Lombardy in a nutshell …

- Inhabitants: about 10.008.349 ML (16,5% of the Italian population)

- Population density: 419,3 Inhab/km2

- **GDP: € 359 ML** (21,9% of Italian GDP and the 2th region in Europe)

- **817.000 enterprises in 2017 (mainly SMEs)**

- **4.256.000 employees**

- **Number of total patent applications on enabling technologies = 1.120,4 (2013).** (15,9% in ICT; 7,2% Medical Tech.; 6,5% Pharma; 3% Biotech; 0,2% Nanotech)

Source: ISTAT 2016, ASR 2016

Lombardy's R&I eco - system

Gross domestic expenditure on R&D = 4,62 Billion €
(1,31% regional GDP)

70,2% Companies
17,4% Universities
6,6% No profit inst.
5,8% P.A.

EU ERDF – Lombardy's ROP
for R&TT&I (Axis 1 ROP-ERDF 2014/2020) = 349.355.000 €
(36 % of ROP resources)
for Promotion of SME's Competitiveness (Axis 3 ROP-ERDF 2014/2020) = 294.645.000 € (30,36% of ROP resources)

817.000 enterprises in 2017 (mainly SMEs)

More than 1.000 Centers for Research and TT

More than 75.500 people employed

- *63,2% in companies*
- 24,5% in Universities
- 9,5% in P.A.
- 3,7% in no profit inst.

13 Universities
1 school of higher education
12 NRC Institutes

19 IRCCS
(*more than 50% Italian clinic trials are in Lombardy*)

5 Scientific and Technology Parks
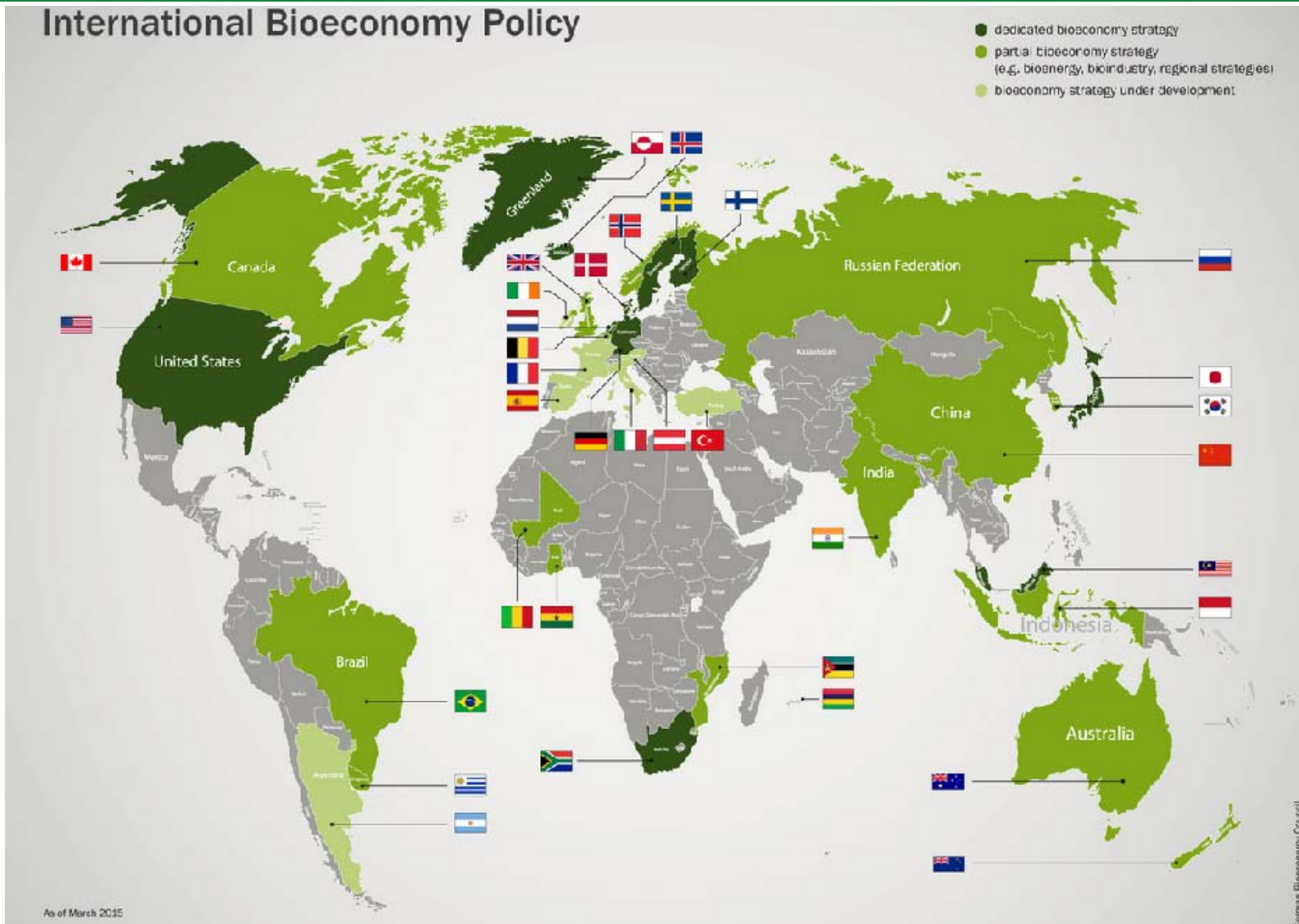*(Kilometro Rosso, PTP, Comonext, BG sviluppo, Polo tecnologico di PV)*

International Bioeconomy Policy

Legend:
- dedicated bioeconomy strategy
- partial bioeconomy strategy (e.g. bioenergy, bioindustry, regional strategies)
- bioeconomy strategy under development

As of March 2015

RIS3 an «alive» strategy constantly evolving and updating

S3 Definition
... *update*

Implementation of the action plan

Impact **Monitoring** and **Evaluation**

Knowledge generation

Policy Learning Process
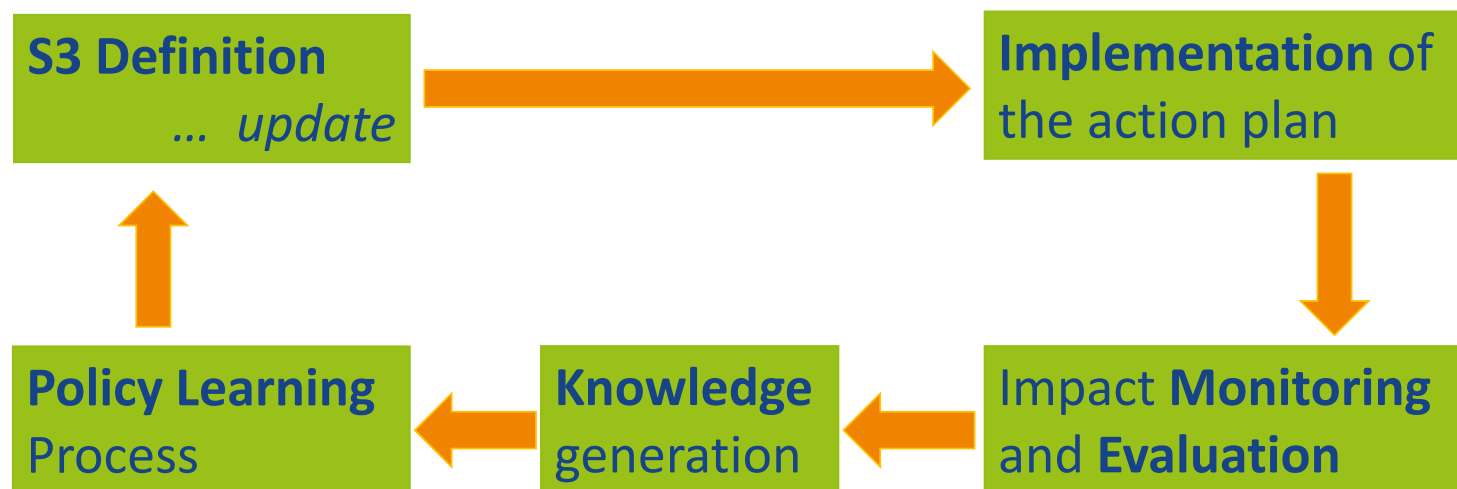
Lombardy's RIS3 and WPs of the SAs the legislative pathway

11.7.2014
1st update to the regional S3 (DGR X/2146/2014) with the principles of the regional law 11/2014 and the Industrial Strategy (DGR X/1379/2014)

24.4.2015
Second update of the S3 document (DGR X/3486/2015) *Approval by CE (Ref. Ares (2015)2828088 - 06.07.2015)*

28.11.2017
III updated of the RIS3 approved containing the main principles of the Regional law 29/2016 (DGR X/7450/2017)

7.10.2014
The WPs 2014-2015 of the 7 Specialisation Areas are approved and published

5.12.2013
With DGR X/1051/2013 RL approved the S3 Document

18.11.2016
After a 3 months process (consultation with stakeholders) the WPs 2017-2018 have been approved (DGR X/3336/2016)

2017

2016

2015

2014

2013

Approval of the Regional Law 29/2016

Smart Specialisation Strategy Lombardia

Lombardy RIS3 supporting tools

2 main lines of actions have been set-up in line with the regional strategy framework
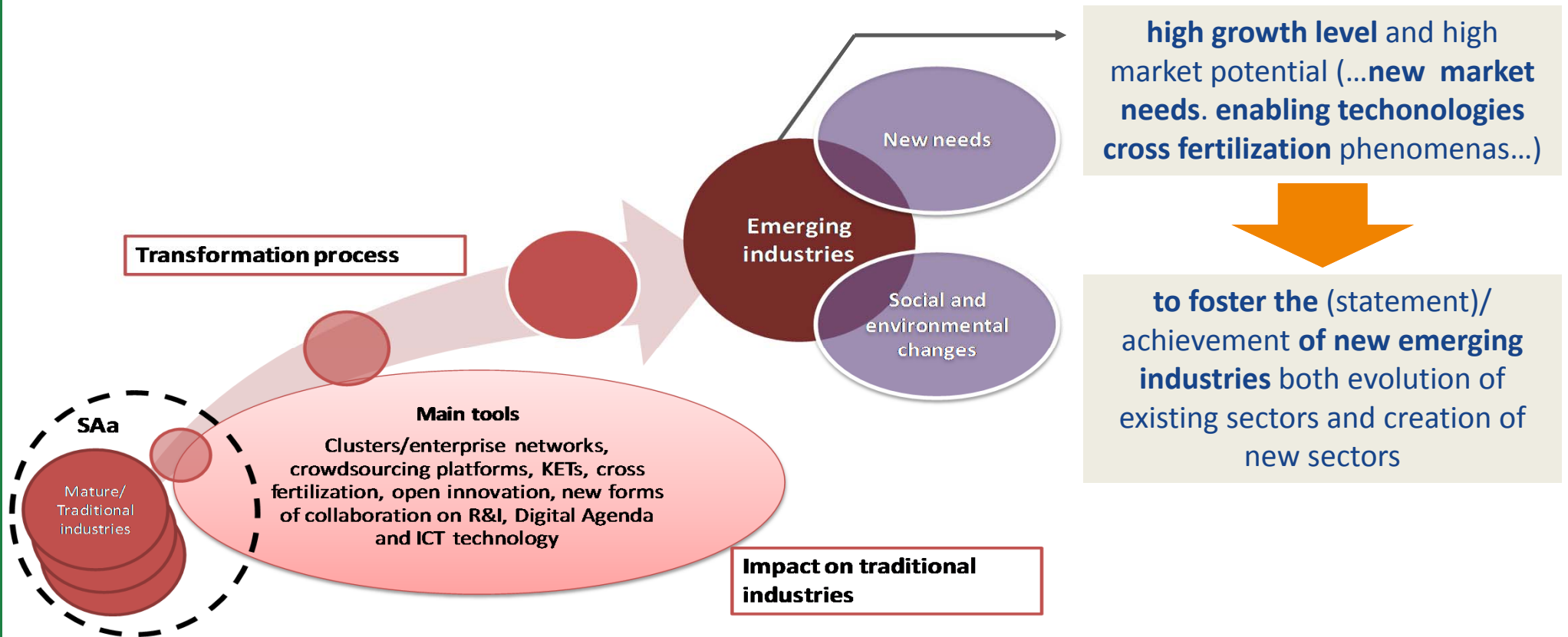(Law n. 29 "Lombardy is Research and Innovation and RIS3")

tools to support establishment
of **Enabling Environments** to
facilitate the evolution of business
into emerging industries
**(Lombard Technological Clusters,
regional Open Innovation Platform)**

Policy Mix – Direct Measures,
giving the companies a series of
straightforward tools, supporting
them in each life-cycle phase
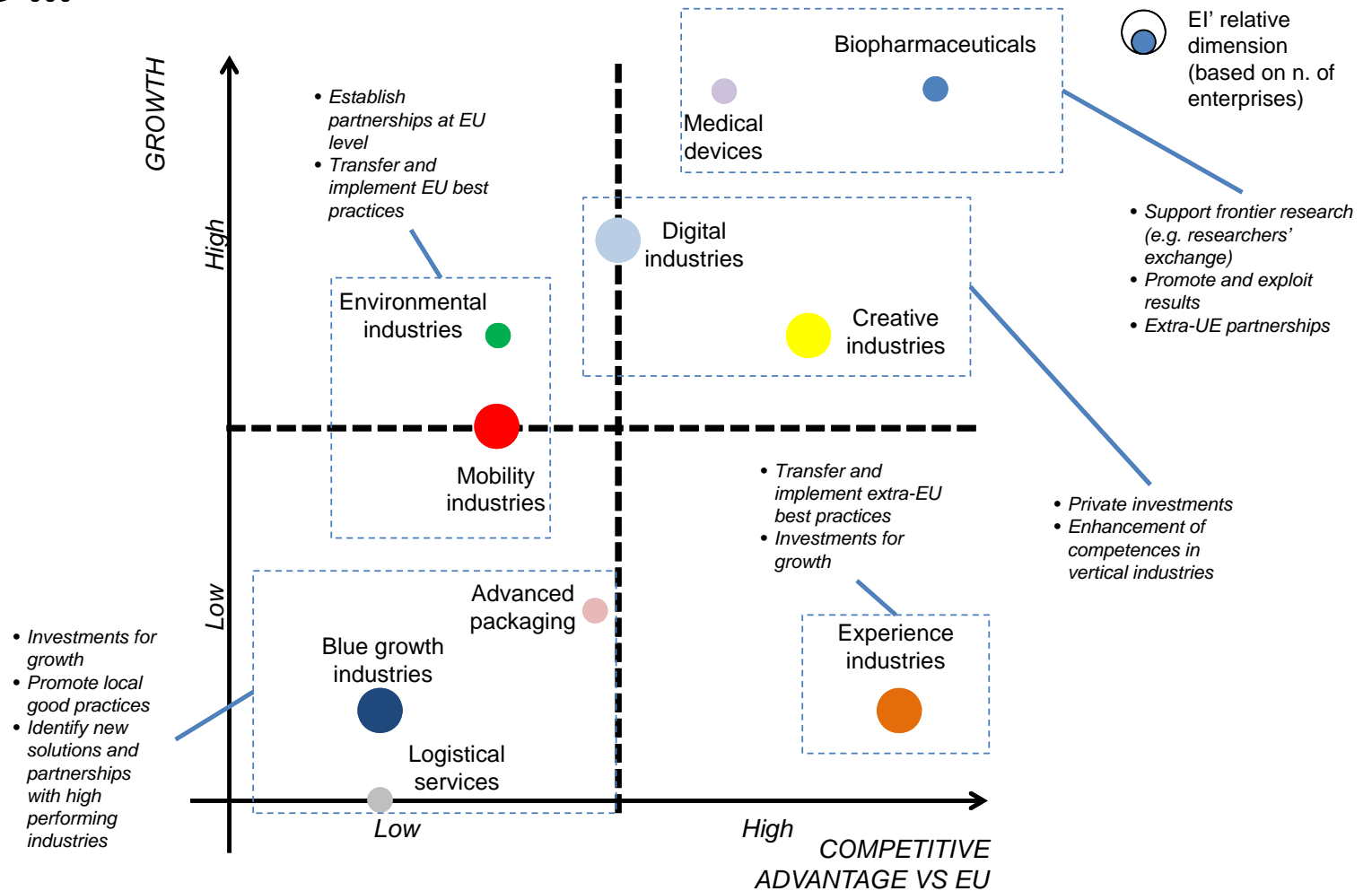
+
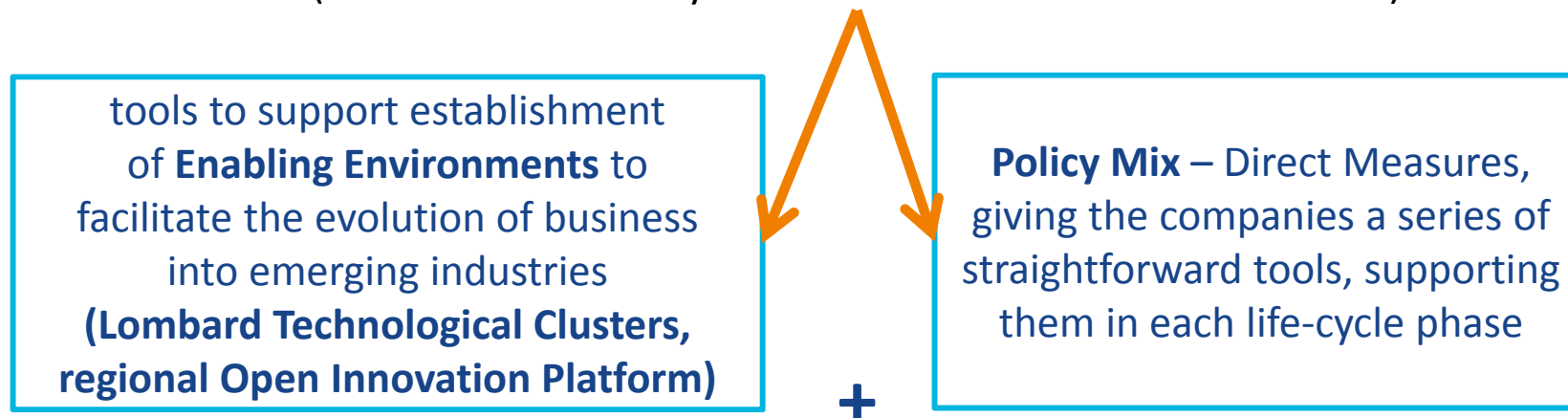
Cross-Cutting Actions
*(e.g. Lombardy Region Delegation to the EU,
European networks & initiatives such as
EEN, Vanguard Initiative, NEREUS, ECRN,
Four Motors for Europe, Eusalp, …)*

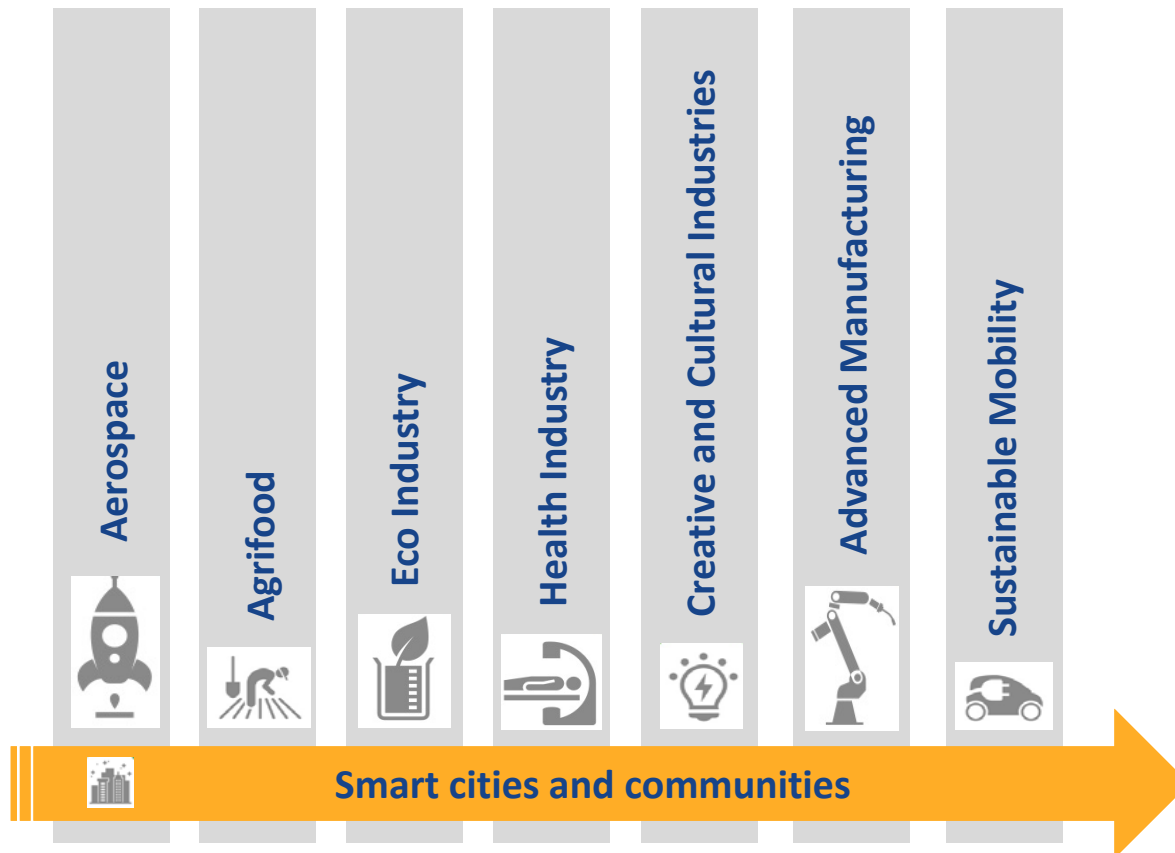# The Challenge ...
path towards Emerging Industries

Transformation process

SAa

Mature/ Traditional industries

Main tools

Clusters/enterprise networks, crowdsourcing platforms, KETs, cross fertilization, open innovation, new forms of collaboration on R&I, Digital Agenda and ICT technology

Impact on traditional industries

New needs

Emerging industries

Social and environmental changes

high growth level and high market potential (...**new market needs**. **enabling techonologies cross fertilization** phenomenas...)

to foster the (statement)/ achievement **of new emerging industries** both evolution of existing sectors and creation of new sectors

The Challenge … path towards Emerging Industries

GROWTH

Establish partnerships at EU level
Transfer and implement EU best practices

High

Environmental industries

Mobility industries

Low

Investments for growth
Promote local good practices
Identify new solutions and partnerships with high performing industries

Blue growth industries

Logistical services

Advanced packaging

Low

Medical devices

Biopharmaceuticals

Digital industries

Creative industries

Transfer and implement extra-EU best practices
Investments for growth

Experience industries

High

COMPETITIVE ADVANTAGE VS EU

EI' relative dimension (based on n. of enterprises)

Support frontier research (e.g. researchers' exchange)
Promote and exploit results
Extra-UE partnerships

Private investments
Enhancement of competences in vertical industries

Lombardy's Specialisation Areas

Aerospace

Agrifood

Eco Industry

Health Industry

Creative and Cultural Industries

Advanced Manufacturing

Sustainable Mobility

Smart cities and communities

Lombardy has identified the transversal themes of SCC to stimulate integrated projects and to encourage the expertise of the SAs

Lombardy's RIS3 Specialisation Area's Work Programmes 2017 - 2018

Area of Specialisation	Macro Themes	Development Theme
ECO-INDUSTRY (ENVIRONMENT AND ENERGY)	AE1 Distributed generation and management of energy	AE1.1 Development of technologies and/or innovative solutions for smart grids
		AE1.2 Development of intelligent systems for management, monitoring and safety of the network infrastructure
		AE1.3 Development of new innovative systems and/or technologies to promote the integration of electrical, communication and thermal network infrastructures, in a smart city framework
	AE2 Technological evolution of renewable sources	AE2.1 Development of new technologies and/or innovative systems or renewable source technologies (for example, third generation photovoltaic, new mini-hydro technologies for systems with low environmental impact)
		AE2.2 Development of new applications for hydrogen-powered fuel cells, for example, in the civil and transport sectors
	AE3 Energy accumulation systems	AE3.1 Development of technologies and/or innovative small accumulation systems, including non-conventional types
		AE3.2 Development of innovative technologies and/or large accumulation systems for energy applications
	AE4 Infrastructures for electric mobility	AE4.1 Development of innovative slow, fast and rapid (motorway) charging solutions for personal, collective and goods electric mobility
	AE5 Intelligent illumination	AE5.1 Development of innovative technologies and new materials for efficient light production
		AE5.2 Development of multipurpose integrated systems for intelligent management of public illumination
	AE6 Technologies and materials for the building system	AE6.1 Development of innovative building materials and/or systems to increase the quality of life in civil and industrial buildings (for example, construction materials and/or techniques to give buildings with very high thermal-acoustic insulation and low environmental impact)
		AE6.2 Development of low-cost innovative building technologies and techniques for reuse and recycling of materials used in construction
		AE6.3 Development of innovative "Building-Plant" systems for effective and efficient integration for renewable sources in construction
		AE6.4 Development of innovative building technologies and techniques for building redevelopment, including energy, to lower costs of management and maintenance of buildings with special focus on public, artistic and historic heritage
		AE6.5 Development of innovative integrated systems to monitor energy consumption in industrial and civil buildings, with special focus on public ones and development of innovative tools and models for management and use of building information throughout its life cycle with a view to energy savings
		AE6.6 Development of technologies, intelligent materials and/or innovative components for "non- structural" elements (for example, partitions, false ceilings, window and door frames, building systems, storage systems) for personal safety in the event of natural or man made incidents

Area of Specialisation	Macro Themes	Development Theme
ECO-INDUSTRY (ENVIRONMENT AND ENERGY)	AE5 Intelligent illumination	AE5.2 Development of multipurpose integrated systems for intelligent management of public illumination
	AE6 Technologies and materials for the building system	AE6.1 Development of innovative building materials and/or systems to increase the quality of life in civil and industrial buildings (for example, construction materials and/or techniques to give buildings with very high thermal-acoustic insulation and low environmental impact)
		AE6.2 Development of low-cost innovative building technologies and techniques for reuse and recycling of materials used in construction
		AE6.3 Development of innovative "Building-Plant" systems for effective and efficient integration for renewable sources in construction
		AE6.4 Development of innovative building technologies and techniques for building redevelopment, including energy, to lower costs of management and maintenance of buildings with special focus on public, artistic and historic heritage
		AE6.5 Development of innovative integrated systems to monitor energy consumption in industrial and civil buildings, with special focus on public ones and development of innovative tools and models for management and use of building information throughout its life cycle with a view to energy savings
		AE6.6 Development of technologies, intelligent materials and/or innovative components for "non- structural" elements (for example, partitions, false ceilings, window and door frames, building systems, storage systems) for personal safety in the event of natural or man made incidents
	AE7 Technologies for managing, monitoring and processing of water, air and waste	AE7.1 Development of innovative technological solutions for detection, anti-pollution and cleaning/purification of urban and industrial water and of the air
		AE7.2 Development of ICT solutions and innovative systems for monitoring, controlling the use and optimisation of water consumption in urban and industrial areas
		AE7.3 Development of innovative, integrated, intelligent technologies and/or systems for collection, managing and processing waste
ECO-INDUSTRY (GREEN CHEMISTRY)	CV1 Sustainable catalytic processes for industrial applications	CV1.1 Development and optimisation of (bio) catalysers within the Green Chemistry sector
		CV1.2 New biocomputer approaches and methods for industrial biotechnologies and for Green Chemistry
	CV2 Creation of biorefineries to give products with added value	CV2.1 Development of processes based on the concept of biorefineries for the production of fine- and bulk-chemicals
		CV2.2 Development of processes based on the concept of biorefineries for the production of biomaterials
		CV2.3 Development of processes based on the concept of biorefineries for the production of bioenergies
	CV3 New catalysed and/or biocatalysed cascade chemical processes	CV3.1 Development of multi-enzymatic and chemo-enzymatic cascade processes
		CV3.2 Metabolic engineering and synthetic biology

28.11.2017
III updated of the RIS3 approved containing the main principles of the Regional law 29/2016 (DGR X/7450/2017)

2017

2016

18.11.2016
After a 3 months process (consultation with stakeholders) the WPs 2017-2018 have been approved (DGR X/3336/2016)

Approval of the Regional Law 29/2016

RIS3 (III update, 2017) and SAs WP 2017-2018

Transversal driver supporting the transition
to Emerging Industries
In the first edition there was only
Smart Cities and Communities (connection with Social Innovation)
With the evolving and updating new drivers
have been introduced:
Industry 4.0;
bioeconomy;
circular economy;
Cybersecurity;
Social innovation;
Responsible innovation.

- **strategic and transversal**
- **opportunity for the growth and development of the territory**
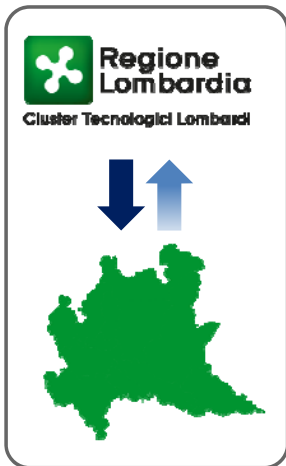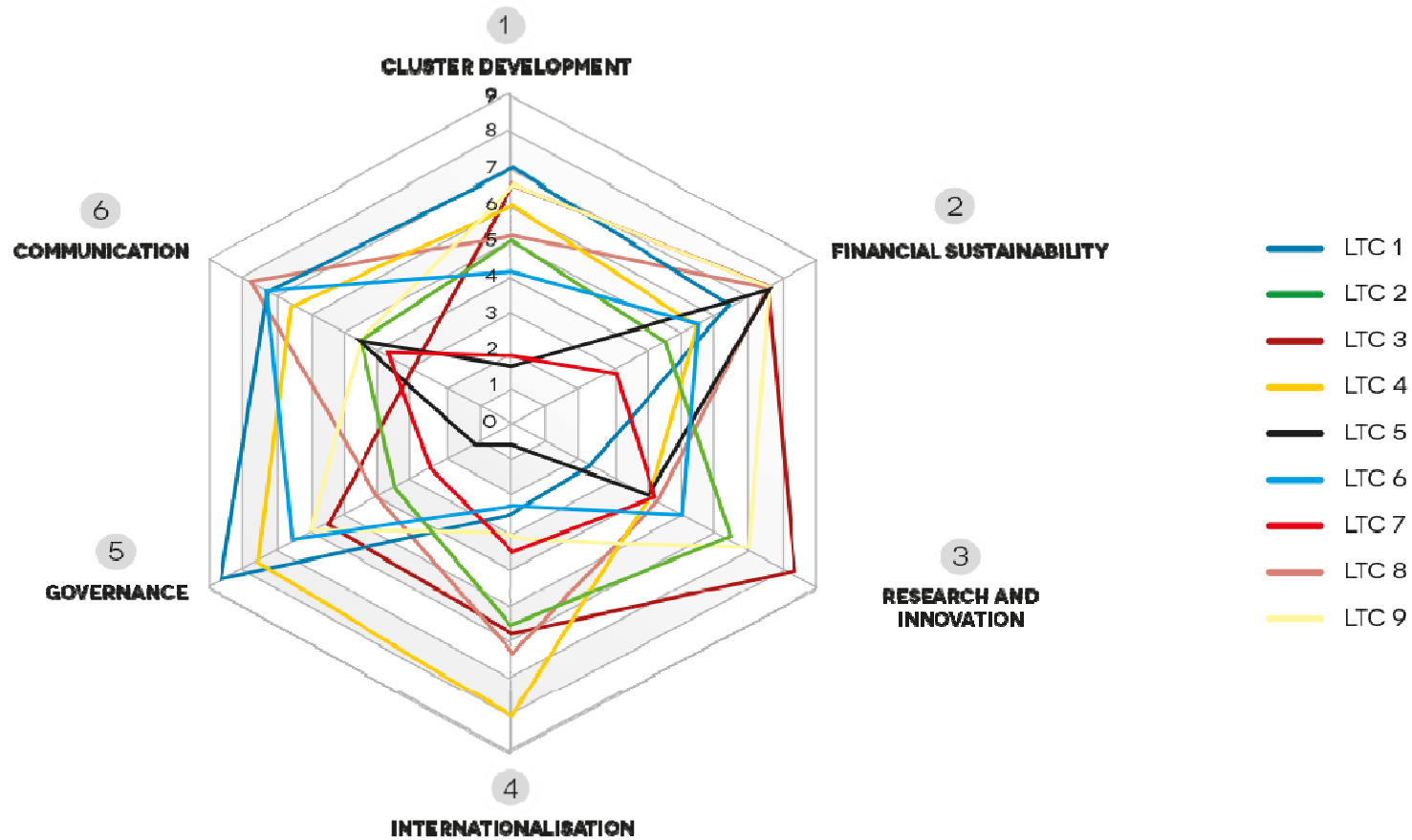
Open Innovation Platform

Public use interface (no.1)

Internal interface
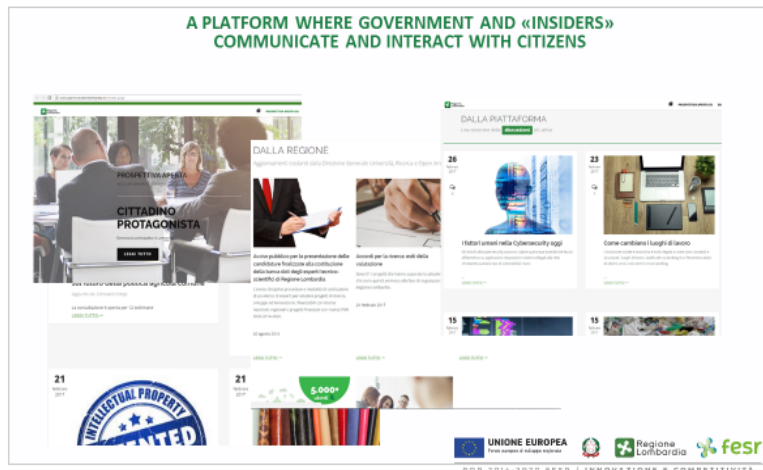
aims to stimulate the creation of Innovation ecosystems addressing the challenges of the RIS3

www.openinnovation.regione.lombardia.it

Public use interface (no.2)

Inward and outward looking …
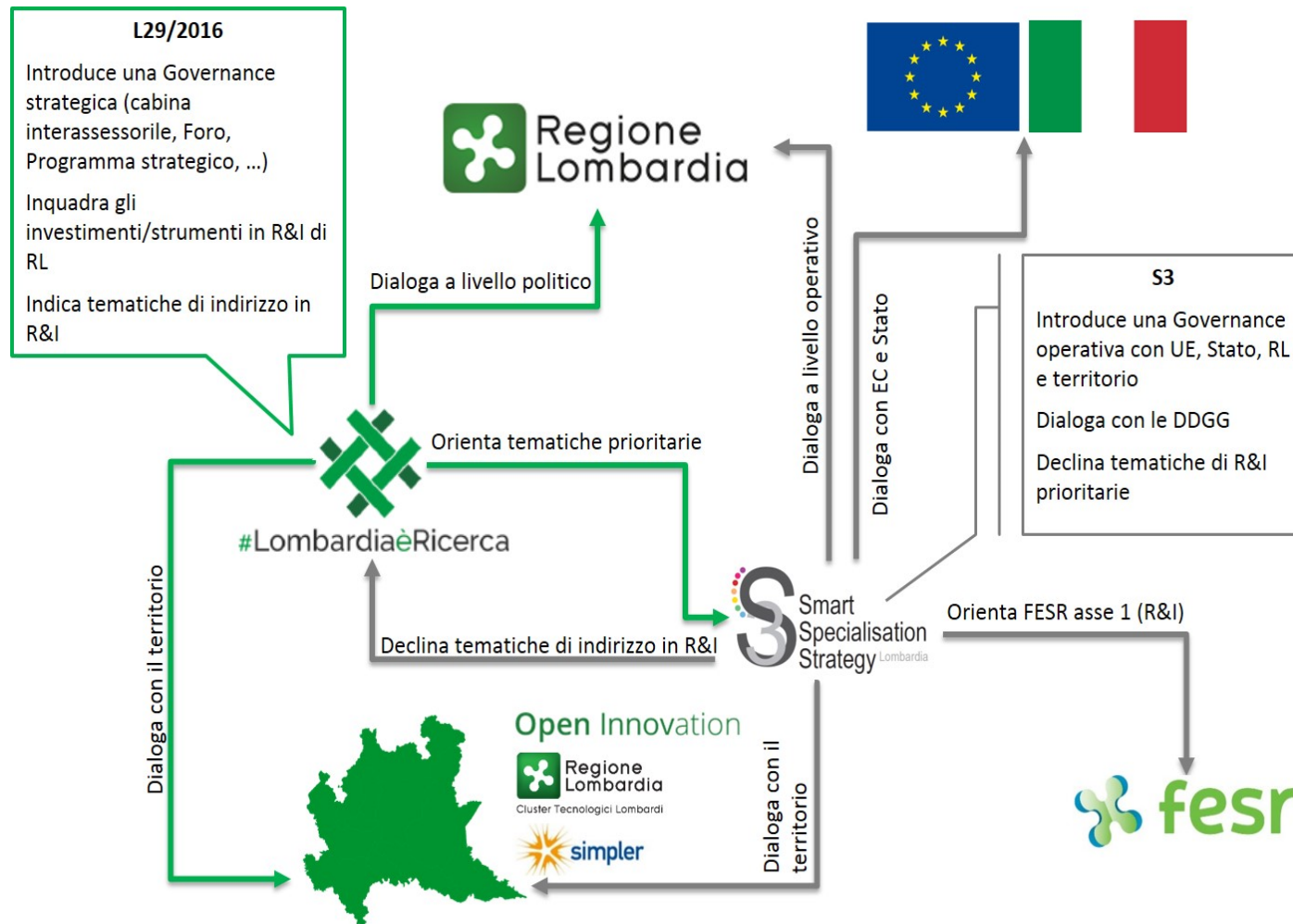
Partner e alcuni stakeholder...

European Cooperation and Networking

Lombardy Region is participating actively in **networking activities**.
We are member of relevant EU netwoks focused on
policy development or **more specific sectorial themes**.

European Cooperation and Networking

Lessons learned ...   *till now*

implementation of **synergy** between business system and of R&I asset
promote **technology transfer**

act the principle of **consistency /** identify a clear and concrete objective

cross-fertilization phenomena

guarantee diversification of the regional initiatives

encourage negotiation phases with potential beneficiaries

territorial characterization