



REGIONE
PIEMONTE



CENTRO SERVIZI INDUSTRIE

The role of Innovation Clusters for Industry 4.0

The MESAP success story

XXVIII Assemblea Generale dell'Italy-
Japan Business Group (IJBG)

25th November 2016

Milan

MESAP
Innovation Cluster
for Smart
Products and
Manufacturing



Who we are

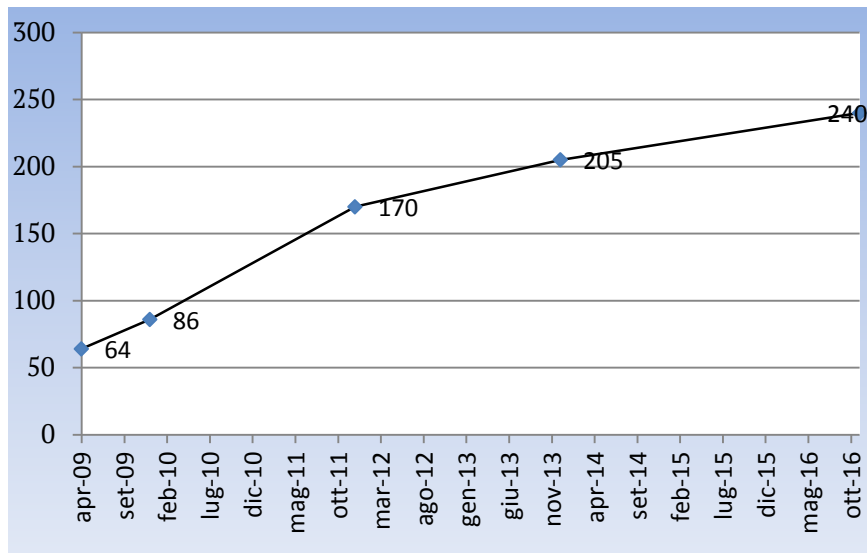


- MESAP was grounded in **Turin** in 2009 as the **Piedmont Innovation Cluster for Smart Products and Manufacturing**
- It has been **co-funded by the Piedmont Region** using the ERDF (European Regional Development Fund)
- MESAP **mission** is to strengthen and complement local supply chains, enhancing their competitiveness all over the world, through:
 - technology transfer actions (from research centers to firms and among firms)
 - international expansion (both for business and research)

MESAP: some numbers



MESAP growth from 2009 to 2016



240 Members

229 Companies

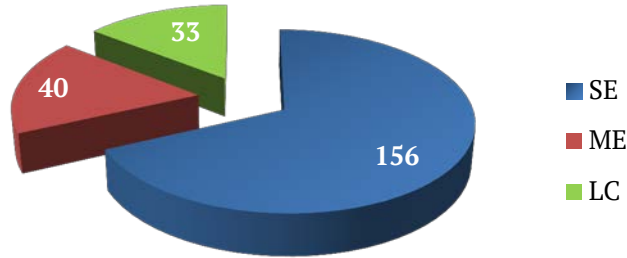
11 Universities and Research Centers

34.500 Total employees

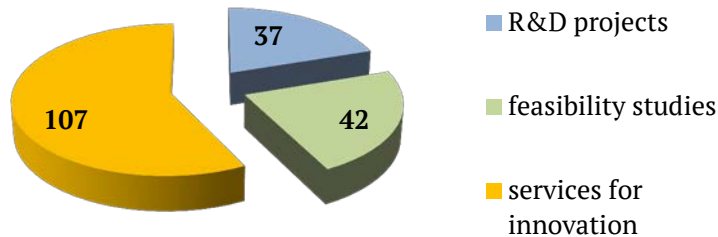
15 Industrial sectors

A snapshot

MESAP companies size



R&D total activities

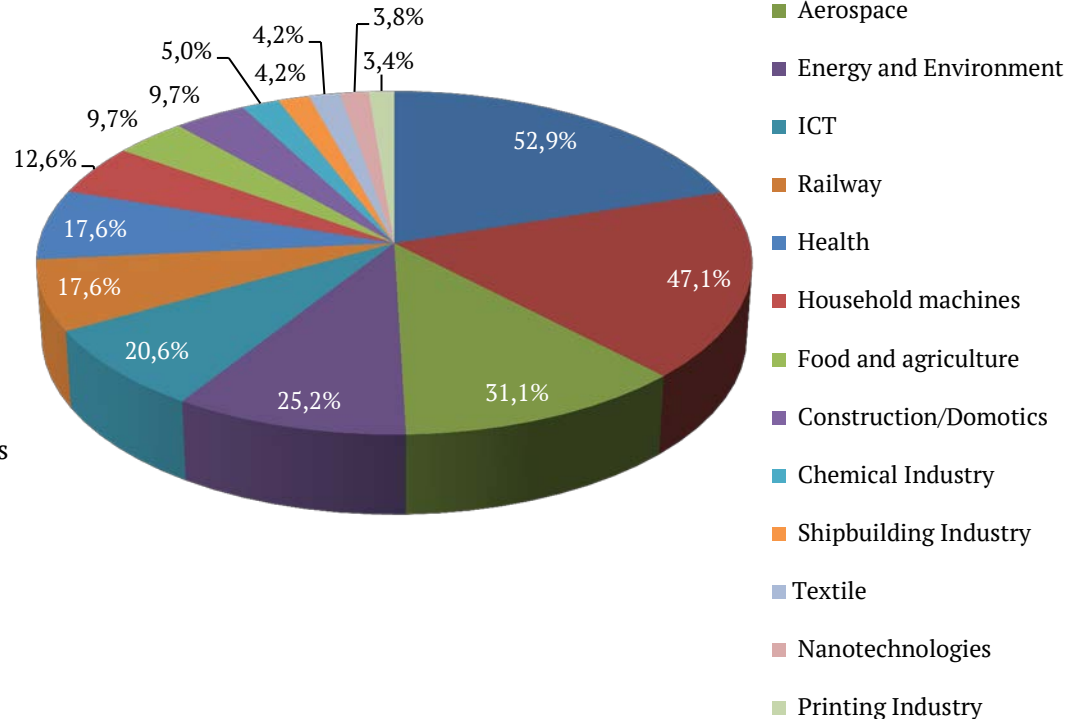


R&D total investments

46 M€ (total costs)

22 M€ (public funding)

MESAP companies market segments



R&D projects' success stories

Mechatronics for production processes:

- **Amico project:** advanced monitoring and intelligent control
- **Adhoc project:** advanced design procedure for tailor-made high performance open and flexible control systems
- **Xsia project:** extended SCADA over IP architecture
- **Eha Inavico project:** electro hydrostatic actuation for industrial automation and vibration control
- **mflex project:** flexible micro-manufacturing system coupling laser and high speed drilling machine
- **Smash gaming project:** miniaturized sensor for the analysis and sensing of H2S and other toxic gases by means of nanostructures integration

Mechatronics for biotechnology:

- **Biowid project:** development of a wireless device for monitoring of muscle activation

Mechatronics for railway:

- **Pocde project:** polyvalent cable development

Mechatronics for agrifood:

- **Green Plasma project:** new self-controlled green process for plasma based "on site" micro processing of industrial wastewater and solid waste

MESAP Internationalization program

- Direct participation in international projects
 - Support to the members for H2020 program
 - Participation in European Technology Platforms (EFFRA, EPoSS)
 - Networking with international Clusters (e.g. SCS, Viaméca, MC Upper Austria, Mechatronik BW, etc.)
 - International cooperation with target countries (e.g. Japan in Fukuoka in 2015)
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MESAP: The role of the innovative start ups

- 28 INNOVATIVE START UPS (11,5% of the total membership):
 - 17 (61%) dealing with design and process innovation within the smart manufacturing (INDUSTRY 4.0)
 - 11 (39%) dealing with design and product innovation for smart products and related services
 - They represent a valuable resource for R&D in the projects, together with Research Centers and Universities
 - They contribute with strong attitude and focus to the innovation process
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MESAP: un Polo fatto di persone

MESAP: a cluster made of people

Guido Colombo
Orchestra Srl - President

MESAP Steering Committee Member

Thank you

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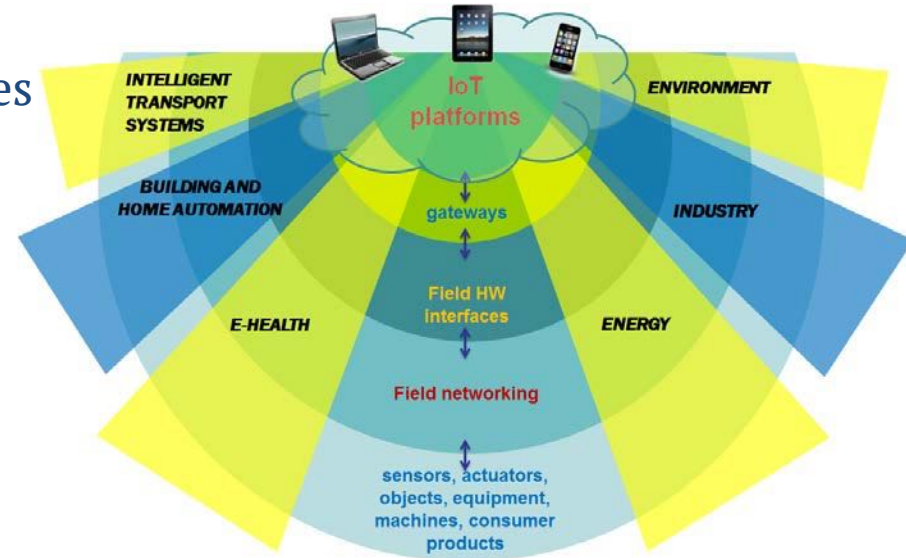
www.orchestrweb.com



Multidisciplinary nature of IIOT projects for Industry 4.0

- A stack of complex technologies requires different skills and experiences
- The Industry 4.0 projects need to aggregate different suppliers with specific knowledge and expertise

Layer level	Degree of complexity	Type of objects
1° IoT platform	10	Software components
2° gateways level	10 ²	HW + embedded software + SIM cards + Wi-fi + ethernet
3° local HW interfaces level	10 ³	HW + embedded SW
4° local connectivity level	10 ⁵	Wi-Fi, Bluetooth, Zigbe, WSN, other protocols
5° field level	10 ⁹	Sensors, actuators, internet objects, equipment, machines



How to improve machineries and shopfloor

Major investments are needed to leverage the new INDUSTRY 4.0 paradigm

Public support actions are already put in place in different geographies worldwide

The average age for working machines in Italy was 13 years in 2015. It was 10,5 years in 2005 (source: UCIMU)

The injection of new technologies is also welcome to retrofit the existing machines making them connected and smarter