

# Entscheidungsunterstützung für eine effiziente und nachhaltige Kehrachtsammlung Forschungsprojekt



Präsentation an der asut-GV 2020  
14. Mai 2020  
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- **Innosuisse**-gefördertes Forschungsprojekt (2019-2022)

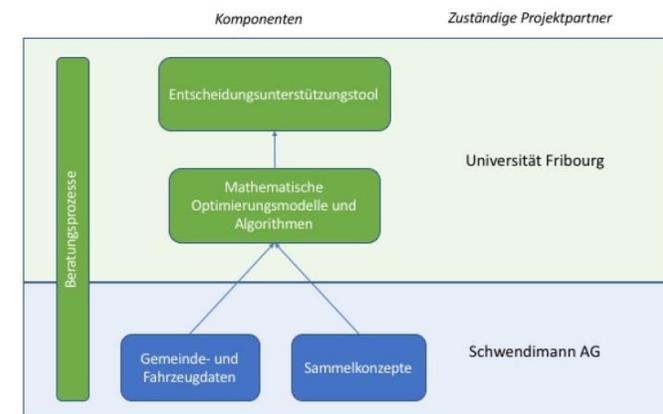
- **Projektpartner:**

- **Akademisch:** Department für Informatik, Universität Fribourg  
**iimt**, Universität Fribourg
- **Industrie:** Schwendimann AG, Münchenbuchsee

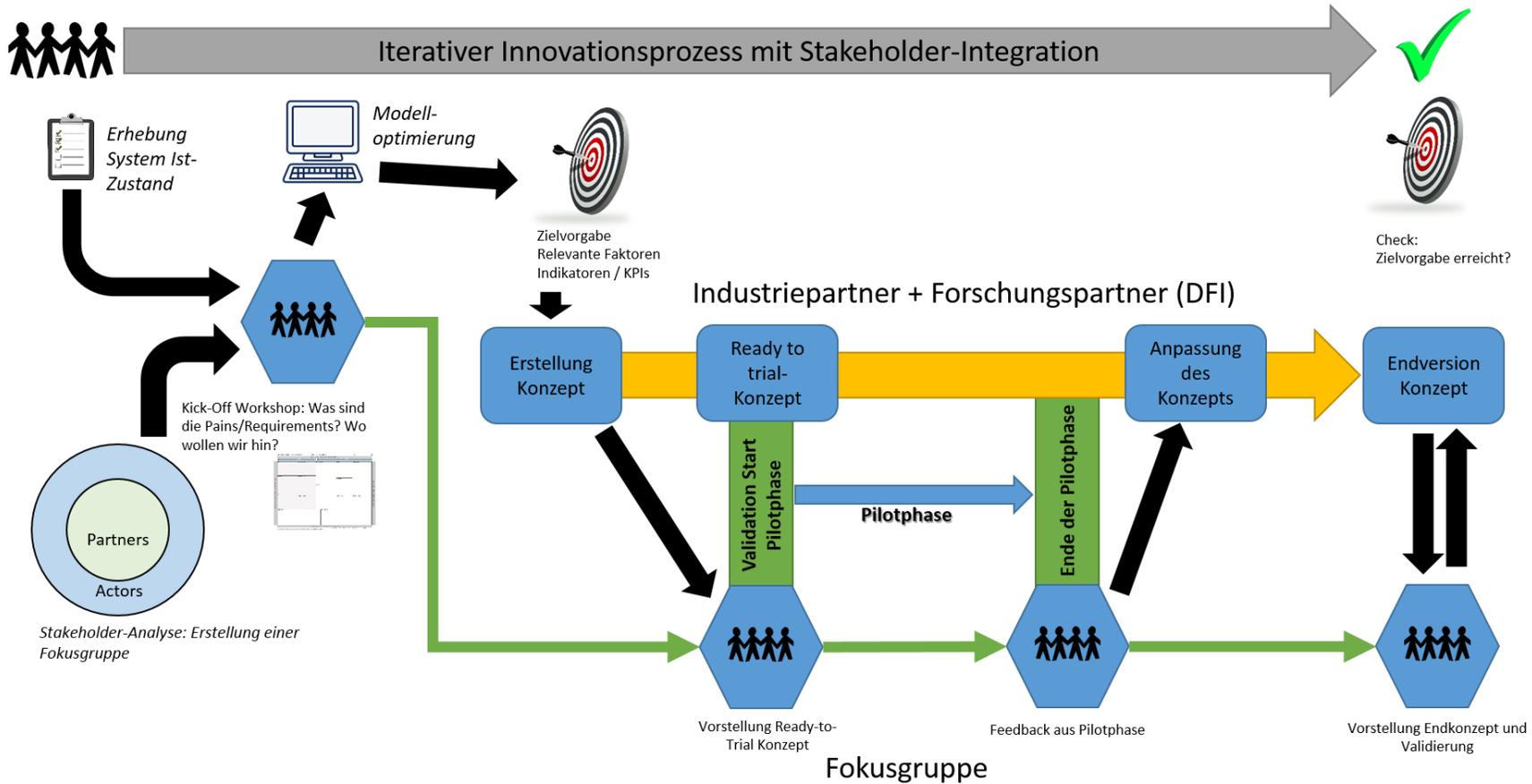


- **Projektziele:**

- **Ganzheitliche Modernisierung** der Kehrachtsammlung
- **Unterstützungstool** auf Basis eines Optimierungsmodells
- **Prozessunterstützung** bei der Einführung innovativer Abfallmanagementkonzepte



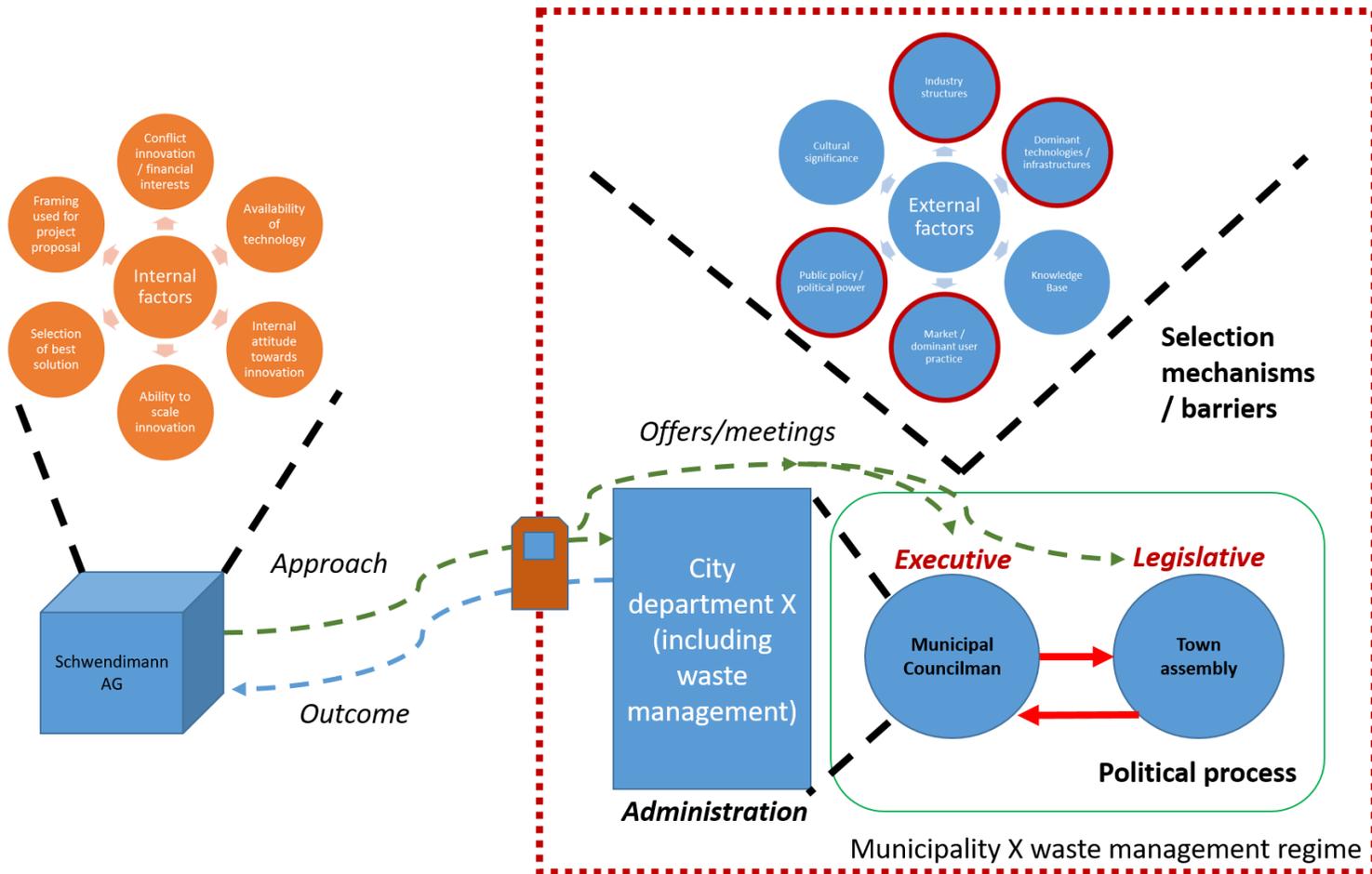
# Innovation - Unterstützungsprozess



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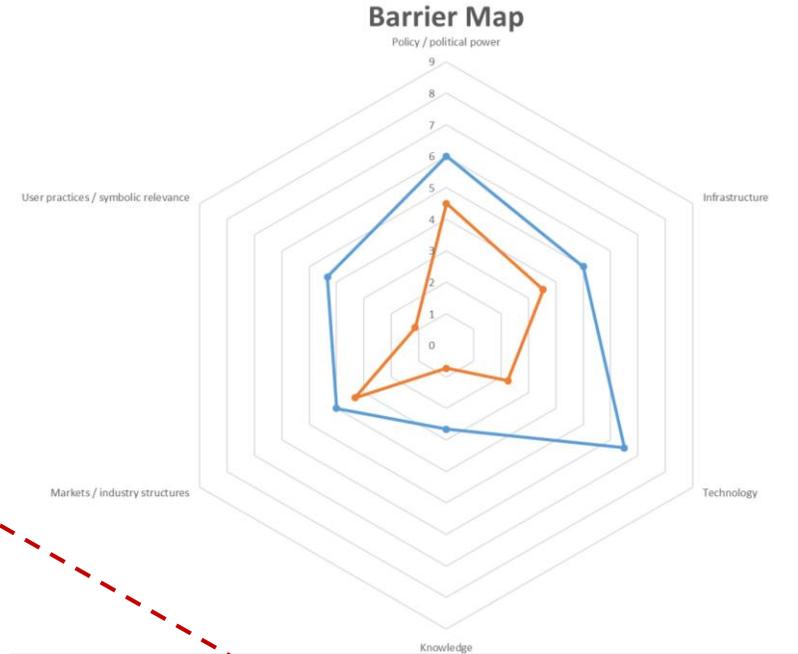
System Transformation Process v.2

# Innovation im Abfallmanagement - die Herausforderungen



# Barrieren für Innovation Unser Analysewerkzeug

Category	Potential barriers (description)	Relevance	Analytical Questions	Barrier Impact/Description/Policy	Demerit/Relevance/Status						Description/Goal	Score	Weighted score	Total category score	Total category weighted score
					Very High	High	Medium	Low	Very Low	Not applicable					
Policy / political power	Lack of political pressure/need for waste management change	0.6	Are actors/users satisfied with the current waste management system? Show a expressed need for change? Are there any waste management performance requirements demanded by the current/local government for change?	Very High	0	0	0	0	0	0	0	0	0	0	0
	Recent political commitment to alternative waste management system	0.6	Has the local government recently made a decision to upgrade the waste management system using a different technology?	Medium	0	0	0	0	0	0	0	0	0	0	0
	Local authorities express a negative attitude towards innovation	0.6	What is the local authority's expressed attitude/stance towards innovation (official statements, actions, labels)?	High	0	0	0	0	0	0	0	0	0	0	0
	Key individual actors in local waste management (waste managers, responsible councillors) are risk averse or opposed to change/innovation	1	Who are the key actors (waste managers) and what is their stance towards innovation/change? Can these key actors be characterised as risk-averse?	Very High	0	0	0	0	0	0	0	0	0	0	0
Infrastructure	Existing infrastructure is incompatible with the innovation	0.8	Is it possible to introduce the new system using the existing infrastructure, or by only implementing minor changes to it?	High	0	0	0	0	0	0	0	0	0	0	0
	There is an existing commitment to infrastructural change not compatible with the innovation	1	Are infrastructural and/or technological changes planned in the short to medium term? If yes, would the innovation be compatible with the planned infrastructural changes?	High	0	0	0	0	0	0	0	0	0	0	0
	Infrastructure change would have a significant influence on other sectors of the municipality	0.4	Would a change of the infrastructure have a significant impact on other sectors outside of waste management?	High	0	0	0	0	0	0	0	0	0	0	0
Technology	The currently used technology meets the needs of the municipality (or can meet them with minor, incremental changes)	0.2	Is the waste management technology currently in use meeting the municipality's expectations in terms of efficiency/energy use?	Low	0	0	0	0	0	0	0	0	0	0	0
	Innovative waste management technologies are already used in the municipality	0.4	Are innovative waste management technologies already used in the municipality?	Medium	0	0	0	0	0	0	0	0	0	0	0
	There is a negative perception of the proposed innovation	0.6	How are the proposed technological elements perceived by key actors in the municipality?	High	0	0	0	0	0	0	0	0	0	0	0
	Scaling issues related to the proposed technology	0.2	Is it possible to scale the technological elements to meet the requirements of the municipality?	Medium	0	0	0	0	0	0	0	0	0	0	0
Knowledge	Lack of knowledge on waste management among key actors or decision-makers	0.2	Do the key actors in the municipality have the necessary (sufficient) knowledge about waste management in general?	Low	0	0	0	0	0	0	0	0	0	0	0
	Lack of knowledge on potential financial benefits of proposed innovation	0.2	Do the actors know about the potential financial benefits of the proposed innovation?	Low	0	0	0	0	0	0	0	0	0	0	0
	Negative experience with proposed innovation or similar/related innovations	0.4	Have key actors had negative experiences with the proposed innovation or related innovations?	Medium	0	0	0	0	0	0	0	0	0	0	0
Markets / industry structures	The existing waste management market is (very) stable. The existing industry and associated waste management market are closed to external actors	1	How stable/perfected is the existing waste management industry? Do the current market forces (existing) appear to market success criteria or even blocked for external competitors?	High	0	0	0	0	0	0	0	0	0	0	0
	The innovation is not supported by or incompatible with established system actors	0.6	Is the innovative company part of the waste management system, or does it have access to the system? Would established industry actors support innovation/change?	High	0	0	0	0	0	0	0	0	0	0	0
	The cost of introducing the innovation is (too) high for existing actors	1	How high would the costs of implementing the innovation be for existing actors?	High	0	0	0	0	0	0	0	0	0	0	0
User perception/ symbolic relevance	Users are satisfied with the current system and do not perceive a need to change it	0.2	Are the users satisfied with the performance of the current waste management system? Are there any user-side demands for system change?	Low	0	0	0	0	0	0	0	0	0	0	0
	Behaviour change(s) required by the proposed system would not be accepted by users	0.4	Would users need to change their current waste management behaviour due to the introduction of the innovation? If yes, would this behaviour change be accepted by the users?	Medium	0	0	0	0	0	0	0	0	0	0	0
	User-related communication issues related to system change	0.2	In the case of system change, is it possible to convey communicate important information to the users?	Low	0	0	0	0	0	0	0	0	0	0	0



Local authorities express a negative attitude towards innovation	0.6	What is the local authority's expressed attitude/stance towards innovation (official statements, actions, labels)?	Authorities never engaged in innovation or system improvement
Key individual actors in local waste management (waste managers, responsible councillors) are risk averse or opposed to change/innovation	1	Who are the key actors (waste managers) and what is their stance towards innovation/change? Can these key actors be characterised as risk-averse?	Key individuals clearly opposed to change and/or highly risk-averse

# Vielen Dank für Ihre Aufmerksamkeit!



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