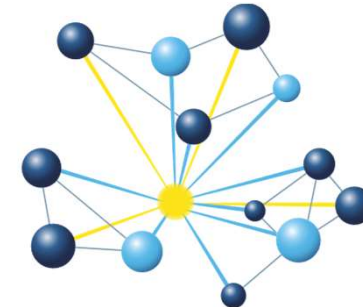


Vanguard Initiative, Supported by Policy, Driven by Industry

NanoInnovation2020 Conference – 15 September 2020

Session “Innovation at the Nanoscale : R&I Strategies and Opportunities for the Industry and the Research World”

Wim De Kinderen, Brainport Development (NL)



VANGUARD INITIATIVE

New growth through smart specialisation

Vanguard Initiative ?!
a short intro.

**Regional
Cooperation**

**S3 Smart
Specialisation**

Industrial Innovation

**Political
Commitment**

Entrepreneurship

■ **two presumptions :**

1. our **Smart Specialisation Strategy (S3)** is the result of a real **Entrepreneurial Discovery Process (EDP)**.
2. our companies have a **positive attitude towards 'Internationalisation'**, and it is even a priority for their business.

VI Members

Members (37)

Aragon, Asturias, Auvergne-Rhône-Alpes, Baden-Württemberg, Basque Country, Cantabria, Catalonia, East Netherlands, East & West Slovenia, Emilia Romagna, Flanders, Friuli Venezia Giulia, Galicia, Gävleborg, Lombardy, Lower Austria, Malopolska, Navarra, North Rhine-Westphalia, Norte, Pays de la Loire, Piemonte, Randstad, Region Dalarna, Region Skåne, Region Värmland, Region Örebro County, Saxony, Saxony Anhalt, Scotland, South Netherlands, South Tyrol, Tampere, Trento, Upper Austria, Wales, Wallonia

Observers (2)

East and North Finland,
Lower Saxony

Associate Members (5)

AFIL, Lombardy Green Cluster,
Brainport Development, SPRI,
Scottish Enterprise

VI : a network of many regions



Political commitment :
access to regional funds; VI's USP

Triple helix involved and organized

Action focused network, influence by results

Content driven

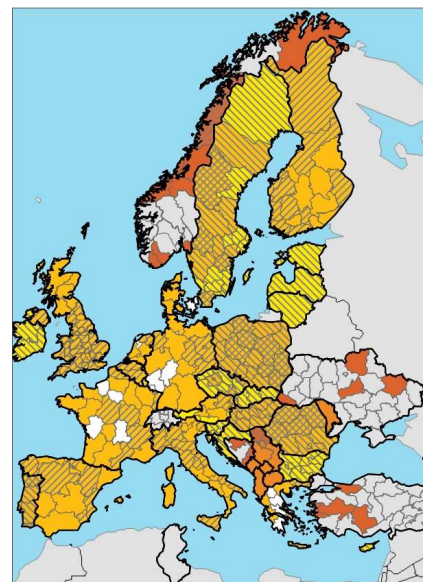
- region
- industry based S3
- ambition
- political commitment (Milan Declaration)
- mobilizing and organizing stakeholders in the region
- active participation in the network structure
- active participation in core activities

VI inspires

happy with the EU copy paste



- 3 Thematic S3 Platforms (Industry Modernisation, Agrofood, Energy)
- 30+ S3 Partnerships
 - high tech, low tech, non tech
- +180 EU regions involved
- support by DGs REGIO, JRC, GROW, RTD, Connect, Agri, ENER, MARE,...



VANGUARD INITIATIVE

VI works for the collective interests




The Vanguard Initiative¹ welcomes the MFF package as an ambitious renewed agenda for EU industrial and innovation policies
Position paper

The Vanguard Initiative welcomes the MFF package as an ambitious renewed agenda for smart specialisation principles. At clear and concrete modalities are sources of funding for supporting value chains, on the basis of smart




**Supporting Key EC Proposals for New Instruments
Offering Real Possibilities of EU Funds Synergies**

On 29 May 2018, the European Commission announced the new provisions for the European territorial cooperation of a **new INTERREG Component 5** on I C1 billion, representing 11,5% of the interregional innovation investments that innovation projects having the potential would take on board the work already in



Working Document

**Interregional Innovation Investments
European Territorial Cooperation – Component 5**

this is a good proposal to contribute substantially to the strengthening of the competitiveness of the EU and all of its regions

about?

open region is strong in one or more particular areas, but hardly any of them is strong enough to face and lead worldwide competition. Collaboration across regions is therefore moreover the needed exercise in this context is to bring innovation faster to the market, requires public investments that form the basis of later follow-up public-private and private investments and initiatives. When working together across borders, these investments can be better aligned.



Dear Members of the SME Intergroup,
The SME Intergroup cordially invites you to a breakfast discussion hosted by



on the topic of

**Supporting interregional S3 cooperation
along industrial value chains**
How component 5 in Interreg strengthens interregional cooperation

Tuesday, 6 November 2018
08:00 – 09:00 am, MEP Salon
European Parliament, Brussels

Vanguard Initiative's Pilot Projects a short intro.

VI Pilot Projects

- **Interregional cooperation projects between companies and knowledge institutes in a specific technology field or application domain**
 - demonstration projects, no research (> TRL 5 – post prototyping)
 - industrial commitment (to participate/lead/co-invest)
 - European dimension : added value of joint demonstration
 - expected significant impact (economic, social and environmental returns)
- **European Networks of Demonstrators**
- **no “one off” projects / building of new industrial value chains through a pipeline of investment projects**

in order to :

- **accelerate market development**
- **global competitiveness**

VI Pilot Projects and Democases

3D-printing

3D printed hybrid components

Additive Subtractive Platform High Precision & High Finish Production

3D printed automotive components for large, medium, and small complex parts

Machinery, tooling and complex shapes

3D-Printed Customized Components for Orthosis, Exoskeleton and Exoprosthesis

ADMA for Energy-Related Applications in Harsh Environments

Corrosion on Offshore and Subsea Infrastructure

Sensing and Remote Monitoring Technologies

Efficient and Sustainable Manufacturing

De- and Remanufacturing

Functional materials for polymer based products

Digital Transformation

Energy-flexible and resource-efficient factory operation - EFREFO

Bioeconomy

Lignocellulose biorefinery

Bio-aromatics

Liquified BioMethane

New Nano-enabled Products

Nanowires for ICT and energy applications

Nano enabled Micro System for Bio Analysis (NeMs4Bio)

Shapetronics

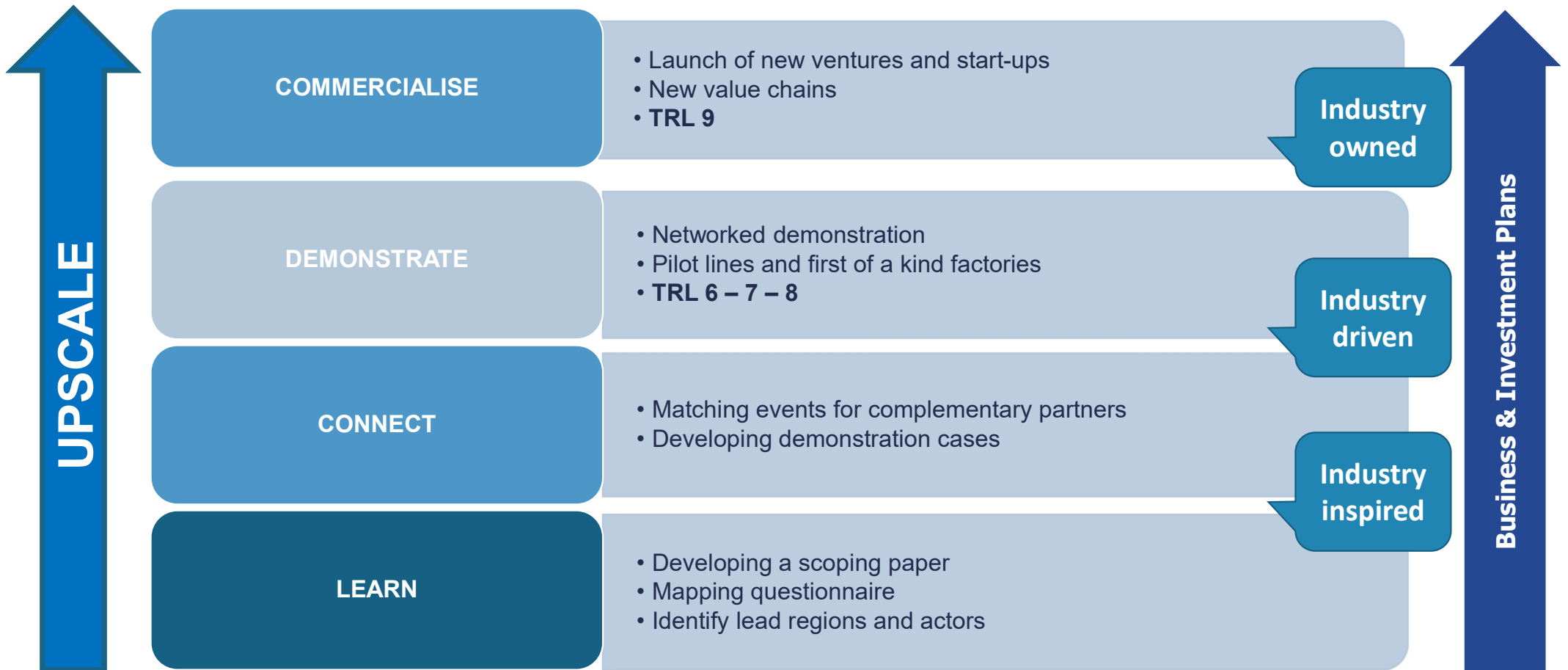


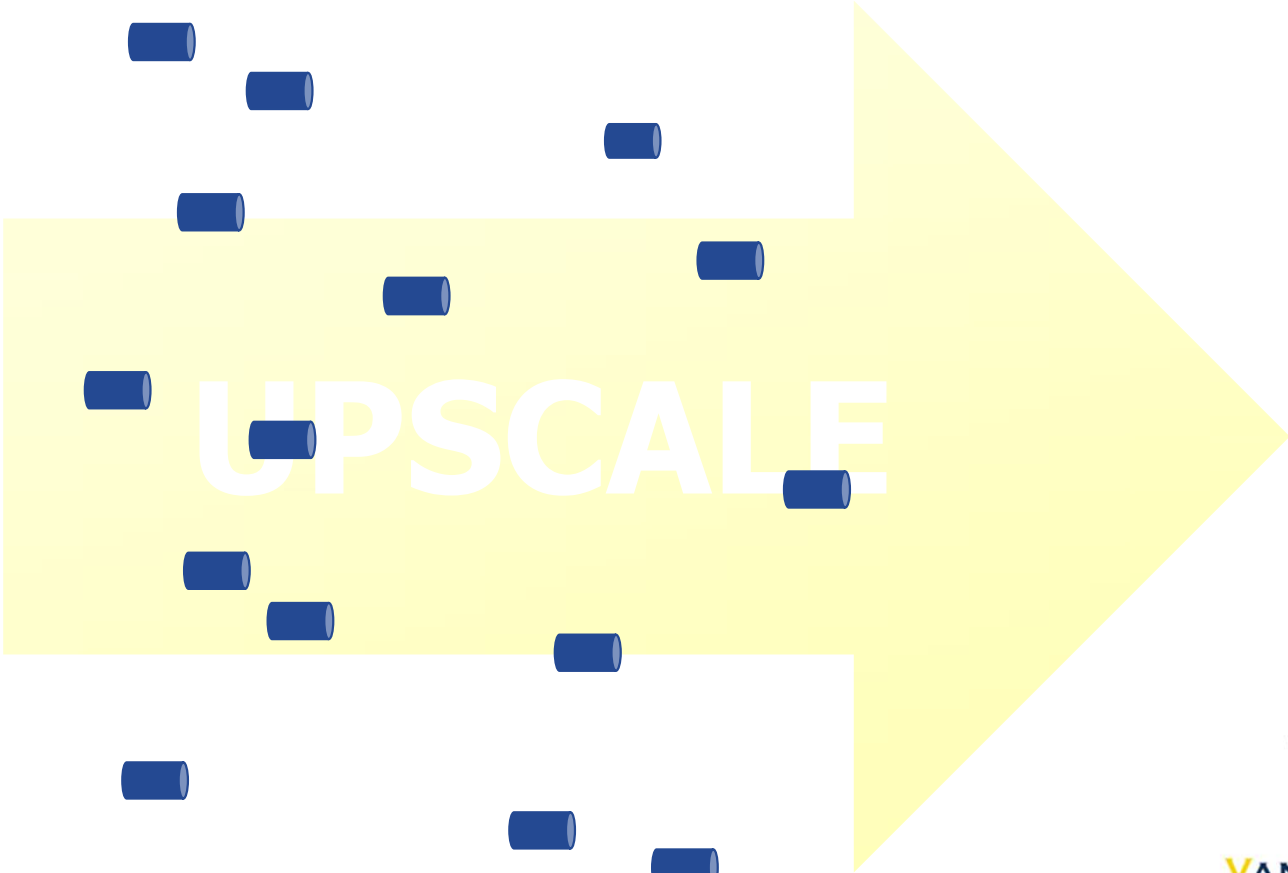
DYNAMIC LANDSCAPE

VI democases

- **VI democases common objectives**
 - establish (shared) facilities for demonstration of new technologies
 - facilitate access to (shared) facilities
 - lower technology uncertainty, risks and costs
 - stimulate industrial replication and upscale (hence market uptake)
- **each democase =**
 - combination of complementary demonstration facilities
 - group(s) of companies accessing infrastructure (TRL 6-8)
 - Industrial replication and upscale (if the above is successful) (TRL 8-9)
- **3 types of democases**
 - challenge driven or technology driven
 - connecting existing infrastructure
 - building brand new infrastructure
 - connect and upgrade existing infrastructure (hybrid format)

VI Methodology





3D-printing



Bio-economy



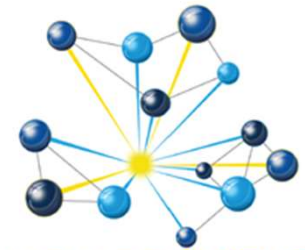
ADMA-Energy



Nano-technology



Efficient and sustainable manufacturing



VANGUARD INITIATIVE
New growth through smart specialisation

a closer look at
VI's Pilot Project "New Nano-enabled Products"
current democases

VI New Nano-enabled Products' current democases

- **Nanowires for ICT and energy applications**
 - Nanowires for power and energy applications
 - Establishment of a new European Innovation Infrastructure as a pan European pilot manufacturing facility for nano enabled products
- **NeMs4Bio**
 - NeMs4BIOplatform to simplify the development trajectories of nano-enabled bio-sensor applications through standardized microfluidic and -electronic modules that allow for engineering on demand into tailored applications
- **Shapetronics**
 - Development of technologies to integrate functionally printed structures directly onto 3D metal objects

VI New Nano-enabled Products's current democases: NeMs4BIO

- **The demo-case on Nano-enabled Microsystems for Bioanalysis (NeMs4BIO)**
 - context : this demo case addresses the common challenge integrating and interfacing various components (e.g. light sources, fluid in- and outlets) with Si -based chips into lab-on-chip modules (e.g. chip carrier, cartridge).
 - Identified challenges
 - Design and develop a modular bio sensing platform
 - Funding for cross-regional collaboration partnerships (focus: beyond single app demonstrator and beyond lower TRLs)
 - Governance model of cross-regional collaboration partnerships (focus: distributed model, different types of actors, liability, legal)
 - with respect to, in particular
 - Adaptation of distributed infrastructures for technical compatibility
 - Standardization (of technical interfaces and testing)
 - Regulatory compliance readiness
 - Contractual flow along the value chain
 - long term goal : demonstrate the feasibility, the value, the sustainability and the efficacy of the NeMs4BIO platform

VI New Nano-enabled Products's current democases: NeMs4BIO

- The demo-case on Nano-enabled Microsystems for Bioanalysis (NeMs4BIO)
 - to do :
 - finalize various concepts for R&D activities in order to develop the NeMs4Bio platform using standardized solutions, since the NeMs4Bio demo case aims to develop integrated and packaged functional modules that fit into devices, and not isolated pieces of technology.
 - Identify missing capabilities in the NeMs4Bio platform and possible user cases (standardized modules) for co-development
 - Design collaborative development scenarios of a standardised lab-on-a-chip module and put together a consortium of labs and engineering companies, in which each player devotes its own competency to the collective

a closer look at
VI's Pilot Project "New Nano-enabled Products"
the future :
**new democases + stimulation of deployment of
nanomaterials through collaboration**

Questions ?



THANK YOU

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Nano Pilot Project

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