

Bi-rex – Big Data Innovation & Research EXcellence¹

Bi-rex acts as a strategic and operational support Hub for manufacturing companies oriented towards the digitalization and automatization of industrial processes falling under the Industry 4.0 national framework.

Bi-rex gathers the know-how of Emilia's High Technology network (industrial laboratories, infrastructures, Digital innovation Hubs) with the aim to develop high ICT solutions properly finetuned to SMEs' needs.

Bi-rex focuses its efforts on two main areas of development:

- Big data and new digital business models applied to/for manufacturing industries.

In other words: enabling new technologies that facilitates the processing of big data and the implementation of highly sophisticated tech resources such as AI, machine learning and predictive diagnostic for business efficiency and competitiveness;

- Additive Manufacturing

Specifically related to the primary activities of any Manufacturing industry's value chain, the additive manufacturing consists of new technologies applied to the transformation of the primary inputs.

Bi-rex's mission is declined in 3 long-term objectives:

1. To establish a training, orientation and consultancy system for companies closely integrated to others Digital Innovation Hubs at national level.
2. To empower and strengthen a large ecosystem that prospers of innovative projects, experimental developments applied to the targets' needs and public-private initiatives focused on research and business competitiveness.
3. To test, validate and pilot a demonstration production plant to further foster the adoption of enabling and innovative 4.0 technologies for business management and SMEs competitiveness.

Moreover, Bi-rex has a very strong focus on digital education and consulting, which is made possible through several training programs, conferences, workshops, events and round tables highly customised on the basis of the target audience.

Bi-rex provides specialised expertise and knowledge on what are known the “enabling technologies” for the digitalisation of the manufacturing industry:

- Smart production technologies – new production technologies that link all the elements coexistent within the production: human operators, machines and tools.

¹ <https://bi-rex.it/>



- Smart services technologies – the overall "IT infrastructures" and techniques that allow the integration processes among the various systems involved, with no sort of exclusion or barrier (both cultural and technical).
- Smart energies technologies – the sustainment of highly efficient energy-consumption parameters, supporting at the same time essential goals of CSR.

Strengths and lessons learnt

Bi-rex stands as a very strong, solid and reliable initiative that leverages on multiple opportunities emerging from the great exploitation of the most avant-garde 4.0 technologies combined with the longstanding traditional know-hows and expertise of the Italian manufacturing industry.

The strength of the program is the ability to record the mutual dialogue existing between such diverse ecosystems whose harmony is allowed to guarantee for:

- *Highly innovative projects aimed at implementing never-seen-before solutions to well-know and longstanding business' needs.*
- *A productive system with no real sector, company and industry's constraints*
- *Never ending transfer of technological skills*
- *Prototype productions with great added value*
- *A continuous fostering of a cultural discussion that seems so desperately needed at national level.*

