Development and implementation of the RIS3 priorities
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
- 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
**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  
<table>
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<th>• Analysis of Science and Technology Policy Council (VRWI)</th>
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| 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!
Entrepreneurial dynamics: VRWI foresight study

From 6 clusters in 2006 ➔ 7 domains in 2013

Technology & Innovation in Flanders: 6 clusters

- ICT and Services in Healthcare
- Healthcare – Food – Prevention and Treatment
- New materials – Nanotechnology – Manufacturing industry
- ICT for Socio-economic Innovation
- Energy and Environment for Services and Industry

SOCIETY 2.0

- E-SOCIETY
- FOOD
- HEALTH - WELL - BEING
- SMART RESOURCES MANAGEMENT
- URBAN PLANNING MOBILITY DYNAMICS AND LOGISTICS
- NEW ENERGY DEMAND AND DELIVERY
Flanders (Belgium)

Observations, economic profile:

*Top 3 highest and lowest specialisations*

<table>
<thead>
<tr>
<th>Highest specialisations</th>
<th>Lowest specialisations</th>
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<tbody>
<tr>
<td>Manufacture of coke, refined petroleum products</td>
<td>Mining and quarrying</td>
</tr>
<tr>
<td>Manufacture of chemicals and chemical products</td>
<td>Tanning and dressing of leather</td>
</tr>
<tr>
<td>Manufacture of equipment for radio, tv and communication</td>
<td>Manufacture of other transport equipment</td>
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</table>

*Highlights*

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

1. Analyzing systems
2. Developing a view
3. Defining a direction
4. Experimenting
5. Follow-up
6. Anchoring
‘Innovation Hubs’: transition-driven innovation policy framework

Grand Societal and Economic Challenges

Innovation Hubs

- Transformation by Innovation
- ECO-Innovation
- Energy Innovation
- Innovation in Care
- Sustainable Mobility and Logistics
- Social Innovation

Cooperation projects and initiatives

Solid base
Fundamental research, strategic basic research, research infrastructure, HR, eco-system
‘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)
... 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 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


• 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

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, Electrical Vehicle), Social Innovation
• Skills and Training (ESF)
• TINA Fund (Financial instrument)
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

**Smart international Positioning**

**Vision 20..**

**Roadmap**

Today

Role of the front

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.
b) In the direction of an **oriented partnership** between government and (socio-)economic actors, in cluster cooperation.

**Roadmapping – steps:**

- Clusters of (socio)economic actors
- **Oriented partnership**
- Flanders government
- European Union

**Goals**
- To respond to societal challenges (to shape ViA-Transitions)
- To create Economic value
- To foster the International positioning of Flanders

**Instruments**
- **Roadmap** (routekaart)
- Management structure
- Partnership agreement
**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. **Management structure** 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 account managers 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

FROM IDEA TO MARKET

Smart Specialisation Strategies

Modernisation
Diversification
Transition
Radical emergence

Science Technology Product Commerce

Technological development Product development Competitive manufacturing

Valleys of Death

Tailored policy mixes for lead-clusters = smart specialisations

TRANSFORMATION
Three stage cluster development: different needs, different policies

**GENERIC CLUSTER POLICIES**

1. **Clustering**
   - Co-location / agglomeration
   - Value chains
   - Occasional collaboration

2. **Cluster platforms**
   - Organised
   - Triple helix
   - Systematic use of synergies

3. **Lead Clusters**
   - Strategic
   - Smart specialisation
   - System innovation

**TARGETED CLUSTER POLICIES**

1. Local infrastructures (anchoring)
2. Local & international networks (connecting)
3. Strategic intelligence (global positioning)
Partnership agreements

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

Partnership mutual engagement

Roadmapping developing a vision and strategy together

Cluster platform organized, triple helix, synergy from networking

Experiments sector transcendent innovations in function of transition

Direct cluster policy with intensive partnership portfolio

Toolbox of support measures IWT, AO, FIT, PMV-TINA, …
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 knowledge with TW

Existing structures and initiatives contribute to the logistic policy in Flanders:
- Academic policy research
- Company showcases
- Local policy implementation
- Promotion action abroad

Coordinating Single Point of Contact for Logistic Initiatives in Flanders

Transversal themes implement the breakthroughs identified in Flanders In Action:
- Freight Infrastructure
- Communication & stakeholder management
- Education & Employment
- Sustainable freight (incl. co-modality)
- Innovation
- Logistic Chains
- Smart regulation

FLANDERS LAND LOGISTICS
Policy actions for Country/Process Logistics

FLANDERS PORT AREA
Policy Actions for Ports
Co-ordination Unit for Railway Transport

FLANDERS AIR TRANSPORT NETWORK
Policy Actions for Air Transport

FLANDERS INLAND SHIPPING NETWORK
Policy Actions for Inland Shipping
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*
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

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<th>Micro Algae</th>
<th>Renewable Chemicals</th>
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<td><em>Miniature chemical factories</em></td>
<td><em>Using nature’s power</em></td>
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<th>Separation Technology</th>
<th>Microprocess Technology</th>
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<tr>
<td><em>Purity is the name of the game</em></td>
<td><em>The smaller, the more efficient</em></td>
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<th>Polymer Recycling</th>
<th>Sidestream Valorization</th>
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<td><em>Reusing polymers forever</em></td>
<td><em>Waste becomes resource</em></td>
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<th>Knowledge Tools</th>
<th>Assessment</th>
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<td><em>Knowledge is power</em></td>
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Ambition = Multiregion approach

Bio-economy clusters VI-NI-NF

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 ecosystem (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)
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.

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.

Society needs solutions for a Healthy aging population

Economic growth for the region

More with less = focus

SMART SPECIALISATION
LIFE SCIENCES + NANOTECH + NEURODEGENERATION
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: focused regional cluster of connected expertise, infrastructure and funding throughout the entire value chain supported by governmental policies.
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

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

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

Spearhead Clusters

Economic strength

Society’s challenges

Cluster

Cluster

Cluster

Cluster

Technological strength

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