



**Knowledge network for System Innovations
and transitions (www.ksinetwork.nl)**

Transformative Change towards sustainability

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Context



Persistent problems

- our society faces a number of persistent problems
- many examples: climate change, energy supply, water problem, mobility problem, agriculture, health care
- persistence is due to system failures that are deeply rooted in our societal structures
- regular policy aimed at incremental improvement is not enough to resolve persistent problems

transformative change is needed



Transition

fundamental change of structure, culture and practices in societal (sub)system

- **structure:** physical infrastructure, economic infrastructure (market, consumption, production), institutions (rules, regulations, collective actors)
- **culture:** collective set of values, norms, perspective (shared orientation), paradigm (defining problems and solutions)
- **practices:** routines, behaviour, ways of handling, implementation at the individual level

incumbent structure, culture and practices need to be broken down and new (sustainable) ones need to be built up



Examples of transitions

- from coal energy supply to gas energy supply
- from extensive to intensive agriculture
- from an industrial - to service - to knowledge economy
- from fossil fuel based energy supply to renewable energy supply

not spontaneous processes



Why do transitions often fail?

game, rules and players

transition requires a new structure, culture and practices

transition requires new rules, new players and new game

dominant players have too many interests to defend and don't want to change the rules drastically

only new players can 'break open' the game and change the rules

more, different, better



Sustainability as orientation

sustainability serves as guiding orientation for transition

sustainable development is a socially and scientifically
contested notion: *no unique definition or approach*

transition approach

organize reflexive search and learning process with
stakeholders [frontrunners] to assess what sustainability
is in a particular context



Dynamics of transitions



Transformative Change

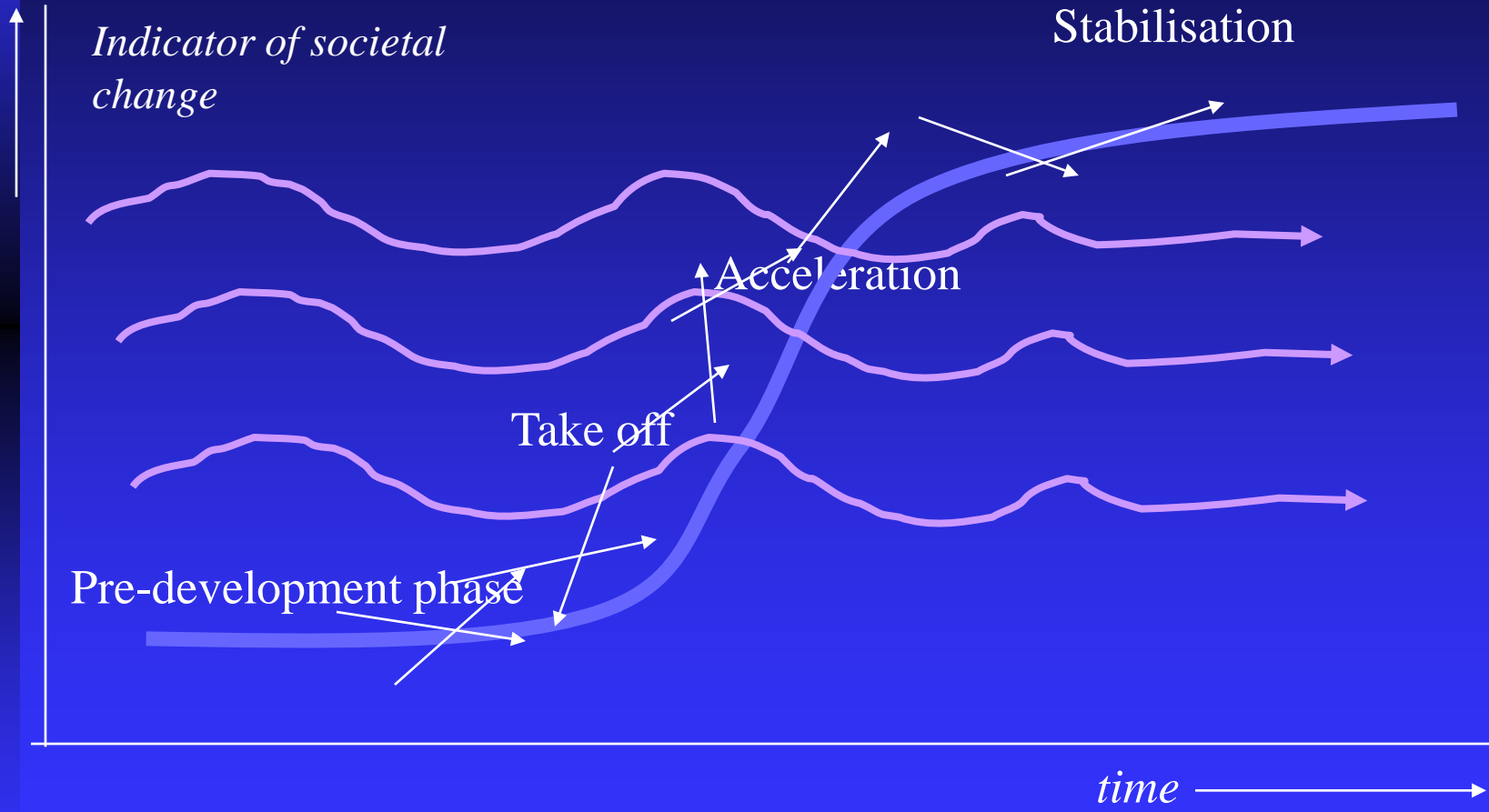
sweeping change

describes the dynamics of transitions in time as a sequence of *alternating* phases of relatively *fast* and *slow* dynamics, which together forms a strongly non-linear pattern, with a shift from one dynamic state of *equilibrium* to the other

creeping change

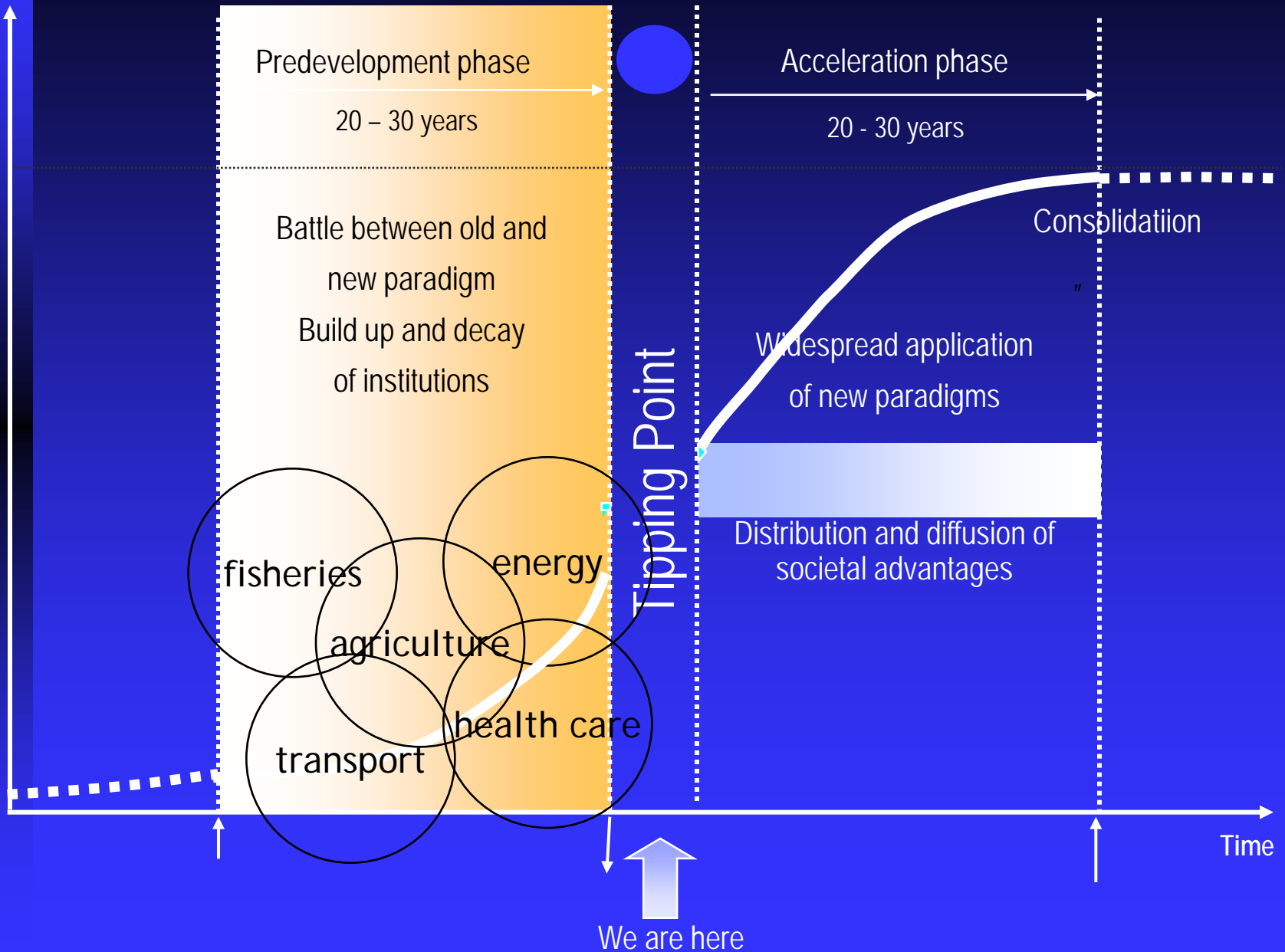


Multiple Phases





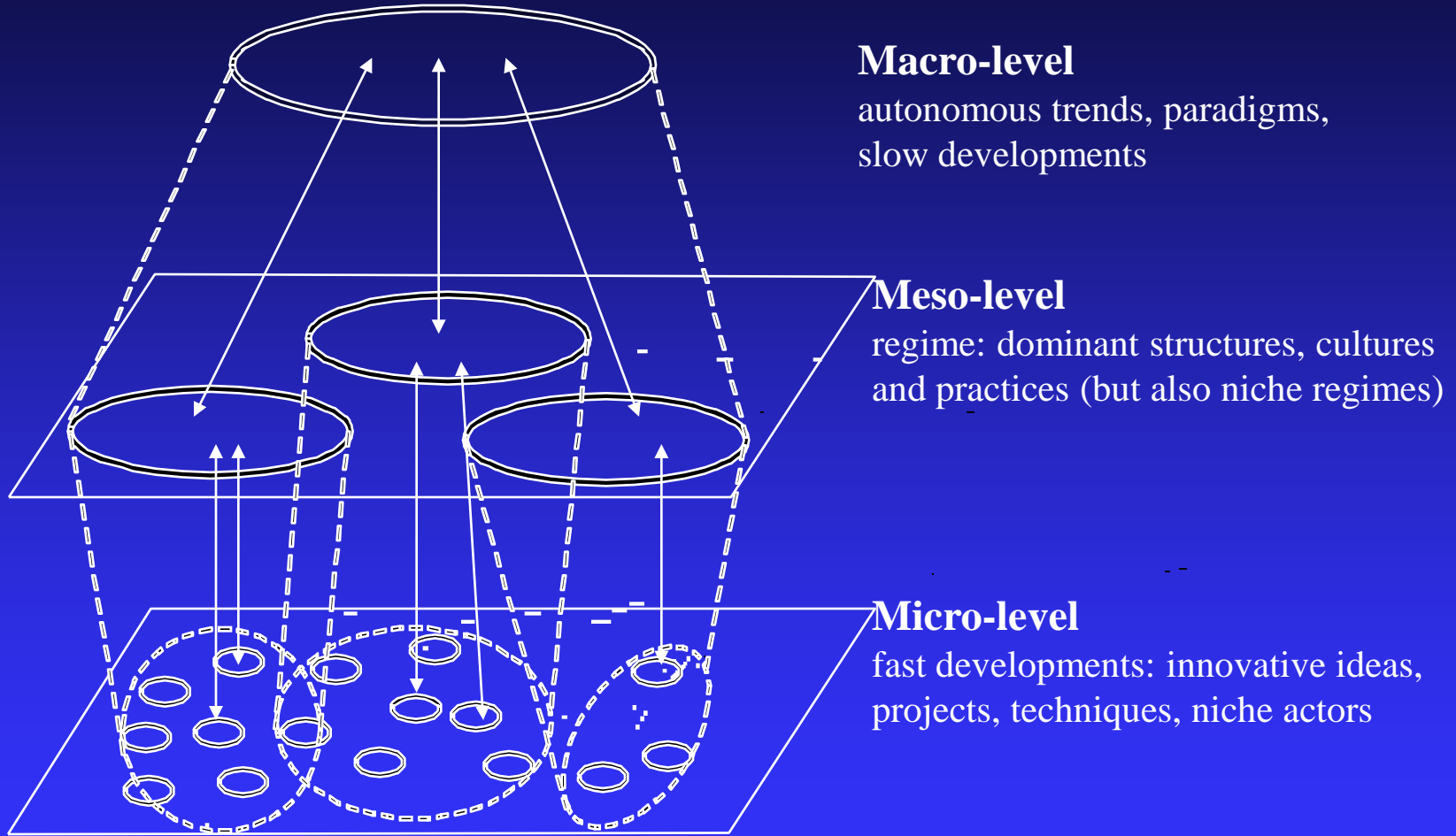
Breakthrough to sustainable society



Multiple Levels



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Multiple Patterns

Transformative Change arises from

small, emerging changes at the micro-level

bottom-up *creeping*

induced changes at the meso-level

in between *periodic shocks*

a massive, fast change at the macro-level

top-down *big bang*





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Transition Governance



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Transition management concept

rooted in

complex systems thinking

new forms of governance



Managing complex systems

insights

- command and control management is useless
forced steering is counterproductive
- longer term goals need to be flexible and adjustable
- a combination of top-down & bottom-up might work
- creating space for entrepreneurs is crucial

adaptive and anticipatory management



New forms of governance

insights

- interactive network approach
- pluralistic approach
value- and perspective based
- multi-level approach
- learning is important
uncertainty and complexity

no central actor in charge, multiple actors steering



Transition governance

rules of thumb

- long-term thinking as the basis for short term policy
- think in terms of multiple domains (multi-domain), different actors (multi-actor), different levels (multi-level)
- learning as an important aim for policy ('learning-by-doing' and 'doing-by-learning')
- orient policy towards system innovation besides system improvement
- keeping options open (wide playing field)



Forced Steering is counterproductive

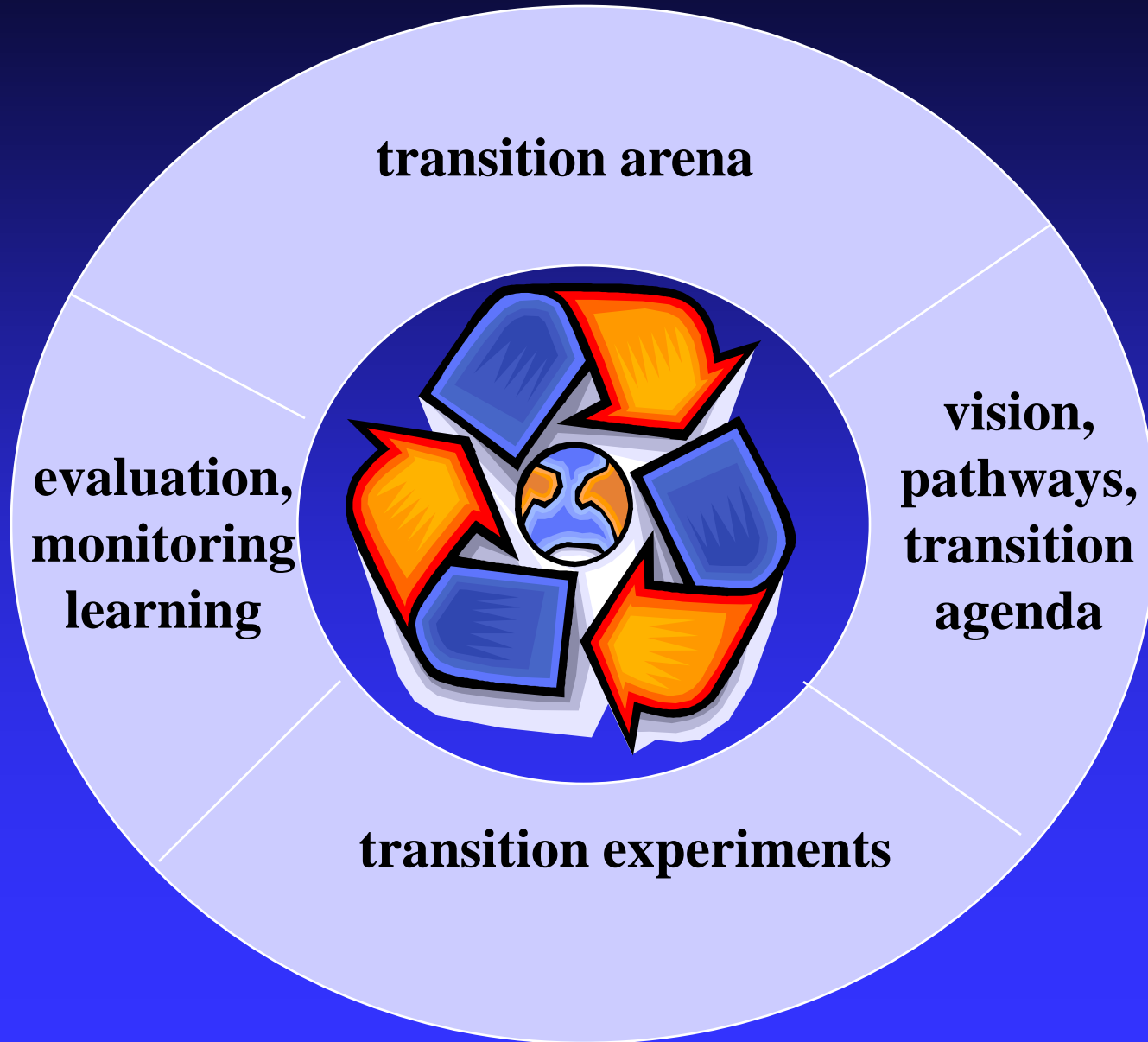
Suzuki Foundation report on climate change policy

radical recommendations

- CCS mandatory
- California-level fuel efficiency standards for vehicles
- capturing methane emissions from all landfills
- less growth in Alberta and Saskatchewan

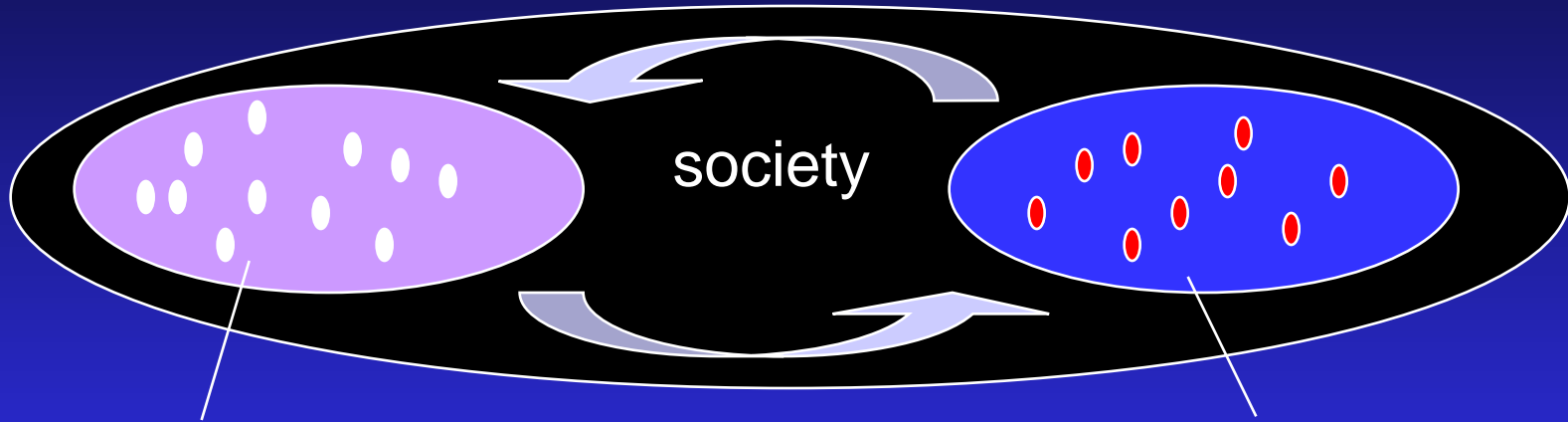
Battle between Provinces

Transition approach cycle



The transition arena

space for experimenting and envisioning



Regular policy arena

- *Short term*
- *Peloton*
- *Incremental change*
- *Problem- and goal oriented*

Transitionarenas

- *Long term*
- *Innovators*
- *System-innovation*
- *Problem- and goal searching*



Transition approach

- identifying frontrunners [movers and shakers]
- establishing transition arenas [protected spaces]
- formulating a joint, long-term strategic agenda
- designing small-scale transition experiments
- scaling up most successful experiments
- forming new coalitions/networks around experiments

searching, learning and experimenting



Examples



Ongoing transition processes

- six Dutch ministries have official transition policy
 - Water transition
 - Energy transition
 - Construction sector transition
 - Mobility transition
 - Biodiversity transition
 - Health care transition
- regional governments experiment with transition policy
 - Provinces Zeeland, Flevoland, North-Holland
 - Regions such as Zuidvleugel, Texel, Haarlemmermeer, Twente
 - Cities such as Almere, Rotterdam

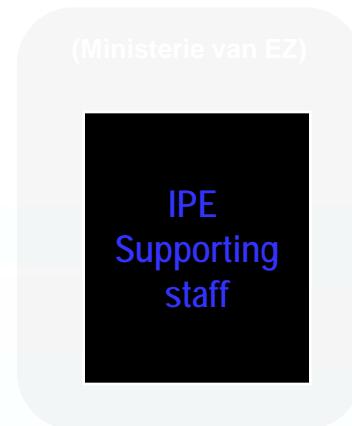
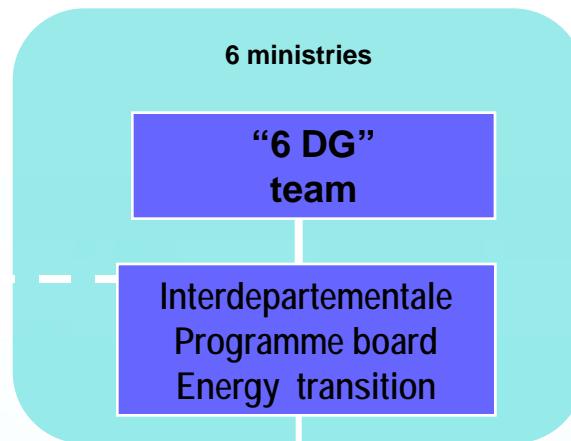
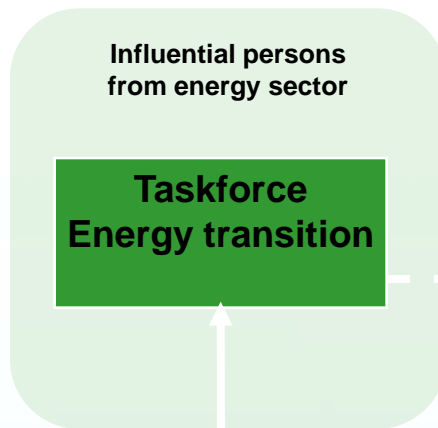


Energy transition

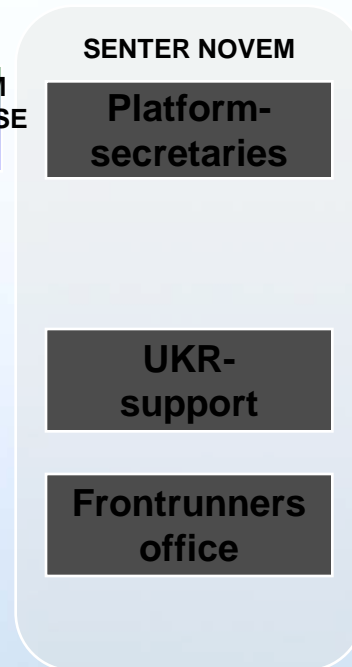
- in 2001 initiated by the ministry of Economic Affairs (EZ)
- started with a niche (small group of frontrunners within EZ) evolved into a movement with companies, NGOs, knowledge institutions and individuals
- vision has been developed [‘where do we want to go?’]
- 7 main themes chosen [platforms or arenas]
- 23 transition paths formulated [‘how to go there from here?’]
- 100 transition experiments set up [‘how to implement paths?’]

Energy transition

1
Long-term
vision



7
Transition
themes



23
Transition
-pathways



100-en
Transition
experiments



What has been achieved?

- sense of urgency, high ambition level
- new discourses, agenda of reform, breakthrough projects
- broad movement with 1000 people involved
- high amount of time, manpower, energy invested

but

still dominance of regime players and danger of becoming and execution process and institutionalized



Urban transition management: *transitionizing Rotterdam*

- strategic: fundamental debate on cities future and governance culture
 - role of government and the effectiveness of policy related to persistent problems
 - identifying the unsustainability of the city and debating long term sustainability principles
 - creating various strategic arenas in different areas and government institutions



Urban transition management: *transitionizing Rotterdam*

- tactical: reorientation and reorganisation of major programmes in crucial domains
 - Rotterdam Climate Initiative
 - 50% reduction of CO₂ in 2025
 - Pact op Zuid
 - 1 billion Euro investment in battling social problems
 - CityHarbors
 - 35 year redevelopment of innercity industrial harbor area
- *reorienting programmes based on raising ambition, seeking coherence and new governance strategies*



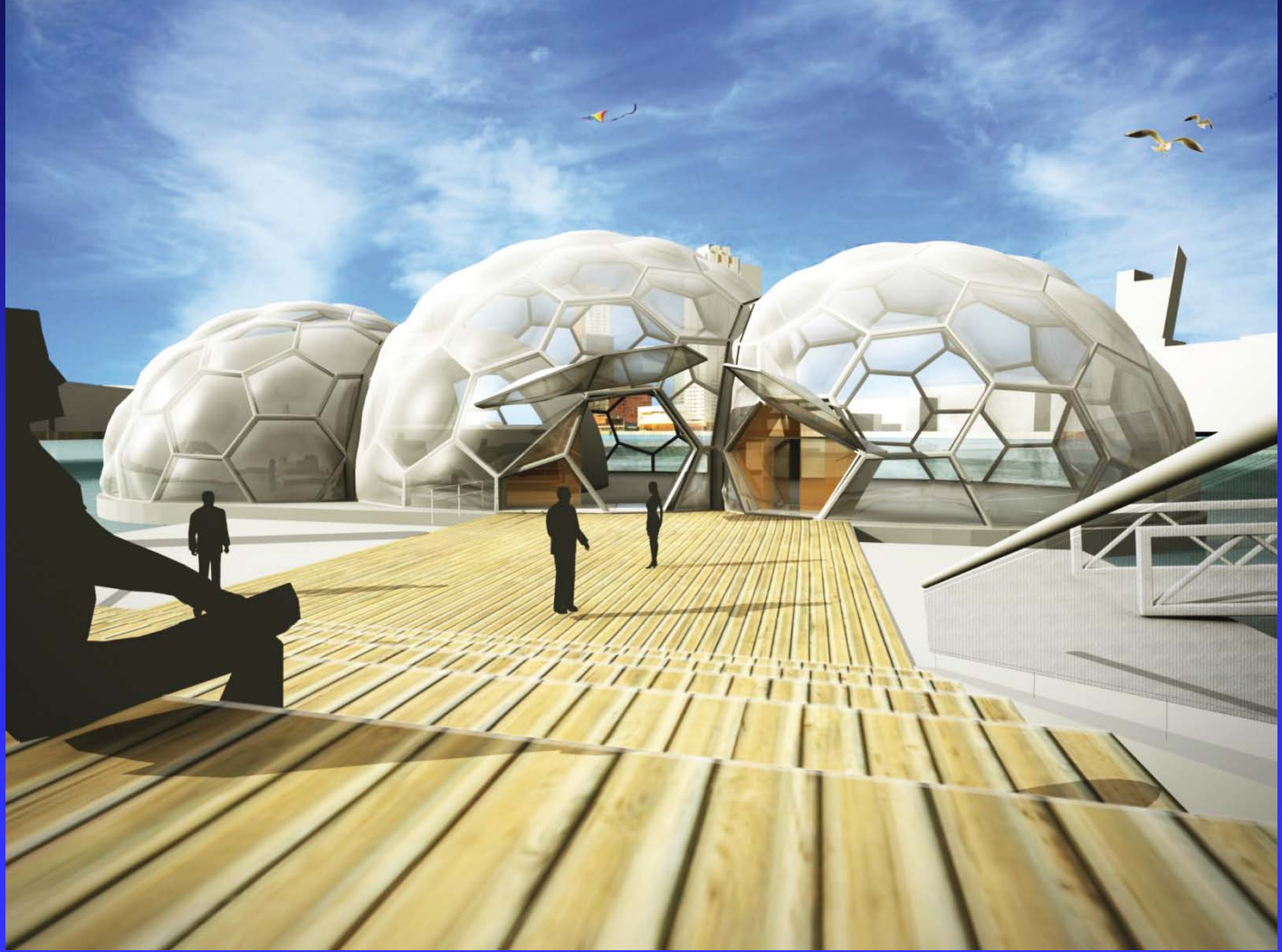
Urban transition management: *transitionizing Rotterdam*

- operational: transition experiments and actions
 - floating city
 - water mobility
 - urban agriculture
 - new communities/lifestyles
 - roof transition
 - energy service companies



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Floating Pavilion



Floating City

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Dutch Research Institute For Transitions



Role of government

not in a directing role

but

- a facilitating, enabling, stimulating role
- still an active but different role
 - formulating vision and high ambition level
 - creating space for frontrunners
 - stimulating and enabling transition experiments
 - removing barriers for sustainable innovation



Role of intermediary organizations

- brokery role
- co-designing role
 - co-develop transition instruments
 - initiating transition experiments
- monitoring role
 - monitoring progress of transition process
 - evaluating transition experiments



Our role as researchers

- Analysis
 - Integrating disciplinary and lay knowledge
- (re)structuration
 - Ongoing processes
- Design and facilitation
 - Of transition management type and process
- Reflection
 - Upon impact, effect and future steps



Successes and Failures

Successes

energy transition

health care transition

implemented in regular policy

Failures

mobility transition

biodiversity transition

not created enough critical mass



Lessons

- natural tendency to an execution process
- natural tendency of the government to fall back in the command-and-control mode
- the first period is relatively easy, thereafter arise winners and losers
- space for frontrunners is of crucial importance [financial, organizational, juridical, mental space]



International Context

- in Belgium two transition processes are running
 - sustainable housing, sustainable energy & materials
- in Finland transition programme for health care
- in other European countries growing interest
- in Australia city transition programme
 - Melbourne, Sydney, Brisbane, Cairns
- in Japan experiments with transition policy



Insights, no Answers

- transition approach is promising new governance mode
- principles underlying transition approach are universal but the application is context-specific
- the results so far are promising and stimulating
- traditional governance approaches do not seem appropriate for transitions required