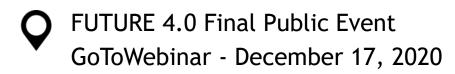
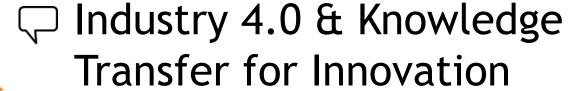


European Regional Development Fund - Instrument for Pre-Accession II Fund

FUTURE 4.0









Stefano Miotto





Strategical & Theoretical Approach for the Model



- ➤ According to "2019 World Manufacturing Forum Report: Skills for the Future of Manufacturing" is crucial to reinforce the need for industries to evolve in light of new technologies brought upon by rapid digitalisation in manufacturing
- The Fourth Industrial Revolution is moving manufacturing forward through technologies such as Advanced Manufacturing Solutions, Additive Manufacturing, Cloud, Cyber Security, Augmented Reality, Big Data & Analytics
- ➤ The disruption caused by new technology calls for new, innovative solutions that result in a change of the skills and competencies
- The skills necessary are rapidly switching from manual to cognitive based skill sets to manage intelligence systems such as robotics, AI, and advanced manufacturing
- ➤ To adapt to these changing trends, companies need to have a new mindset for building the future workforce and collaborating with educational institutions, industry associations and universities as knowledge providers



The "Knowledge Transfer Approach": Process - Action



- According to "Lab-Fab-App report Investing in the future we want" is crucial to invest in research, to produce new knowledge and to turn the acquired knowledge into innovation
- 2019 OECD report "University-Industry Collaboration: New evidence": higher education institutions and public research institutes should engage in the "knowledge co-creation" with Industry
- ➤ UIIN (University Industry Innovation Network): the technological transfer needs to be integrated within the wider logic of knowledge transfer.





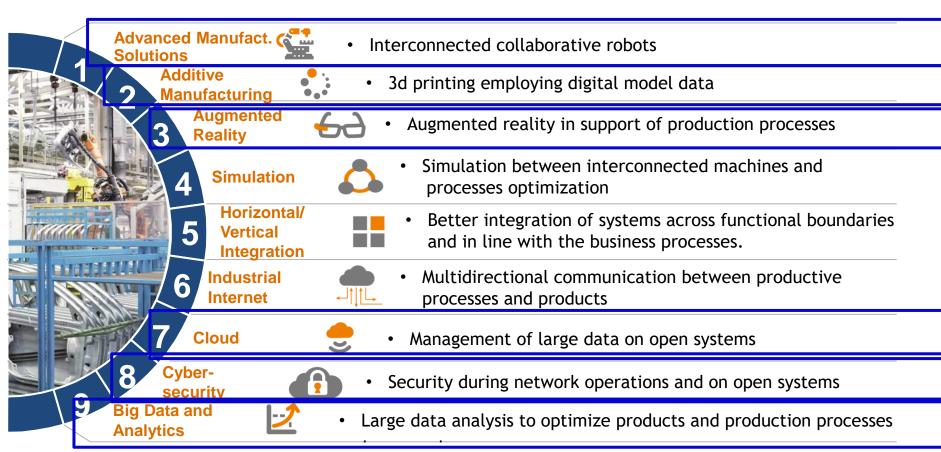
The KNOWLEDGE TRANSFER is a wide concept and includes TECHNOLOGICAL TRANSFER, as well as CHANGE and LEARNING PROCESSES



Industry 4.0 (or Digital Maturity)



New significant transformation of manufacturing industry of the shipyard and nautical logistic supply chain, the fourth industrial revolution and new digital age called INDUSTRY 4.0





I 100 LUOGHI DI INDUSTRIA 4.0

FUTURE 4.0



PROGETTO

MAPPA

PARTECIPA

EVENTI

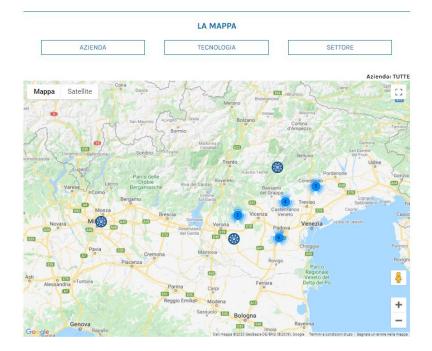


IL PROGETTO

Le Associazioni Industriali del Veneto, coordinate da Confindustria Veneto, hanno affrontato con grande impegno la sfida di Industria 4.0, promuovendo un piano strutturato che - in modo complementare e coordinato rispetto al disegno governativo e alle misure nazionali di sostegno - possa individuare una via veneta al 4.0.

L'obiettivo è quello di rendere il Veneto un "laboratorio per lo sviluppo del Paese", puntando a creare sul territorio un ecosistema favorevole all'insediamento, alla crescita e allo sviluppo di imprese e start-up attive nel campo della manifattura digitale e industria/artigianato 4.0.





http://100luoghi.industria40veneto.it



The main hypothesis: SMEs in search of knowledge



Seeking outside for new knowledge: TRENDS for competitiveness

- The rate of technological advancement and the degree of novelty, make it inadequate to acquire knowledge by experience through a path dependence learning model;
- ➤ The development of new transversal technologies made necessary by the increase of the technological bundle in the products;
- More regulations on energy saving and sustainability, as a primary innovation factor;
- ➤ The rate of technological advancement and the degree of novelty, make it **inadequate to** acquire knowledge by experience through a path dependence learning model;

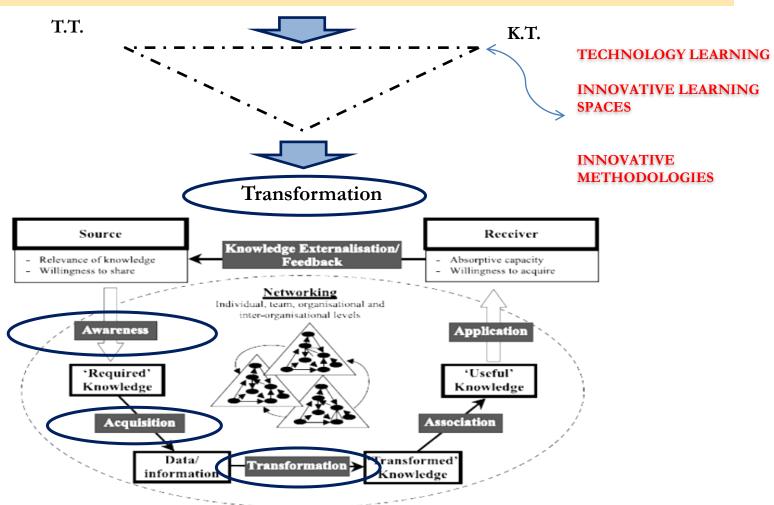
From TRANSFER of Knowledge to CAPACITY TO TRANSFORM Knowledge into Innovation



The Smart Learning Model & "Knowledge Transfer Approach"



KNOWLEDGE TRANSFORMATION FOR EFFECTIVE INNOVATION



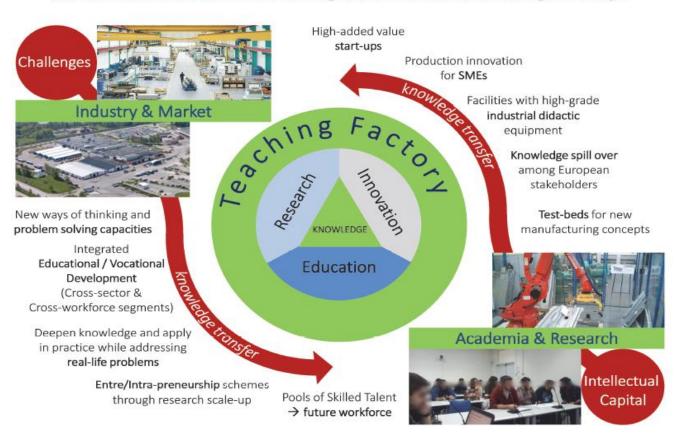
Source: Liyanage's et al. (2009) Knowledge Transfer Process Model



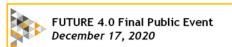
The Smart Learning Model & "The Teaching Factory Paradigm"



An educational theme for knowledge-intensive manufacturing in Europe



Source: Lab. for Manufacturing Systems and Automation, Director Prof. G. Chryssolouris University of Patras – Greece





The Promotional **Activities**

I.e. Veneto region Local Pilot Action: Main Structure

New and wide promotion to reach the 39 companies involved, belonging to the Naval Industry, the Shipbuilding and the related Supply Chain





FUTURE 4.0 PROJECT

Technologies 4.0 and applied knowledge for the nautical sector and the supply chain





ADDITIVE HANUFACTURING

It allows the creation of objects through a process of "layering" of different materials.

Advantages

- Prototyping: the production of prototypes using additive techniques (Rapid Prototyping);
- Indirect productions molds, positioning and
- Direct production: different materials and
- complex shapes / geometries; Production of spare parts.



CLOUD

Implementation of all cloud technologies such as online information storage, the use of cloud computing and external data analysis services. The Cloud also includes techniques for managing large amounts of data through open systems.

Benefits in terms of costs, flexibility, mobility, data loss prevention, security, productivity, software update.



The increase of internal and external interconnection has an impact on the security of information and systems that must not be altered from the outside.

- Reduction of take positives in terms of security;
- Reduction of operating and management costs; Elimination of human configuration errors and
- consequent business blockages;
- Drastic reduction of reaction times.



ADVANCED HANUFACTURING SOLUTIONS

Advanced production systems, namely automated material handling systems and advanced robotics (collaborative robots or cobots).

In terms of time, quality and costs, in particular for the production of standardized products.



Vision systems with augmented reality for botter judging the operators in carrying out daily activities. Advantages

TRANSFER OF KNOWLEDGE FOR INNOVATION

Cost reduction, lower risks, faster arecesse

better quality and greater efficiency.



AND ANALYTICS

Management techniques for very large amounts of data through open systems that allow forecasts or predictions. Advantages

Cost reduction, new products and services, better and faster decision-making process.

Opportunities and moments of sharing and comparison:

WARFNESS!

Name and surname:____

Company address:

Company:__

DESIGN & TECHNOLOGIES 4.0 AND AUGMENTED REALITY

NEW MATERIALS & FURNISHING COMPONENTS FOR THE NAUTICAL SECTORS AND ITS SUPPLY CHAIN: FUNCTIONALITY ON THE ADDITIVE MANUFACTURING

DIGITAL TECHNOLOGIES 4.0 FOR THE NAVAL INDUSTRY, SHIPBUILDING AND THE RELATED SUPPLY CHAIN

LOGISTICS & DIGITAL TECHNOLOGIES FOR BOATING, SHIPBUILDING AND SUPPLY CHAIN

* tick the seminars of interest.

ACTIONS FOR KNOWLEDGE AND COMPANY ACQUISITION OF TECHNOLOGIES 4.0











"tick the technologies of interest

PERSONALIZED ACTIONS FOR THE APPLIED KNOWLEDGE IN THE COMPANY OF TECHNOLOGIES 4.0









8



"tick the technologies of interest



The Smart Learning Model applied in the companies' actions



- 1. Seminar Workshop Webinar for AWARENSS Level
- In-company and intercompany actions for ACQUISITION & TRANSFORMATION Levels

Knowledge transfer for Innovation

Companies Universities Knowledge providers

Blended Learning

Card Game Analysis
E-learning - Future 4.0 Platform
Action Learning
Coaching

Action Learning

Small group inside company



to the pandemic emergency



The Smart Learning Model experimented within five Local Pilot Actions

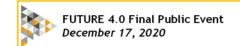


Number of *companies reached* in the LPAs:

	DISSEMINATION level	AWARENESS level	ACQUISITION level	TRANSFORMATION level
VENETO	7	31	4	4
APULIA	5	23	4	4
CROATIA	20 in total (10 attending all the four levels)			
ALBANIA	20 in total (18 attending all the four levels)			
IN TOTAL	132 companies – mostly SMES - belonging to Naval Industry, the Shipbuilding and the related supply chain			



At least **250 companies' human resources** involved in FUTURE 4.0 experimental actions





New Skills for the future of Naval Industry









Transversal Revision in FUTURE 4.0 Local Pilot Actions of four relevant PROFESSIONAL PROFILES

for the Naval Industry, the Shipbuilding and the Supply Chain







Thanks for the attention!

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