



# Digitranscope: Digital Transformation and the Governance of Human Society

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The European Commission's science and knowledge service

VIDEO COURTESY: esri



# Broad trends

- Hyperchange and disruption. Technologies developing at speeds and over geographical ranges not experienced before by thinkers and policy-makers
- Deep transformations in public and private life. Shifts in in the social and organisational fabric of society impacting institutions at multiple levels
- Profound challenges to regulation emerging from AI and processes governed by smart algorithms etc.

# Overall Challenge

- The digital transformation has the power to transform every aspect of European society over the next 10-30 years
- Our challenge is to identify and explore the major trends in this process and to consider how policy-makers should first grasp their implications and then respond to them

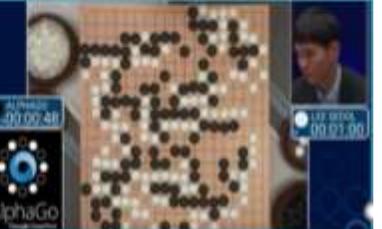
# Governance of Human Society

- Vision on Humanity
  - Human and Public Values
  - Ethical themes
  - Societal themes
- 
- How to get Policy involved and on which scale
    - Awareness / Wake up call
    - Agenda formation
    - Policy formation
    - Policy Determination

# Digital Transformation

- 8 Trends
  - Robotica
  - IoT
  - Biometrics
  - Persuasive
  - Digital Platforms
  - Virtual and Augmented Reality
  - Big Data and Algoritims
  - AI
- Gamification

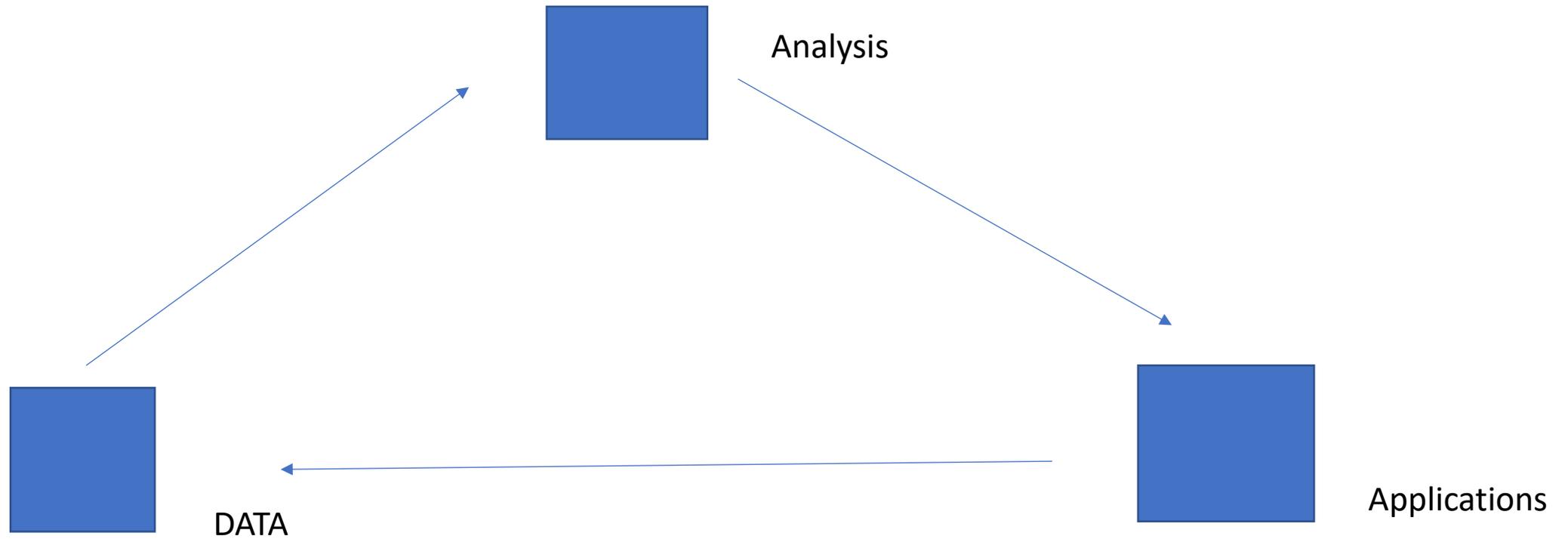
# Technology trends (Rathenau Institute)

Material world	Biological world	Socio-cultural world	Digital world
Robotics	Persuasive technology	Platforms	Artificial intelligence
			
Internet of Things	Biometrics	VR/AR and social media	Big data and algorithms
			

# Ethical and Socio-technical challenges

Central topic	Issues
Privacy	Data protection, privacy, mental privacy, spatial privacy, surveillance, function creep
Autonomy	Freedom of choice, freedom of expression, manipulation, paternalism
Safety and security	Information security, identity fraud, physical safety
Control over technology	Control and transparency of algorithms, responsibility, accountability, unpredictability
Human dignity	Dehumanization, instrumentalization, deskilling, desocialization, unemployment
Equity and equality	Discrimination, exclusion, equal treatment, unfair bias, stigmatization
Balances of power	Unfair competition, exploitation, shifting relations consumers and businesses,

# How do they interact

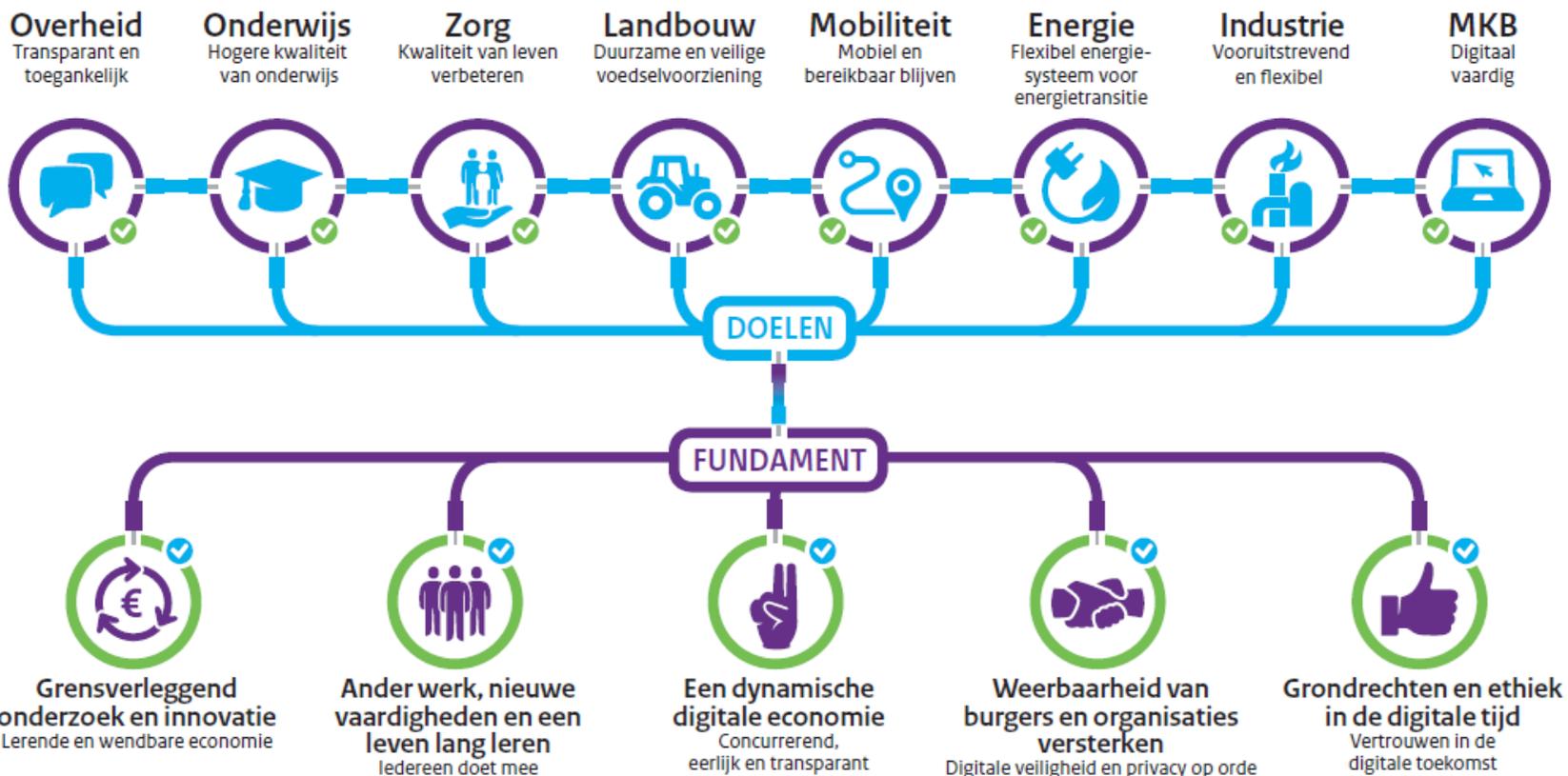


# What governance strategies are being taken at present?

- European Union – regulation focus (privacy, competition, data protection etc.)
- China – control focus
- Singapore – ‘liberal authoritarian’
  
- The Netherlands:
- What other models should we be looking at?



## Nederland Digitaal



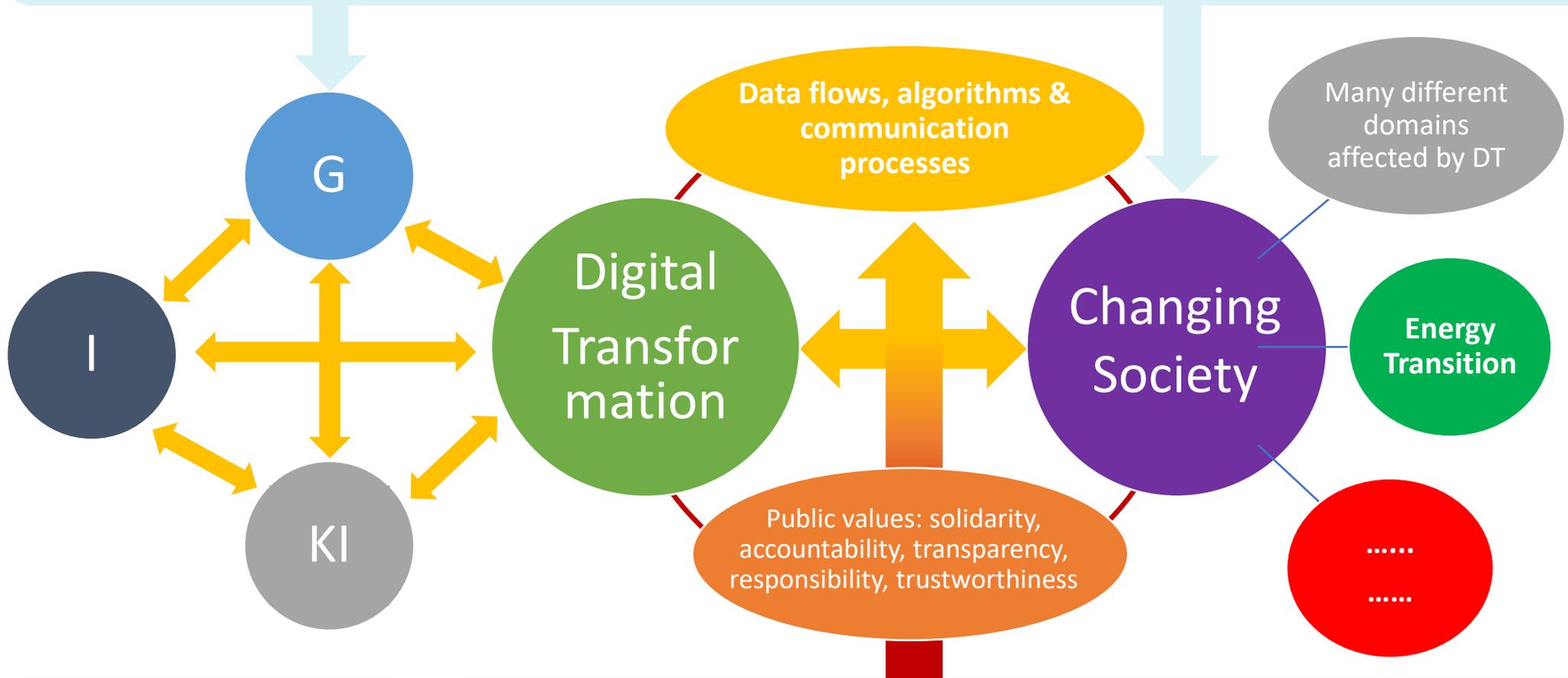
# The Dutch strategy on Digitalisation



# How to frame all components

# Different interacting scales:

global, continental, international, national, regional, local - city, neighbourhood, community, individual



Interacting Triple Helix:  
Governance, Industry and  
Knowledge Institutions

**Safeguarding the European Values listed in Article 2 of TEU:  
Human dignity, Freedom, Democracy, Equality, Rule of law, Human rights.**

# How can we act?

1. Desk Research
2. Experiments
3. Cooperation

# What do we mean with Experiments

1. Digital Twin
2. Ecocraft

# 2018 Experiments



“How to connect the real world and virtual world, both physical and social”

“Liveable city by design”



# Governance discourse changes according to scale – e.g. Global Warming

- International: Paris Agreement
- National: Netherlands Delta Plan (water is a national challenge)
- Regional: Netherlands Multiple water regulation measures
- Local: Specific dike enforcement



# HOW TO MAKE USE OF THE DIGITALISATION? (MOVIE)

In a digital twin we can simulate and test possible futures.

- Outcomes can be translated in practicable plans tailored to local conditions.
- Improvement of future scenarios by machine learning and smart modelling.
- Assessment of feasibility and mitigation of possible negative effects.





# We need technologies of humility

For every new technology, we must leave ourselves time to ask how it can best serve humankind. We will find the answers only by remaining critical and by supplementing the forces of government, the market, and ethics with a more humble approach to innovation.

By Sheila Jasanoff, Professor of Science and Technology Studies at [Harvard Kennedy School](#)



# Any questions?

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