

# co-creation and public outreach

the rise of predictive public e-services

**Kristjan Vassil**  
**Vice Rector for Research**  
**University of Tartu**



UNIVERSITY OF TARTU



**CITIS**  
Center of IT Impact Studies

**1**

**Water and steam to mechanize production**

**2**

**Electric power to create mass production**

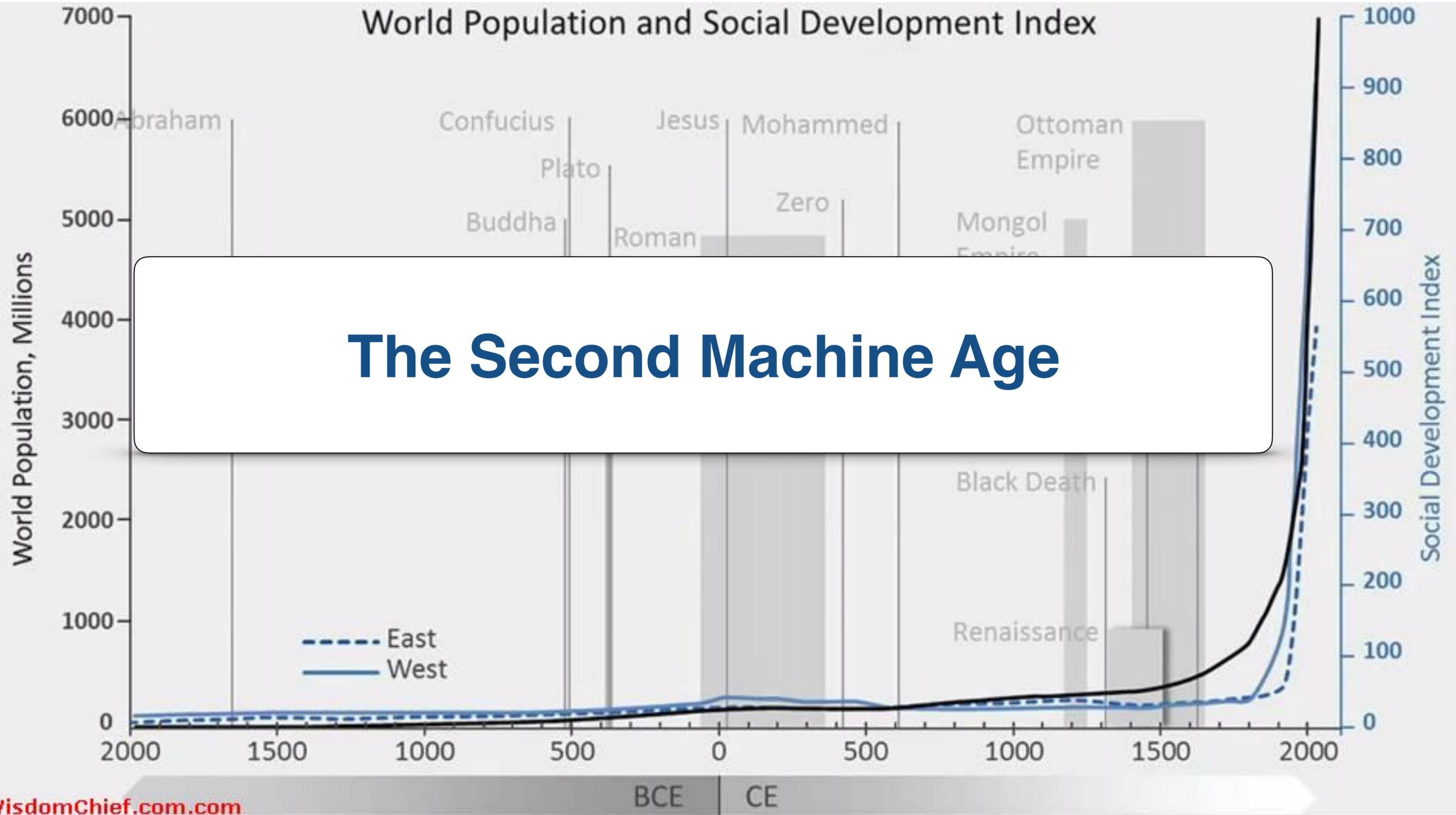
**3**

**Electronics and IT to automate production**

**4**

**Fusion of technologies to blur physical, digital and biological**

# World Population and Social Development Index



Large **sensor** networks

produce immense amount of **data**

in **real-time**

requiring **self-learning** analytical techniques

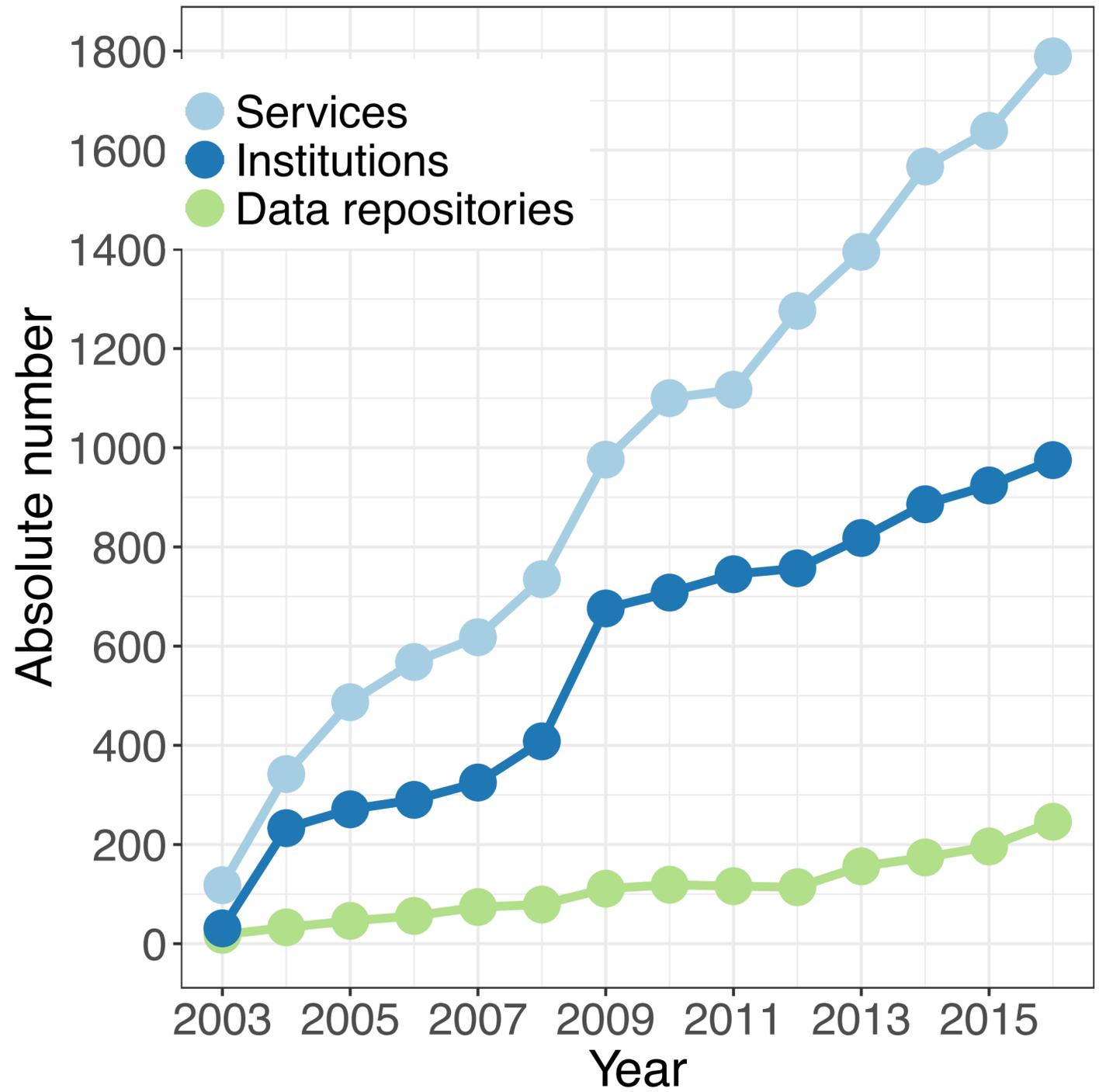
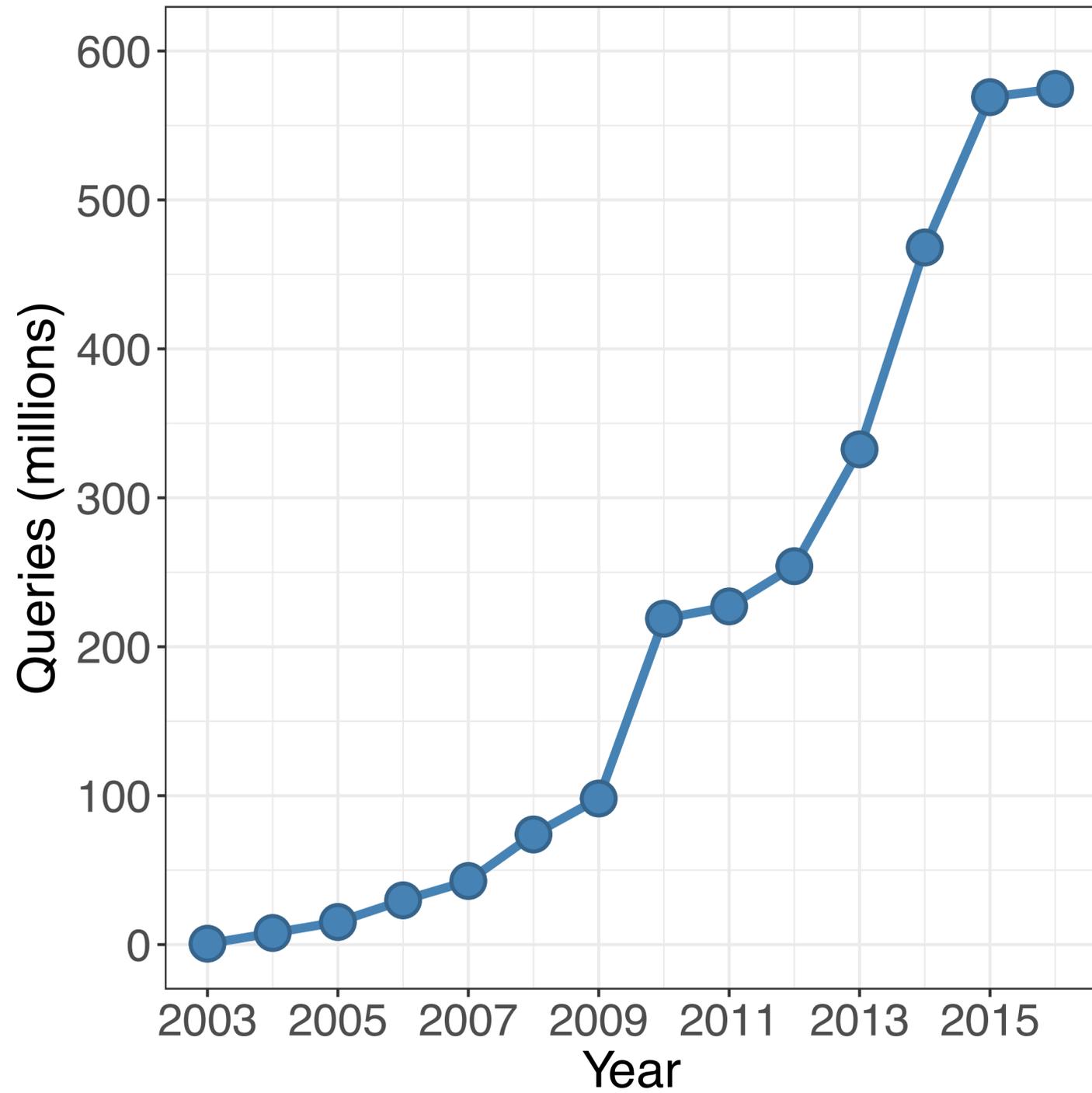
for evidence based **decision making**

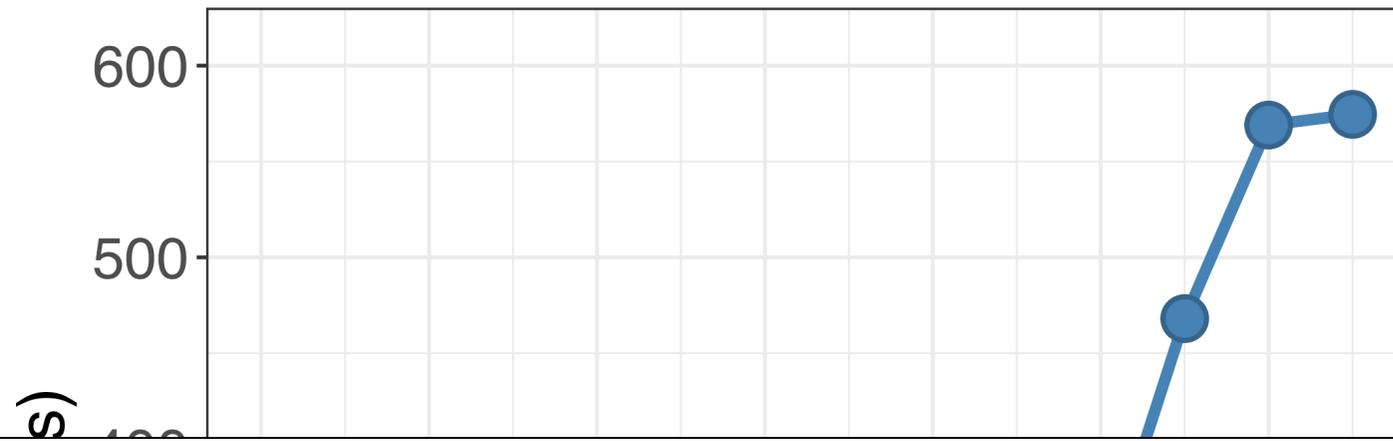
**affecting all domains** of mankind

key features

The background features several light blue decorative elements: a series of five circles of increasing size from left to right in the upper half, a thick curved bar in the top right corner, a bar chart with five vertical bars of varying heights in the lower half, and a thick curved bar in the bottom left corner.

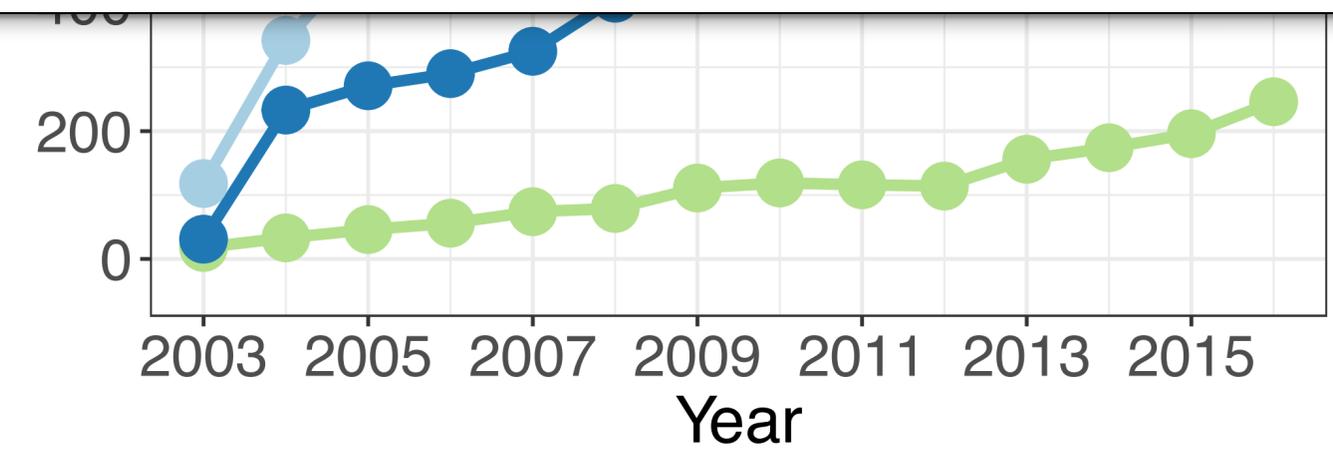
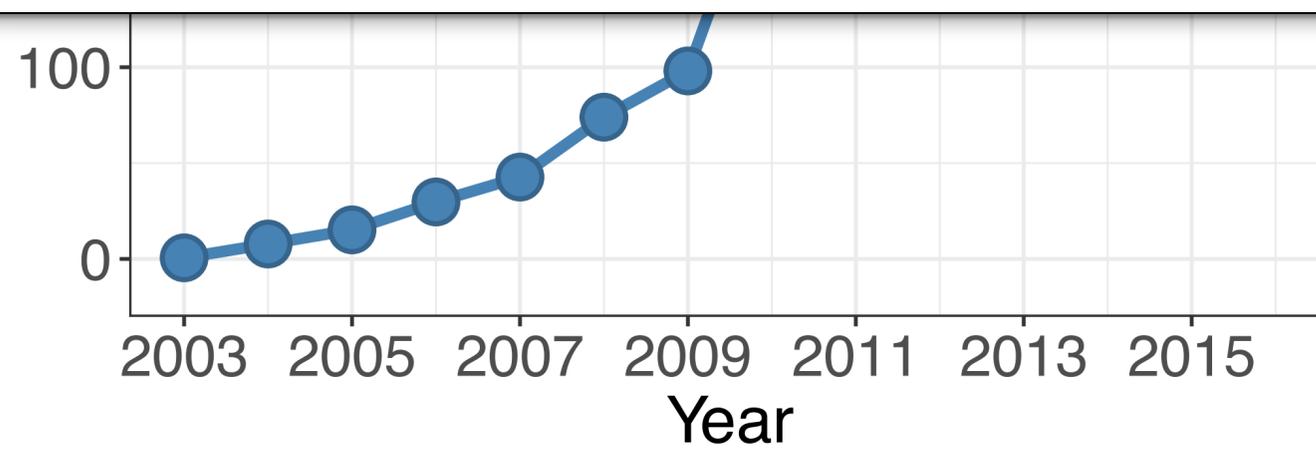
we sense the world **better than ever**

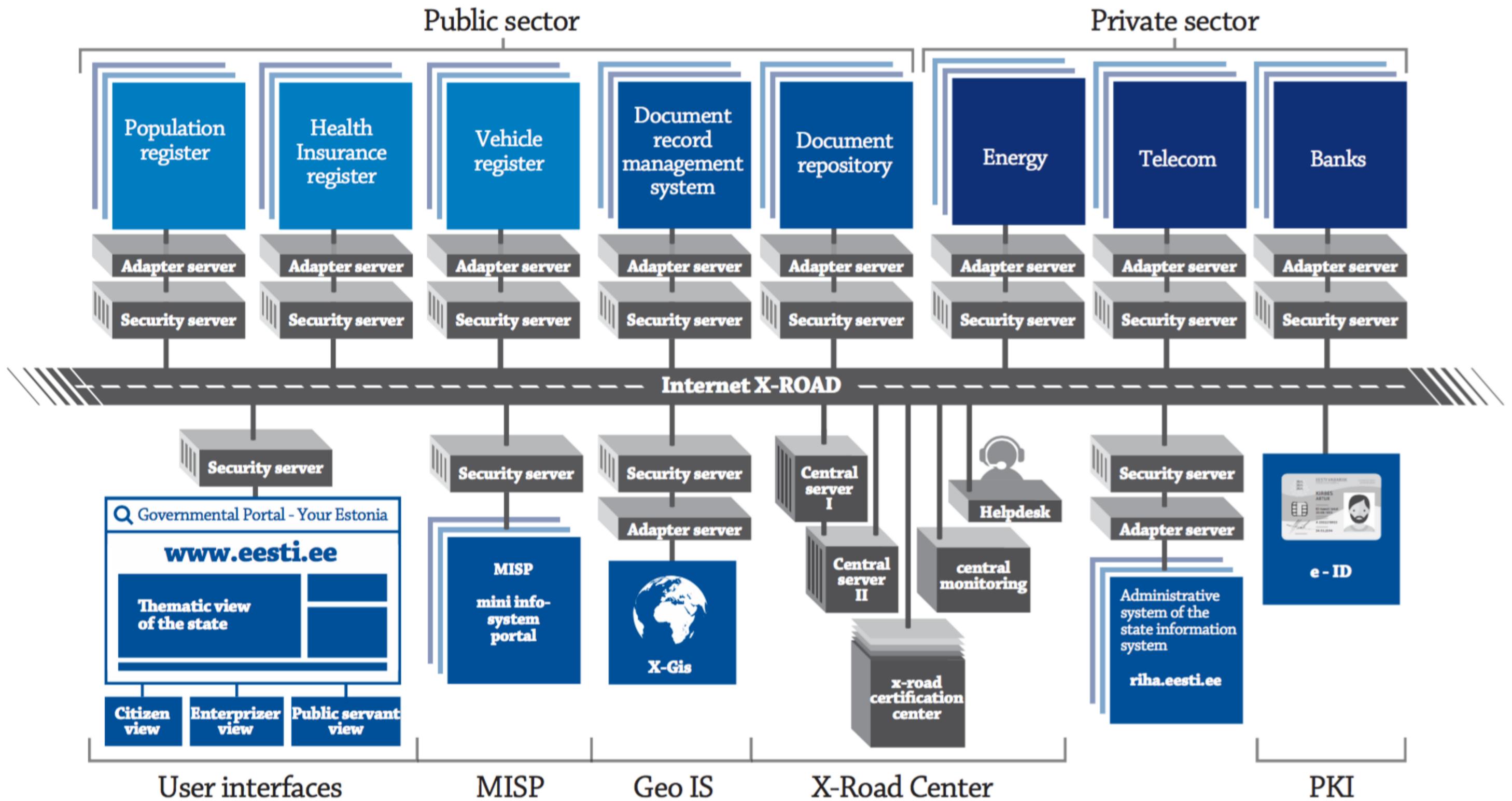




- Services
- Institutions
- Data repositories

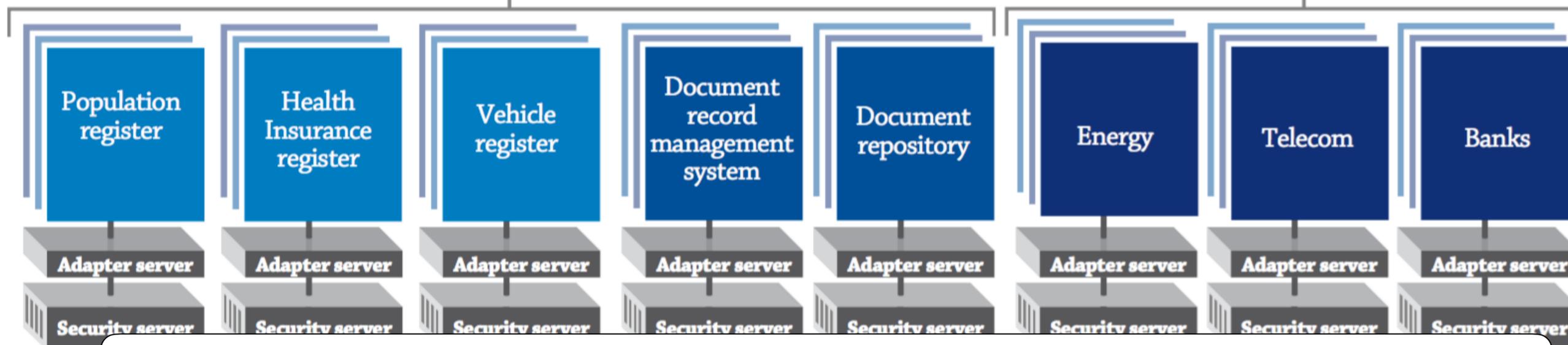
1.6 million queries per day in the population of 1.3 million  
 Estimated time saved in 2016 ~5700 years



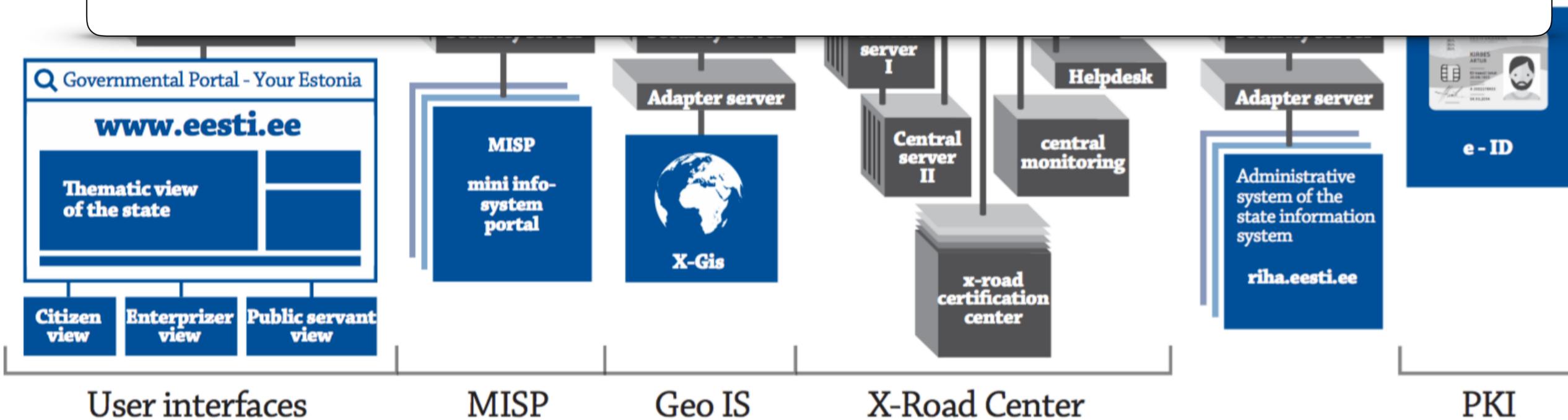


Public sector

Private sector



## Estonia's sensory system is X-Road





e-government accelerates **innovation**

real-time economy **economy**

Form 15 State  
**W-2**  
17  
Wage and Tax  
Statement

**2011**  
Copy B To Be Filed  
Employee's Form

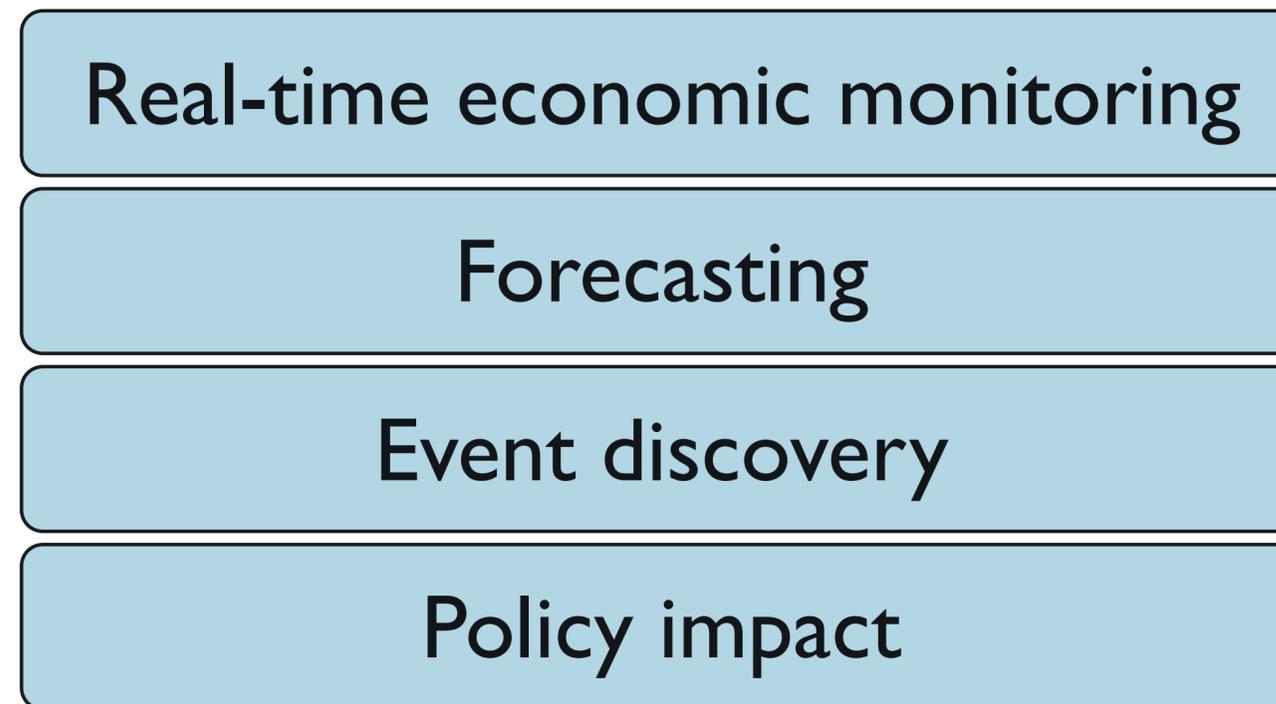
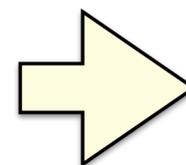
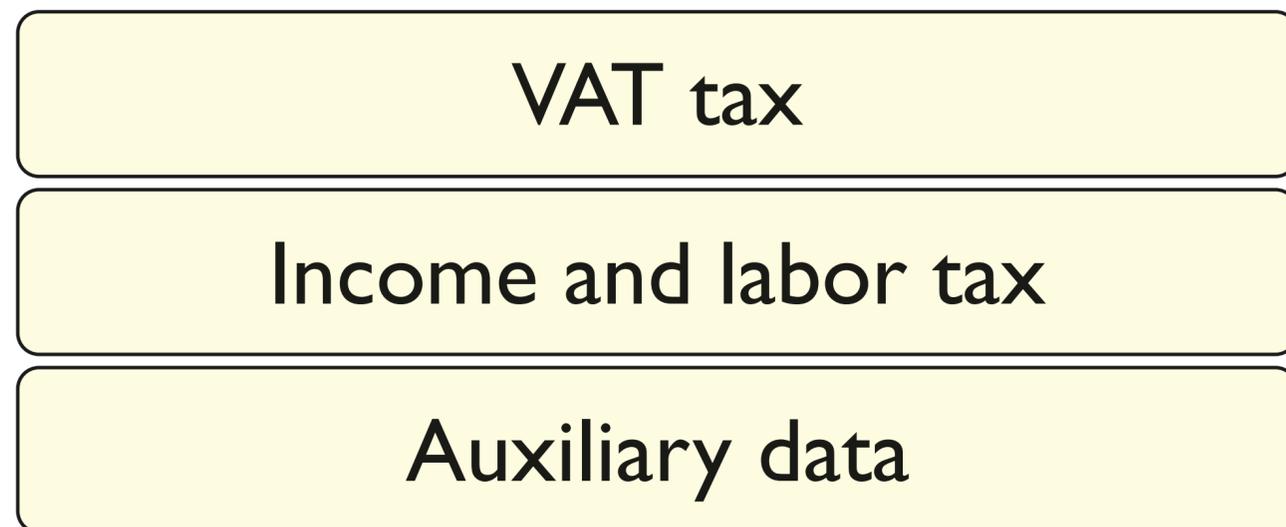
**1040**  
Form  
year Jan. 1–Dec. 31, 2  
name and initial

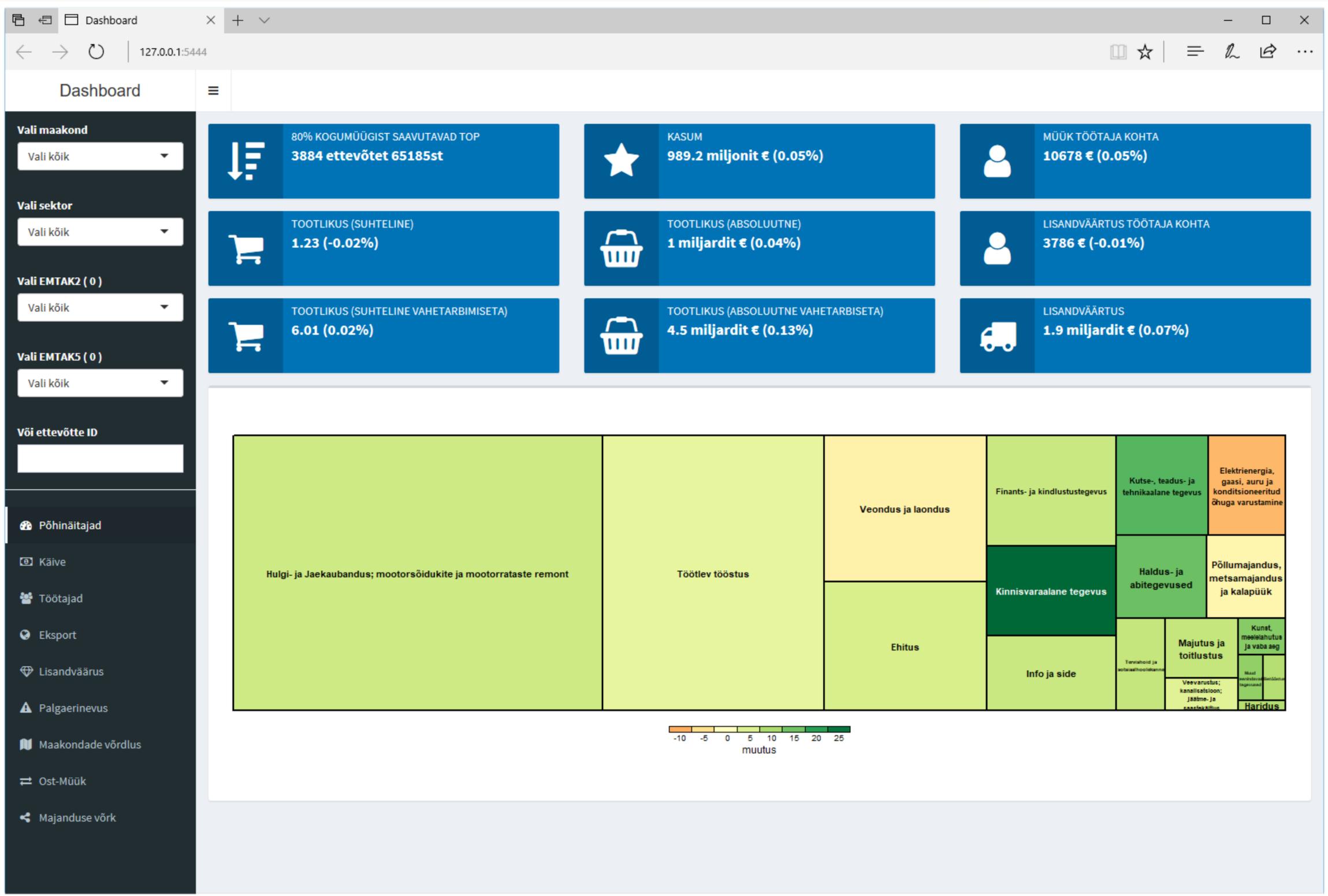


VAT tax

Income and labor tax

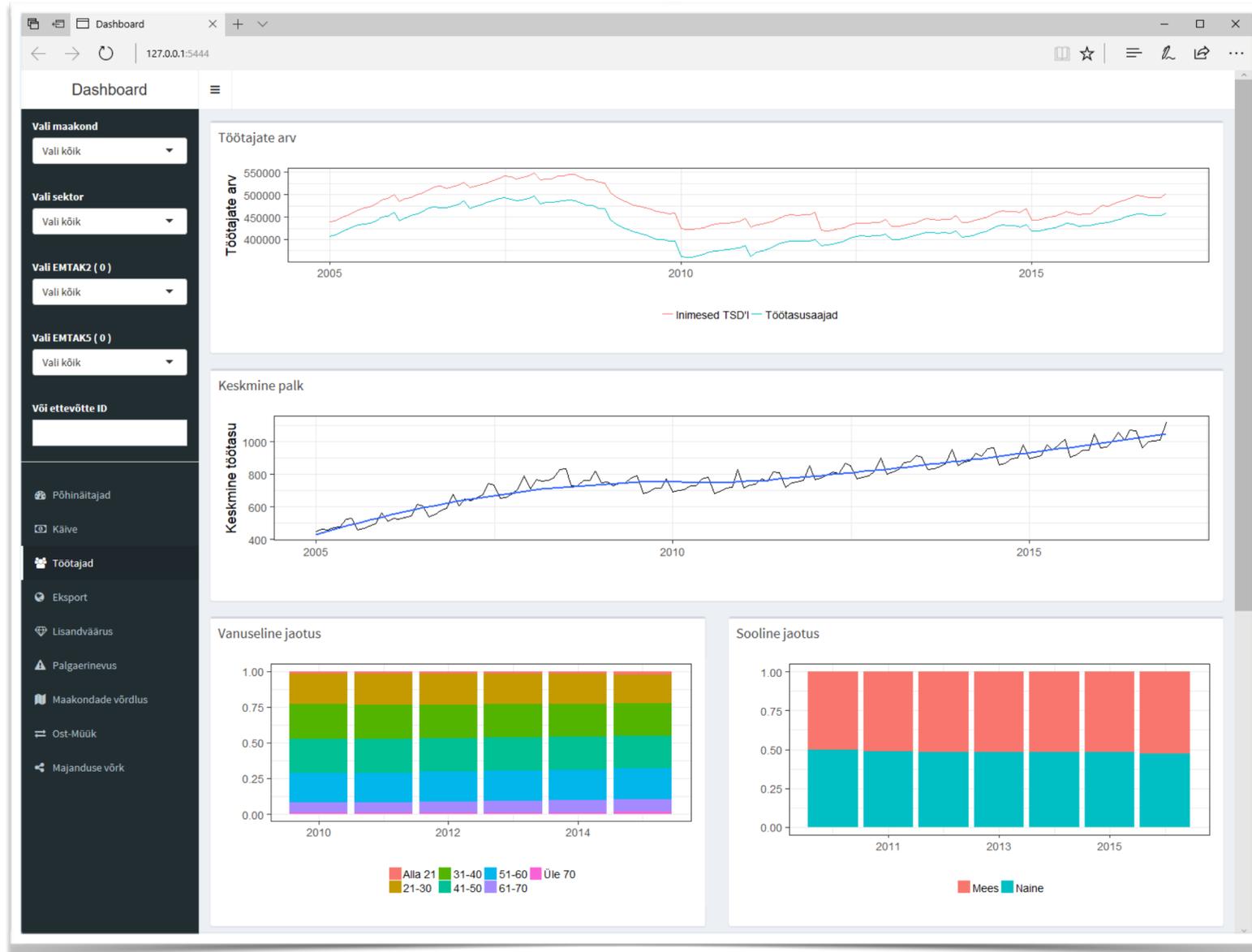
Auxiliary data



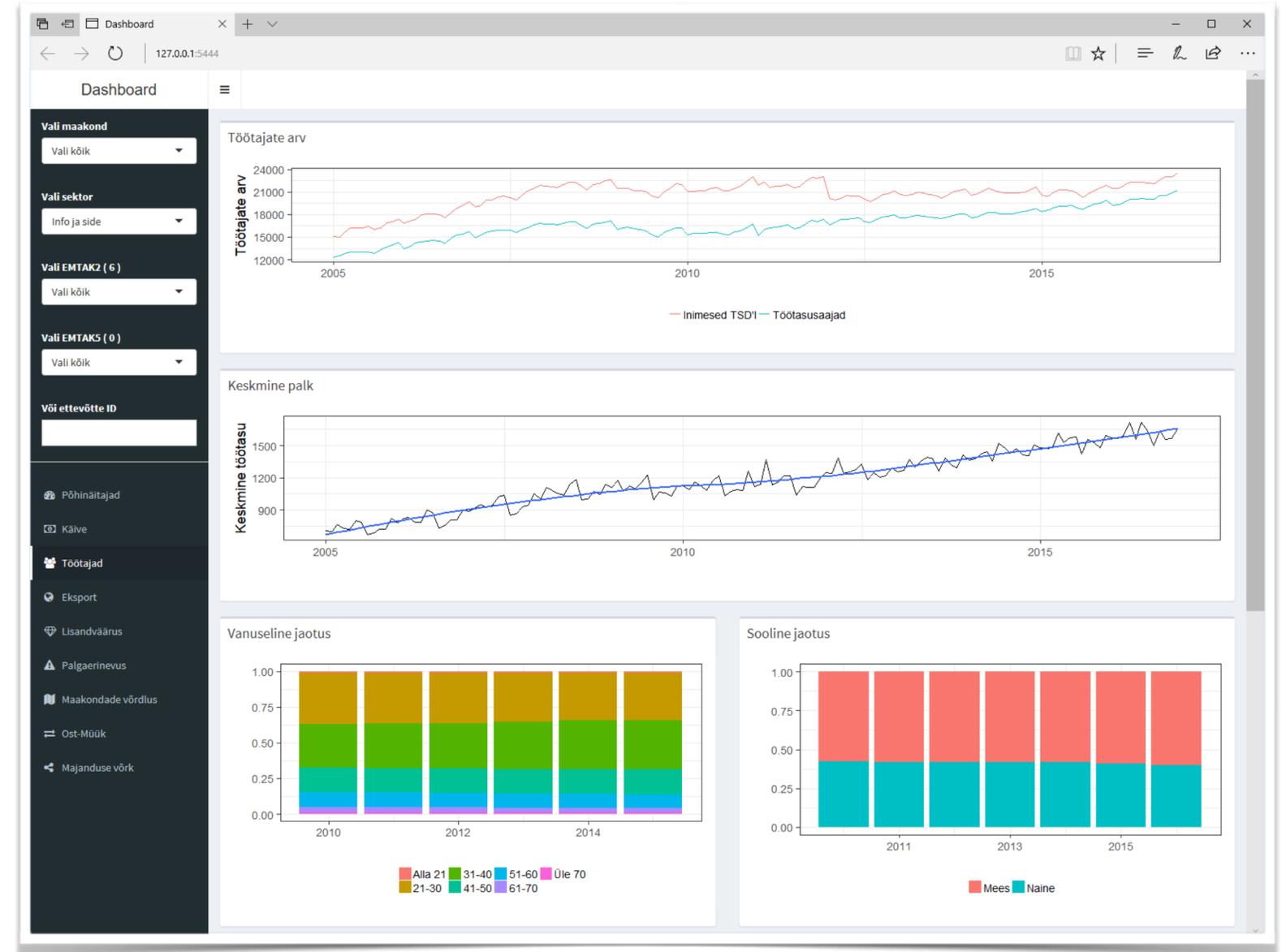


- Dashboard**
- Vali maakond
    - Vali kõik
  - Vali sektor
    - Vali kõik
  - Vali EMTAK2 (0)
    - Vali kõik
  - Vali EMTAK5 (0)
    - Vali kõik
  - Või ettevõtte ID
- Põhinäitajad
  - Käive
  - Töötajad
  - Eksport
  - Lisandväärus
  - Palgaerinevus
  - Maakondade võrdlus
  - Ost-Müük
  - Majanduse võrk

# Entire economy



# IT and telco





real-time **forecasting**

Vali tase

SEKTOR

Valik

Töötlev tööstus

Vali uuritav tunnus

Kogumyyk\_maksuvaba\_kaubega

Prognoosi pikkus kuudes



Minimaalne kuude arv treeninguks



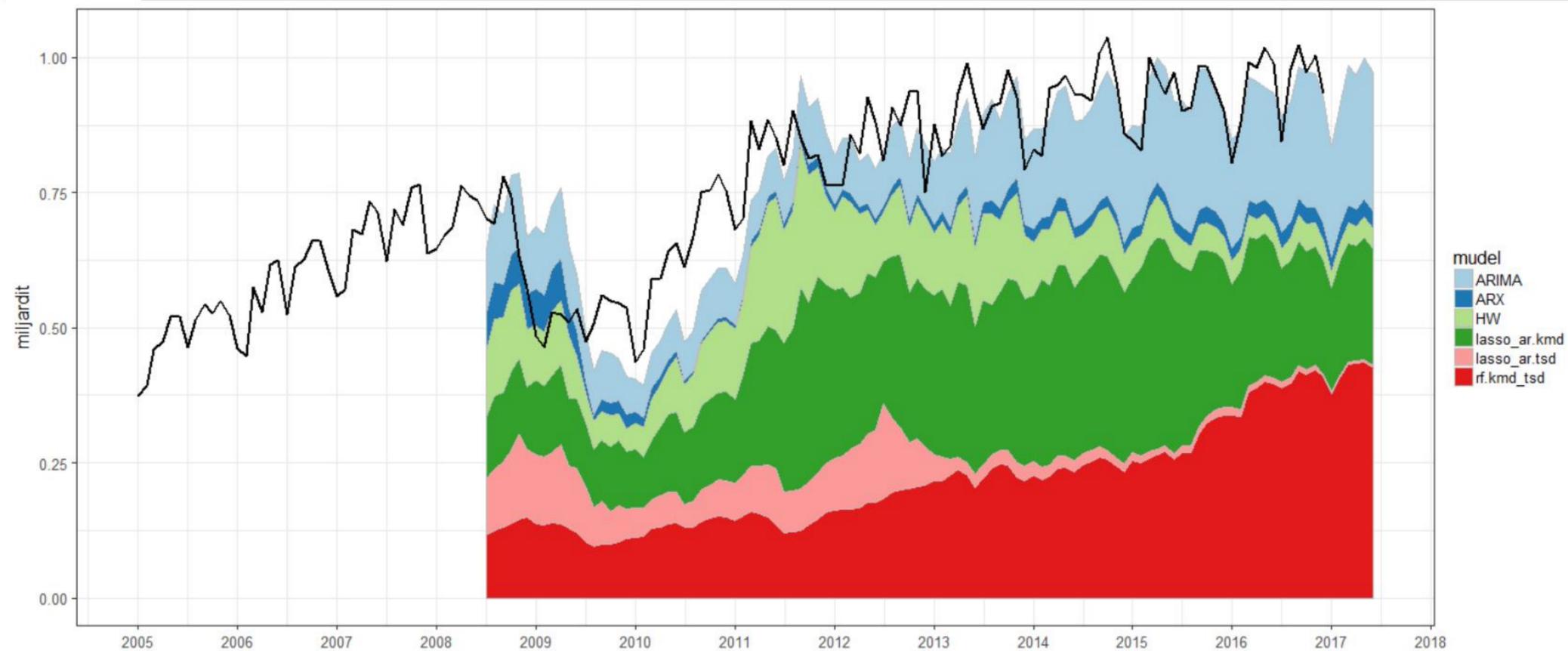
Aegrea alguskuupäev

2005-1

Käivita

Uuenda väliseid tunnuseid

Kombinatsioon Komponentid Kaalud Diagnostika Ülevaade



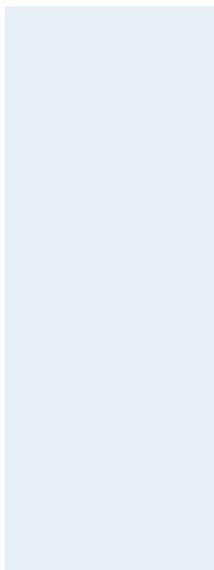
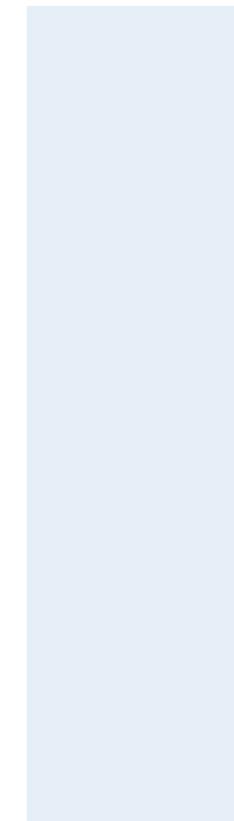
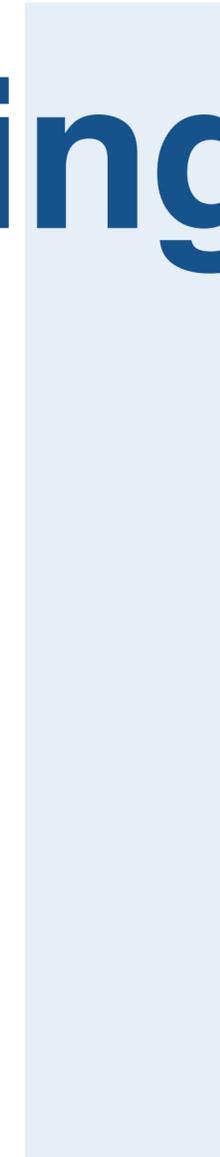
Prognoosimise_kuu	Kuu	Prognoos
2016 juuli	2017 jaan	834248365.00
2016 aug	2017 veebr	916998688.00
2016 sept	2017 märts	986075918.00
2016 okt	2017 apr	969173353.00
2016 nov	2017 mai	1000448699.00
2016 dets	2017 juuni	973318422.00

algorithmic

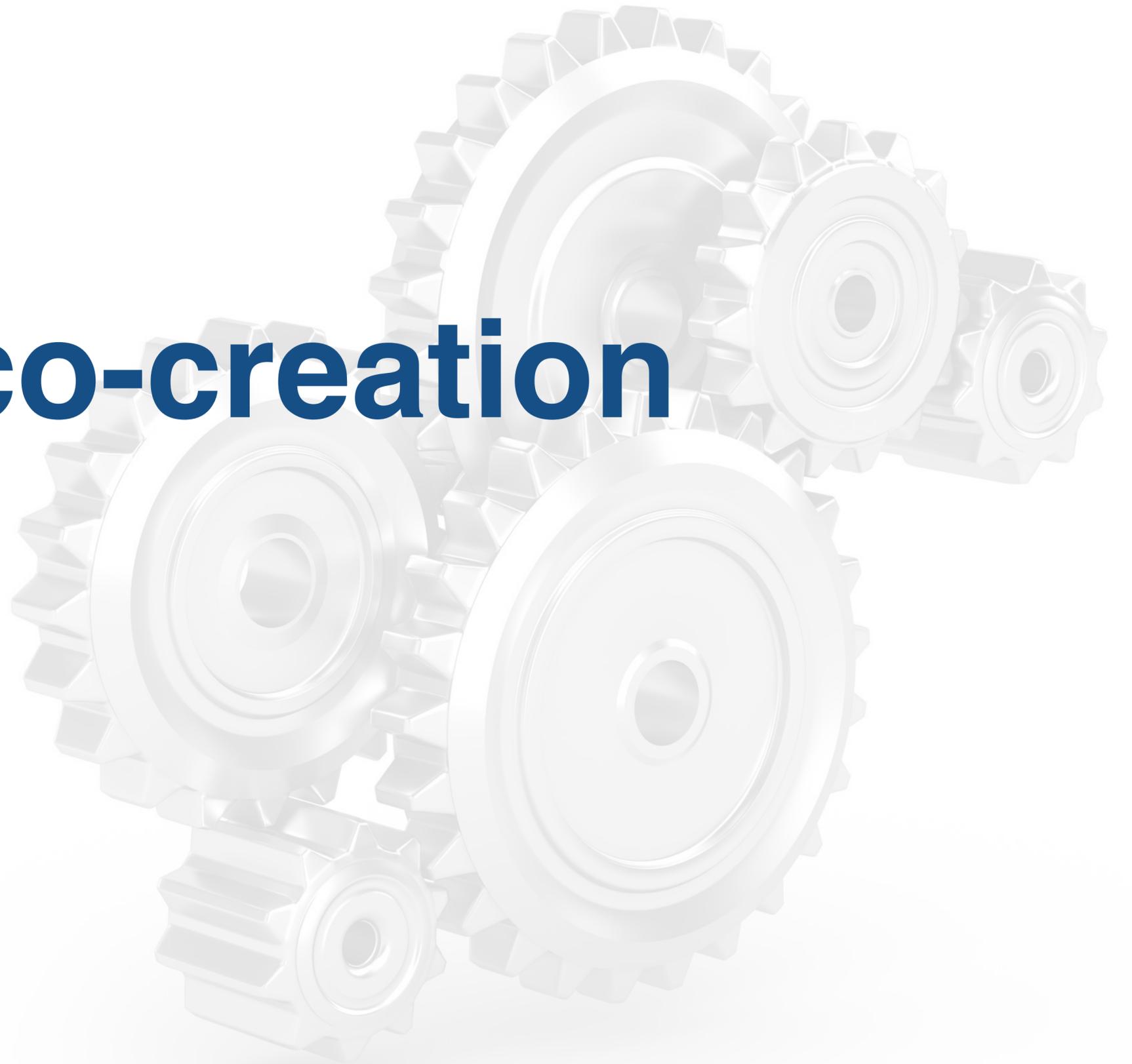
predictive

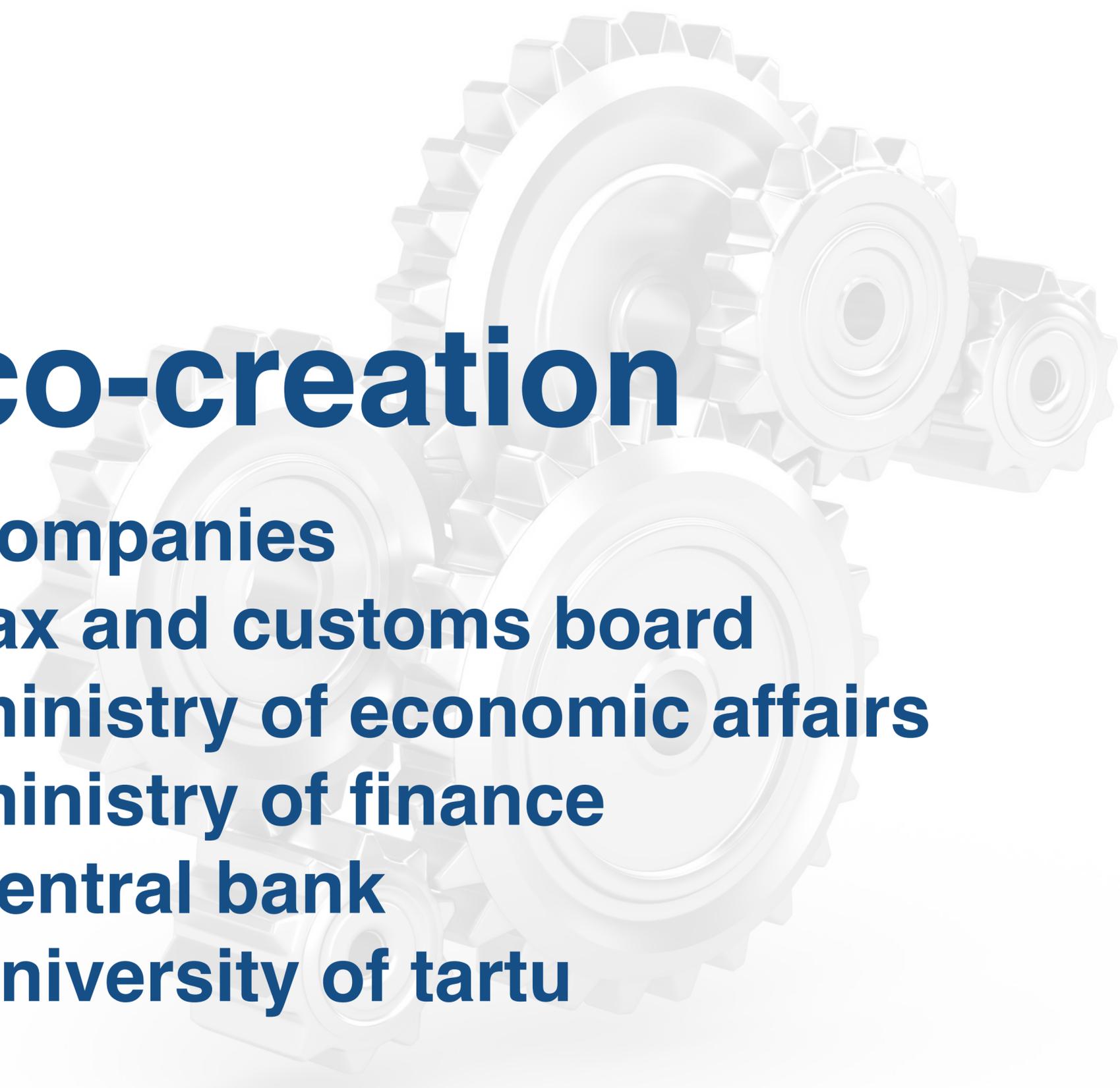
**policy making**

**e-services**



this is **co-creation**





this is **co-creation**

**companies**

**tax and customs board**

**ministry of economic affairs**

**ministry of finance**

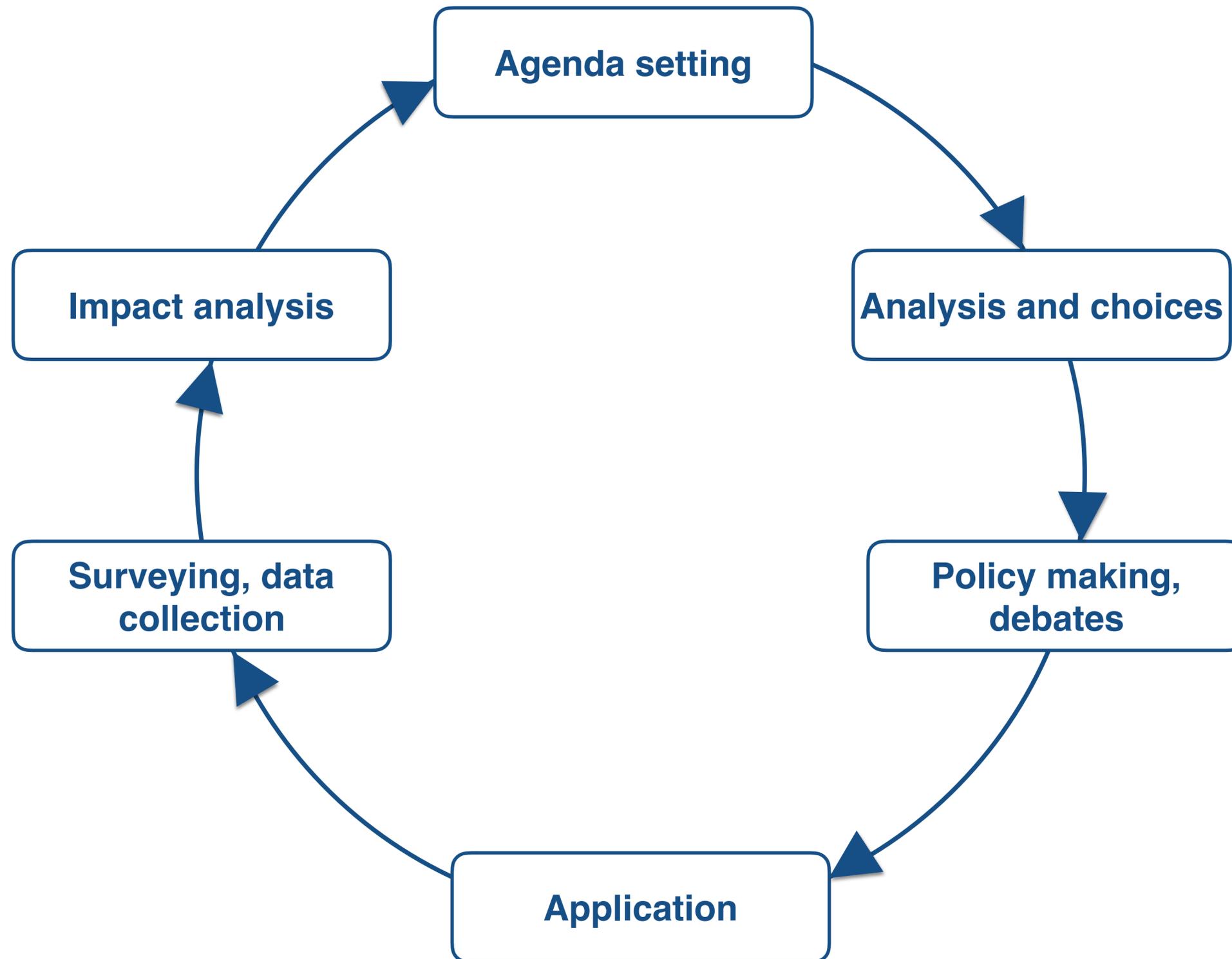
**central bank**

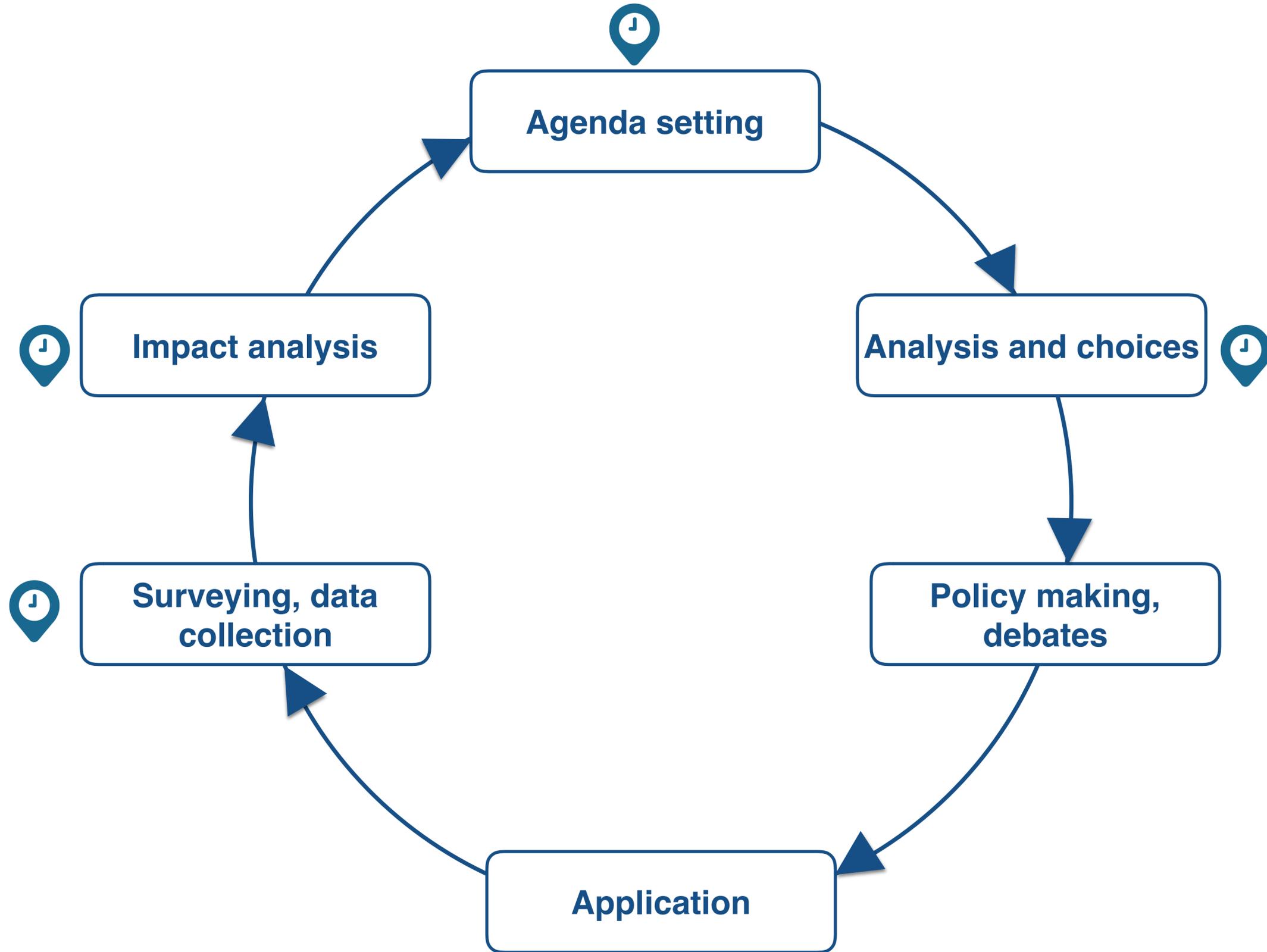
**university of tartu**

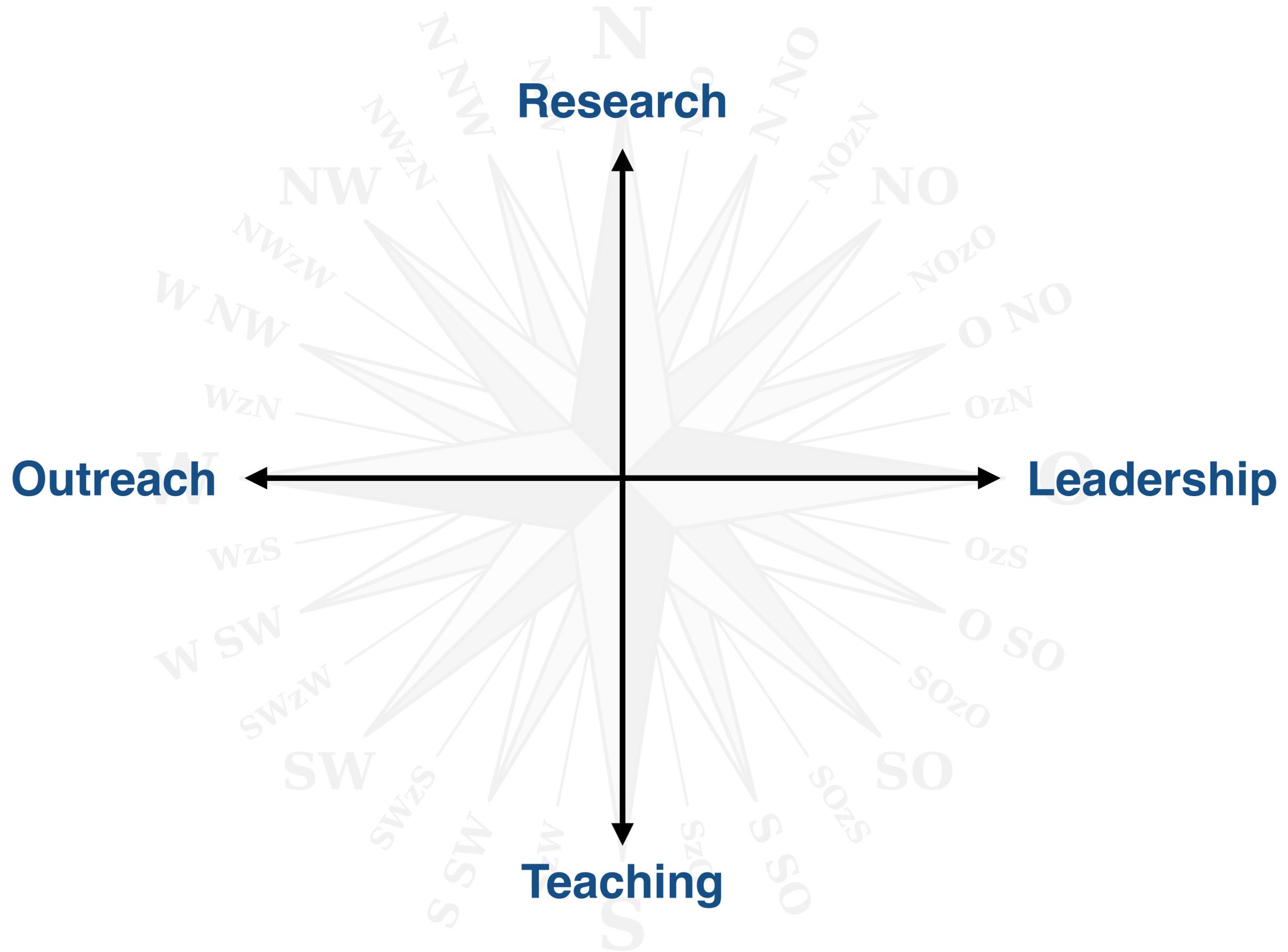
acceleration in

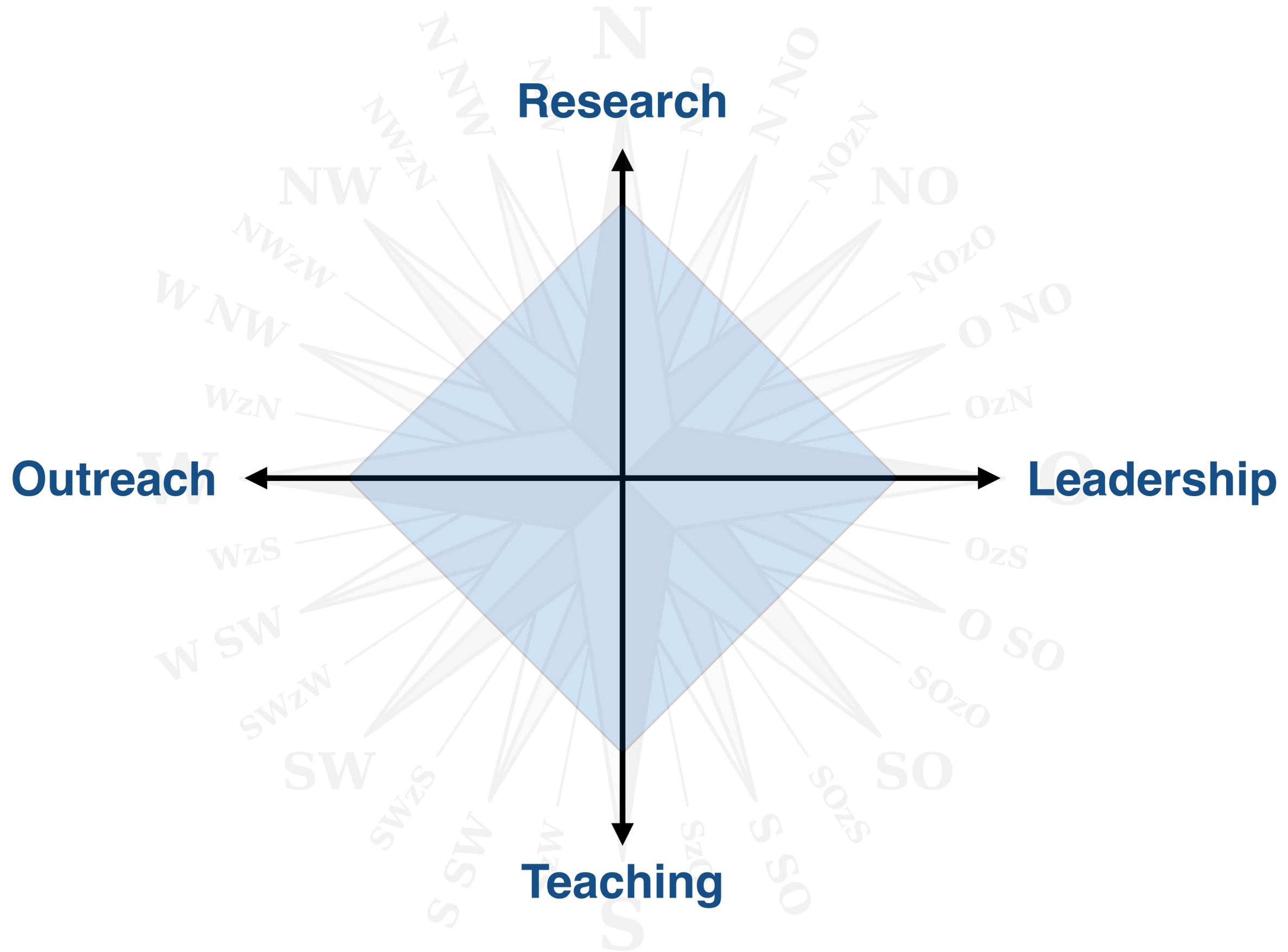
**policy making**

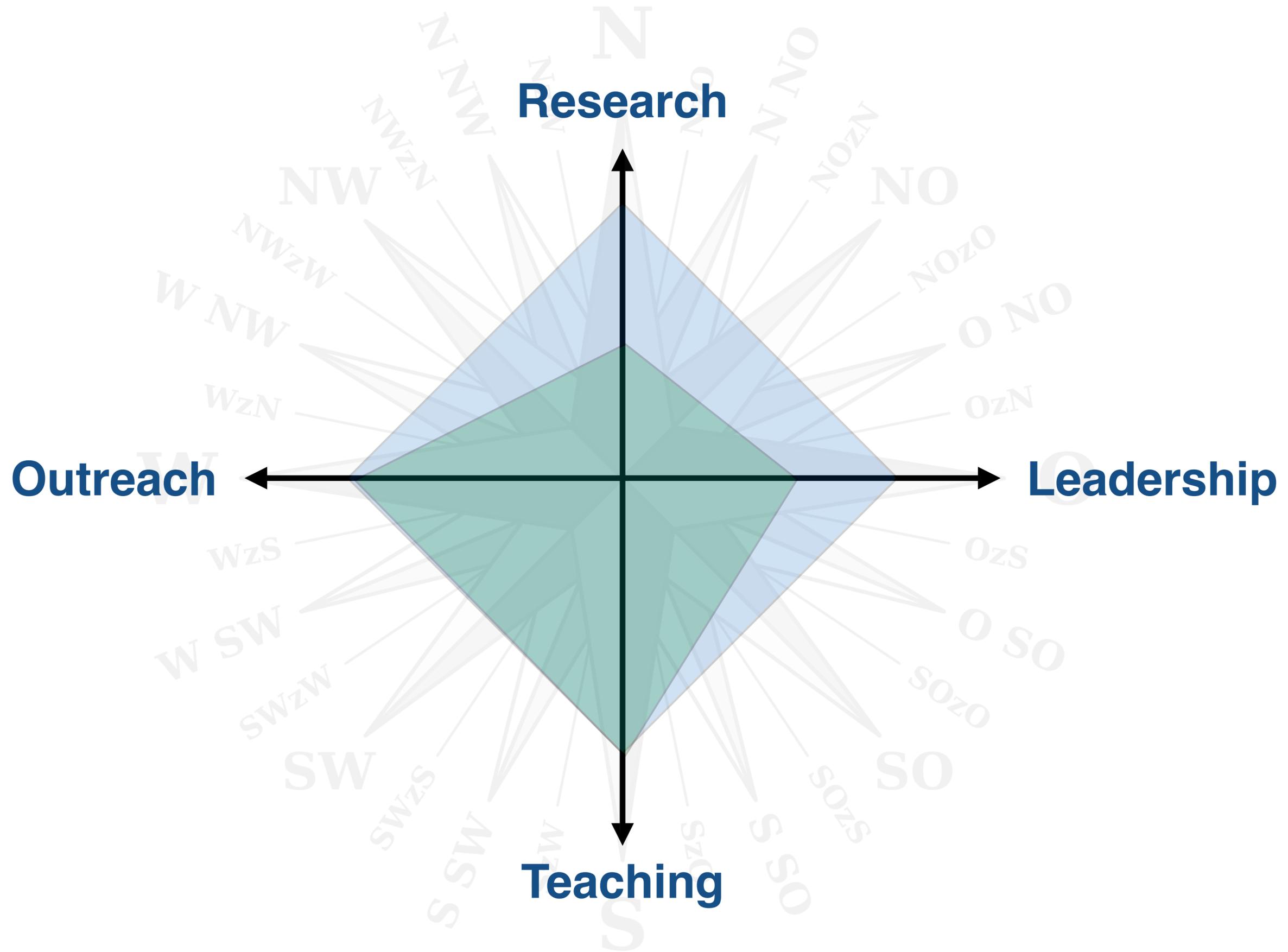


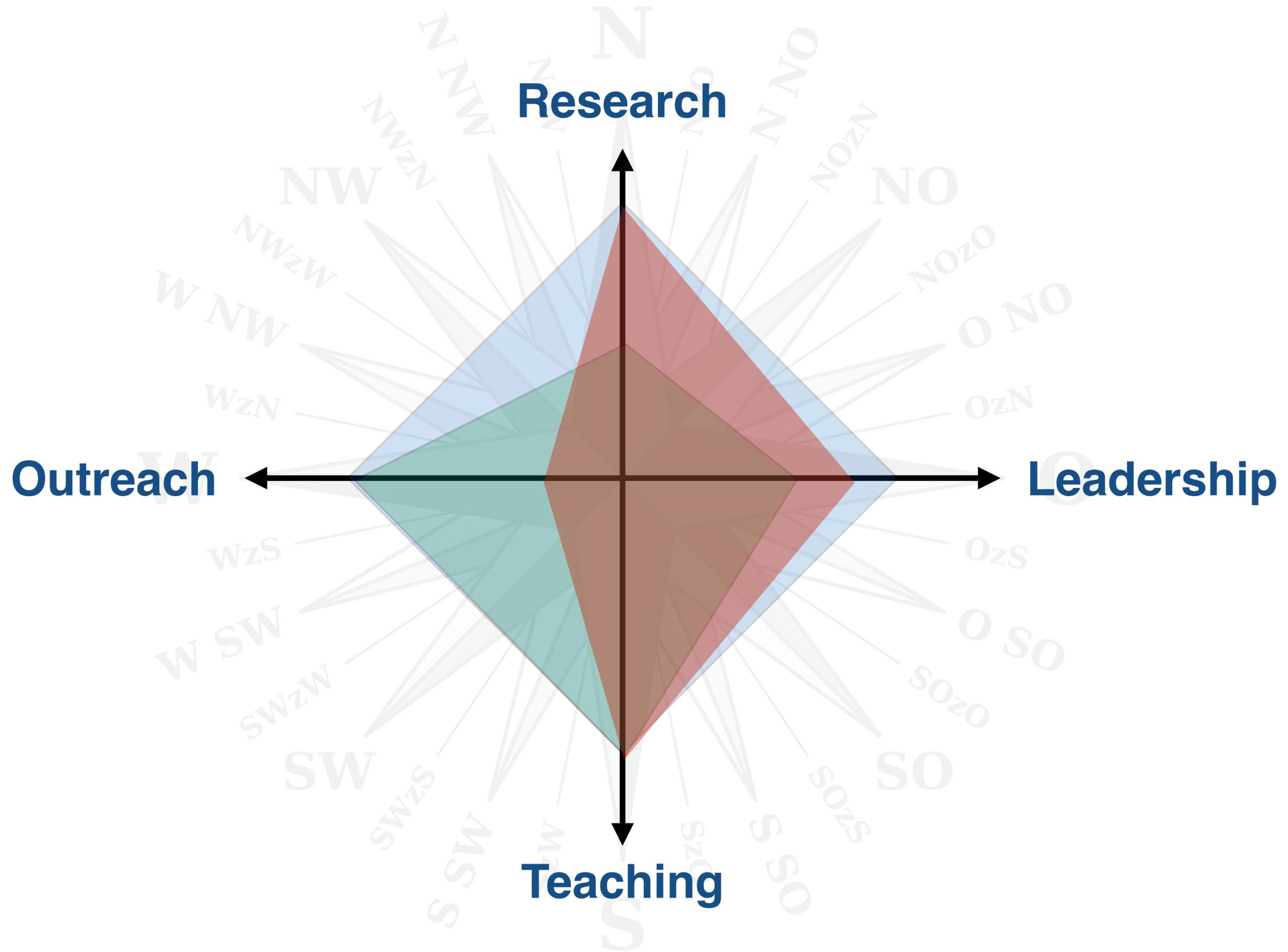








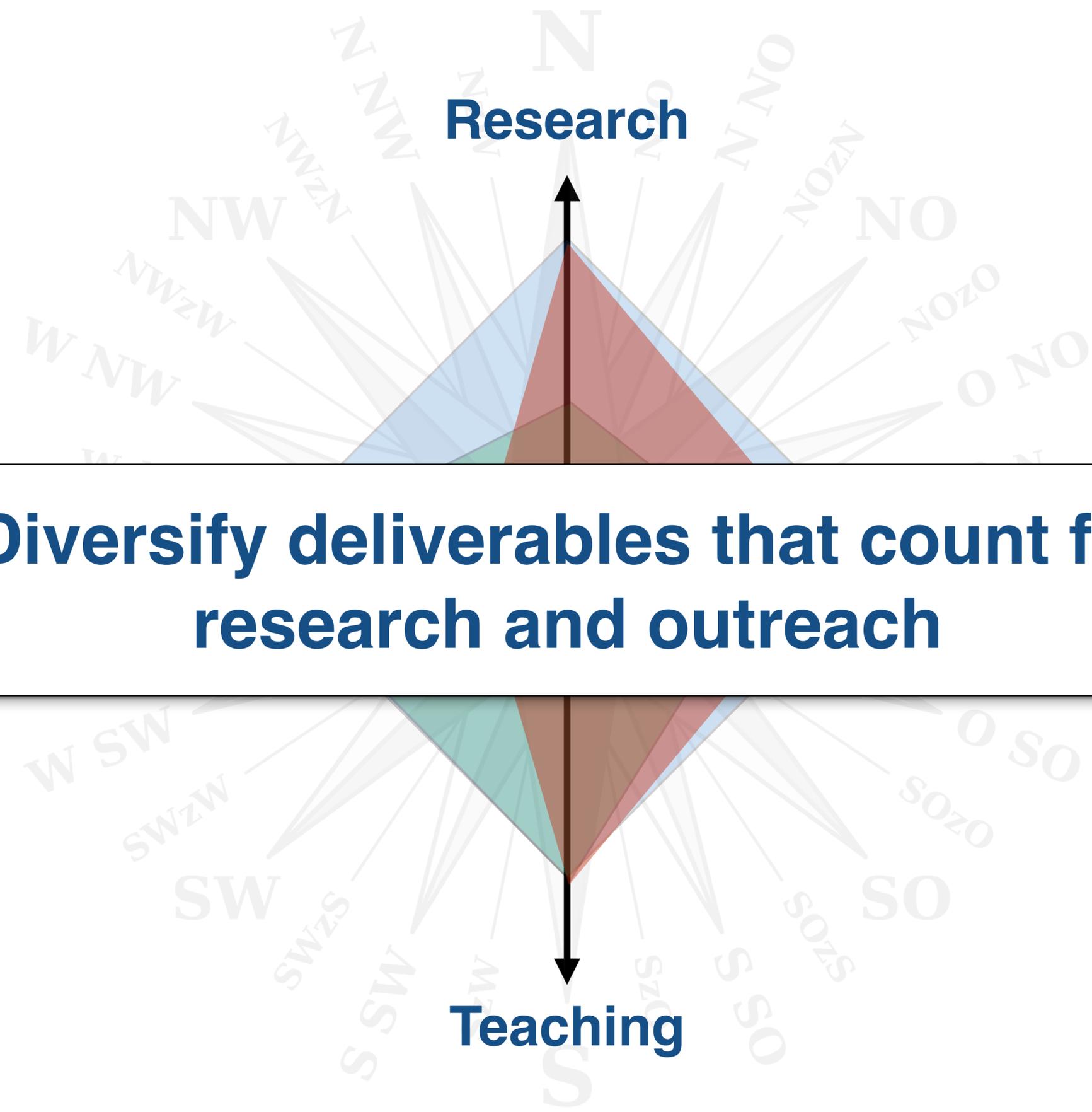




**Research**

**Diversify deliverables that count for  
research and outreach**

**Teaching**



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SEKTOR

Valik

Töötlev tööstus

Vali uuritav tunnus

Kogumyyk\_maksuvaba\_kaubega

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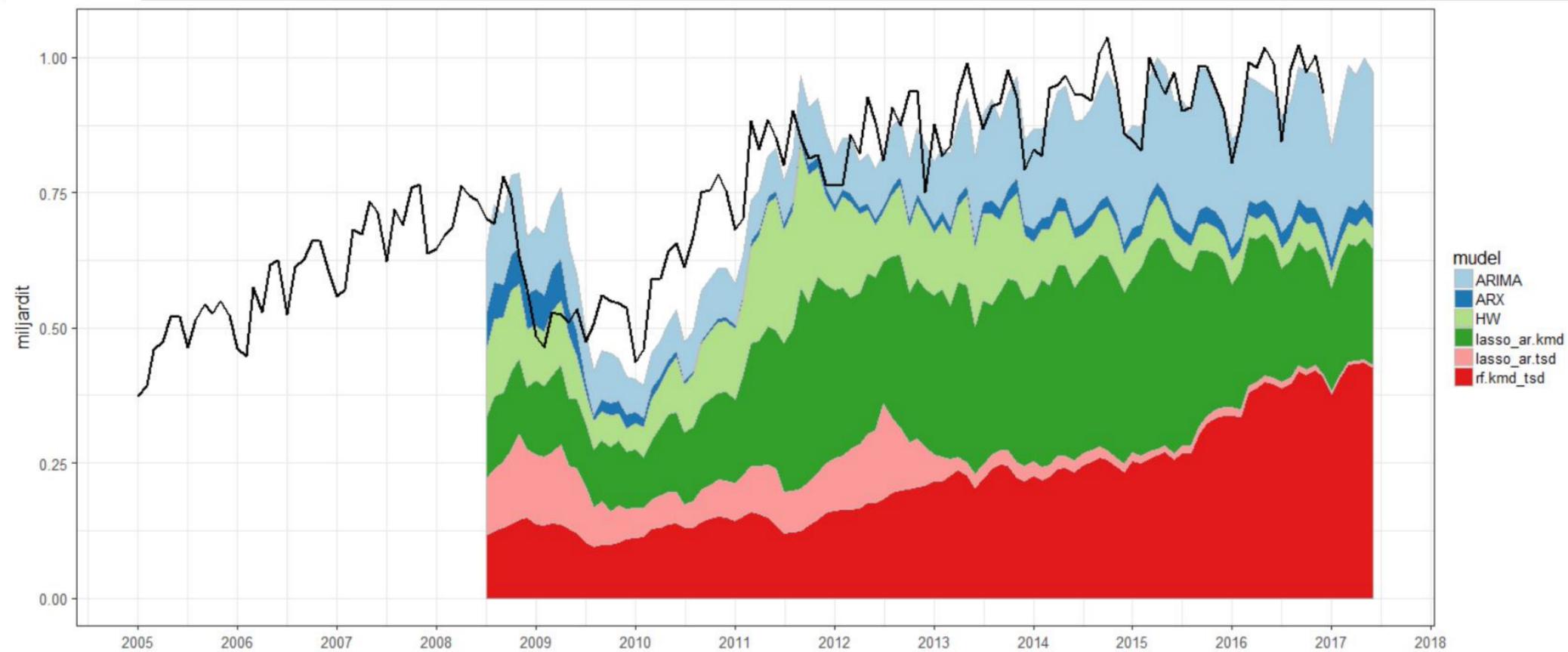
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