

FLANDERS [BE]



Development and implementation of the RIS3 priorities

Norrköping, 1-2 April 2014
Bernard De Potter



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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



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Third generation cluster policies?

1st generation

Marshall

- hard infrastructure
- agglomeration 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



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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

- 4 **research, innovation and economic policy**



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Flanders RIS3 Policy Framework





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1. SWOT



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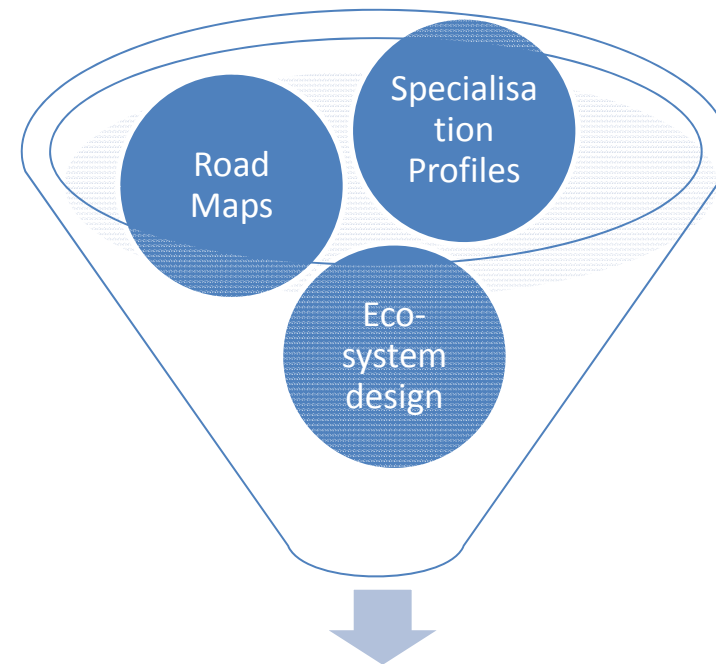


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Discovery process supported by (shared) strategic intelligence

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!



Smart Specialisation Strategy



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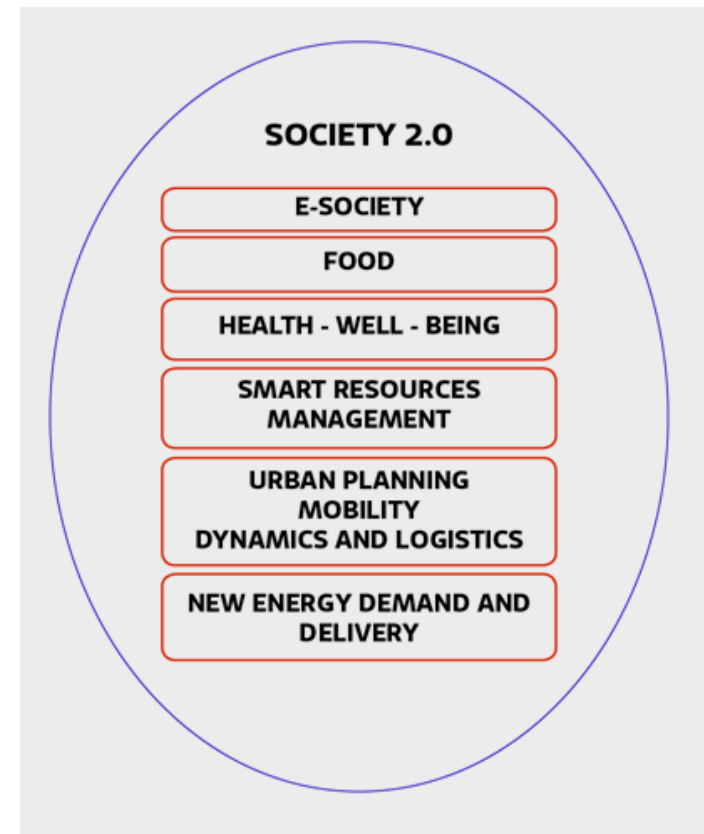
Entrepreneurial dynamics: VRWI foresight study

From 6 clusters in 2006



7 domains in 2013

Technology & Innovation in Flanders: 6 clusters





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

- Considerable fall in relative employment in the manufacture of basic metals, followed by a small recovery.

Flanders (Belgium)

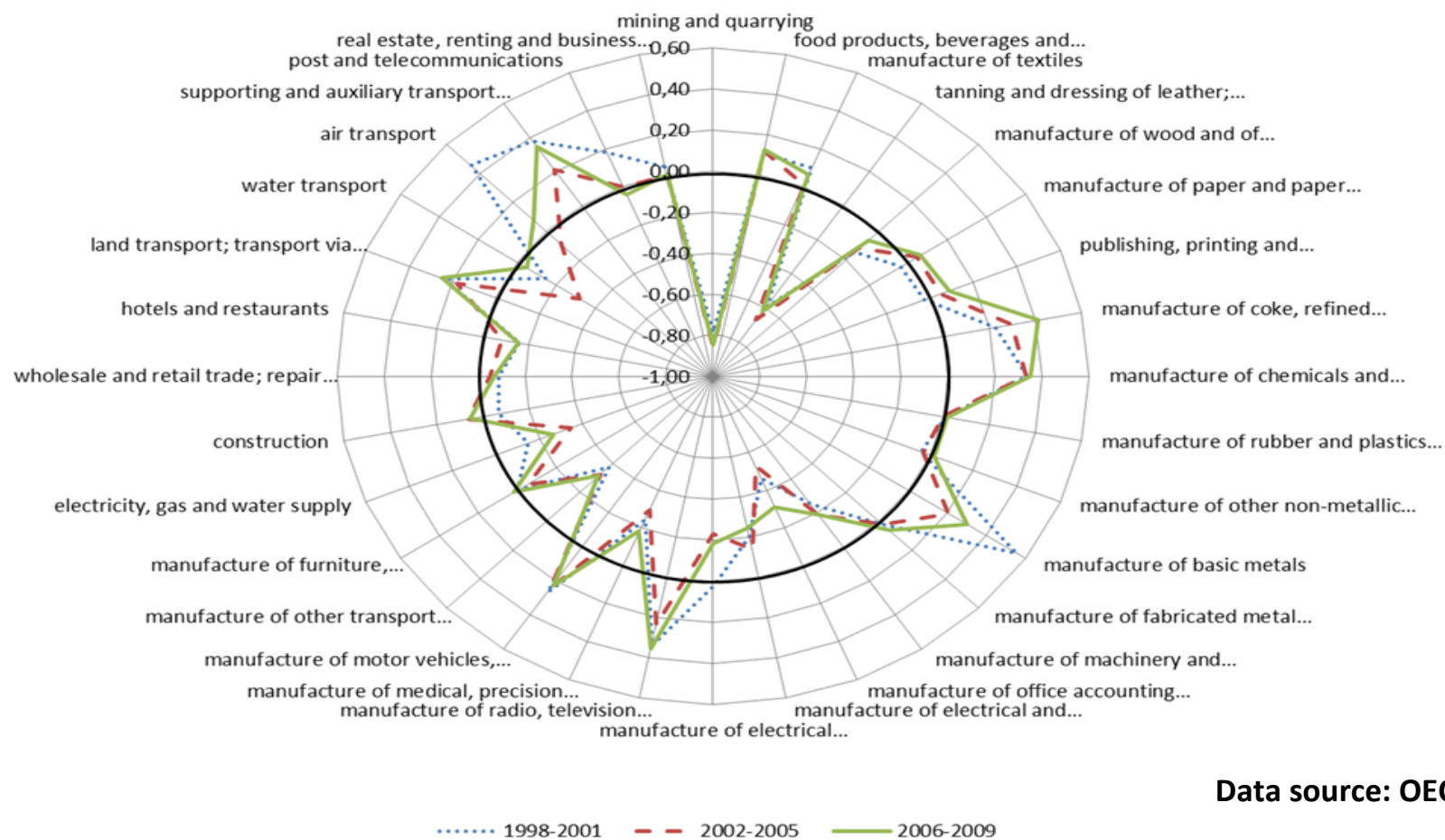


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RCAN - FLANDERS (BE2)



Data source: OECD



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2. POLICY



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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

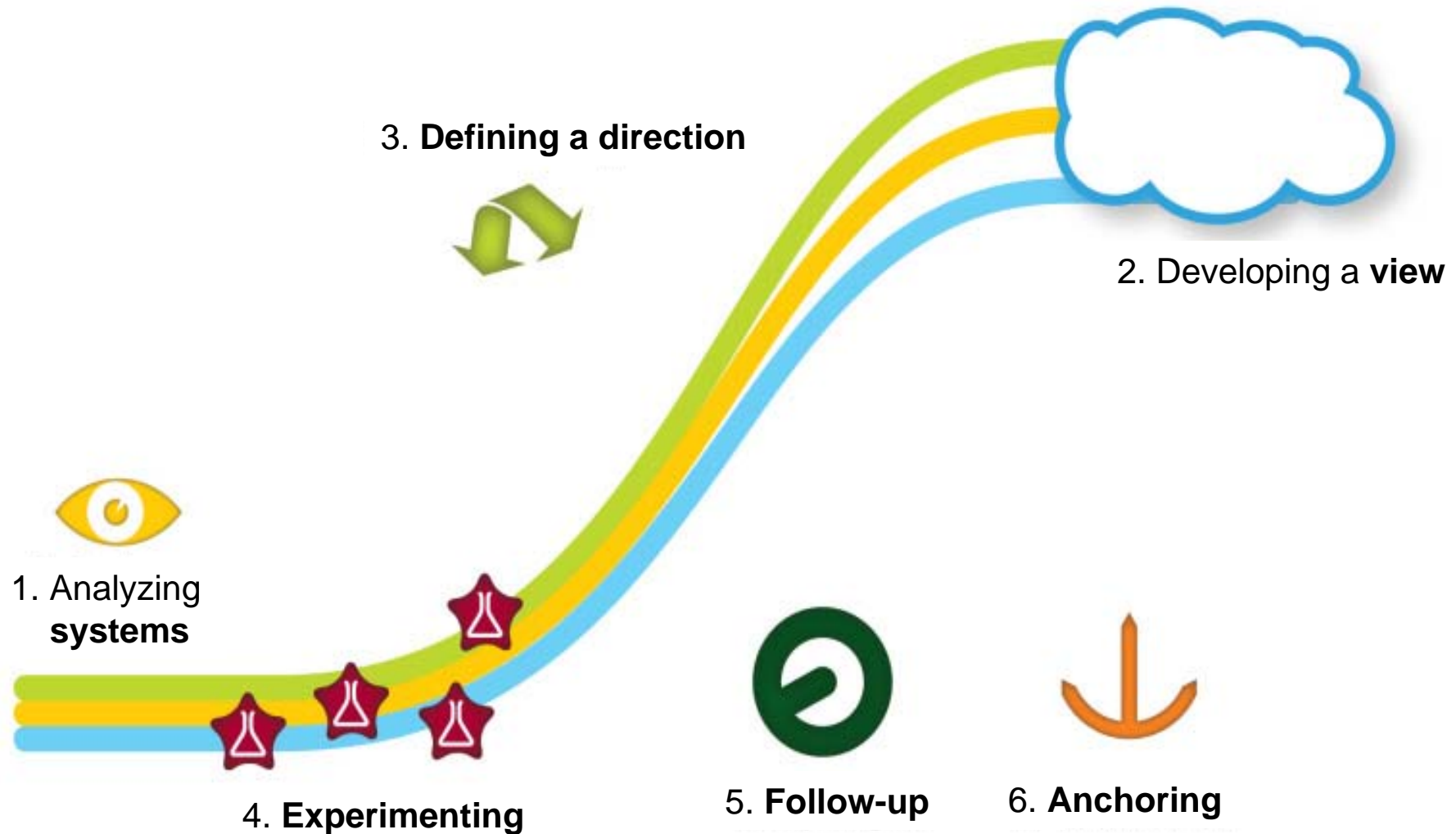


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Transitionmanagement



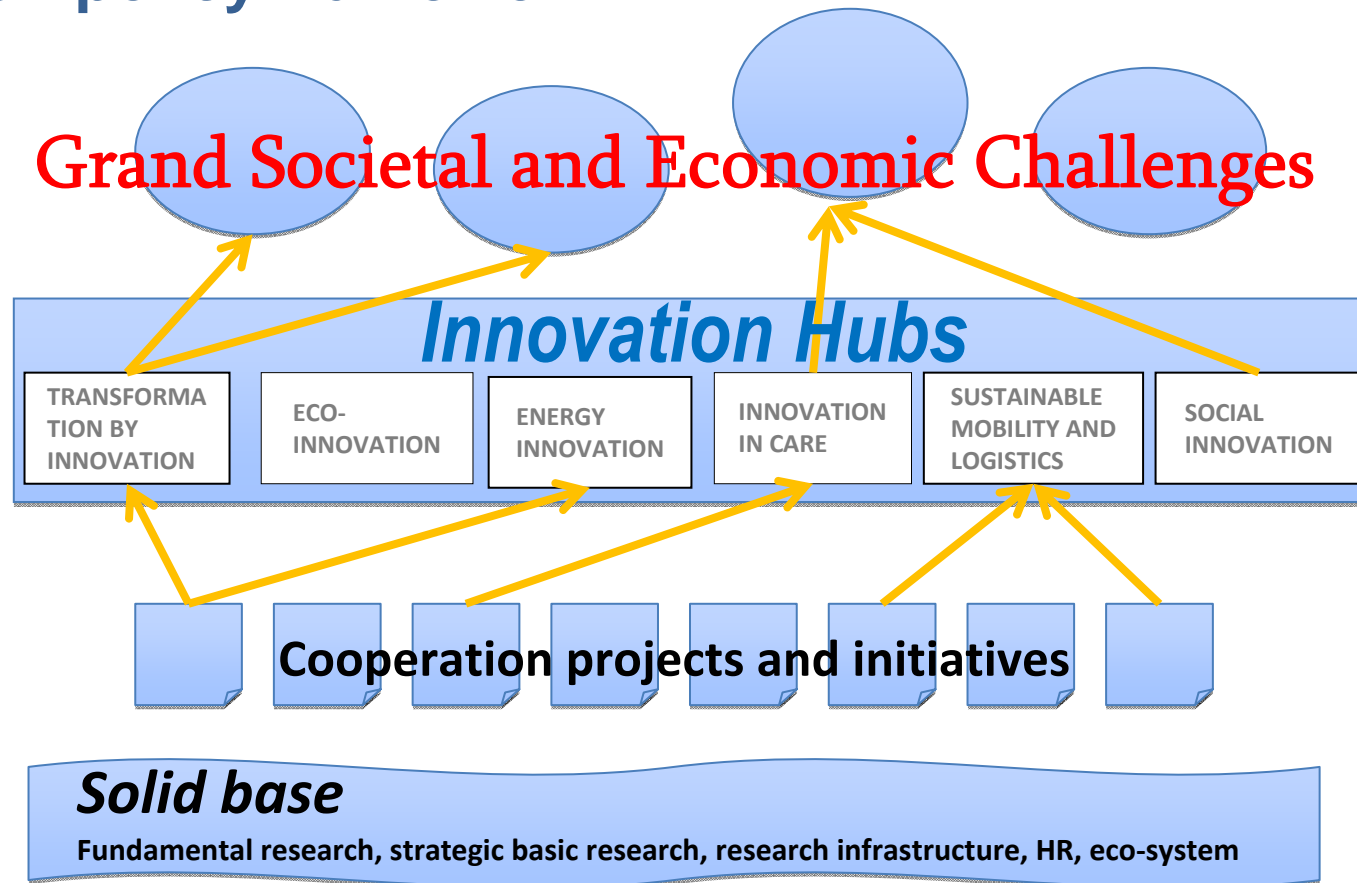


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'Innovation Hubs': transition-driven innovation policy framework





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‘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 mobility 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)



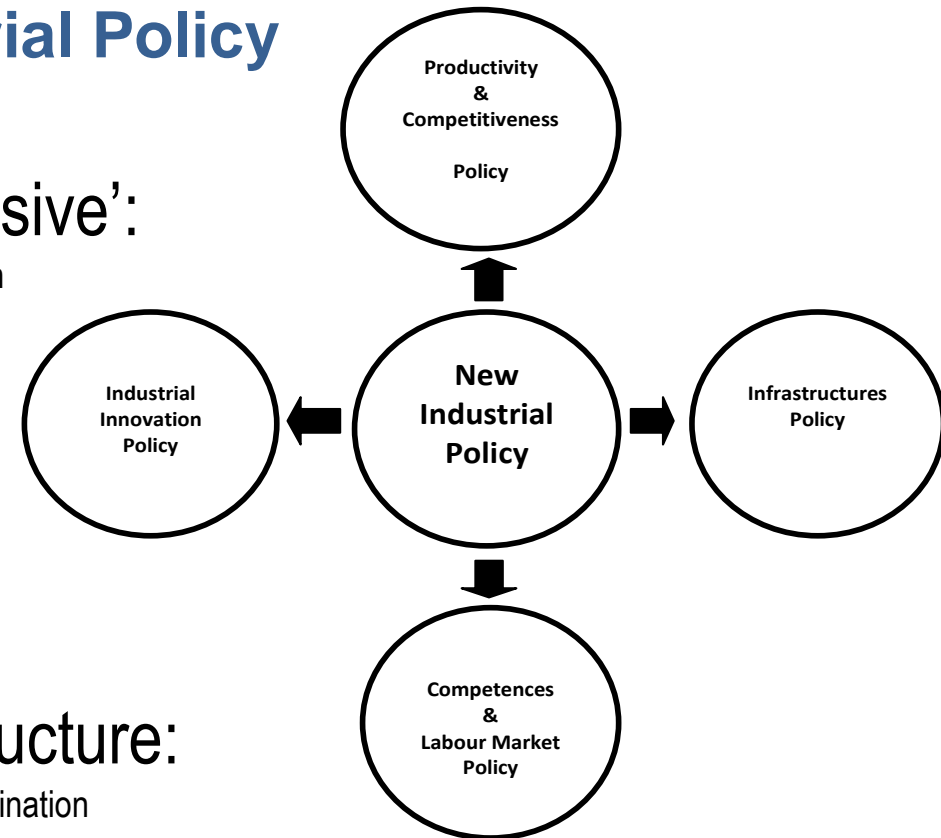
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... embedded in New Industrial Policy

- **A 'New Productivity Offensive':**
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 structure:**
An interministerial body and interdepartmental coordination
- **A strong stakeholder based process for discovering new growth opportunities:**
Secoral policies with 'Roundtables'





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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)



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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**)





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3. INSTRUMENTS

Overview



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



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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

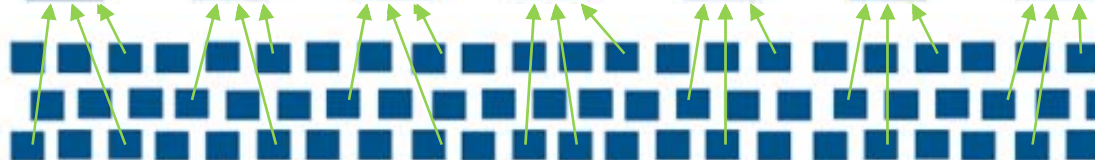


PRE-CLUSTER PROJECTS



NIP ACTORS

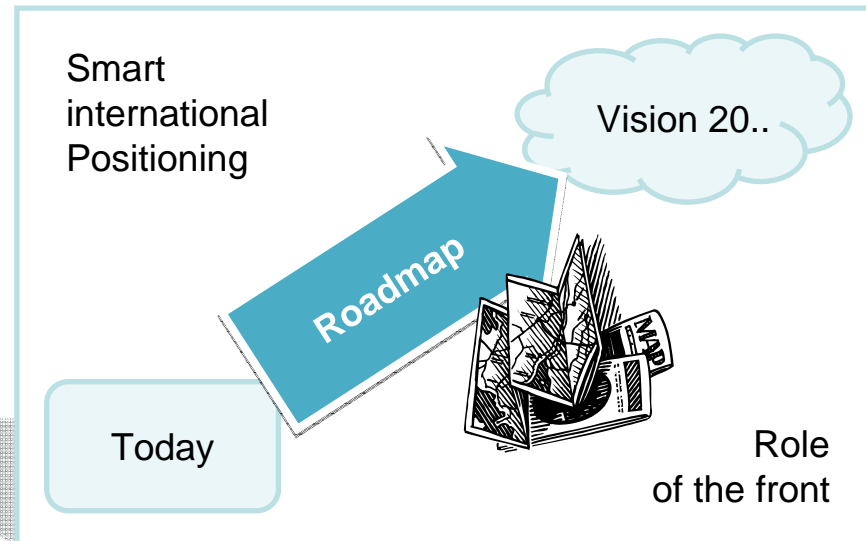
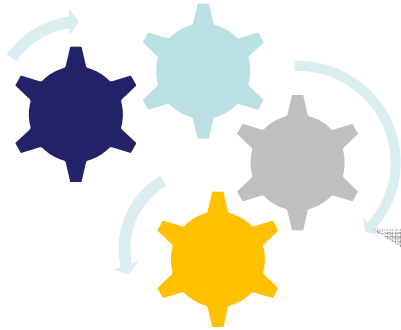
ENTREPRENEURSHIP



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

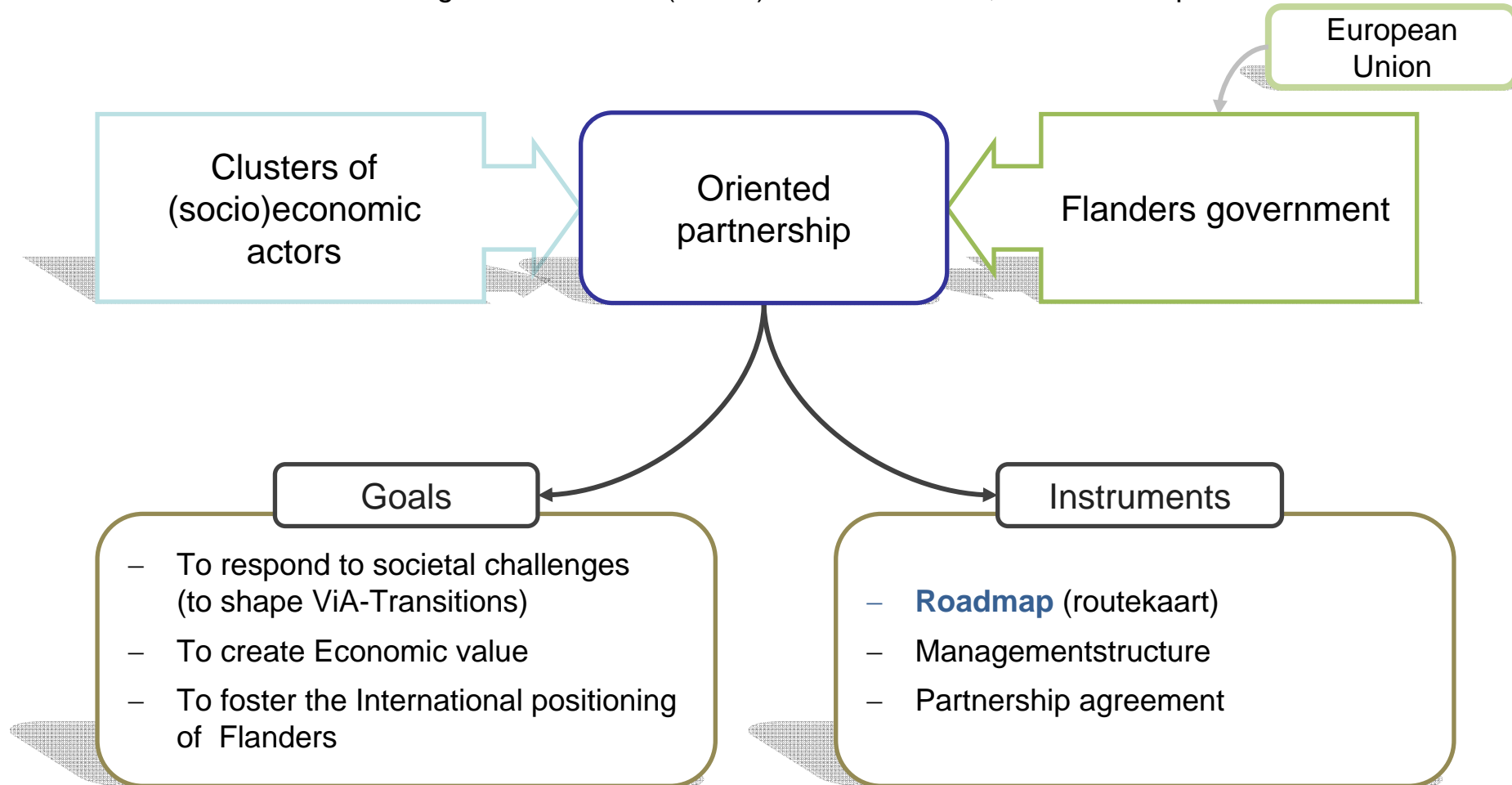


Cluster: concentration of interlinked network of enterprises, knowledge institutes, education and other organisations active in the same domain of value creation .

Roadmap (Routekaart): strategy document that describes in a transparent manner the way goals, milestones and commitments of the actors to achieve an important transition trajectory 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





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Roadmapping – NIB - conclusions:

b. Instrumentarium for an “oriented” cluster policy

1. **Strategic roadmap** being further developed in collaboration between the spearhead 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 spearhead cluster
3. **Partnership 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



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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, ...)

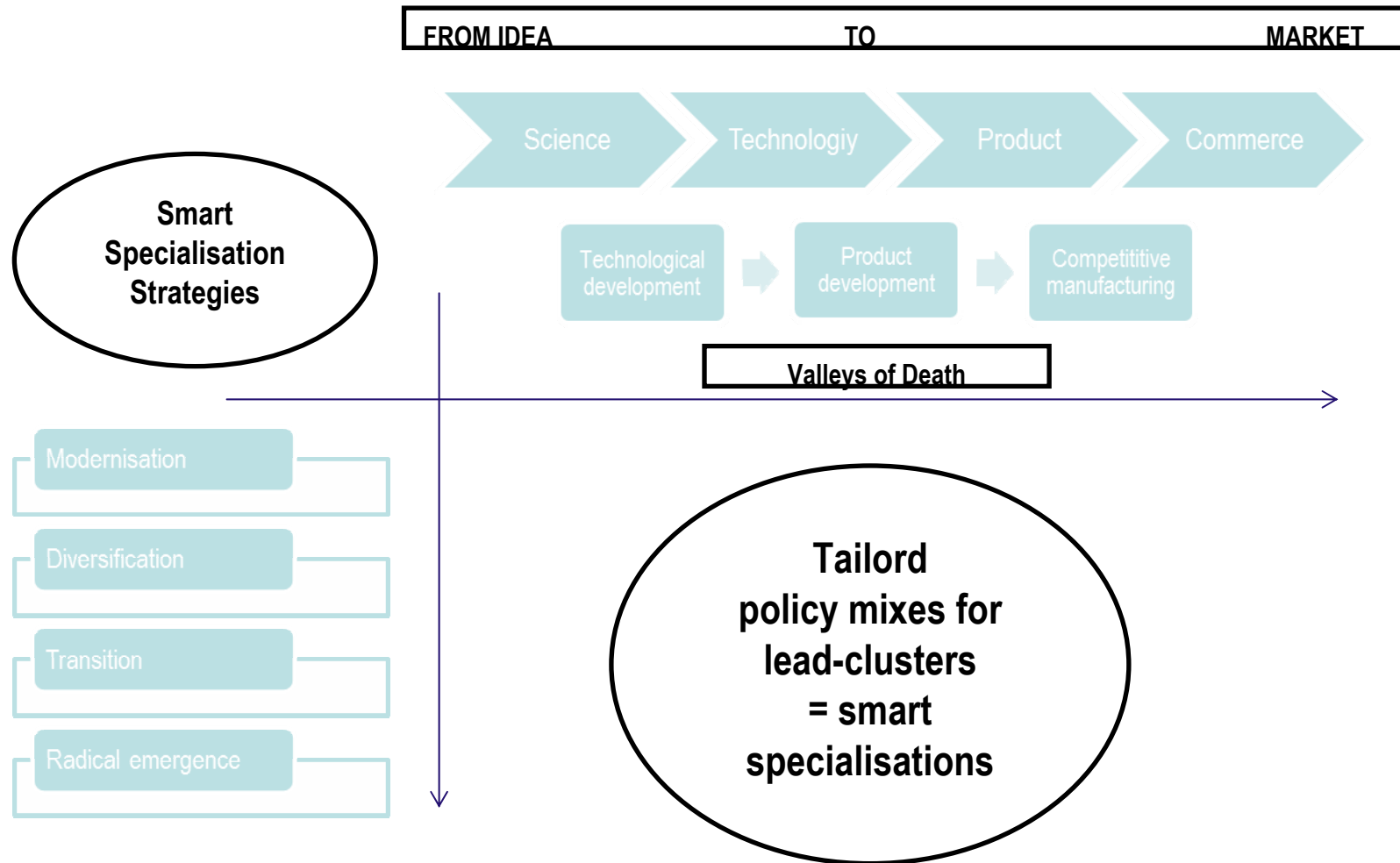


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Tailored policies for smart specialisation



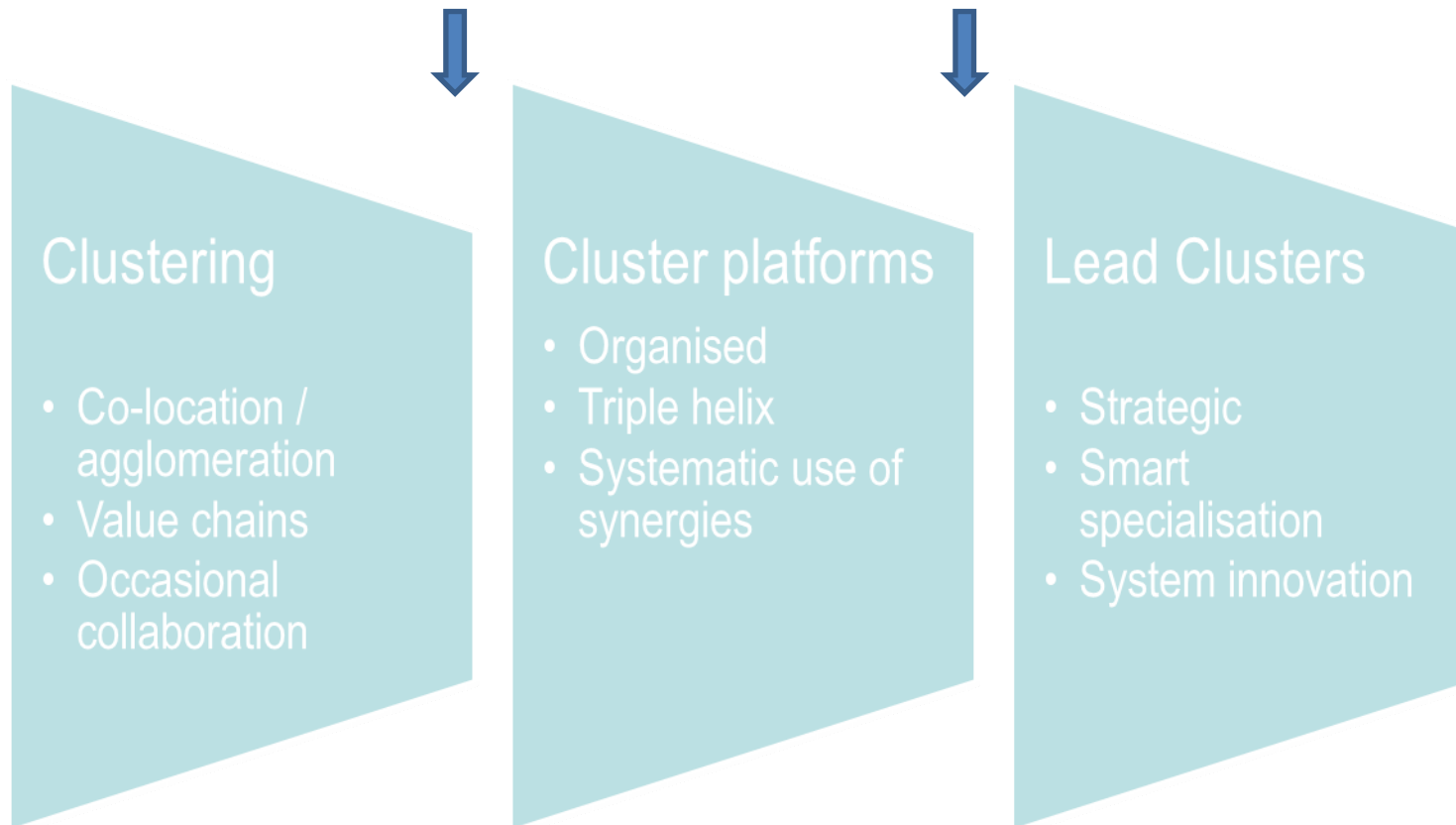
TRANSFORMATION



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)**



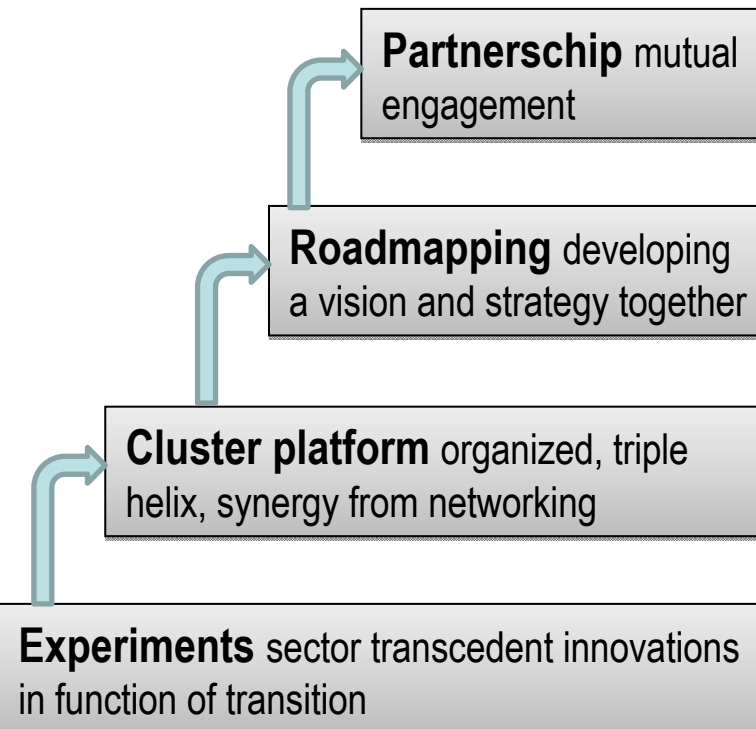
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Partnership agreements

Smart specialisation:
Cluster (self) selection
-Answer to society's
challenges?
-Huge economic
gain?
-Strong international
positioning?



Direct cluster policy
with intensive
partnership portfolio



Toolbox of support
measures IWT, AO,
FIT, PMV-TINA, ...



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4. CASE STUDIES



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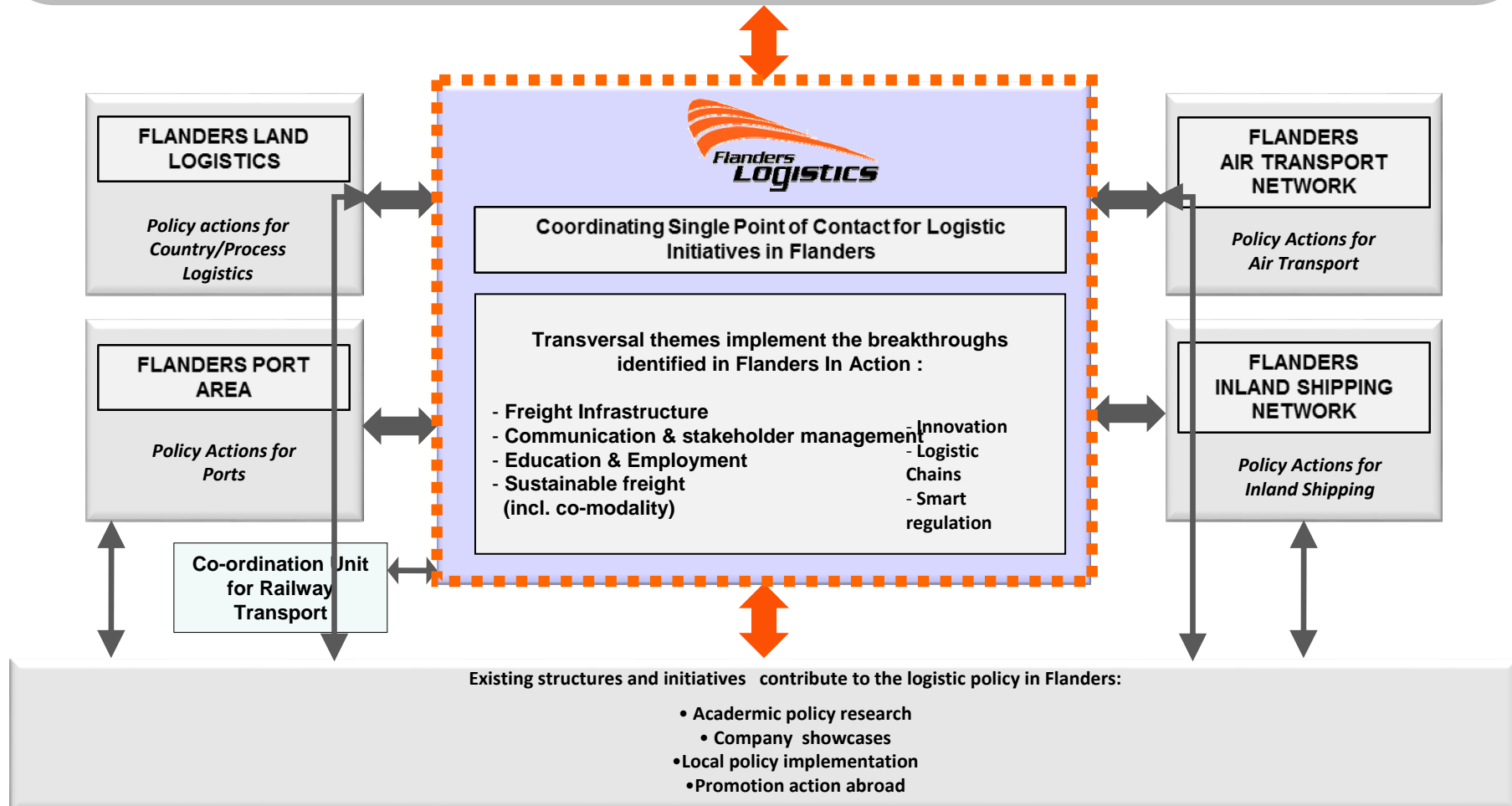
Case 1: Modernisation Value Added Logistics Cluster Platform

Flanders as a smart turntable in Europe

Minister Hilde Crevits

7 Breakthroughs of Flanders in Action:

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Enhanced Logistic Chain Management 2. Care for Infrastructure 3. Multi-modal Transfers | <ol style="list-style-type: none"> 4. Wide policy plan as a guideline 5. Smart kilometer taxes 6. Multimodal intermediation 7. Logistic knowledge with TW |
|---|---|





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Some Instruments

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



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Case 2 : Diversification ZEETEX

- Textiles for Maritime applications
- Cluster (project)

Case 3: Transition



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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!)



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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



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7 Innovation programs



**Micro
Algae**

Miniature chemical factories

Resources

**Renewable
Chemicals**

Using nature's power



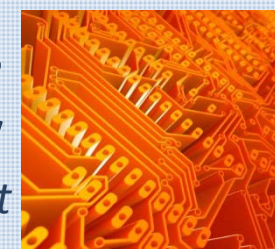
**Separation
Technology**

Purity is the name of the game

Processes

**Microproces
Technology**

The smaller, the more efficient



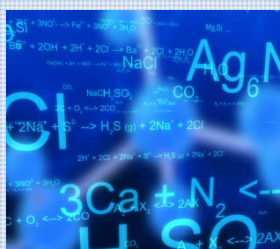
**Polymer
Recycling**

Reusing polymers forever

Products

**Sidestream
Valorization**

Waste becomes resource



**Knowledge
Tools**

Knowledge is power

Assessment





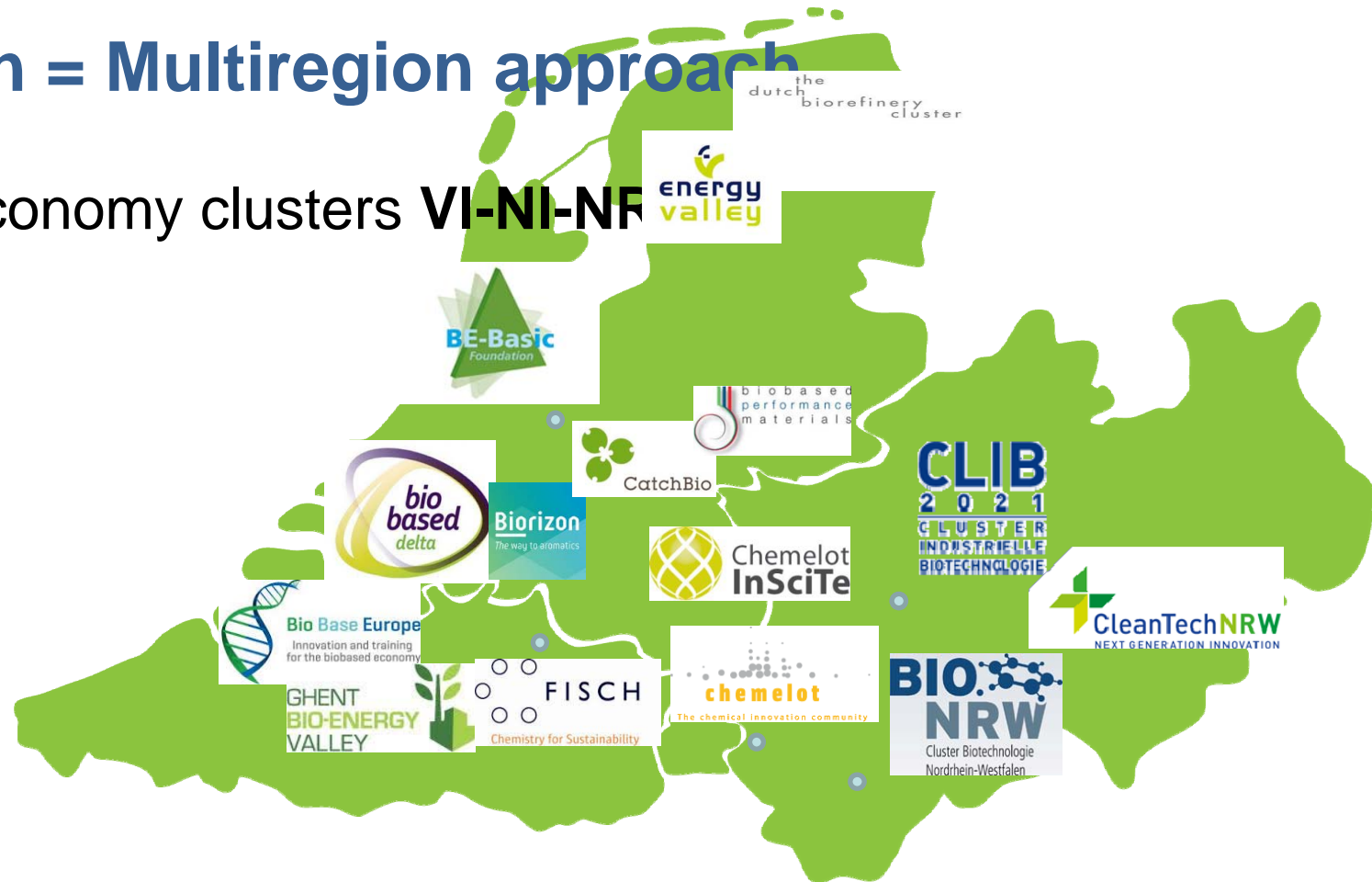
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Ambition = Multiregion approach

Bio-economy clusters VI-NI-NRW



NL-FL-NRW
Initiative



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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 ecosystem** (cross-border!)



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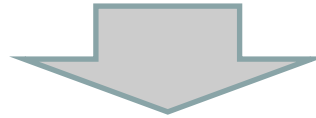
Instruments

- 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.



Challenges

Society needs solutions for a Healthy aging population

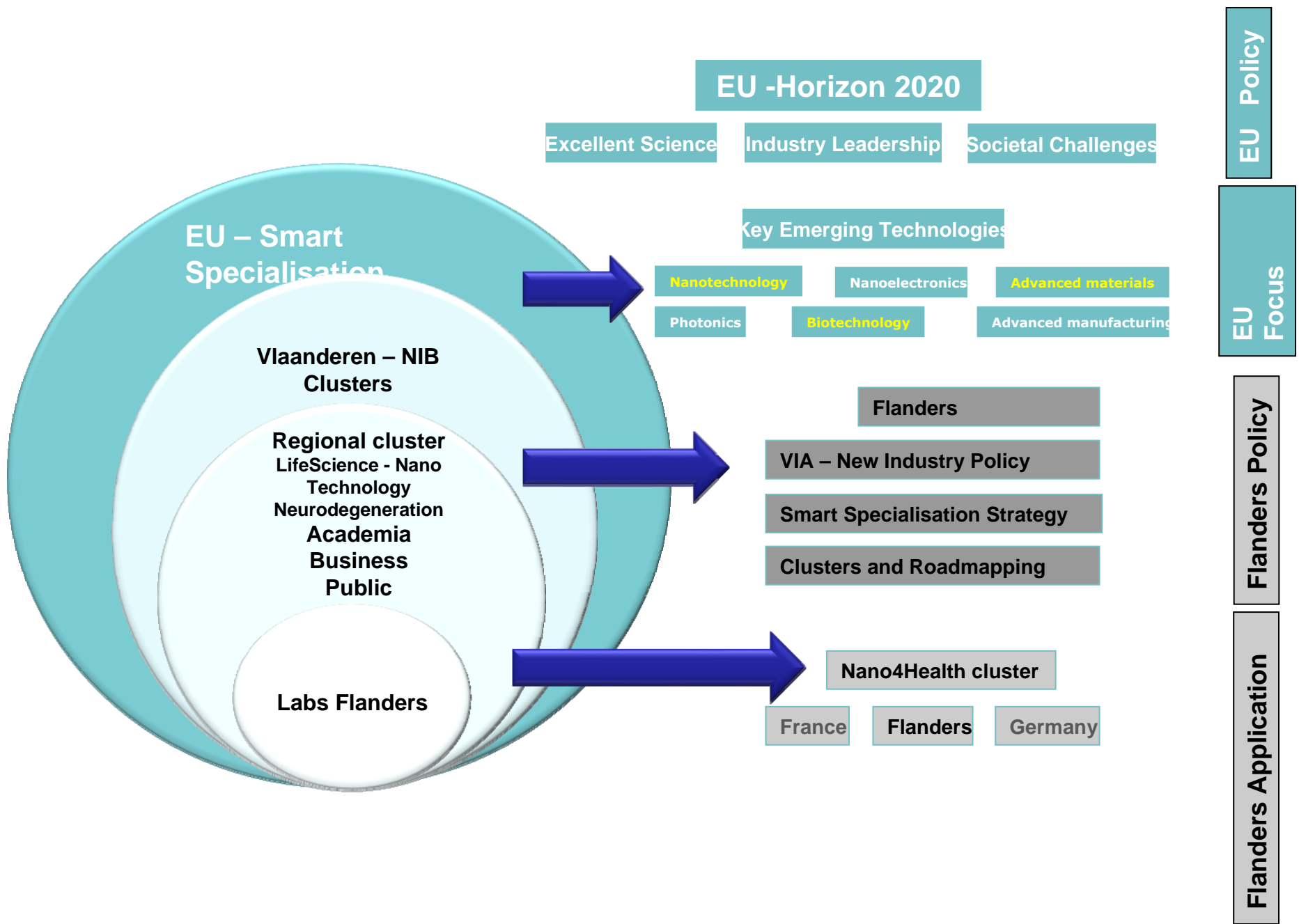
Economic growth for the region

More with less = focus

Solution



SMART SPECIALISATION
LIFE SCIENCES + NANOTECH + NEURODEGENERATION



EU perspective

Table 1: Overview of performance profile per country and KET

	Photonic s	Nano- techno- logy	Industri- al Biotech- nology	Advance d Material s	Micro-/ Nano- electroni- cs	Advance d Manu- facturin- g
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 strengths 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)

Definition and enablers

Definition: focused regional cluster of connected expertise, infrastructure and funding throughout the entire value chain supported by governmental policies



INFRA
STRUCTURE



EXPERTISE



TALENT



FUNDING



POLICIES



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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



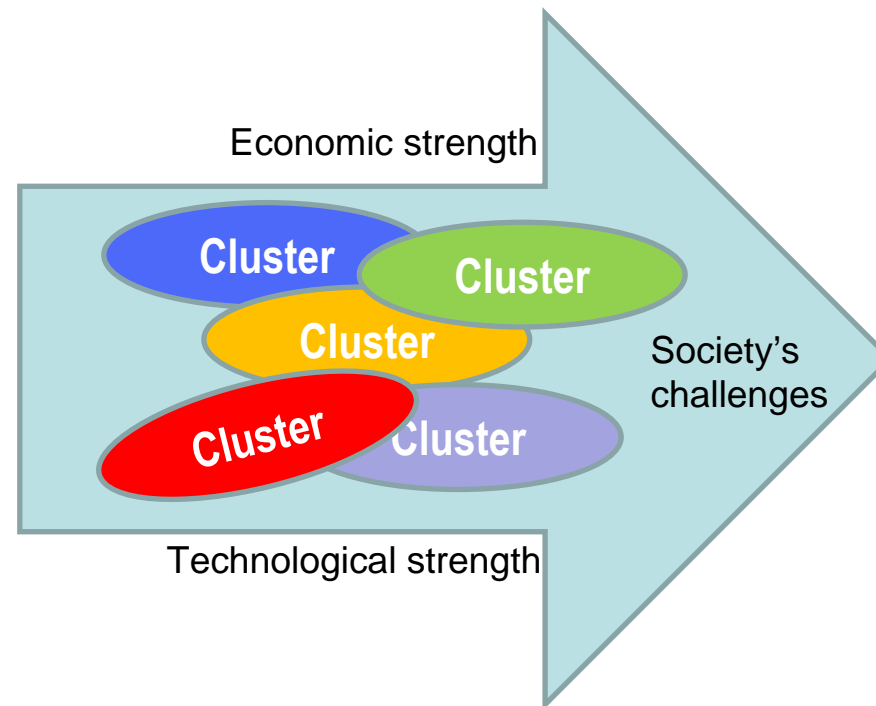
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Spearhead Clusters

- (petro)Chemistry
- Plastics
- Food
- Technical textiles
- Logistics
- Pharma
- Niches
- ...

- Biotechnology
- Nano-electronics
- Mechatronics
- New materials
- Measuring systems
- Imaging
- ICT-applications
- ...



13 ViA transitions

- Energy
- Materials
- Space
- Housing
- Mobility
- Care
- Poverty
- ...

Summary and next steps

Conclusions:

- Process driven entrepreneurial process with a lot of experimentation
- Bottleneck : to become a real driver of overall policy in Flanders (incorporation in all transition areas)
- Challenges :
 - Multilevel governance
 - How to involve 'social actors' in the process
 - Horizontal governance mechanisms (hierarchical governance versus network collaboration)
 - Local Action versus Global challenges – Monitoring and Evaluation