

Transport and Climate  
Change Week

#TransportWeek23

# How Can AI and Data-Driven Approaches Support Sustainable Mobility?

Dr. Martin Memmel, German Research Center for AI, Kaiserslautern, Germany.



Supported by:



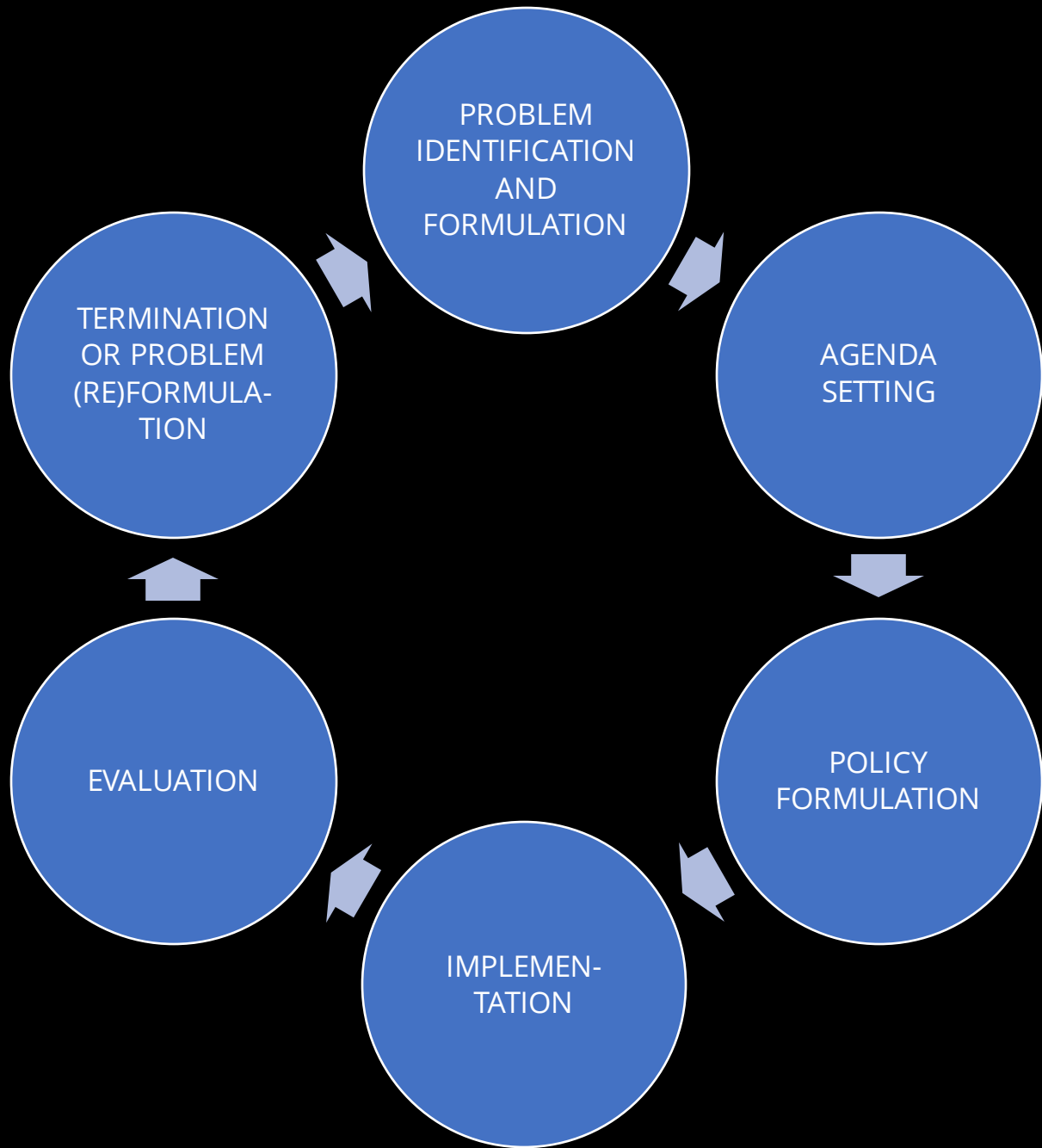
on the basis of a decision  
by the German Bundestag



*“Technology is the answer,  
but what was the question?”*

Cedric Price, 1966

*What role do AI and data-driven approaches play in promoting sustainable mobility?*



## POLICY CYCLE

Problem identification and formulation

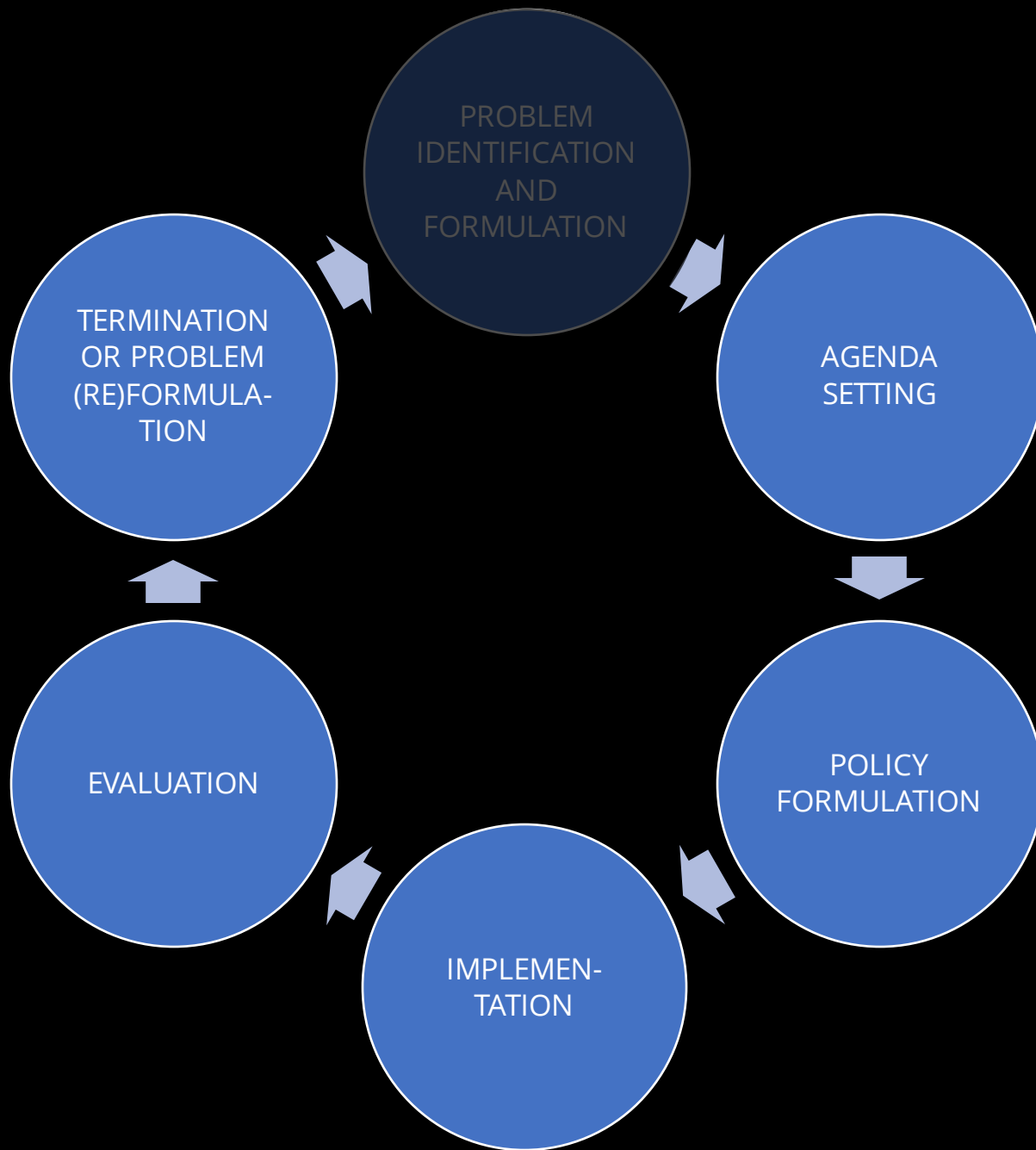
Agenda Setting

Policy Formulation

Implementation

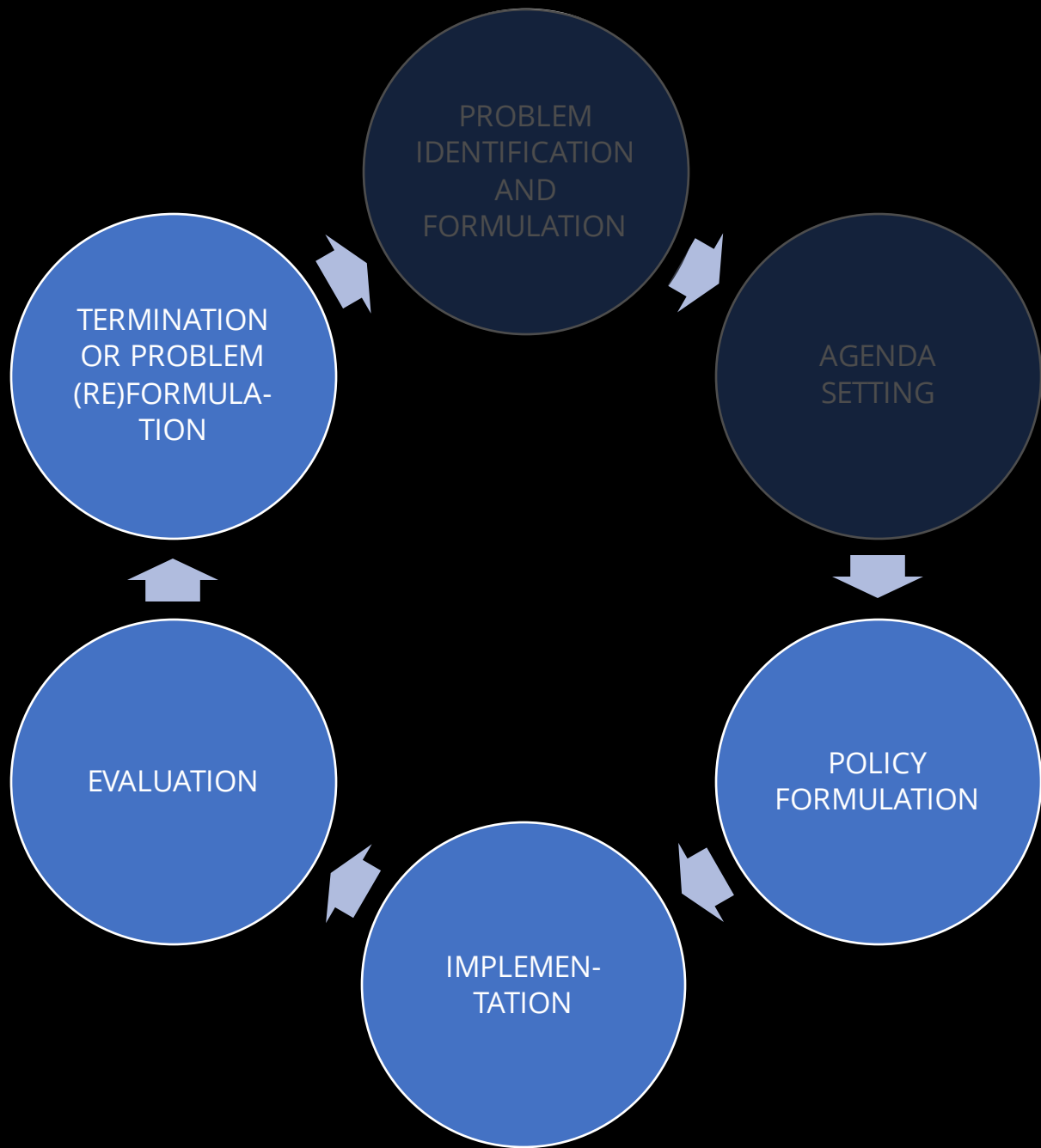
Evaluation

Termination or Problem (Re)formulation



## POLICY CYCLE

- Problem identification and formulation
- Agenda Setting
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- Termination or Problem (Re)formulation



## POLICY CYCLE

Problem identification and formulation

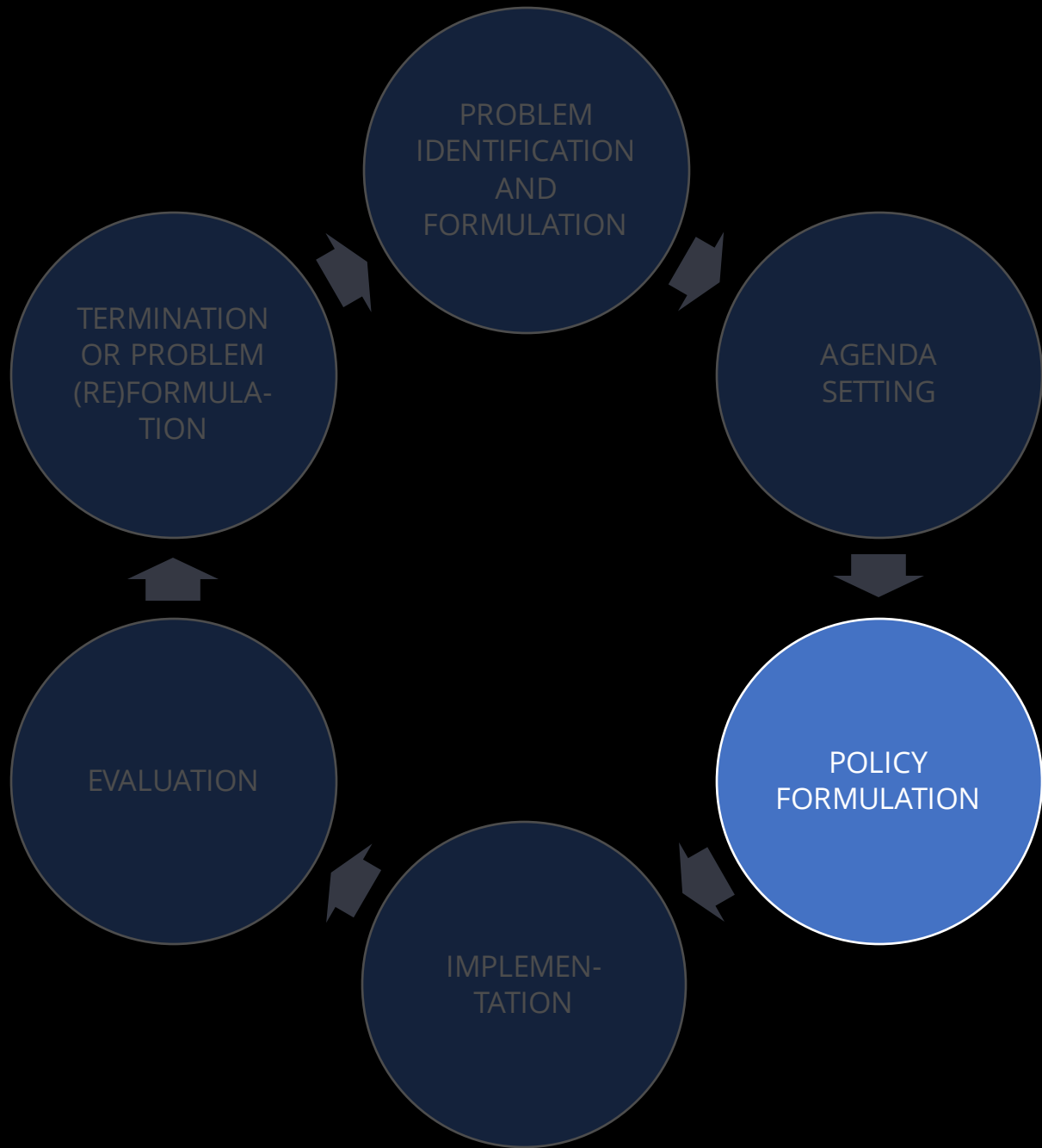
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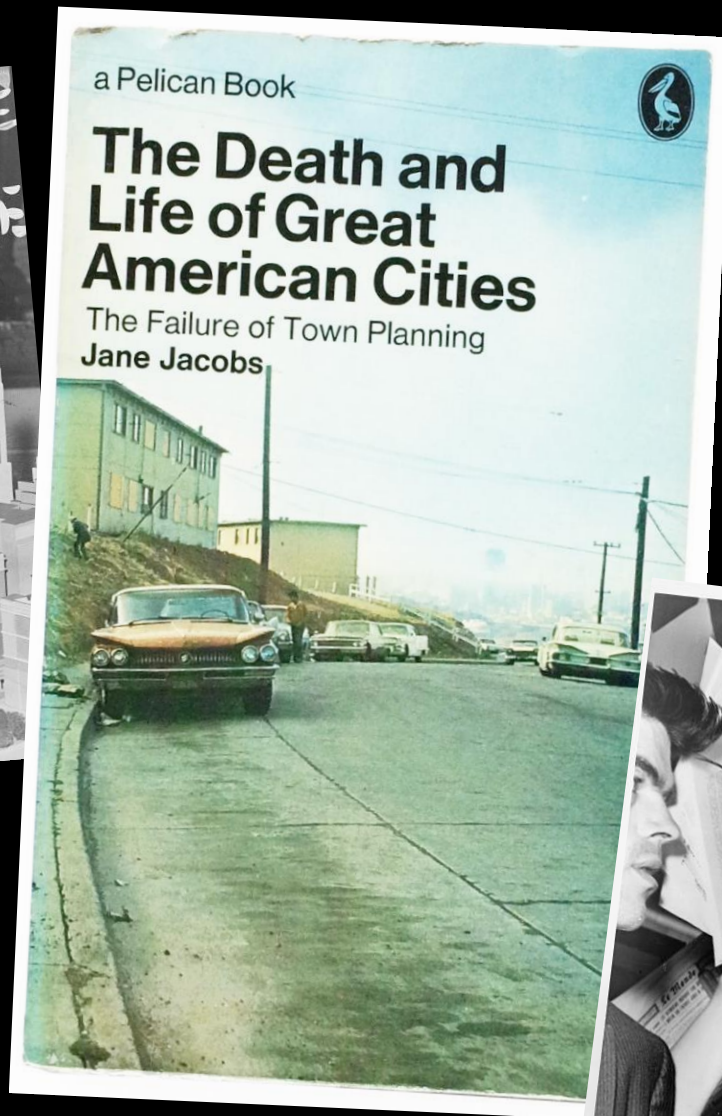
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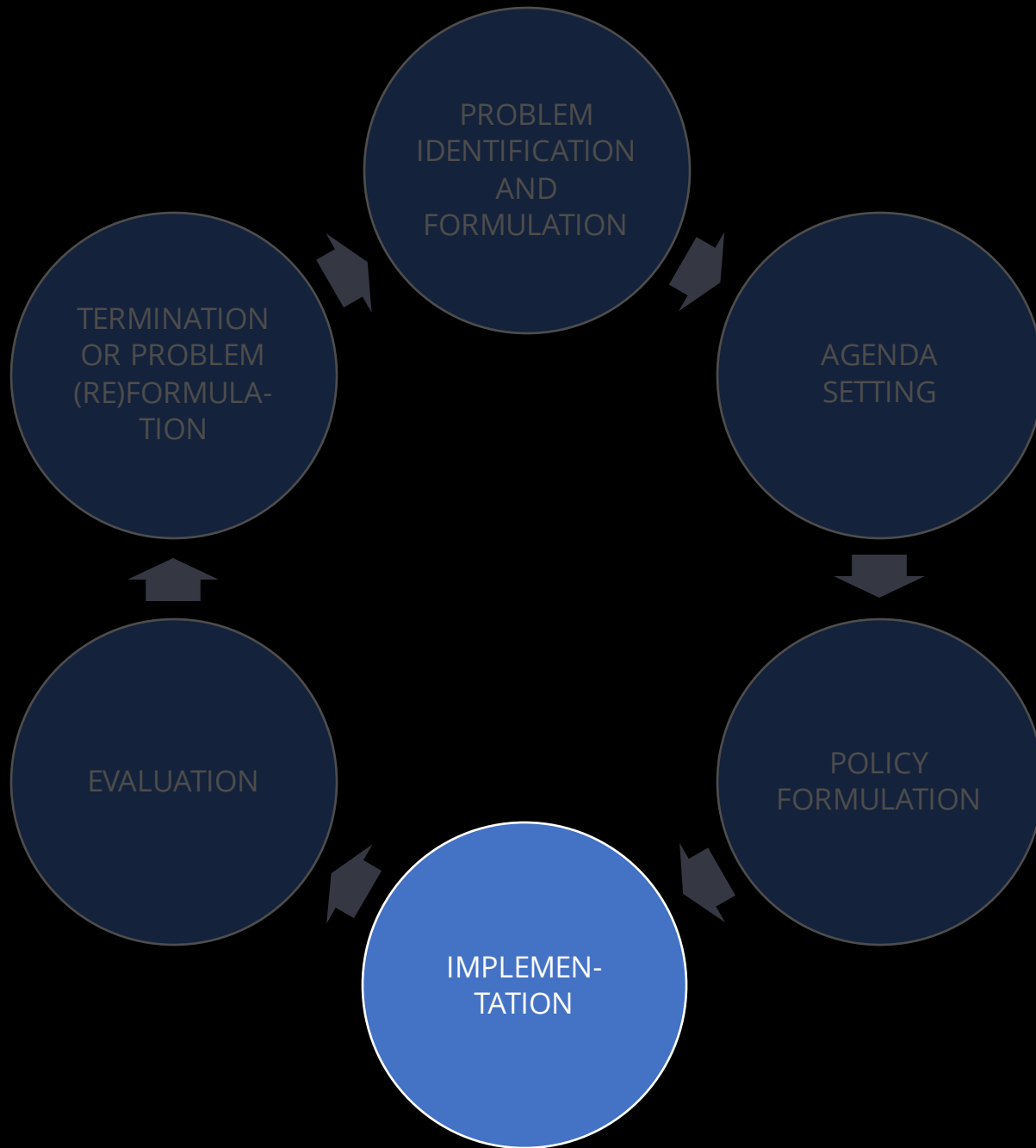
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Sources:

- Sponsor of Battery Bridge / World Telegram & Sun photo by C.M. Spiegltz., 1939  
<http://www.loc.gov/pictures/item/2006675178/>
- Mrs. Jane Jacobs, chairman of the Comm. to save the West Village holds up documentary evidence at press conference at Lions Head Restaurant at Hudson & Charles Sts / World Telegram & Sun photo by Phil Stanziola, 1961  
<http://www.loc.gov/pictures/item/2008677538/>



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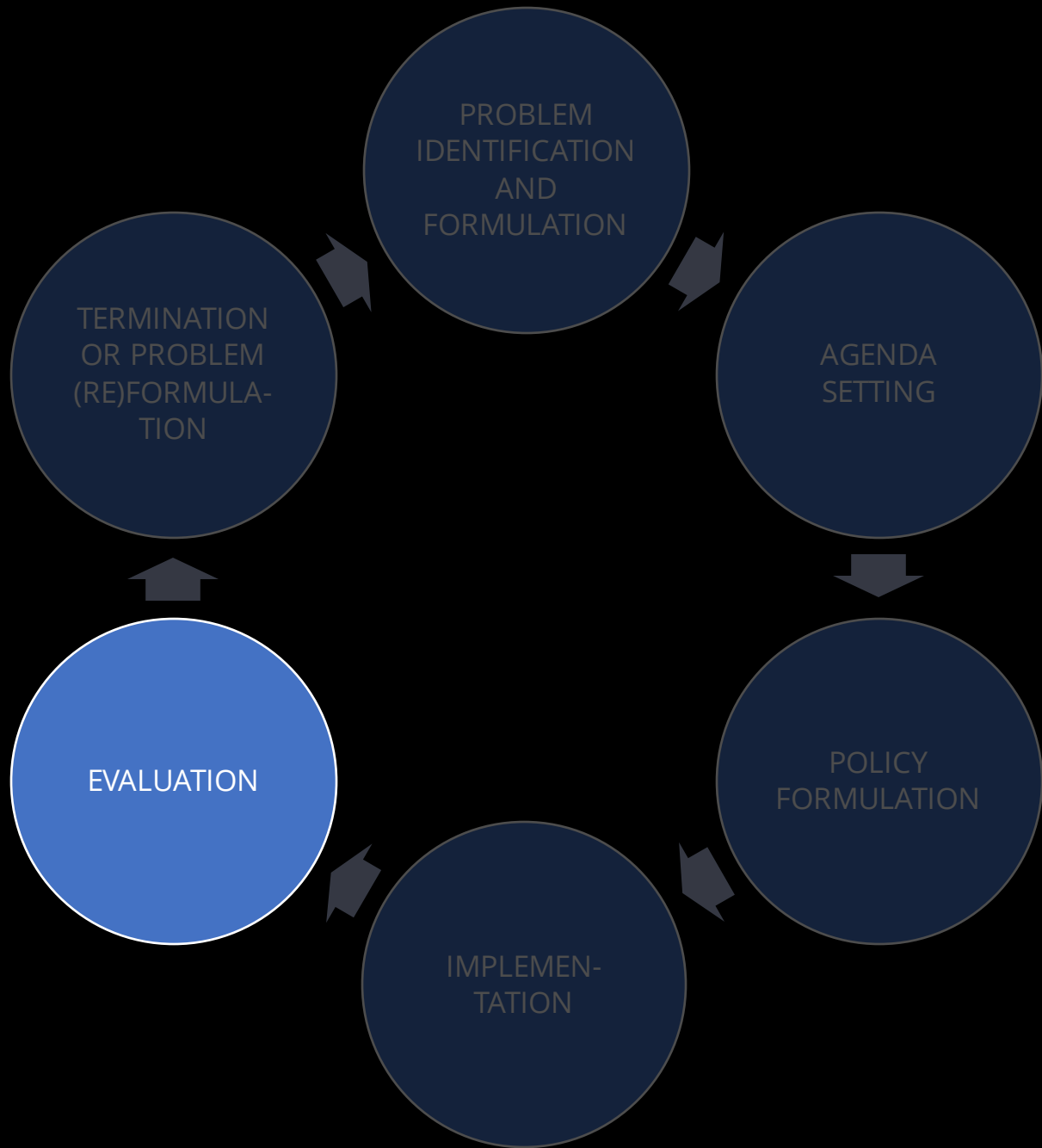
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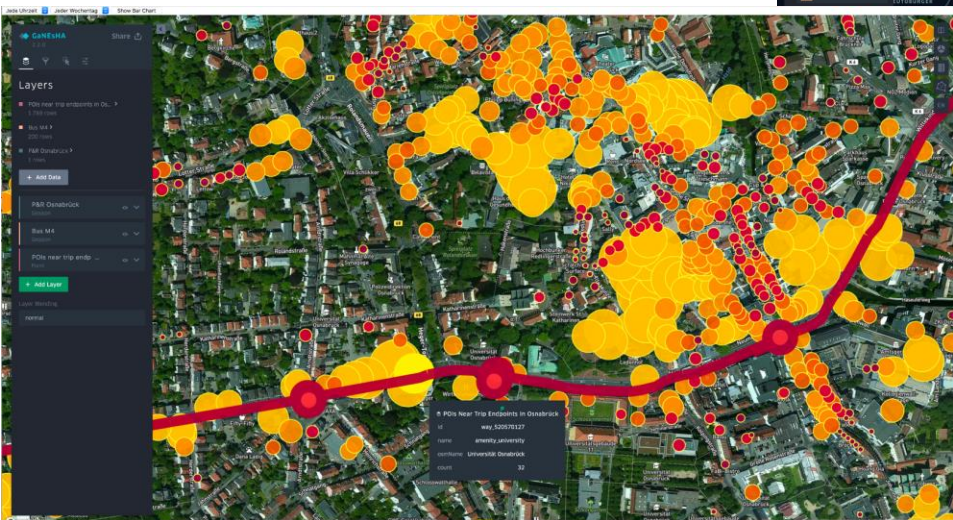
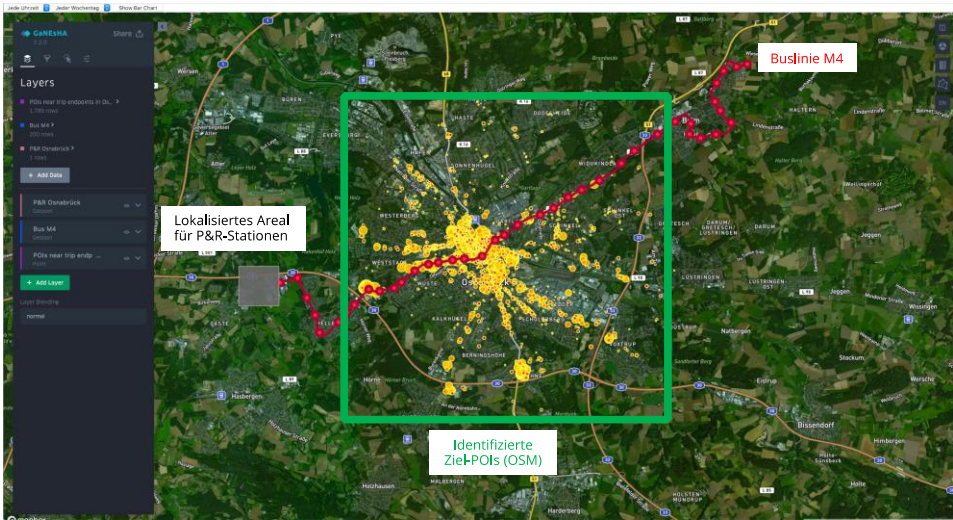
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Bundesministerium  
für Verkehr und  
digitale Infrastruktur

# POLICY CYCLE

Problem identification and formulation

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*What role do AI and data-driven approaches play in promoting sustainable mobility?*

# DIGITAL RESET



« Redirecting Technologies  
for the Deep Sustainability  
Transformation



DIGITAL RESET.  
REDIRECTING TECHNOLOGIES FOR THE DEEP  
SUSTAINABILITY TRANSFORMATION.

Regenerative Design

System Innovations

Sufficiency

Circularity

Sovereignty

Resilience

Equity

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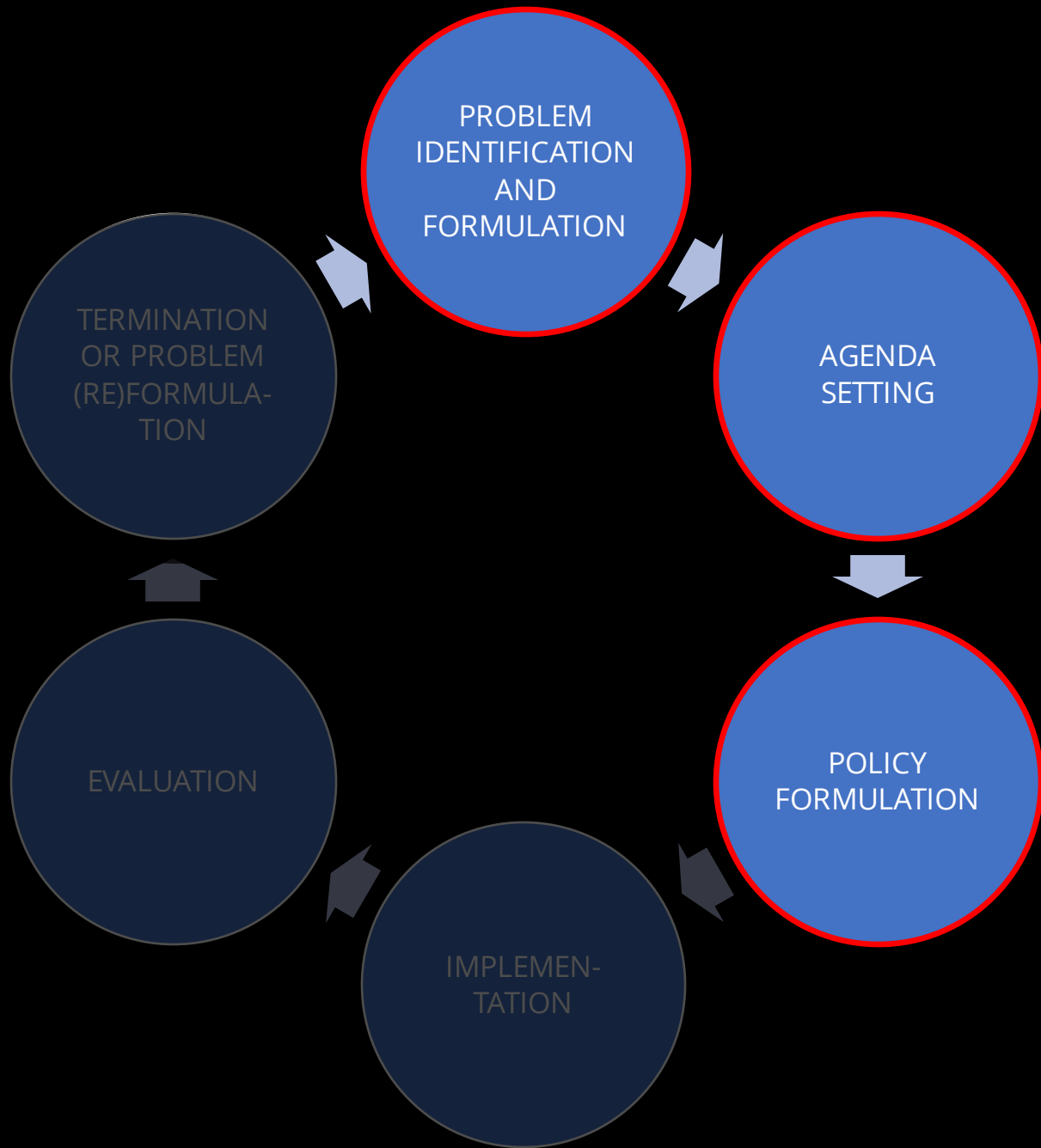
## System Innovations

Digital technologies should be used for system innovations to **fundamentally change production patterns and consumption practices** in all sectors and spheres of action, **not just for incremental optimizations that maintain the status quo.**

## Sufficiency

The prevailing strategy of using digital technologies to increase efficiency must be guided by an overarching strategy of sufficiency, which aims to **achieve satisfaction of needs (an 'enough')** instead of an **ongoing increase (a 'more')**.





## POLICY CYCLE

Problem identification and formulation

Agenda Setting

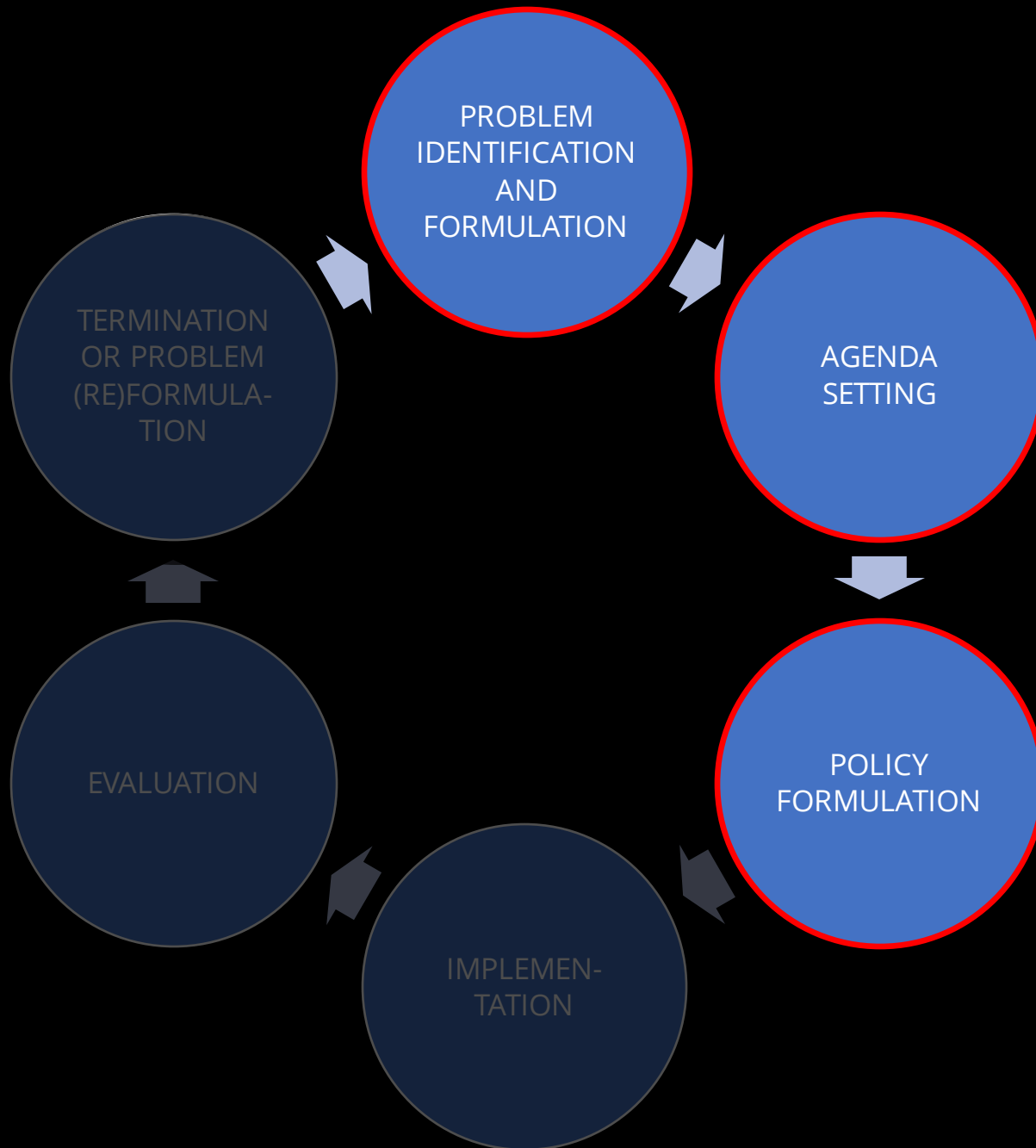
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# POLICY CYCLE & DIGITAL RESET



## System Innovations

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*There is a need for fundamental transformations!*

How can transformation be achieved?



Source: <https://commons.wikimedia.org/wiki/File:Iceberg.jpg>  
Created by Uwe Kils / Wiska Bodo

# How can transformation be achieved?



Processes

Transitions

Culture(s)

People's values

Legacies

People's needs

People's needs

Economic interests

Politics

Resistance

Costs

Multi-stakeholder

Cross-hierarchical





# How can transformation be achieved?

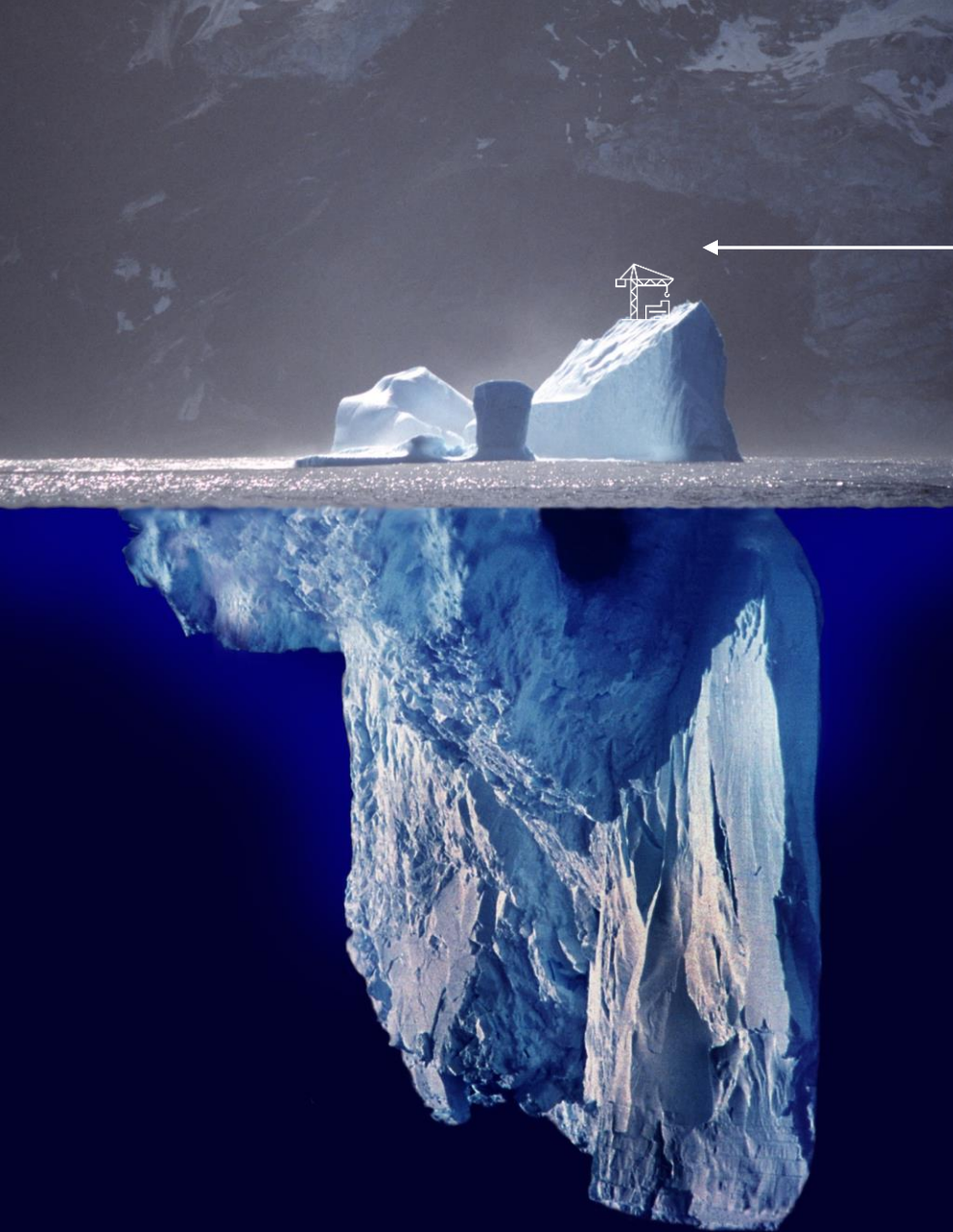
(Digital) Technologies

Processes  
Legacies  
Economic interests  
Costs

Transitions  
People's needs  
Politics  
Multi-stakeholder

Culture(s)  
People's values  
People's needs  
Resistance  
Cross-hierarchical





# How can transformation be achieved?

Artificial Intelligence  
(Digital) Technologies

Processes  
Legacies  
Economic interests  
Costs

Transitions  
People's needs  
Politics  
Multi-stakeholder

Culture(s)  
People's values  
People's needs  
Resistance

Cross-hierarchical



*Let us aim at a transformation by design.*



*Let us aim at a transformation by design.  
Not by disaster.*

# THANKS FOR YOUR ATTENTION!

## SMARTCITY LIVING LAB

SMART DATA & KNOWLEDGE SERVICES GROUP  
DFKI GMBH  
TRIPPSTADTER STR. 122  
D-67663 KAISERSLAUTERN

WEB: <https://scll.dfki.de>  
EMAIL: [scll@dfki.de](mailto:scll@dfki.de)



**SmartCity**  
Living Lab

## HEAD

DR. MARTIN MEMMEL  
DFKI GMBH  
TRIPPSTADTER STR. 122  
D-67663 KAISERSLAUTERN

EMAIL: [martin.memmel@dfki.de](mailto:martin.memmel@dfki.de)



German  
Research Center  
for Artificial  
Intelligence