FLANDERS [BE]

Development and implementation of the RIS3 priorities

Norrköping, 1-2 April 2014

Bernard De Potter, Agentschap Ondernemen

Smart Specialisation (S3)

•**It's about:**

- value creating activities (economic and social)
- driven by entrepreneurial actors
- oriented by strong vision of opportunities in global trends
- choices for transformation (vertical approach)
- Based on eco-systems and clusters

•**It's not about:**

- sectors or thematic areas
- Top-down decisions
- existing strengths
- Horizontal approach
- narrow disciplinary approach / closed innovation

Third generation cluster policies?

1st generation

Marshall

- hard infrastructure
- aglommeration economies
- 'Passive‘ promotion of co-location

2nd generation

Porter

- soft infrastructure
- spillover economies
- 'Active‘ promotion of innovation

3rd generation

S3

- strategic capacities
- integration economies (VC)
- 'Dynamic‘ promotion of transformation

FLANDERS: Key Figures

Flanders:

a high-income region

with an open economy in the core of Europe

- Population: 6.3 million (= 58 % BEL)
- Language: Dutch (NL)
- Surface: 13.521 km² (= 45% BEL)
- GDP: € 185 billion (2011)
- Export : +- 100% of GDP
- GERD: €4.33 billion (+- 2/3 of BEL), of which €2.82 billion BERD (2011)
- % GERD/BBP: 2.15% (2011)
- Total public budget STI policy: €1.88 billion of which €1.23 billion R&D

The region has constitutional competences on research, innovation and economic policy

Flanders RIS3 Policy Framework

SWOT

- **Main competitive advantages for S3**
- **Analysis of Science and Technology Policy Council (VRWI)**

Flanders 2020

- **Flanders in Action (ViA):**
  - **= 7 Breakthroughs, incl. "Innovation Centre Flanders"**
  - **= 88 strategic policy goals with 337 key projects**

→ 13 themes for transition incl. New Industrial Policy, Innovation,…

Policy framework

- **Action plan "New Industrial Policy" (White Paper)** (Flemish Gov 27.05.11)
- **Innovation Centre Flanders (Concept note)** (Flemish Gov 27.05.11)

Actions

- **New Industrial Policy (NIB): 50 Action Plan**
- **Concept note of Smart Specialisation : 10 Actions (3 Test trajectories)**

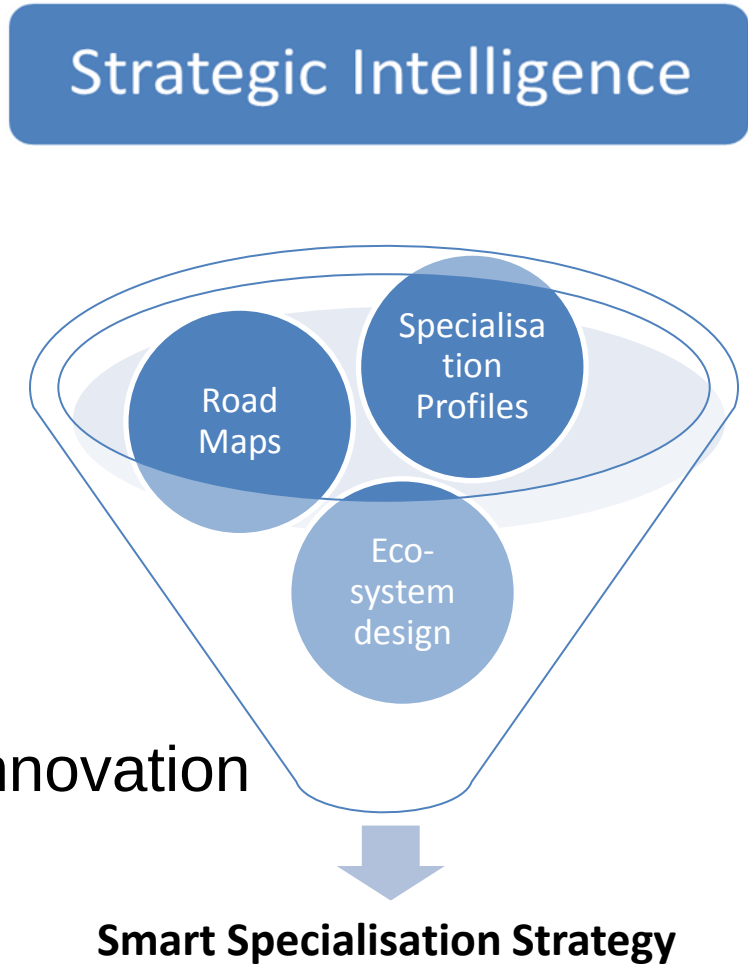
Governance

- **New Industrial Policy (NIB) : Interministerial Comite, Board of Directors, Industry Council**

1. SWOT

Discovery process supported by (shared) strategic intelligence

- Shared visions (foresight)
- Common Road Maps
- Specialisation profiles to help identify comparative advantages (evidence-based)
- Promote clusters with unique eco-systems that exploit the positive sum game of open innovation
- Giving a role to all regions!



Summary of competitive (dis)advantages

Excellent scientific production (PROs)

Flemish top performance in ICT, Nanotechnology & Health (FP7)

(higher) education assets

Significant public R&D efforts towards 3 % R&D / GDP target (2.40% in 2011)

>50% of companies innovate

Entrepeneurship: EER award in 2013

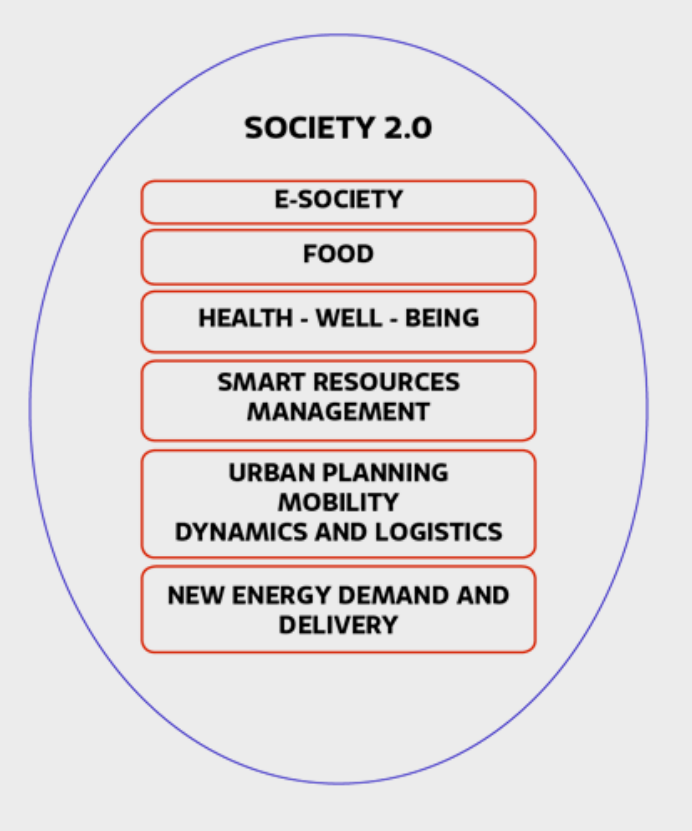
Innovation paradox: go-to-market of knowledge and research to industry / society

Global trade and foreign headquarters' dependency due to export-oriented and very open economy and buy-outs/take-overs

Reconversion challenges (plant closures or downsizing due to overcapacity or delocalisations)

Entrepreneurial dynamics: VRWI foresight study

From 6 clusters in 2006 → **7 domains in 2013**



Flanders (Belgium)

Observations, economic profile:

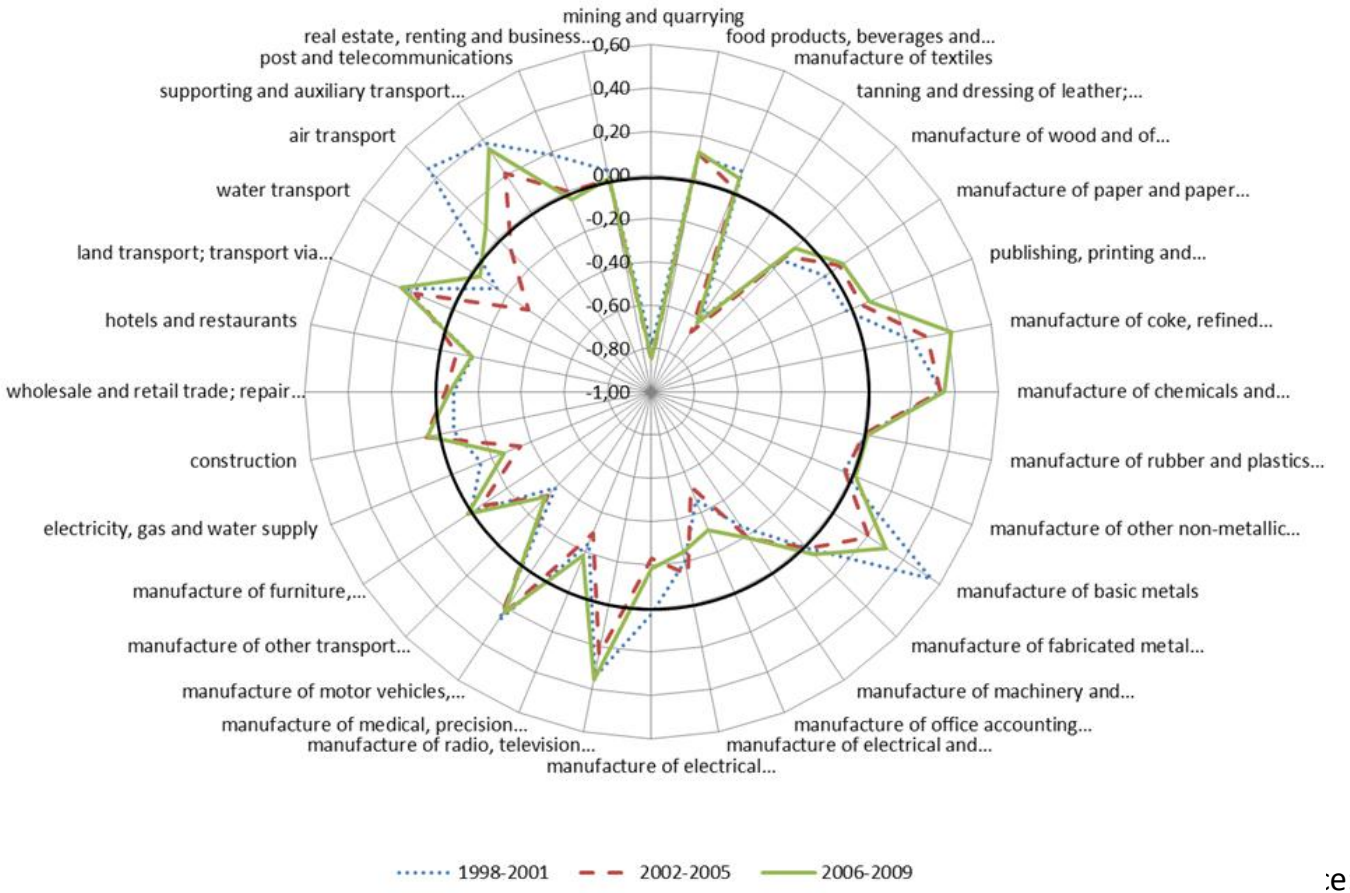
- *Top 3 highest and lowest specialisations*

Highest specialisations	Lowest specialisations
Manufacture of coke, refined petroleum products	Mining and quarrying
Manufacture of chemicals and chemical products	Tanning and dressing of leather
Manufacture of equipment for radio, tv and communication	Manufacture of other transport equipment

- *Highlights*

  - Relative employment in air transport plummeted initially, but then recovered somewhat.
  - Considerable fall in relative employment in the manufacture of basic metals, followed by a small recovery.

Flanders (Belgium)



Source: OECD

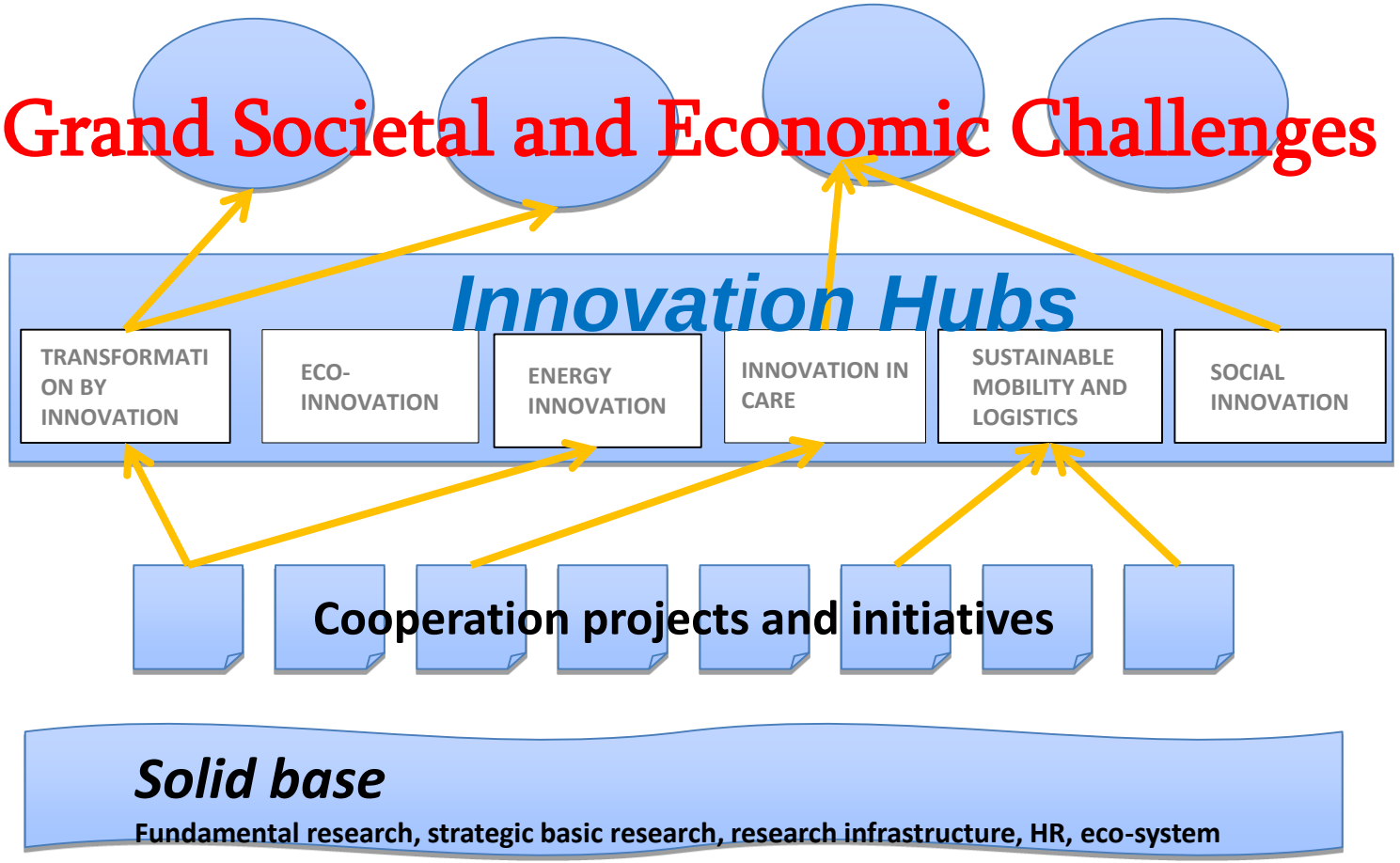
2. POLICY

Flanders in Action

- Transition Areas
  - New Industrial Policy
  - Gazelle Leap
  - Flanders Care
  - Flanders Mobility
  - Flanders Material – Circular Economy
  - Green and Dynamic Urban Region
  - Child Poverty

Transitionmanagement

‘Innovation Hubs’: transition-driven innovation policy framework



Vlaamse overheid

Vlaanderen In Actie Pact 2020

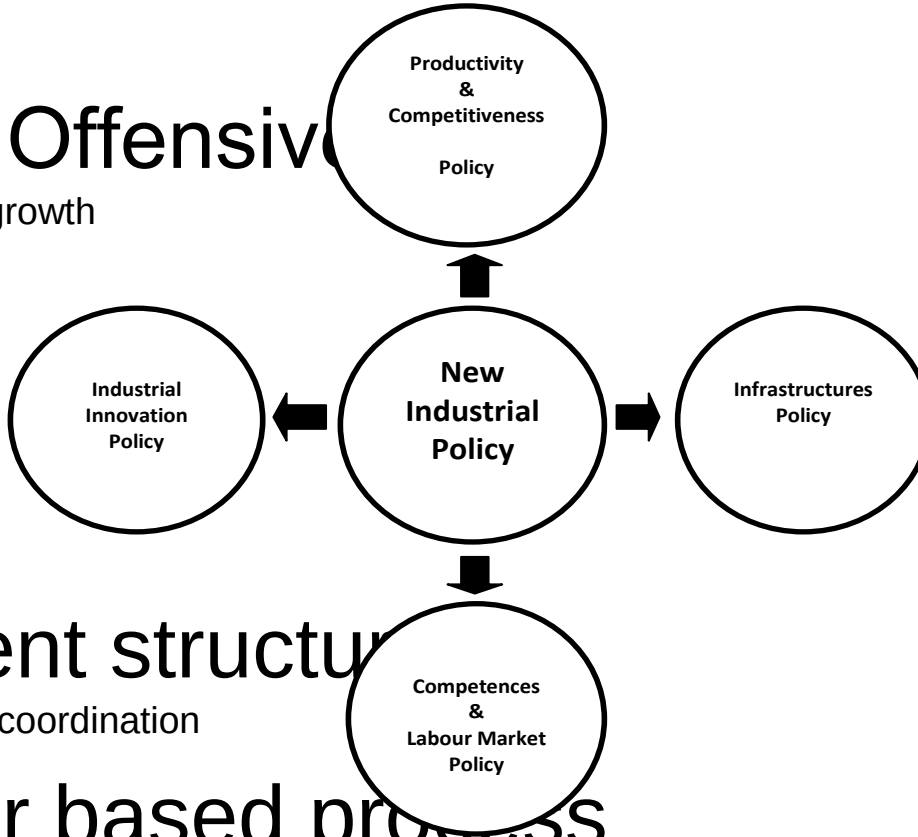
‘Innovation Crossroads’: challenge driven innovation policy

‘Innovation Centre Flanders’, concept note adopted by Flemish Government on May 27th 2011

- Societal challenges recognised as driver of a new innovation strategy
- ‘Innovation crossroads’ are a space where interdisciplinary research and open innovation can contribute to societal and economic value creation.
- **Six ‘innovation crossroads’ are identified for the development of specific innovation strategies**
  - **Eco-innovation**
  - **Green energy**
  - **Sustainable mobbility and logistics**
  - **Innovation in care**
  - **Social Innovation**
  - **Industrial transformation (specified for core sectors)**
- ‘Innovation Direction Groups’ are assigned by the Minister to advise on such strategies (ongoing)

… embedded in New Industrial Policy

- A ‘New Productivity Offensiv
  targeting unexploited sources of productivity growth in resource productivity, smart infrastructures, clusters, specialisation.
- A strong vision:
  ‘Factory of the Future’: a vision of a sustainable, innovative, flexible and networked economy centred on the ‘real economy’



- A strong management structu
  An interministrial body and interdepartmental coordination
- A strong stakeholder based process for discovering new growth opportunities:
  Secoral policies with ‘Roundtables’

Transformation processes: core of New Industrial Policy

'White Paper New Industrial Policy', adopted by Flemish Government on May 27th 2011:

- Action Plan with 50 Actions in economy-innovation-work policy for a 'new productivity offensive', 'Factory of the Future' and 'system innovation'
  - Round Tables are organised to elaborate a 'Strategic Action Plan' for transformation in (ready) sectors.
  - 'Transformation strategies' are based on value chains, clusters and grand projects (cross-sectoral)
  - New arrangements for policy coordination are gradually put in place
- A 'targeted' cluster policy will be developed (advised by an Industry Council). 'Smart specialisation' is adopted as a reference.
  This is a 'discovery **process'**! Strong bottom-up drive.
- Frontrunner: **FISCH** (Flanders Initiative for Sustainable Chemistry)

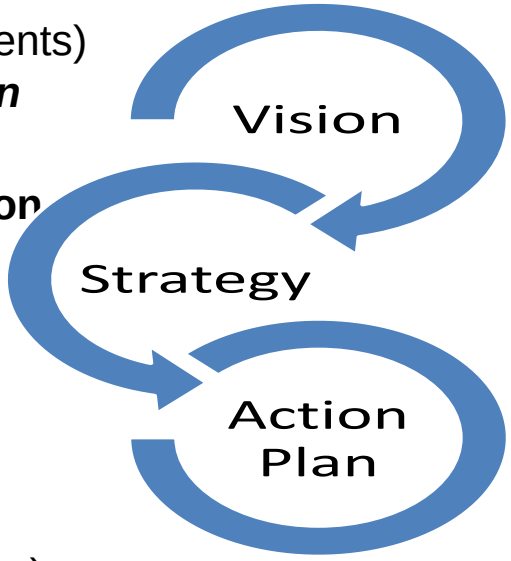
A three steps entrepreneurial discovery process

Strategic Governance

1.Visioning:
with focus on **societal challenges**
(transition management / starting experiments)
in ***Transition Arenas*** / ***Flanders in Action***

2.Strategy development:
with focus on **transformation by innovation**
(strategies within the 6 ***innovation hubs***)
in ***Innovation Direction Groups***

3.Action plan:
with focus on **investment projects**
in ***consortia*** driven by frontrunners
(promoted in ***Round Tables*** and
Transformation and Innovation Platforms)



3. INSTRUMENTS

Overview

- (Cluster) Roadmaps
  - Technology driven (KET)
  - Value Chains – crossover
- Partnership Agreements
- Pilot and demo plants (EFRD)
- Living Labs (Health Care, Construction, Electical Vehicle), Social Innovation
- Skills and Training (ESF)
- TINA Fund (Financial instrument)

POLICY

EU 2020

FLANDERS' CARE	RENEWABLE ENERGY & SMART GRIDS	SMART MOBILITY	SUSTAINABLE MATERIALS MGMT	FLANDERS FOOD

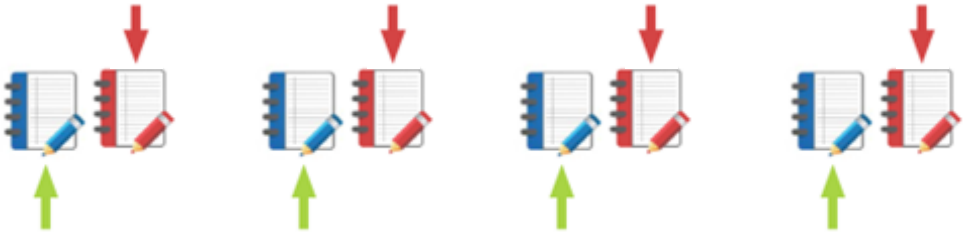
VIA PACT 2020

HEALTHY AGEING AND WELL-BEING	RENEWABLE ENERGY	SUSTAINABLE MOBILITY	NEW RESOURCES	SUSTAINABLE FOOD

FOCUSED CLUSTER POLICY

ROADMAPS

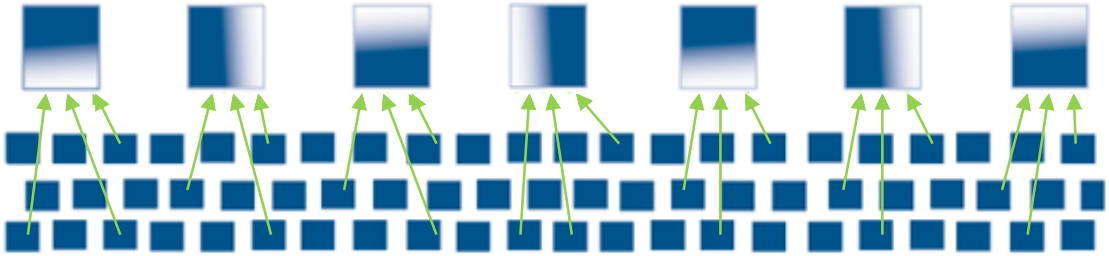
SMART SPECIALISATION



NIP CLUSTERS

LEARNING PLATFORM

PRE-CLUSTER PROJECTS



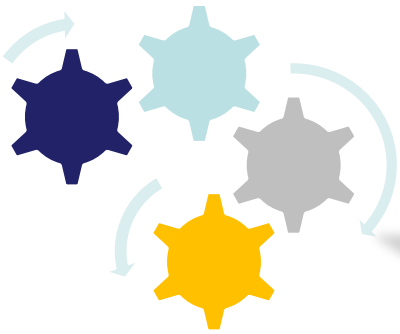
NIP ACTORS

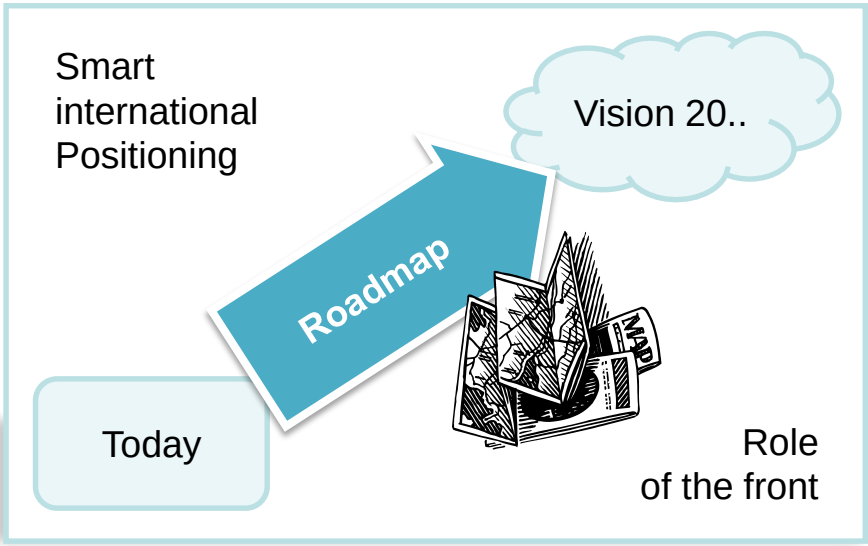
ENTREPRENEURSHIP

Roadmapping – steps:

a) As an instrument to develop a common strategy in which the interplay between the different actors becomes visible .

Cluster : selforganisation for transformation



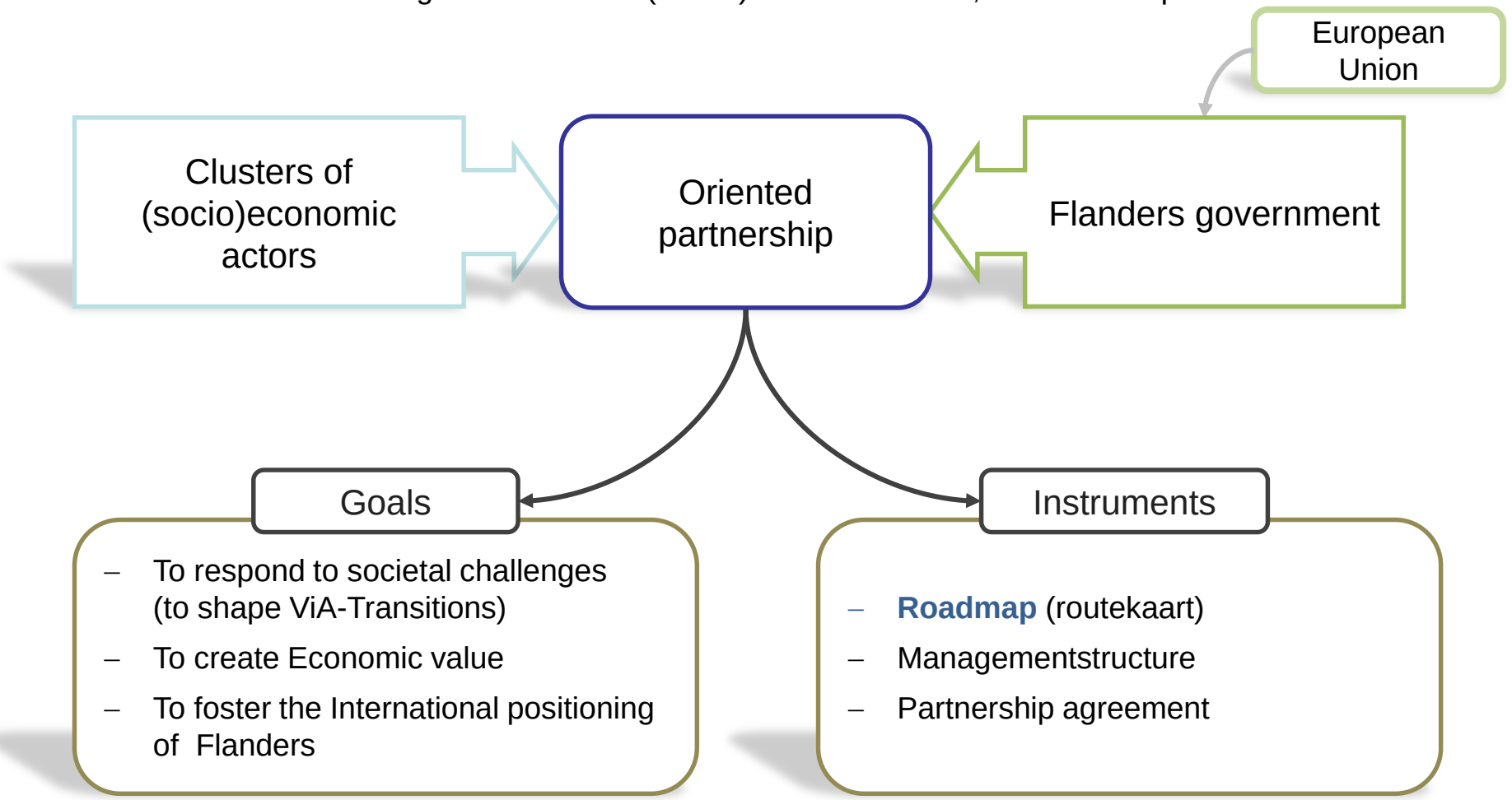


Cluster: concentration of interlinked network of enterprises, knowlegde institutes, education and other organisations active in the same domain of value creation .

Roadmap (Routekaart): strategydocument that describes in a transparent manner the way goals, milestones and commitments of the actors to achieve an important transitiontrajectorie towards the creation of new value chain

Roadmapping – steps:

b) In the direction of an oriented partnership between government and (socio-)economic actors, in clustercooperation



Roadmapping – NIB - conclusions:

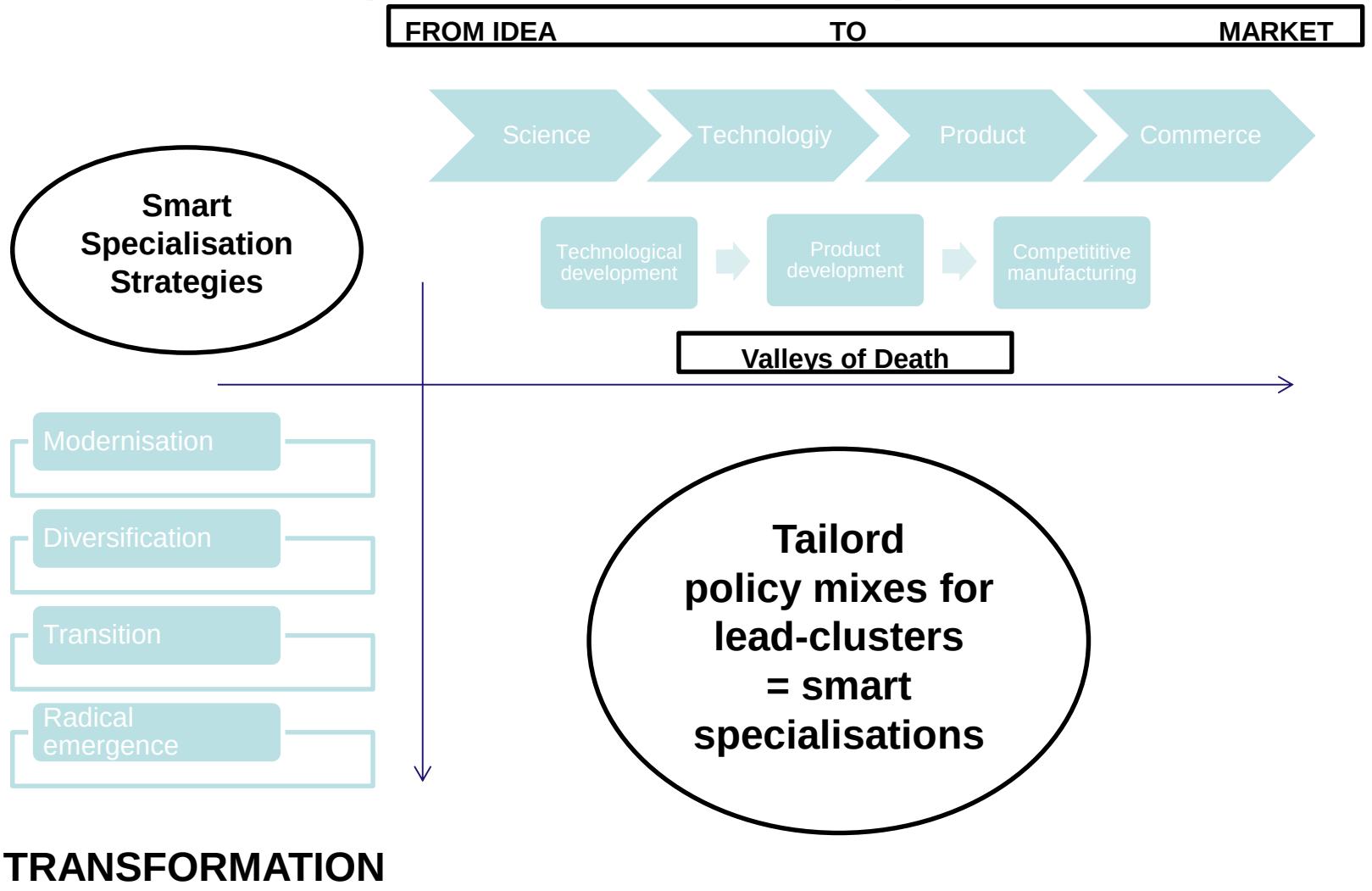
b. Instrumentarium for an “oriented” cluster policy

1. Strategic roadmap being further developed in collaboration between the spearehead cluster and the government
2. Managementstructure is being set up to channel the actions by the government to help the innovation and transformation of the spearehead cluster
3. Partnerschip agreement is written down in which a long term engagement/commitment of all involved parties is described to realize the roadmap.
   Use of earmarked budgets within financial instruments and process consultancy by accountmanagers of the government to overcome specific barriers

Three test beds

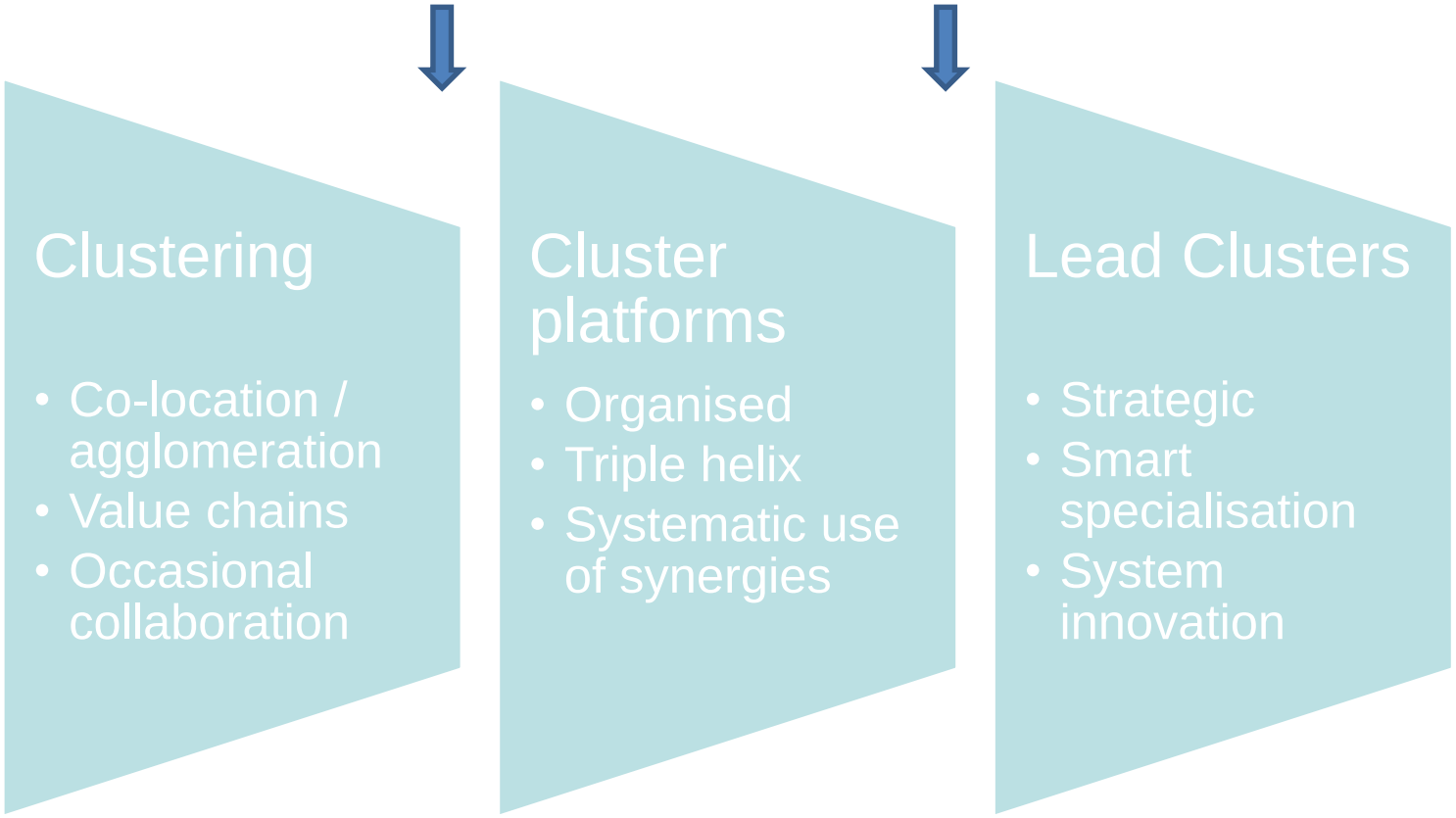
- Additive Manufacturing (LMS, Layerwise, Materialise, Melotte…)
- Sustainable Chemistry (Chemical Plants in Antwerp harbour)
- Closing the circle – Material recycling (Umicore, Machiels, Construction sector, …)

Tailored policies for smart specialisation



Three stage cluster development: different needs, different policies

GENERIC CLUSTER POLICIES **TARGETED CLUSTER POLICIES**



Local infrastructures (anchoring)

Local & international networks (connecting)

Strategic intelligence (global positioning)

4. CASE STUDIES

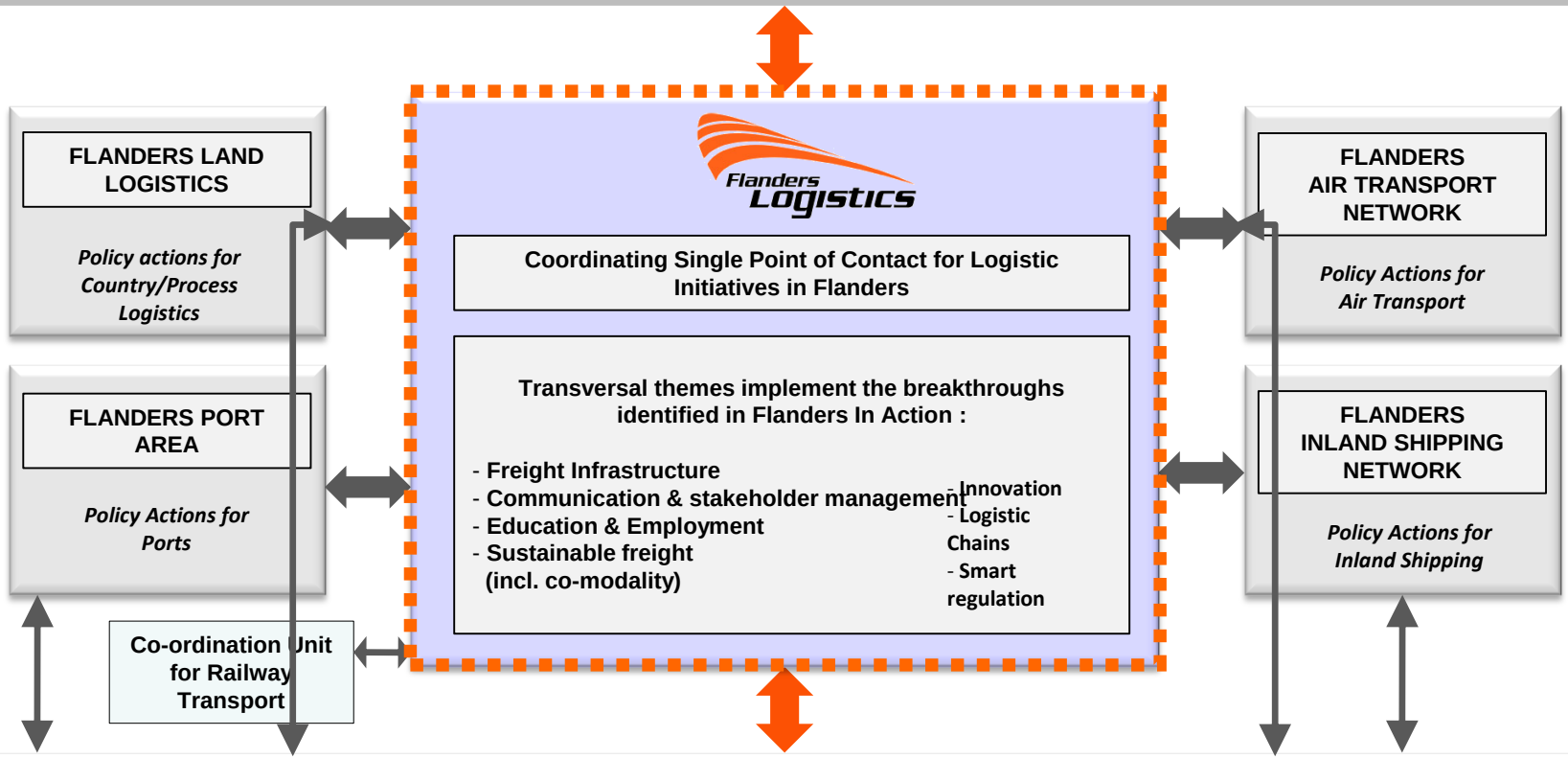
Case 1: Modernisation Value Added Logistics Cluster Platform

Flanders as a smart turntable in Europe

Minister Hilde Crevits

7 Breakthroughs of Flanders in Action:

1. ***Enhanced Logistic Chain Management***
2. ***Care for Infrastructure***
3. ***Multi-modal Transfers***
4. ***Wide policy plan as a guideline***
5. ***Smart kilometer taxes***
6. ***Multimodal intermediation***
7. ***Logistic knowledgy withTW***



Some Instruments

- Academia : Univ of Antwerp, Brussels, Hasselt, Leuven, Ghent
- Competence Centers : VIL, VIM, …
- Lead Companies : Katoennatie, Essers, DHL, Nike
- Local Pilot projects on multimodality
- *DG Regio : Interreg projects*

Case 2 : Diversification
ZEETEX

- Textiles for Maritime applications
- Cluster (project)

Case 3: Transition
Sustainable Chemistry – Bio based Europe

- Largest petro-chemical cluster in Europe in Flanders; strong links with food, building e.o. sectors; cross-border links with NL and DE
- Transition towards bio-based economy, but incomplete science base!
- How to become a world-class cluster in sustainable chemistry?
- Focus on strategic **road mapping** for a transition (also cross-border!)

Some Instruments

- Shared vision between NL – NRW – Flanders
- KET Roadmap
- Lead companies : Procter Gamble, BASF, Bayer, Afga, …
- Strategic Innovation Platform : FISCH
- Pilot plants
- Incubator
- DG REGIO : ERDF and Interreg
- JTI BBI

7 Innovation programs

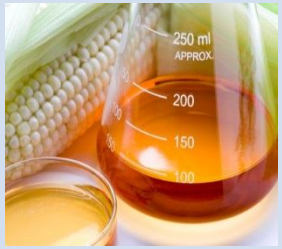
Micro Algae

Miniature chemical factories

Resources

Renewable Chemicals

Using nature's power



Separation Technology

Purity is the name of the game

Processes

Microproces Technology

The smaller, the more efficient

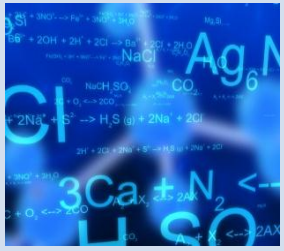
Polymer Recycling

Reusing polymers forever

Products

Sidestream Valorization

Waste becomes resource



Knowledge Tools

Knowledge is power

Assessment

Ambition = Multiregion approach

Bio-economy clusters **Vl-Nl-NRW**

NL-FL-NRW Initiative

Case 4: Emerging cluster Nano-for-Health

- IMEC: largest independent nano-electronics research institute in Europe; technology platform for open innovation, but weak industrial cluster.
- Health: transition towards ‘personalised therapy’
- How to leverage this technology platform for these new application areas?
- Focus on the management of an **emerging eco-system** (cross-border!)

Instruments

- Strategic Research Centre : IMEC, VIB, ..
- Lead Companies : J&J ; specialised SMEs,
- Cluster organisations : DSP Valley, Flanders Bio
- Living Lab : Health Care
- Demoprojects
- KET Roadmaps , Value driven roadmaps
- DG Research : AAL, CASA, DAA, …
- DG Enterprise project : Nano4Health (interconnection with other cluster in Europe)

Define focus areas and answers for societal challenges

Past

European healthcare has come a long way.
The solutions and business models were fine for the 20th century but cracks in the system are beginning to show.

Trends

That trend will continue as our population gets older.
People don't always need the same pattern of care.
And they prefer to live independently at home, and avoid constant, time-consuming trips to see the doctor.

Challenge

Society needs solutions for a Healthy aging population

Economic growth for the region

More with less = focus

Solution

SMART SPECIALISATION
LIFE SCIENCES + NANOTECH + NEURODEGENERATION

EU perspective

Table 1: Overview of performance profile per country and KET

	Photonics	Nano-technology	Industrial Biotech-nology	Advanced Materials	Micro-/ Nano-electronics	Advanced Manu-facturing
AT					Z	Z
BE		X	X	X		
BG		X				
CH	Z	Z	X		Z	Y
CN	X	Y	Z	Y	Y	Y
CY	Z		A		X	
CZ	X			Z	Z	X
DE	Y	X	Y	X	Y	X
DK		Z	Z			
EE		A				A
ES		X		Z		
FI	Z	X	X	X		
FR	Z	Y	Z	Y	Y	Y
GR						A
HU	X		Z	X	A	
IE		X				
IL	Z	Z	Z		X	
IN		Y	X	Y		
IT	Z	Z				X
JP	Y	Y	Y	Y	X	Y
KR	X	Y	Z	X	Y	Y
LT	Z			X		
LU	Z				Z	
LV	A					A
MT						
NL	Y	Y	Y	X	Y	Z
PL					X	X
PT	X				A	
RO						
SE	Z	X		X	A	X
SI		X		A	A	
SK			Z	Z	Z	
UK	X	Y	Z		Z	
US	X	X	Y	Y	X	Y

X: country is on the 'production frontier' of patent and trade performance
Y: country is below the 'production frontier' but shows a strong patent performance
Z: country is close to the 'production frontier' with medium to low patent performance
A: country is on the 'production frontier' but has no/almost no patent activity

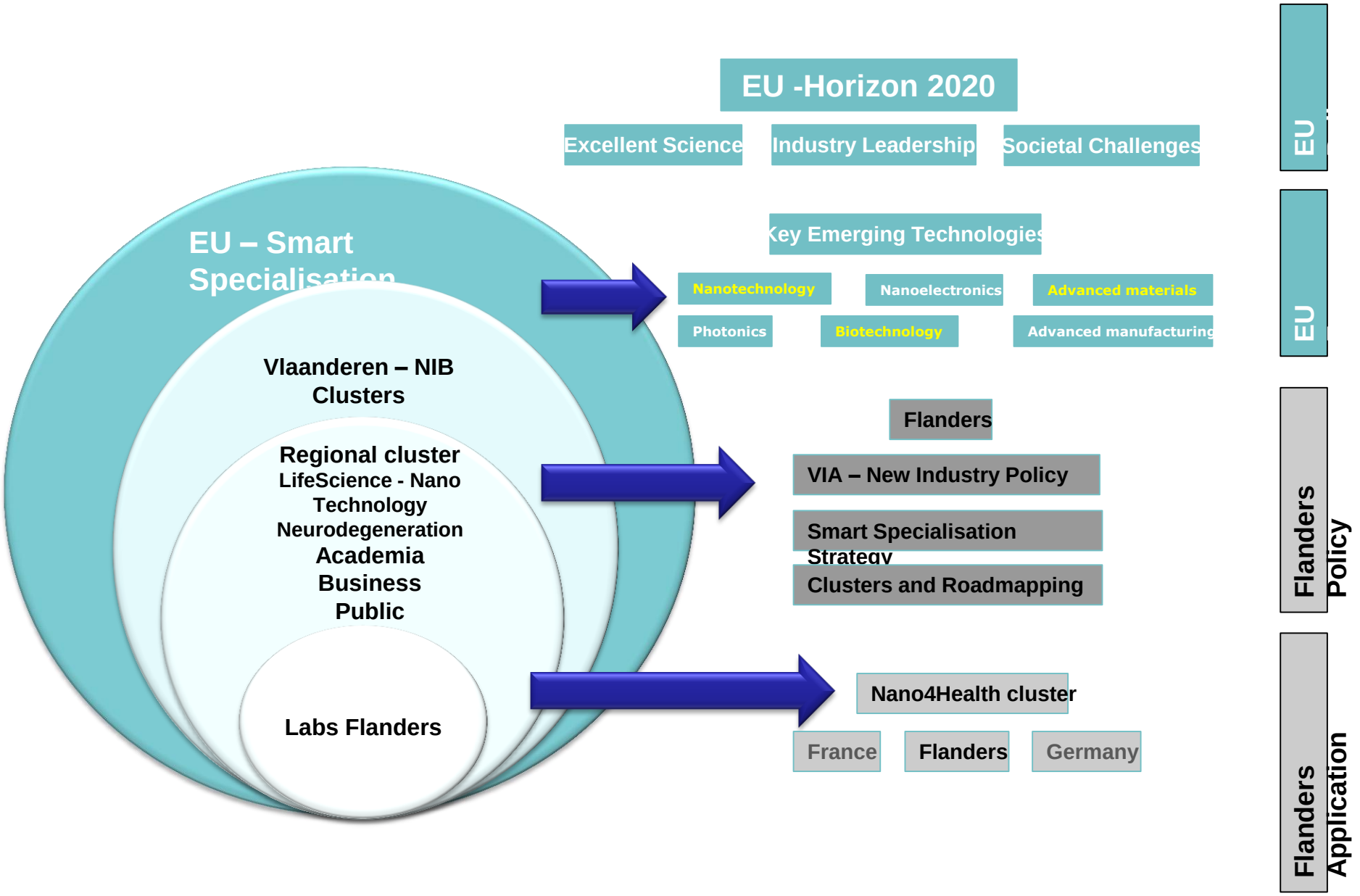
Source: EPO: Patstat, UN: Comtrade. - ZEW and NIW calculations.

- A significant part of future goods and services are as yet unknown, but the main driving force behind their development will be **Key Enabling Technologies** (KETs).
- Some countries have a focus on certain KETs, and perform **particularly strong** in these fields. For example, **Belgium and Finland** are top regions in **Nanotechnology**, **Industrial Biotechnology** and **Advanced Materials.**

Alignment of our strenghts with EU

- Location: Strong region
- Technology : Key Enabling Technologies
- Focus: on the EU Societal challenges: Health, demographic change and wellbeing
- Issue solving: From Lab to Industry to Market

Source: Exchange of good policy practices promoting the industrial uptake and deployment of Key Enabling Technologies.
European Commission, DG Enterprise and Industry (2011-2012)


EU -Horizon 2020
Excellent Science
Industry Leadership
Societal Challenges
EU – Smart Specialisation
Vlaanderen – NIB Clusters
Regional cluster
LifeScience - Nano Technology Neurodegeneration
Academia
Business
Public
Labs Flanders
Key Emerging Technologies
Nanotechnology
Nanoelectronics
Advanced materials
Photonics
Biotechnology
Advanced manufacturing
Flanders
VIA – New Industry Policy
Smart Specialisation Strategy
Clusters and Roadmapping
Nano4Health cluster
France
Flanders
Germany
EU
EU
Flanders Policy
Flanders Application

Vanguard Initiative

- Launched November 8th, 2013
- To support the wide application of Smart Specialisation principles
- To establish an Industrial Compact for Growth based on entrepreneurship and common policy goals

5. CONCLUSION DISCUSSION TOPICS

Summary and next steps

- **Conclusions:**
  - Process driven enterpreneurial process with a lot of experimentation
  - Bottleneck : to become a real driver of overall policy in Flanders (incorporation in all transition areas)

Summary and next steps

- **Discussion Item**
  - Issue 1: Multilevel Governance
    - *Why:* value chains are running cross border
    - *What has been done:* in case of bio-economy and logistics, smart speciliasation strategies are discussed on multiregion scale
    - *What worked*: bringing together politics
    - *What did not work:* aligning (funding) instruments from agencies crossborder

Summary and next steps

- **Discussion Item**
  - Issue 2: How to involve 'societal actors' in the process
    - *Why:* core is challenge driven innovation
    - *What has been done:* in some transition platform (like FISCH) representatives of environmental interest groups are incorporated
    - *What worked*: dialogue amongst interest groups
    - *What did not work:* to orientate towards the real societal needs (still technology-driven solutions – cars with less pollution ; in stead of new forms of mobility)
    - Challenge : can the concept of smart cities play in role in this – cities as "pilot area"/"test bed" to make to the link between bottom-up initiatives and global transitions

Summary and next steps

- **Discussion Item**
  - Issue 3 : Horizontal governance mechanisms (hierarchical governance versus network collaboration)
    - *Why:* societal challenges are not aligned with functional ministeries
    - *What has been done:* creation of Interministerial Comites, transition platforms
    - *What worked*: to creation an action plan with division of responsibilities
    - *What did not work:* Common ownership at political level (Governance Board of an Enterprise versus Government of a Region)

Summary and next steps

- **Discussion Item**
  - Issue 4 : Local Action versus Global challenges – Monitoring and Evaluation
    - *Why:* actions that are undertaken have a scope of max 5 years, while a transition process take years, whilst the environment is changing continously
    - *What has been done:* monitoring activities, experimentation
    - *What worked*: consolidation of running actions towards bigger scale
    - *What did not work:* Close the policy circle : input, proces, output, outcome, evaluation, feedback