. The RUDDER model symbolizes navigating through an uncertain, continually changing world, providing civil servants and their teams with the means to guide innovation within society.

Concerning the specific practical roles of local government in societal innovation processes, taking into consideration, for example, the EU Grand Challenges, there is limited literature available, especially when it comes to concrete, bottom-up examples. Based on the participants' own experiences in the FREIIA- program, as well as previous experiences with EU projects on islands, with regards to the Schumpeterian aspect, we have identified a basic set of eight operational roles of the government. Within these various roles, we have distinguished different dimensions.

Since the FREIIA-program is aimed at the development of innovative projects, we have adopted a design thinking based '4 diamonds' process as carrier for the Weber-Schumpeter balanced activities.²⁴ Below, in Figure 2 and in the Annex 3, we will explore this process in more detail.

From theory to practice – the horizontal axis of the T-model operationalized

Not long after the turn of the century, innovation teams operating at the lead partner, the province of Fryslân, started to carefully apply Schumpeter's ideas, both at a policy level (Oars as Oars, 2004) and in its reflections on the role of government. This required a careful, or in other words, cautious approach, since a lot of political (and official) resistance to changes in policy and to the establishment of new institutions existed. Moreover, an active role for the government in the economic process was considered at odds with the dominant economic discourse, which emphasized the realization of infrastructure and the facilitation of the market.

Schumpeter's ideas were applied at both the policy level and the role of the government in the socio-economic domain. In other words, the question arose: What role should the government play in innovation processes? It became clear that statutory tasks in the toolbox of regional and local authorities alone were not sufficient for the development of innovation projects.

In hindsight, this change process at the Province of Fryslân followed very much the insights that later were published by Marianne Mazzucato²⁵. Her research emphasizes that while businesses primarily

²⁴ Design Thinking is a user-centric approach to problem-solving that emphasizes understanding the user's needs and developing insights to solve complex problems. It involves creative and practical strategies to generate innovative solutions.

The Design Thinking Process is typically structured in four stages: Discover & Define, where you learn about the audience for whom you are designing; and where you clearly articulate the problem you are aiming to solve; Design, where you generate a range of ideas and solutions; Strict Development, where you build representations of your ideas and focus on 'making' of the preferred concept; and Deliver, where you try out/test your solution with users to gather feedback, refine your approach and prepare for production, roll-out and marketing. This iterative process encourages continuous improvement and adaptation, focusing on the needs and experiences of the users.

Source: Delft Design Guide. TU Delft, Faculty of Industrial Design. Netherlands.

²⁵ Mazzucato, M. (2018), The Entrepreneurial State: Debunking Public vs. Private Sector Myths.

Mazzucato, M & R. Collington (2023), The Big Con, how the consulting industry Weakens our Businesses, Infantilizes our Governments and Warps our Economies.

focus on maximizing their profits, this orientation inherently limits their capacity to address widespread societal issues, such as sustainability, without strategic intervention and direction from public policies. She argues, "The profit-driven nature of businesses means that without clear incentives and regulations set by governments, it is unrealistic to expect them to tackle large-scale societal challenges like climate change on their own." This perspective is detailed in her work, "The Value of Everything: Making and Taking in the Global Economy," where she critiques the current economic system for prioritizing short-term gains over long-term societal welfare.

In other words, while the T-model for balanced governance innovation for the grand societal transitions is potentially a promising basis for the RUDDER toolbox for teams of local officials, **the urgency to apply it** depends on the perceived urgency by local -and regional- communities. In line with Mazzucato, the SDGs, the EU Green Deal and -in retrospect with the empirical evidence of frontrunning regional programs and pioneer island projects-, in effect those government actors who support this overall responsibility vision will tend to actively apply T-model inspired innovation approaches, in our case operationalized via the Tipping and Rudder tools as interventions in a design oriented project and program development process.

Unfortunately, the available scientific literature around 2004 offered few clues regarding the operational roles that local government can play in (social) innovation processes, a deficit we still see today. This resulted in a search for potentially effective and efficient tools, and a lot of trial and error. Leadership soon proved to be indispensable and a design-oriented and systematic program approach also offered the opportunity to bridge contradictions between participating stakeholders, to focus on the end user and thus to make progress in systematic and creative project development and project implementation.

Particularly, water as complex and broad regional challenge, from drinking water, water purification , distribution to increasing salination by sea level rise, was addressed in the development of a special provincial program, initially with 3 lines, which were derived from the Creative Class Rise theory of Richard Florida²⁶ (Florida, R (2002), The Rise of the Creative Class.....and how it's transforming work, leisure, community, & everyday life), namely: talent, technology and tolerance, where tolerance stands for an open attitude to experimentation because innovation is often 'seeing is believing'. This very actively government-facilitated and supported initiative resulted in the successful effectuation of a water expertise and venture-based innovation ecosystem in Fryslan, with an international reputation, including WETSUS European Water Center of Excellence, the Water Alliance of new ventures and a joint Water Campus).

In a next step, within the tolerance line of Florida, the Wadden Islands and their local communities and municipalities were given attention due to the specific circumstances and characteristics described earlier. The first attempts in developing the facilitation of bottom-up sustainable innovation projects and the development of an operational governance toolbox were taken in collaboration with

²⁶ Florida, R. (2002), The Rise of the Creative Class.....and how it's transforming work, leisure, community, & everyday life.

the Into the Great Wide Open (ITGWO) festival on the island of Vlieland²⁷. At this festival, the local government took on roles that fell outside the framework of existing government policy, both in realizing the festival and in supporting the projects, while the regional government took care of seed funding, connecting roles and ambassador actions.

One of the European projects that was inspired by the ITGWO-Vlieland collaboration was the Interreg Europe project Islands of Innovation (from 1 January 2017- 31 December 2021). In the context of this project, the so-called Tipping method was developed and tested on various islands, as the first - ideation- phase of innovation project development. The aim of the Tipping method is to arrive at a series of promising ideas for sustainable innovation through a creative process, co-initiated by an island municipality or community and supported by research and benchmarking while also increasing support among stakeholders strengthened and expanded. Key conclusions regarding the results of the Tipping approach are: a lot of promising results in terms of a list of potential unique and powerful ideas, an increase in support from stakeholders, increased enthusiasm among the participants, but (very) limited government involvement and follow-up: in many cases local governments were hesitant to take a leading role in the further development of ideas into roadmaps and project proposals. Mostly, this attitude was not based on unwillingness, but rather on ignorance and the participation of a majority of 'Weberian' civil servants and policymakers at the table with a restricted view on social innovation: 'you, outside stakeholder, have an idea, develop it and then we will assess it'. In other words, Schumpeterian entrepreneurship was lacking and knowledge of the possible stimulating and facilitating roles that local government can play in innovation processes was lacking. This observation led to the development of the Interreg North Sea project FREIIA.

Based on the developments described above, combined with experiences from other European projects and the 'grey literature' available in the field of operationalizing the roles of the government in innovation processes from pioneering islands in the governance of transitions, such as Samsø (DK), Ameland (NL) and Bornholm (DK), we have made an initial assessment of the different roles that local government can play. (see Annex 1) We see these eight roles as a first step towards the development of a RUDDER model. The object of study is the toolbox at local, small island level, but we have also been inspired by what we estimate to be potentially useful generic roles and actions that for instance the Province of Fryslân has successfully applied to project development at regional level, as mentioned earlier. In the meantime also the energy transition team of the City of Alkmaar (NL) has adopted the RUDDER approach for the introduction of the heat transition program among its citizens.²⁹

Now, with the need to further systematize the project, we have created eight main roles within the program, each with different -in total 31- dimensions = actions (See Annex 2). This is the first step towards the RUDDER model, which serves as a structured framework. The aim is to make these

²⁷ Into The Great Wide Open festival. <https://intothegreatwideopen.nl>

²⁸ Vlieland is also mentioned as case in the forthcoming paper: Hasanefendic, S. et al. Experiments and demonstrations in sustainable energy innovation – Insights from past research and a future outlook. Free University Amsterdam, Faculty of Science – Breakthrough Tech Innovation Research Group. Concept to be published. June 2024.

²⁹ As part of the Pocify EU project: <https://pocify.eu>

identified roles and actions, embedded in a design-oriented project development framework, accessible to other authorities and transition teams, allowing them to benefit from the experiences gained and stimulate innovations in a more systematic way.

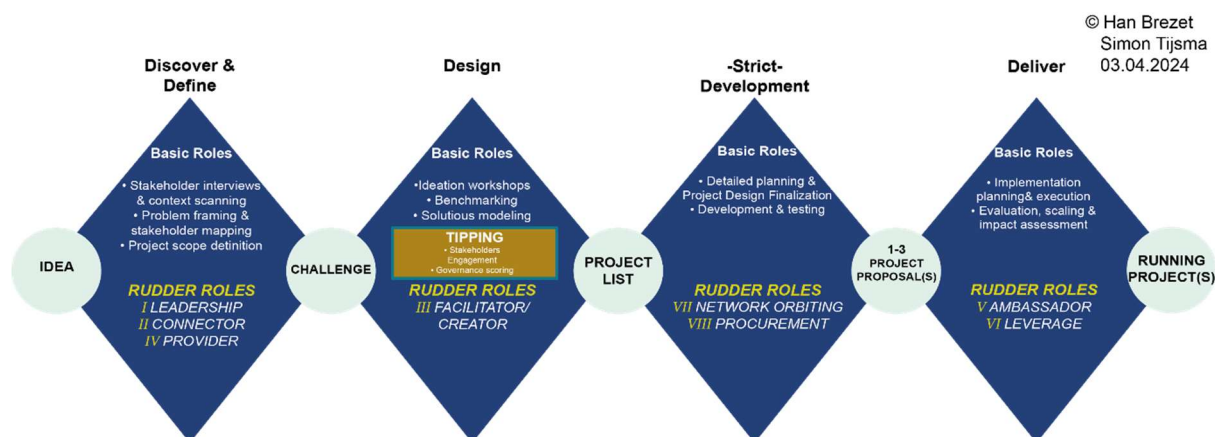


Figure 2. The RUDDER project development model, including TIPPING workshop, in a Design Oriented Perspective.

Figure 2 shows a typical RUDDER project development process, in four phases, starting with 'the Idea' in the Discover & Define phase and ending with one or more projects started at the end of the Deliver phase. RUDDER Roles I to VIII and Actions 1 to 31 play a role in all phases, but are sometimes more important in a certain phase than another. Leadership in Phase 1 is an absolute must. In phase 2 Design, the TIPPING approach and workshop can lead to an extra rich list of innovation projects and additional support among stakeholders. Reference is made to the TIPPING Guide. Phase 3 Strict Development leads to the development of a Roadmap of one or more project ideas, which are realized in Phase 4, the Deliver phase. Realization does not necessarily have to be the implementation of the final design, but can also be a project proposal submitted to the EU, with a good chance of success. In Figure 2 the emphasis is on the application of the RUDDER Roles and Actions by municipal transition teams in the project development process. It is assumed that the NeoSchumpeterian Design Thinking tools are already known to the team. Of these, a few well-known methods and tools are shown in Annex 3.

In addition to the retrospective reflections regarding the Province of Fryslan, and the island communities of Vlieland³⁰, Ameland³¹, Samsoe and Bornholm, the RUDDER model for public officials in the FREIIA project is now also being tested on other islands, such as Hvaler (Norway), Koster (Sweden), Ile d 'Ouessant (France) and Schiermonnikoog (Netherlands). For example, a series of Tipping and Rudder workshops have taken place for the island municipality of Schiermonnikoog³²,

³⁰ Reflection via RUDDER Questionnaire based interview with Robert Lanting, Manager at the Municipality of Vlieland d.d. 19.12.2023

³¹ Idem, with Luc van Tiggelen, Innovation Manager, Municipality of Ameland d.d. 14.12.2023

³² Based on a series of workshops in the period October 2023-March 2024, plus a Rudder Questionnaire interview with Lisa Edema, Sustainability Manager at Schiermonnikoog Municipality d.d. 8.03.2024

whose mission is to maintain its sparse own underground drinking water supply despite threats from climate change and a continuous increase in the demand for drinking water from inhabitants and tourists. Based on the iterative and creative design thinking approach, incl. a series of TIPPING sessions, an initial List of Water Transition Projects has been drawn up, ranging from demand reduction to highly advanced water purification plants and measures against sea level rise and salinization. In order to optimally facilitate and support the first projects from the idea phase to the realization phase, the island's Water Transition Team is currently being trained in the possible use of the eight RUDDER strategies and the 31 actions that can help to promote realization. The first results indicate that the RUDDER approach not only leads to awareness among the official-policy transition team of a much more colorful and extensive range of innovation-promoting roles and actions than people were previously aware of, but that in doing so it also the ambition level of the projects - 'wanting to be at the forefront of addressing the Grand Challenges' – is increased. It also appears that the RUDDER learning process in this case needs time to become effective and that a one-off explanation and short workshop will not suffice, to effectively transfer the essence of the approach.

X. Conclusions

The goal of the FREIIA-project is to explore and further elaborate the roles and actions of public officials from 'best practices' transition islands and put these into an organizational and economic sociology theoretical perspective.

It can be concluded that these goals of the project and, in particular, the creation of the RUDDER model have been achieved through:

1. Empowering civil servants and governance actors: The model has equipped officials from local government with a first toolkit, including operational roles and actions necessary to effectively steer sustainable innovation initiatives from conception to fruition. Both the theory and the practice of Lighthouse islands have provided the basis for this first innovation toolkit.

2. Integrating a Schumpeterian approach with existing Weberian models via the T-model: This innovative fusion has allowed civil servants and their teams to leverage both the stability and accountability of traditional governance models with the adaptability and dynamism of Schumpeterian and design-oriented principles. While the T-model on its own offers creative new options, the urgency of addressing the Grand Challenges and the precious position of many small islands requires and forces the translation of the model into action: the facilitation and acceleration of local government (co-)led sustainable project- and program development, particularly by the conscious application of the RUDDER-model roles and actions.

The achievements have been operationalized through practical applications in various North Sea islands, where, in retrospect, various entrepreneurial roles and actions could be observed, and tailored governance tools have been developed and tested. These tools are designed to support local

governments on islands in taking on more active and facilitative roles in the innovation process, particularly for the 'grand' societal and environmental challenges, they are confronted with. The RUDDER model has also been tested following an iterative and creative design thinking development process, as seen in the pilot-examples of Vlieland and Schiermonnikoog, leading to the -potential- successful development of a Roadmap of Festival Experimentation resp. Water Projects.

Moreover, the RUDDER approach has led to an increase in ambition levels among projects, indicating a shift towards a more innovative and proactive stance of local governments in addressing grand societal challenges. The training and ongoing learning process involved in adopting the RUDDER strategies further suggest that the model has a promising potential of being successfully embedded into the organizational culture and practices of the participating entities and has a significant diffusion potential among other islands and probably on the mainland.

Follow-Up Steps

Building on the foundation laid out by the FREIIA project and its RUDDER model, the next steps could focus on consolidation, expansion, and systematic evaluation, as part of the EU-Interreg FREIIA-project. Considered actions, in line with the essence of the model, are amongst others:

1. **onsolidate Learning and Training:** Enhancing the effectiveness of the RUDDER model through continuous testing and developing training programs for civil servants on islands and mainland, ensuring the concepts are fully integrated into daily practices, with all FREIIA-islands as natural next testbeds.
2. **Systematize Knowledge Exchange:** Creating a platform for participating islands and regions in FREIIA to share experiences, challenges, and successes, fostering an environment of collaborative learning and improvement. This includes also further validation of the findings against recent research literature, such as from Cussen (2021) and Diercks et al (2023).
3. **Expand the Model's Application**³³: Broaden the application of the RUDDER model to more diverse contexts and scales, including larger island communities or different geographic regions, to test its adaptability and scalability.
4. **Document Best Practices:** Compiling case studies and best practices into the envisaged RUDDER guidebook or online resource for wider dissemination among policymakers and innovation managers.
5. **Integrate with Educational Institutions:** Cooperate with the universities and research institutes involved in FREIIA to embed the RUDDER model into public administration and innovation management curricula.
6. **Policy Advocacy:** Using the results and lessons learned to advocate for policy changes that support innovation-friendly environments, especially in governance structures that are traditionally less flexible.
7. **Strengthen Quadruple Helix Partnerships:** Intensifying collaboration among government, academia, industry, and civil society to ensure that the RUDDER model benefits from diverse perspectives and expertise.

³³ The Dutch city of Alkmaar is testing the TIPPING-RUDDER approach now for the introduction of its new heat distribution network program.

8. **Leverage Digital Technology:** Investing in digital tools and platforms that can support the RUDDER model's processes, such as project management software, communication platforms, and data analysis tools.

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Annex 2 RUDDER Roles & Actions

I. LEADERSHIP

The "Leadership" role in the T- Model framework is the foundation for driving societal innovation projects forward. Leaders play a crucial role in setting the vision, inspiring teams, and providing direction throughout the –design thinking based- systematic innovation process.



1. Leadership (Soul in the Game/Do the Right Things/Co-designs)
 - c) Leaders with "soul in the game" have a personal commitment to success and inspire others.
 - d) They prioritize doing the right things by making ethical decisions aligned with sustainability.
 - e) Emphasize co-designing solutions with diverse stakeholders for inclusivity and relevance.
2. Inclusion of SDGs/Green Deal, Backcasting etc. in Mission
 - f) Government aligns innovation with global sustainability goals (SDGs) and regional Green Deal objectives.
 - g) Embrace "backcasting" to envision the future and create a strategic roadmap for innovation.
3. Composing Team & Arrange Resources
 - Assemble diverse and skilled teams to foster innovative thinking.
 - Optimize resources creatively, seeking partnerships and leveraging assets
4. Active Engaging Knowledge & Research and Maintain
 - h) Leaders stay informed with knowledge and research for evidence-based decision-making.
 - i) Continuous monitoring and evaluation ensure ongoing effectiveness and learning
5. Anticipating Resistance & Barriers
 - j) Leaders develop a long-term view and anticipate on barriers & resistance they might meet underway
6. Promoting Transition Benefits
 - k) Leaders embody the need for 'grand transitions', from technologies to system changes, and promote the direct, indirect and long-term benefits

II. CONNECTOR

The "Connector" role serves as the bridge between stakeholders in societal innovation projects.

It involves fostering collaboration, networking, and communication among various actors, including academia, industry, government, and civil society. Connectors facilitate the exchange of ideas, resources, and knowledge, contributing to a holistic and collaborative approach to innovation.



1. Quadruple/Quintuple Helix (Including Opinion-Makers)

Collaboration among academia, industry, government, civil society, and media representatives.

Engaging opinion-makers amplifies project visibility, generates public support, and shares innovation outcomes widely.

2. Policy-Making and Execution and Vice Versa

Integrating policy-making and project execution for synergy. Continuous feedback loops enable agile policy adjustments and effective implementation on the ground.

3. Connecting Different Government Layers (Local, Regional, National & International; Multi-Level Governance) Collaborating across various government levels ensures aligned strategies and resources. A coordinated approach to innovation at local, regional, national, and international levels.

4. Stimulating a Cross-Sectoral, Integral & Interdisciplinary Encouraging collaboration across diverse fields (business, academia, government, and civil society). Embracing an interdisciplinary approach addresses complex challenges holistically.

III. FACILITATOR/CREATOR

Under the "Facilitate/Create" role in innovation projects, the following dimensions are crucial for cultivating an environment that encourages creativity, experimentation, and the emergence of innovative solutions:



1. Creating a Fertile Humus Layer

This dimension refers to the creation of a fertile and supportive environment for innovation to thrive. It involves establishing the necessary infrastructure, resources, and support systems that enable individuals and organizations to explore new ideas, take risks, and collaborate freely. The government can provide funding, incubation centers, mentorship programs, and networking opportunities to nourish this fertile humus layer for innovation.

2. Facilitate and advocate a systematic –design thinking based- project development approach. Such an approach follows the 4Diamond design+decision making model or similar design approaches, characterized by a transparent team approach, phases of development that go from problem orientation, idea generation to project realization, iterations in research and decision making (divergence & convergence), interim evaluations and feedback loops. The various governance roles/actions can be depicted in the model, for reflection and learning purpose. Typical design tools, like user orientation, persona's, needs assessment, customer journey's, stakeholder mapping, prototyping and testing, sustainable assessments, etc. are considered natural elements of the design thinking model.

3. Organizing the Dancefloor

The "Dancefloor" dimension emphasizes the importance of creating spaces and platforms where different stakeholders can come together, interact, and engage in dynamic discussions and collaborations. These spaces can be physical locations, such as innovation hubs, co-working spaces, or virtual platforms, fostering a "dance" of ideas and partnerships among diverse participants.

4. Operate a Guerrilla Approach - Crossing Redlines

The "Guerrilla Approach" dimension encourages unconventional and agile approaches to problem-solving. It involves breaking traditional barriers and crossing "redlines" that may hinder progress or stifle innovation. The government can support and embrace experimentation, allowing innovators to challenge norms and regulations when necessary to achieve breakthrough results.

IV. PROVIDER

The Provider's role aims at the Development of Specific Funding and Making Seed Funding available, Exploring and Sharing Best – international & national- Practices, Effective Methods & Techniques, Outsourcing Resources):



1. Government identifies and offers funding tailored to innovation projects, to start with 'seed funding'.
2. Shares best national & international practices and innovative techniques to enhance project efficiency.
3. Facilitates with systematic methods & techniques.
4. Facilitates collaboration and resource-sharing to mobilize diverse capabilities.

V. AMBASSADOR

The "Ambassador" role focuses on promoting and advocating for innovative initiatives on a broader scale. Ambassadors represent innovation projects to various stakeholders, including policymakers, investors, and the public. They use storytelling, marketing, and networking strategies to create awareness, generate support, and showcase the value of innovation and transitions to society.



1. Lobby Activities EU & National Government: As an ambassador, the government plays a crucial role in advocating for the innovation project at both the European Union (EU) and national government levels. This involves engaging in lobbying activities to raise awareness of the project's significance and seek financial support or policy backing from relevant authorities.
2. Development & Making Use of Bottom-Up Narratives: Bottom-up narratives involve storytelling that highlights the positive impact of innovation at the grassroots level. The government can develop and leverage these narratives to communicate the real-life benefits of the project to the public, investors, and policymakers. Such narratives help build support and understanding of the project's value.
3. Marketing of Lighthouse-Projects: Lighthouse projects are exemplary initiatives that showcase the potential of innovation and sustainable solutions. The government takes on the role of marketing these projects, creating publicity and visibility to attract investors, collaborators, and other

stakeholders. Through effective marketing strategies, lighthouse projects become beacons of inspiration for others to follow.

4. Organizes Expositions & Invitations: The government organizes expositions, events, and conferences where innovative projects and ideas can be presented to a diverse audience. These platforms serve as opportunities to showcase the project's progress, share knowledge, and foster collaborations. Inviting key stakeholders and potential partners to such events enhances networking and collaboration opportunities.

VI. LEVERAGE/CAPITALIZE

The "Leverage/Capitalize" role is centered around maximizing the impact of innovation projects. Leverage ensures that the outcomes and lessons learned from projects are effectively integrated into broader programs, policies, and strategies. By employing innovative monitoring, evaluation, and integration methods, they leverage the successes of projects to drive long-term societal benefits.



1. Innovative Monitoring & Evaluation Methods

The government uses cutting-edge evaluation techniques to accurately measure the impact and potential scalability of innovation projects. Traditional approaches may not fully capture the unique aspects and complexities of innovation, making innovative methods essential for effective evaluation.

2. Including Projects in Programs and Mission and Vice Versa

Successful innovation projects are integrated into existing government programs and strategic missions. Aligning project objectives with broader policy goals ensures that innovation becomes an integral part of the government's strategic agenda, creating a more cohesive and impactful approach.

3. Develop Internal Capabilities and Structures (Internal Expertise Unit)

The government invests in building internal capabilities and dedicated structures to effectively capitalize on innovation projects. This includes fostering a skilled workforce in innovation management, program integration, and knowledge transfer. Establishing specialized units or innovation departments within the government promotes knowledge sharing and best practices.

VII. NETWORK ORBITING

Network Orbiting by government representatives includes: Connecting different –local to international– networks to your project, Active participation in these networks, Combining external and internal value chains, and Active participation in physical and online conventions on project funding possibilities.



1. Connecting different networks from various backgrounds & scales with each other.

They can enrich your project or lead to new ones by aligning your project network with active, complementary regional networks, EU-project networks, national networks, specific sustainability

interest networks etc. Examples: ERSCP, UNEP, CE4EUI, WBCSD, Great Transition Network, Innovation Islands, OECD, etc.)

2. Active participation in a selected number of local, regional, national & international networks, to be able to play a pivotal & bridging role.
3. Combines external and internal value chains with the assumption that complementarity, cooperation and shared interests can create more opportunities for a sustainable innovation case.
4. Active participation in physical and online conventions and meetings that give explanations and insight information on project funding possibilities, at various levels and on relevant themes for sustainable innovation.

VIII. PROCUREMENT TRENDSETTER

The PROCUREMENT TRENDSETTING role involves a government role with Innovative Procurement Strategies, Early Engagement with Innovators, and Provoking Procurement Innovation:



1. Early Engagement with Pioneers: The government actively engages with innovators and startups during the procurement process. By involving these stakeholders early on, the government can gain insights into emerging trends, technologies, and solutions that can address pressing societal challenges.
2. Incentivizing Innovation: Trendsetting procurement provides incentives for suppliers to innovate and develop solutions that meet the government's unique requirements. This can include financial incentives, longer-term contracts, or support in navigating regulatory hurdles.

Annex 3 Standard Design Methods & Tools for Governance of Innovation

1. Discover & Define

In this combined initial phase, Transition Teams engage in deep exploration to unearth insights and define the project's direction. This phase is crucial for setting the foundation for impactful innovation. Key activities include:

- Stakeholder Interviews, incl. Needs Assessment & Context Scanning: To gather diverse insights and identify pressing challenges within the ecosystem.
- Problem Framing & Stakeholder Mapping: To clearly articulate the challenges to be addressed and understand the network of impacted individuals and entities.
- Project Scope Definition: To precisely outline the objectives and expected outcomes of the innovation project, ensuring clarity and focus for the development phases ahead.

2. Design

Transitioning to the Design phase, teams shift towards creative ideation and conceptualization, informed by the insights gathered earlier. This stage is pivotal for crafting innovative solutions through:

- Ideation Workshops: Facilitated brainstorming sessions that encourage creative thinking and the generation of a wide array of ideas and solutions. The TIPPING method³⁵ is an effective approach that delivers extra rich solution direction and a gross list of potential project, while at the same time extending the network and building support from the stakeholders.
- Benchmarking Competition & Best Practices: Analyzing and drawing inspiration from leading practices and successful initiatives in similar contexts to foster innovation and excellence.
- Solutions Ideation: Early-stage models of proposed solutions are developed and iteratively refined based on stakeholder feedback, ensuring alignment with user needs and project goals.

3. Strict Development

In the Strict Development phase, the project enters a more rigorous and focused stage of turning ideas into reality. This phase emphasizes:

- Detailed Planning, Project Design & Finalization: Solidifying the detailed plans for the project, finalizing designs, and preparing for implementation.
- Development & Testing: Engaging in the technical/organizational execution of the project, followed by thorough testing to ensure reliability, functionality, and alignment with project objectives.

4. Deliver

Finally, the Deliver phase is where the project is fully implemented and its impact is realized.

Activities include:

- Implementation Planning & Execution: The strategic rollout of the transition project, ensuring that all elements are in place for a successful launch.
- Pilot Testing & Full-scale Launch: Initial small-scale implementations are expanded to full-scale operations, closely monitored to ensure success.
- Evaluation, Scaling, and Impact Assessment: Assessing the project's effectiveness in achieving its goals and exploring opportunities to scale the impact to benefit a wider audience.

³⁵ Brezet, J.C., S. Tijsma & N. Belmane. The TIPPING Guide: The Innovation Program's Perspective for Islands' New Governance. Downloadable from: https://projects2014-2020.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1576490901.pdf

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By structuring the development process into these four refined phases, Transition Teams are equipped with a robust framework that, while manoeuvring with the RUDDER Roles & Actions guides them from insightful exploration through to the impactful realization of their sustainable innovation projects, delivering tangible benefits to communities and stakeholders.