

FOUNDATION

Interreg Europe



European Union
European Regional
Development Fund

FOUNDATION Good Practice

Good Practice Owner: ITS MAKER Foundation – Reggio Emilia Headquarters

Presented by: Valeria Reggi, PhD- International Relations

FOUNDATION Partner: ITS MAKER Foundation



The ITS MAKER Foundation,
an educational institution for
resilience to change
addressed to competency systems
in manufacturing businesses.

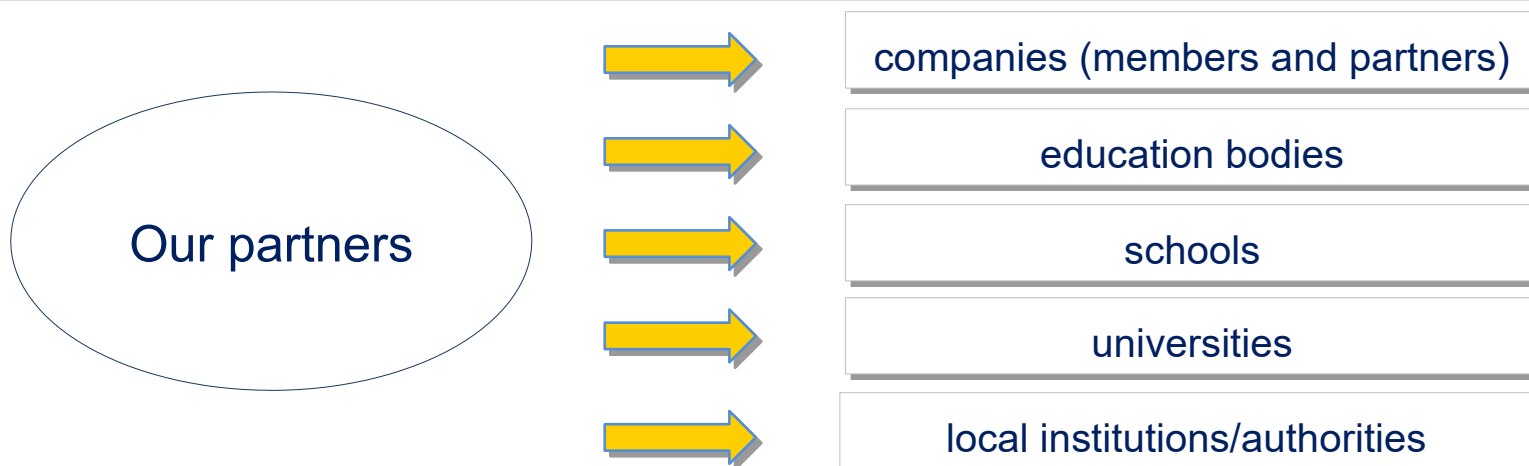


ITS MAKER: the Foundation in a nutshell

ITS are **technology schools** created by the Ministry of Education in 2008 for offering **highly professionalizing training courses** to **secondary-school graduates**.



- ▶ 2011: opening of the course of Mechatronics in Reggio Emilia;
- ▶ 2013: ITS Maker is established by merging the ITS Foundations of Bologna, Modena, Reggio Emilia;
- ▶ 2015 -2019: opening of Fornovo di Taro (Parma), Forlì and Rimini;
- ▶ 2018: opening of the course of Industrial Processes in Reggio Emilia;
- ▶ Autumn 2021: expected opening of the *Advanced technician for digital automation* course in Reggio Emilia.



ITS MAKER, the Academy of Advanced Mechanics in Emilia-Romagna

⚙️ **Mechatronic systems**

⚙️ **Integrated management of industrial processes**

🖨️ **Advanced technician for digital automation**

⚙️ **Endothermic, hybrid and electric motors**

⚙️ **Mechanical design and materials**

⚙️ **International commercial management of products and services**

Fornovo T.

Reggio Emilia

Modena

Bologna

⚙️ **Composite Materials and 3D Printing**

⚙️ **Automation and mechatronic systems**

⚙️ **Digitalization of manufacturing companies**

⚙️ **Automation and packaging**

Forlì

Rimini

⚙️ **Management of technological innovation of industrial processes**



the Academy of Advanced Mechanics in Emilia-Romagna



**ADVANCED TECHNICIAN FOR
COMPOSITE MATERIALS AND
3D PRINTING**

FORNOVO DI TARO (PR)



**ADVANCED TECHNICIAN FOR
INTEGRATED MANAGEMENT
OF INDUSTRIAL PROCESSES**

REGGIO EMILIA



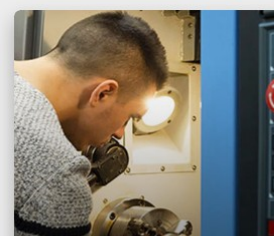
**ADVANCED TECHNICIAN FOR
MECHATRONIC SYSTEMS**

REGGIO EMILIA



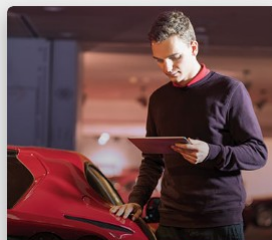
**ADVANCED TECHNICIAN FOR
INTERNATIONAL COMMERCIAL
MANAGEMENT OF PRODUCTS
AND SERVICES**

MODENA



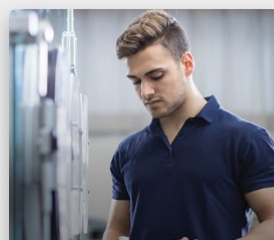
**ADVANCED TECHNICIAN FOR
MECHANICAL DESIGN AND
MATERIALS**

MODENA



**ADVANCED TECHNICIAN FOR
ENDOTHERMIC, HYBRID AND
ELECTRIC MOTORS**

MODENA



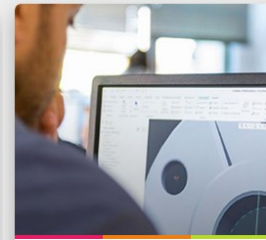
**ADVANCED TECHNICIAN FOR
AUTOMATION AND
PACKAGING**

BOLOGNA



**ADVANCED TECHNICIAN FOR
THE DIGITALIZATION OF
MANUFACTURING COMPANIES**

BOLOGNA



**ADVANCED TECHNICIAN FOR
THE MANAGEMENT OF THE
TECHNOLOGICAL INNOVATION
OF INDUSTRIAL PROCESSES**

FORLÌ



**ADVANCED TECHNICIAN FOR
AUTOMATION AND
MECHATRONIC SYSTEMS**

RIMINI



Professional Profile: Mechatronic Systems Technician

Design, industrialization, programming, production and quality management for product manufacturing in the mechanical, mechatronic, automation and robot sector.

Areas of mechatronics, automation, hydraulic, mechanics and electronics.

Professional Profile: Industrial Processes Technician

- production process management, applying digital technologies of Industry 4.0 and continuous improvement (lean production) to integrate internal production lines with materials from suppliers;
- operational processes of production, handling, storage and distribution of materials;
- management of information flow to/from the supply chain.



And one more to come...

PROVINCIA
DI REGGIO EMILIA



UNIMORE

UNIVERSITÀ DEGLI STUDI DI
MODENA E REGGIO EMILIA

Dipartimento di Ingegneria
"Enzo Ferrari"



FOUNDATION
Interreg Europe



Istituto Tecnico Statale
Luigi Einaudi



ISTITUTO PIERO GOBETTI
Scandiano (RE)

Istituto d'Istruzione Superiore
FRANCESCO ALBERGHETTI
IMOLA



Sapere utile



IIS
Nelson Mandela
Castelnovo ne' Monti

CA Istituto di Istruzione Superiore
Cattaneo Dall'Aglio

Collegio dei Periti Industriali
e dei Periti Industriali Laureati
della Provincia di Reggio Emilia



scuola per la gestione d'impresa

AA **REGGIANA
RIDUTTORI**
PLANETARY REDUCTION **GEARS**



REI REGGIO
EMILIA
INNOVAZIONE



A
ISTITUTO **SILVIO D'ARZO**



comer industries

CLEVERTECH
HANDLING
VALUE SENSITIVE

S.E.I.srl
Società Elettrotecnica Industriale

ELETTRIC80



ognibene power



BUCHER
hydraulics

KOHLER
IN POWER. SINCE 1920.



The challenges for the Reggio Emilia area:

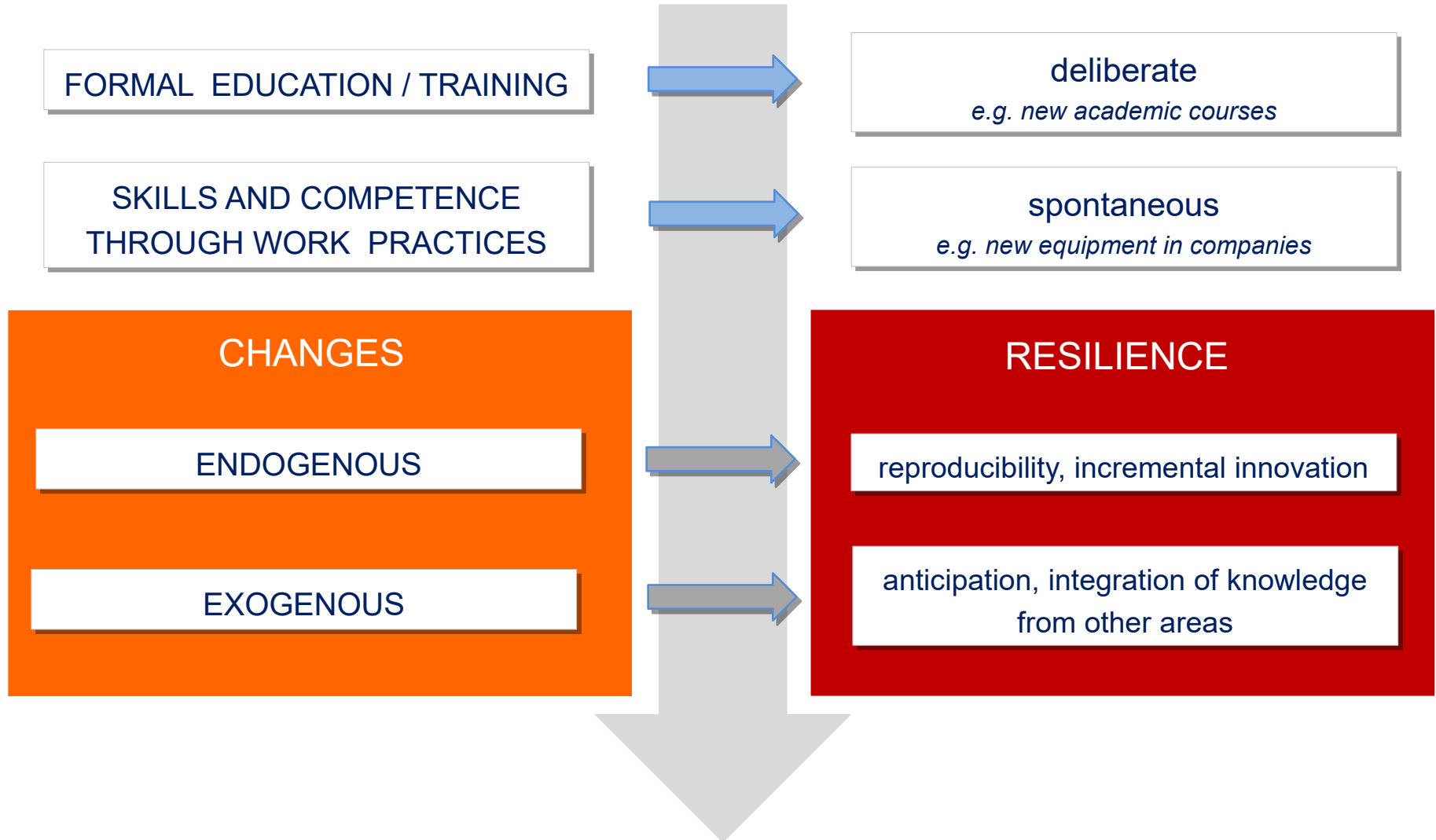
- ▶ Digital transformation;
- ▶ Environmental challenges;
- ▶ Production globalization;
- ▶ Technological evolution;
- ▶ Covid-19 pandemic;
- ▶ Population decline/lack of young competencies.



need of the local competency system to improve resilience

The resilience of local competency systems

LOCAL COMPETENCY SYSTEMS



increase of awareness and knowledge of technical culture

Co-designing competency systems

To meet societal and economic challenges, ITS Maker cooperates with educational institutions and companies to co-design courses and training. This process involves

- ▶ contribution from the **Executive Board, local councils and Technical Scientific Committee** of the Foundation;
- ▶ collecting **emerging needs from partner companies** on a regular basis;
- ▶ **co-designing** professional profiles;
- ▶ **sharing educational responsibilities** with partner companies (on-site teaching, company case studies, guided visits);
- ▶ **co-designing tailor-made internships** for individual students (skills and talents are matched with specific professional profiles that companies request);
- ▶ final **shared evaluation of results** based on how the professional profile fits the job market.



intensive collaboration with partner companies



educational offer that matches the needs of local enterprises

Competency system networking

To foster the evolution of local competency systems in response to challenges and changes, ITS Maker focuses on networking in terms of:

- ▶ **developing curricula in cooperation with the schools, universities and educational institutions** that are members of ITS Maker's Technical Scientific Committee;
- ▶ **sharing teaching, laboratories and premises**;
- ▶ participating in **regional and national networks** operating in the same/similar areas (e.g. ITS Mechatronics National Network);
- ▶ **Erasmus+** exchanges and staff mobility;
- ▶ **collaborating with governmental institutions and local associations** to define educational policies (e.g. ITS Regional Association).



network of education networks

Implementation costs:

- ▶ approximate **cost of a two-year course: € 300,000** – including teaching, services, staff, laboratories, advertising, internship and placement, etc.;
- ▶ **cost per student: € 12,000** (public national and regional funding, obtained only upon successful completion of the course);
- ▶ **cost per hour: € 150**;
- ▶ expense covered by **each company: € 0** (possible occasional contribution to teaching activities or other: **< 5,000 €/year**)
- ▶ student **fees**: approx. **€ 250** (enrolment and exam fees).

Challenges and issues of implementation:

- ▶ **variety of educational culture**;
- ▶ **precariousness of funding** and consequent difficulties in long-term planning;
- ▶ **lack of dedicated headquarters** (compensated by sharing the premises of other schools);
- ▶ the mechatronic sector involves a **wide range of core businesses**; pros: variety and cross-collaboration – cons: **course designing is complex.**)

Reasons for the success of ITS Maker's competency system:

- ▶ mechatronics is a strong sector in the area and its **wide range of core-businesses** fosters **cross-collaboration**;
- ▶ the system acts on a **specific geographic area** on the grounds of its characteristics.

Evidence of success:

- ▶ **very high level of employment (95%)**;
- ▶ **professional growth** of ex-students within the companies;
- ▶ internships may be involved in **process/product innovation**.

Good practice means that results are transferrable.

Potential for learning or transfer:

- ▶ **synergy** among different subjects involved in education;
- ▶ regular **analysis modelling of educational needs**;
- ▶ **learning-by-doing** practice;
- ▶ extensive, tailor-made **internships** in local companies.

FOUNDATION

Interreg Europe



European Union
European Regional
Development Fund

Thank you.



Contacts

Federica Iotti,
Reggio Emilia
Headquarters Manager

federica.iotti@itsmaker.it