FUTURE 4.0 Final Public Event
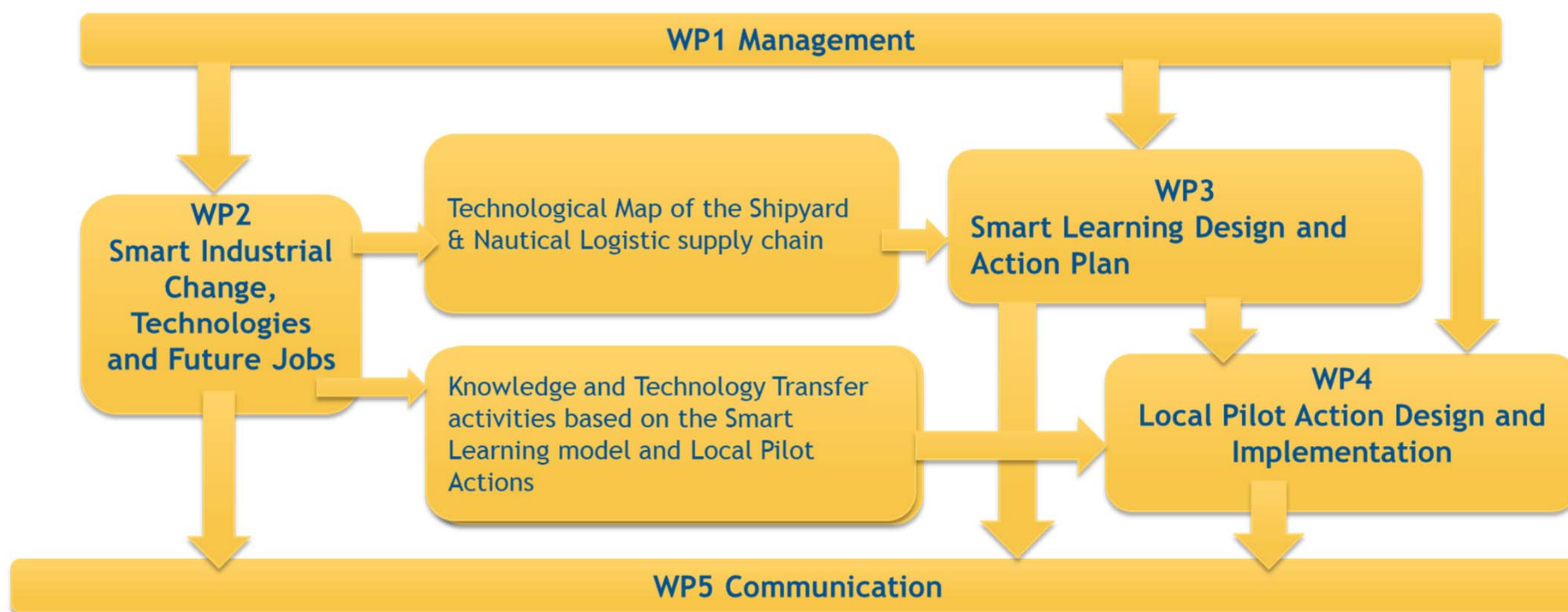GoToWebinar - December 17, 2020

Experience of knowledge transfer
and Best Practices from Apulia Region

Eng. Beatrice Di Pierro
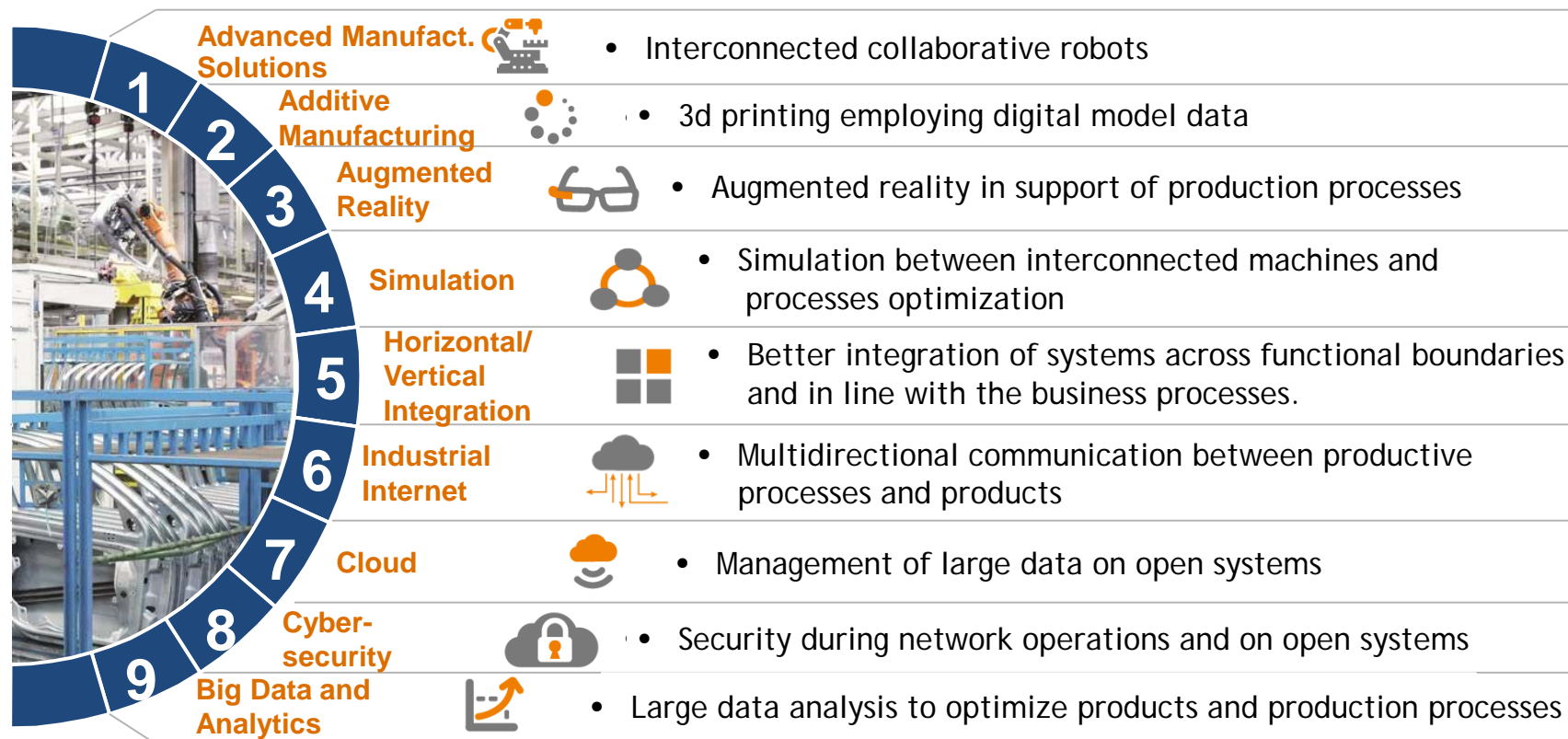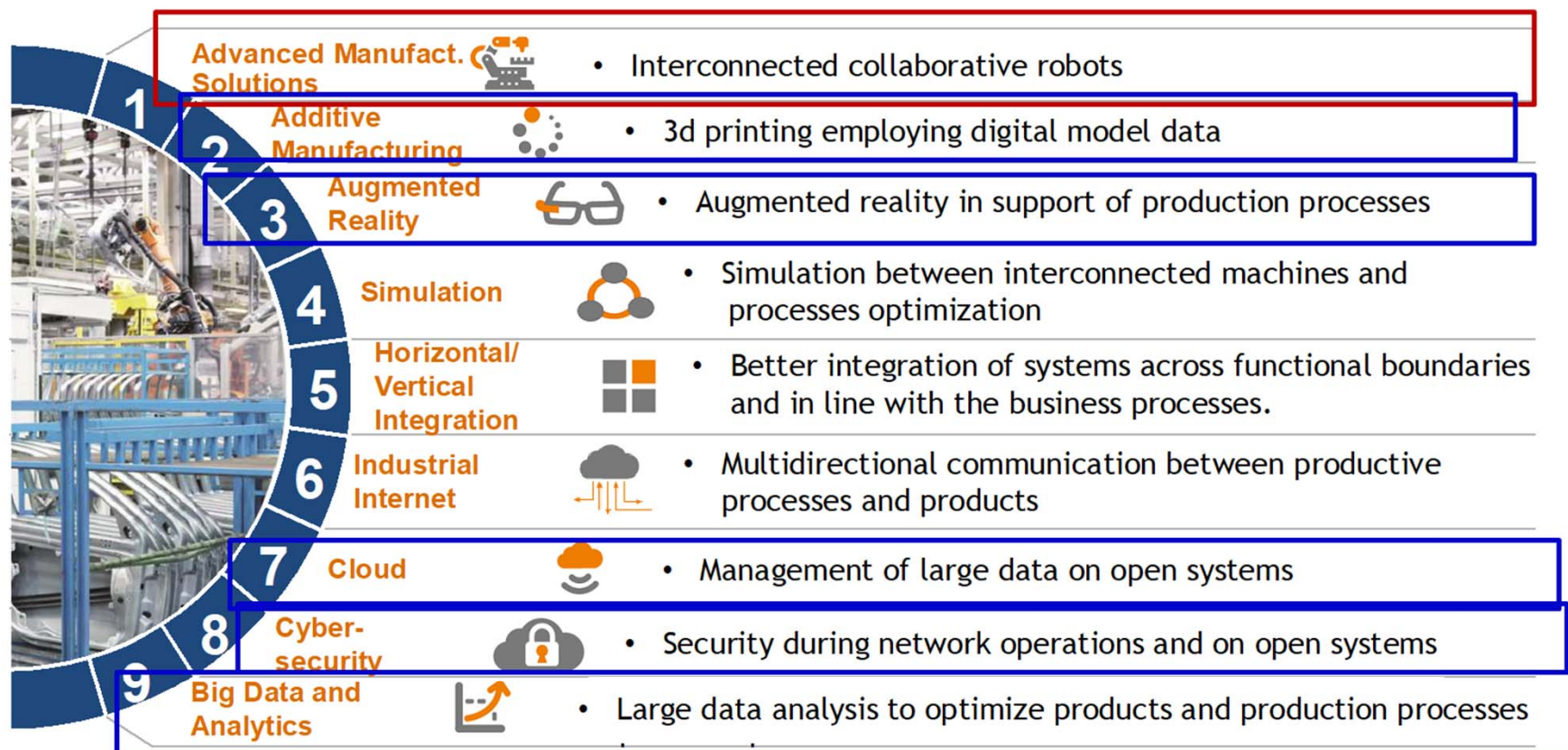
Project map

Industry 4.0

1 **Advanced Manufact. Solutions**
- Interconnected collaborative robots

2 **Additive Manufacturing**
- 3d printing employing digital model data

3 **Augmented Reality**
- Augmented reality in support of production processes

4 **Simulation**
- Simulation between interconnected machines and processes optimization

5 **Horizontal/ Vertical Integration**
- Better integration of systems across functional boundaries and in line with the business processes.

6 **Industrial Internet**
- Multidirectional communication between productive processes and products

7 **Cloud**
- Management of large data on open systems

8 **Cyber- security**
- Security during network operations and on open systems

9 **Big Data and Analytics**
- Large data analysis to optimize products and production processes

Advanced Manufact.Solutions | AugmentedReality | Cloud

Additive Manufacturing | Big Data and Analytics | Cyber-security

1 Advanced Manufact. Solutions
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Card Game Analysis

Augmented Reality

Description
Vision systems with augmented reality to better daily activities.

Costs
Average software costs: 2000 €
Vuzix M100 Glasses: 1000 €

Possible Advantages
Cost reduction, lower risks, faster processes, bet

Required Skills
Most important softwares and required procedu
completely free, ARToolKit, Kudan, Maxst, NyA

Additive Manufacturing

Description
Additive Manufacturing (3D Printing) allows th
process for layers of different materials.

Costs
Desktop 3D Printing (plastic materials)
Large 3D Printing (plastic materials)
Small metal 3D Printing

Possible Advantages
• **Prototyping**: The production of prototypes u
Prototyping)
• **Indirect Production**: Molds, poses and cente
• **Direct Production**: Different materials; comp
•**Production of spare parts**

Required Skills
3D Modeling Software (Digital model of the ob
Slicer software (Print settings)

Advanced Manufacturing Solutions

Description
Advanced production systems, ie automatic mate
robotics (collaborative or cobot robots).

Costs
A project can cost 10, 20 or hundreds of thousan
requests. As for the costs of converting a compar
its fleet is the most expensive hypothesis; adapti
be applied to the current production system is m

Possible Advantages
Advantages in terms of time, quality and costs, in
standardized products

Required Skills
JAAS Advanced Manufacturing Software (JAMS)
Make-to-Order ERP & MRP Manufacturing Softw

Cyber-security

Description
The increase in internal and external interconnections opens the door to the whole issue
of information security and systems that must not be altered from the outside.

Costs
Average costs: 5000 €

Possible Advantages
Reduction of false positives in terms of safety. Reduction of operating and management
costs. Elimination of human configuration errors and the consequent business blocks.
Drastic reduction of reaction times.

Required Skills
Most popular and requested software: **Anti-keyloggers, Anti-malware, Anti-spyware,
Anti-subversion software, Anti-tamper software, Antivirus software, Cryptographic
software, Computer Aided Dispatch (CAD), E-mail Screening, Firewall, Intrusion
detection system (IDS), Intrusion prevention system (IPS), Log management software,
Ransomware prevention, Records Management, Sandbox, Security information
management, SIEM**

Cloud

...ption
...entation of all cloud technologies such as online information storage, the use of
...mputing, and external data analysis services, etc. The Cloud also includes
...es for managing very large amounts of data through open systems.

...ately € 15,000 per year for a medium-sized company (using Microsoft Azure)

...le Advantages
...n terms of costs, flexibility, mobility, prevention of data loss, security,
...ivity, software update

...ed Skills
...ft Azure, Amazon, Google, VMWare

Big Data and Analytics

...scription
...agement techniques of very large amounts of data through open systems that allow
...casts or predictions.

...ts
...B TB of space per month, a database can cost around € 115,000.
...cost of personnel must be added to the cost of technology (eight specialists for 3TB).

...sible Advantages
...action of costs, new products and services, better and faster decision making process.

...quired Skills
...ware: **Hadoop, Apache Spark, Database NoSQL, Database In-memory**

Additive Manufacturing

Additive Manufacturing

Descrizione

Additive Manufacturing (stampa 3D) consente di realizzare oggetti attraverso un processo di deposizione per strati di diversi materiali.

Costi

Stampa 3D desktop (materiali plastici)	1.000 €
Stampa 3D grandi dimensioni (materiali plastici)	100.000 €
Stampa 3D metallo piccole dimensioni	100.000 €

Possibili Vantaggi

- **Prototipazione**: La produzione di prototipi tramite tecniche additive (Rapid Prototyping)
- **Produzione indiretta**: Stampi, posaggi e centraggi;
- **Produzione diretta**. Materiali differenti e forme / geometrie complesse
- **Produzione di parti di ricambio**

Competenze richieste

Software modellazione 3D (Modello digitale dell'oggetto)
Slicer software (Impostazioni di stampa)

Advanced Manufacturing Solutions

Advanced Manufacturing Solutions
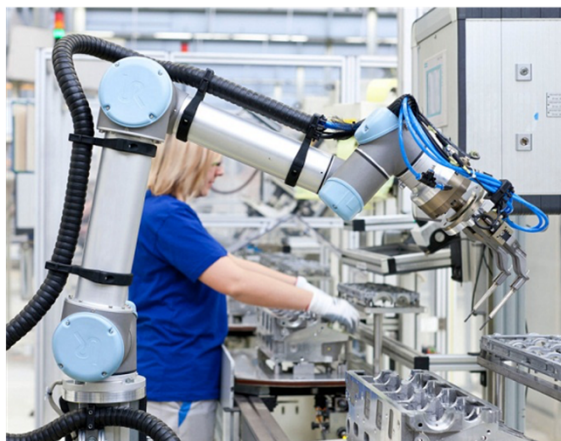
Descrizione
sistemi avanzati di produzione, sistemi di movimentazione dei materiali automatici e robotica avanzata per movimentazione, montaggio etc.

Costi
Un progetto può costare 10, 20 o centinaia di migliaia di euro a seconda delle richieste specifiche. Per quanto riguarda i costi di conversione di una compagnia all'industria 4.0, rinnovare completamente la propria flotta è l'ipotesi più costosa; adattare le tecnologie digitali e i software da applicare al sistema produttivo corrente è più economicamente più abbordabile.

Possibili Vantaggi
Vantaggi in termini di tempi, qualità e costi, in particolare per la produzione di prodotti standardizzati

Competenze richieste
JAAS Advanced Manufacturing Software (JAMS)
Make-to-Order ERP & MRP Manufacturing Software

Augmented reality

Augmented Reality

Descrizione

sistemi di visione con realtà aumentata per supportare gli operatori nello svolgimento delle attività quotidiane: testi, immagini, video e PDF sempre in vista e a mani libere; supporto remoto in tempo reale.

Costi

Costi medi software:	2000 €
Occhiali Vuzix M100	1000 €

Possibili Vantaggi

Riduzione costi, minori rischi, processi più rapidi, migliore qualità e maggiore efficienza

Competenze richieste

Piu important software e procedure richieste:: Vuforia, Wikitude, DeepAR, EasyAR, completely free, ARToolKit, Kudan, Maxst, NyARToolkit

Cloud computing

Cloud

Descrizione

Implementazione di tutte le tecnologie cloud come lo storage online delle informazioni, l'uso del cloud computing, e di servizi esterni di analisi dati, ecc. Nel Cloud sono comprese anche le tecniche di gestione di grandissime quantità di dati attraverso sistemi aperti.

Costi

Circa 15000 € annuali per una media impresa (utilizzando Microsoft Azure)

Possibili Vantaggi

Benefici in termini di costi, flessibilità, mobilità, prevenzione della perdita di dati, sicurezza, produttività, software update

Competenze richieste

Microsoft Azure, Amazon, Google, VMWare

Cyber security

Cyber-security

Descrizione

L'aumento delle interconnessioni interne ed esterne aprono la porta a tutta la tematica della sicurezza delle informazioni e dei sistemi che non devono essere alterati dall'esterno.

Costi

Costi medi: 5000 €

Possibili Vantaggi

Riduzione dei falsi positivi in termini di sicurezza. Riduzione dei costi operativi e di gestione. Eliminazione degli errori umani di configurazione e i conseguenti blocchi del business. Drastica riduzione dei tempi di reazione.

Competenze richieste

Softare più duffusi e richiesti: Anti-keyloggers, Anti-malware, Anti-spyware, Anti-subversion software, Anti-tamper software, Antivirus software, Cryptographic software, Computer Aided Dispatch (CAD), E-mail Screening, Firewall, Intrusion detection system (IDS), Intrusion prevention system (IPS), Log management software, Ransomware prevention, Records Management, Sandbox, Security information management, SIEM

Enabling technologies of industry 4.0

Professional skills

Example of Card Game Results

Marelli Motori						
Criteria/Subcriteria	Advanced Manufact Solutions	Augmented Reality	Cloud	Additive Manufacturing	Big Data and Analytics	Cyber-security
Professional skills	0.05	0.27	0.14	0.14	0.18	0.23
Short-term economic benefit	0.07	0.33	0.13	0.07	0.27	0.13
Long-term economic benefit	0.07	0.33	0.13	0.07	0.27	0.13
Initial costs	0.24	0.29	0.06	0.24	0.12	0.06
Operating costs	0.25	0.19	0.06	0.31	0.13	0.06
Improvement of sustainability	0.07	0.29	0.14	0.07	0.21	0.21
Criteria	Professional skills	Short-term economic benefit	Long-term economic benefit	Initial costs	Operating costs	Improvement of sustainability
Weight	0.17	0.17	0.17	0.17	0.17	0.17

Mareli Motori perception in desirability of technologies 4.0

- Advanced Manufact Solutions — 12%
- Augmented Reality — 20%
- Cloud — 19%
- Additive Manufacturing — 9%
- Big Data and Analytics — 22%
- Cyber-security — 18%
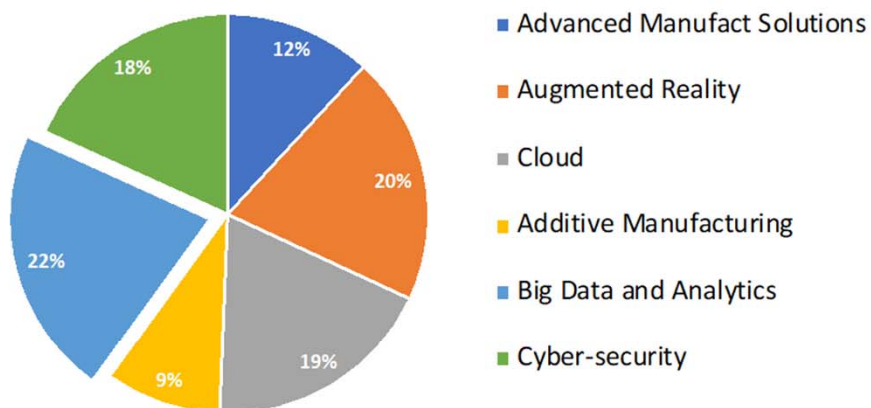
Local Pilot Actions (LPA) and Best Practices in Apulia Region

Local Pilot Actions (LPA)
The Apulian context

➢ Puglia is a region with **high potential in terms of industrial development**, but with no good performances in comparison with other Italian geographical areas. This is due not only to the geopolitical situation, but also to the **low level of innovation** present in most of the companies.

➢ The **research** carried out in the **Future 4.0 project** tends to confirm **the tendency of companies to remain tied to traditional "good rules"**, looking at innovation as something attractive but distant from them.

➢ **Training by the transmission of I4.0 skills** is therefore the best way **to fully get the opportunities** offered by the **industrial revolution**.

➢ Especially **the shipbuilding sector**, which even more than the Apulian manufacture, **is struggling to take off**.

Local Pilot Actions (LPA)
Testing Process Framework

Seminar

1st Level - AWARENESS (8h)

2nd Level - ACQUISITION (16h)

3rd Level - TRANSFORMATION (32h)

IN-COMPANY/INTER-COMPANY INTERVENTIONS

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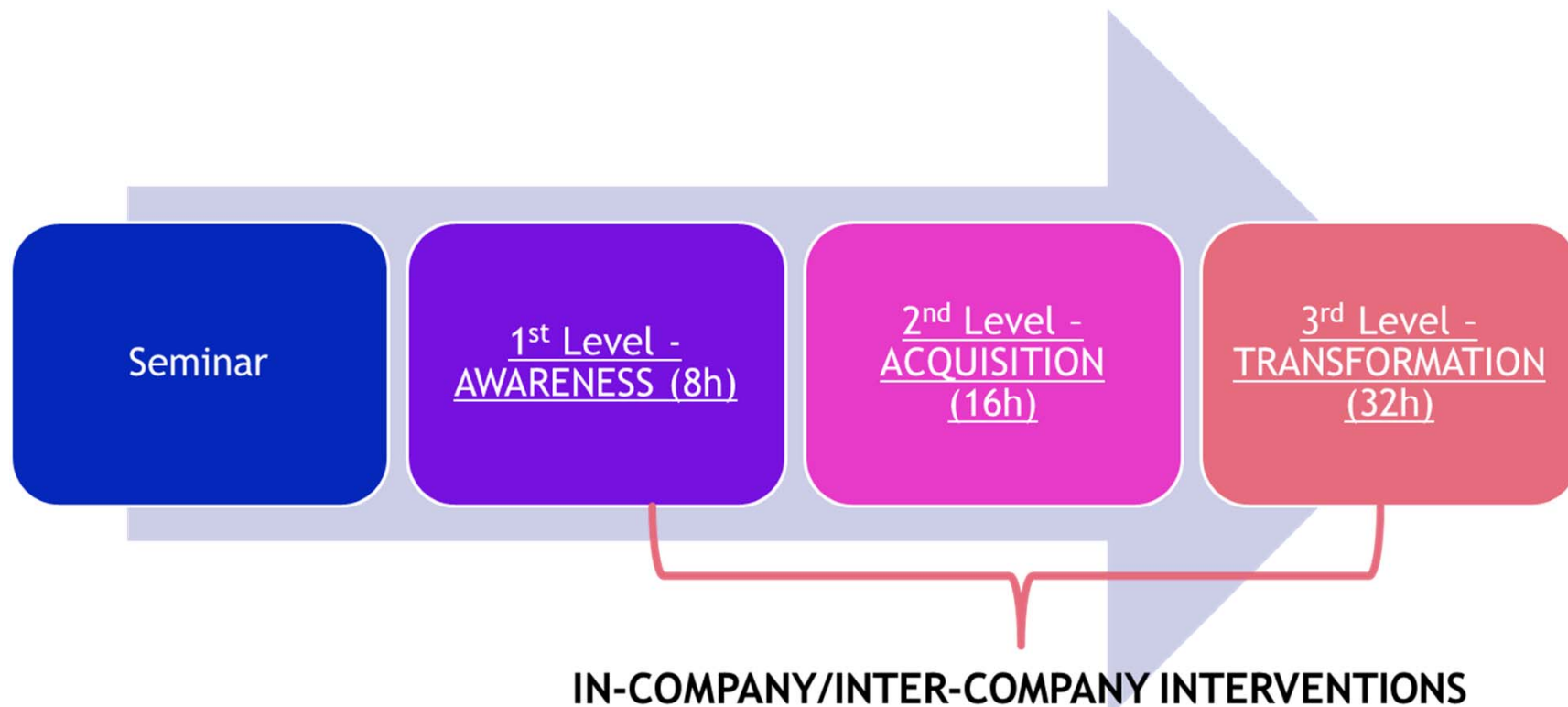
Local Pilot Actions (LPA)
Implementation

➢ **LPA** were addressed to companies **in the manufacturing field and the logistics supply chain, and in a more restricted way to the shipbuilding sector**, which is not very developed in the region.

➢ During the **Seminar phase**, some companies, local bodies and more than 100 stakeholders were involved; the project and methodologies adopted were presented.

➢ Regarding the **Awareness phase**, two events were organized with **23 local companies**, and many others of the national territory. In addition to the project itself, the Future 4.0 Platform was illustrated.

➢ The last two phases (Acquisition and Transformation) involved other **7 companies** to reach the **target of 30 companies to be involved in the Puglia region**. The **Acquisition** and **Transformation** actions took place in various headquarters and by online meetings.

LPA Implementation
SEMINAR

- ▶ **Event name**: Tecnologie abilitanti e loro utilizzo in Industria 4.0

- ▶ **Date and place**: 8 October 2019, Nicolaus Hotel, Via Cardinale Agostino Ciasca 27, 70124 Bari

- ▶ **Enterprises**: N. 5; Manufacuring Sector (FABLAB BITONTO, PUTIGNANO COSTRUZIONI SPA, SITES SRL, NEETRA SRL, AC BARI)

- ▶ **Stakeholder**: Academia, Public Administration, Civil Society 100

- ▶ **Feedbacks on the experimented action**: the audit seemed very interested and collaborative during the Card Game and during the explanation of enabling technologies.

13:45-14:00	**Arrivo e registrazione**	
14:00-14:10	Saluti di benvenuto	Ing. Roberto Masciopinto
14:10-14:25	Introduzione a Industria 4.0	Dott. Cesare Pierpaolo De Palma
14:25-14:30	Presentazione del programma	Prof.ssa Maria Pia Fanti
14.30-14.45	Progetto FUTURE 4.0 • Obiettivi • Sfide • Attività	Dott.ssa Beatrice Di Pierro
14:45-15:45	Industria 4.0: le tecnologie abilitanti • Stampa 3D • Realtà aumentata • Big Data • Cloud • Cyber Security • Advanced Manufacturing Solutions	Dott. Ing. Giorgio Iacobellis
15:45-16:15	Coffee Break	
16:15-17:30	Card Game	Dott.ssa Beatrice Di Pierro, Dott. Ing. Valentino Sangiorgio
17:30-17:45	Lean Production e Industria 4.0: la combinazione vincente per un'azienda competitiva	Dott. Ing. Giuliana Rotunno
17:45-18:15	Lean Production: analizziamo uno strumento - Value Stream Mapping (VSM)	Dott. Ing. Giuliana Rotunno
18.15 – 18.45	Lean Production e Industria 4.0: un caso applicativo	Dott. Ing. Giuliana Rotunno
18.45 – 19.00	Possibili sviluppi e Saluti finali	Prof.ssa Maria Pia Fanti

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LPA Implementation
AWARENESS

BEST PRACTICE

▶ **1st Event**: Tecnologie abilitanti e loro utilizzo in Industria 4.0

▶ **Date and place**: 12 November 2019, MBL Solution, Via Gravina 156 z. Ind.le, 70033, Corato BA

▶ **Enterprises:** 6 companies of the Manufacturing and supply chain sector (DE.OL. SRL, DE PALMA THERMOFLUID SNC, MBL SOLUTION SRL, RESOLTEAM SRL, RAM ELETTRONICA SRL, ISOTTA FRASCHINI MOTORI); Public Authorities such as CCIAA Bari, Comune di Terlizzi)

▶ **Stakeholder**: almost 30 people from Public Administration and companies

▶ **Feedbacks on the experimented action**: the audit seemed to be very interested to intercept the business opportunities that the project could offer them; however, there was a common feeling of doubt regarding the time that their involvement would have required.

▶ **2nd Event**: MECSPE Bari

▶ **Date and place**: 28-30 November 2019, MECSPE BARI, Lungomare Starita, 4, 70132 Bari BA

▶ **Enterprises**: N. 15; Manufacuring and Supply chain. Companies: DIFAST SRL, IDEA75 SRL, CNC ROBOT SAS, ECSA SRL, ESCELSIOR CAMIERATI SRL, RL ENGINEERING, FABCRAFT SRLS, TEKNA AUTOMAZIONE E CONTROLLO SRL, TECNOACCIAI SRL, DIAGNOSTIC ENGINEERING SOLUTIONS SRL, ENERGY@WORK SCARL, CREA 3D SRL, DARTXPLORE SNC, EXPERIS SRL, AXIST

▶ **Stakeholder**: Academia, Companies

▶ **Feedbacks on the experimented action**: the companies coming from all over the national territory seemed to be very interested and collaborative. The involved companies got knowledge of the project; while showing the Industry 4.0 technologies though the FUTURE 4.0 platform, the attention of some participants was caught by specific technologies, such as 3Dprinting, Augmented Reality, Advanced Manufacturing solutions.

* * *

▶ **other events**: online meeting with FABLAB BITONTO and BreD srl

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December 17, 2020
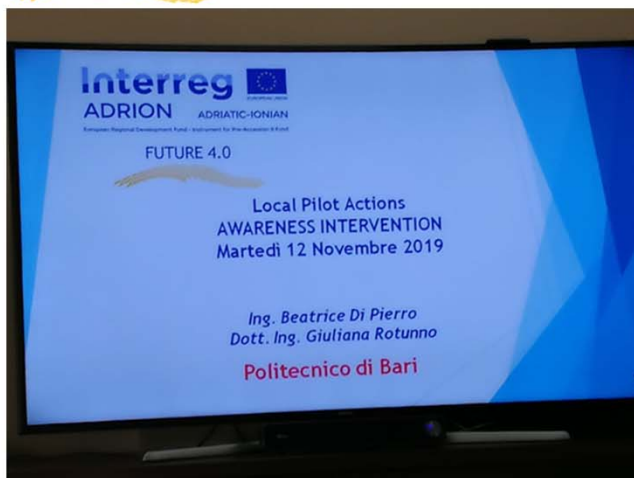
Awareness - Event 1:
Tecnologie abilitanti e loro utilizzo in Industria 4.0
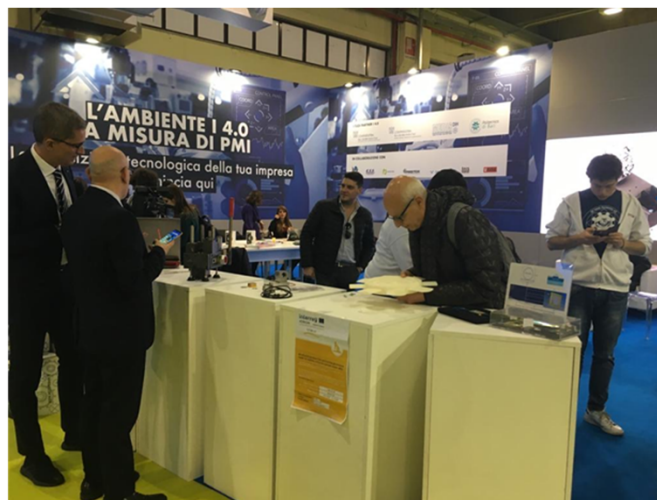
Awareness - Event 2:
MECSPE Bari

FUTURE 4.0 Final Public Event
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LPA Implementation
ACQUISITION

▶ **Methodology**: Blended learning and Face-to-face knowledge transfer

▶ **Future 4.0 Platform**

▶ **Feedbacks on the experimented action**: Discussions, evaluation questionnaire.

▶ **Enterprises**: 4 enterprises reached from Manufacturing Industry and Shipbuilding Sector

▶ **Time**: 16h

Methodogy/ies	Stakeholders	Enterprises Names	Date(s)	N. of hours	Location(s)
Blended learning	2	MICAD srl	1) 12.09.2020 2) 19.09.2020	16	Online meeting
Blended learning	2	Navalmeccanico Rettifiche RanieRi S.r.l	1) 10.09.2020 2) 23.09.2020	16	Port Authority
Blended learning	2	IMPIANTISTICA MANGINI	1) 08.09.2020 2) 03.10.2020	16	Company headquarter in Putignano
Blended learning	2	MOTONAUTICA RUGGIERO	1) 22.09.2020 2) 29.09.2020	16	Company headquarter in Bari

LPA Implementation
ACQUISITION

Company involved	MICAD srl
FOCUS of the company intervention	• The main services are related to the Project and Product management, the Naval architecture and Marine engineering, the Structural Design, the System plans and the Research & Development. The company is well structured and operates in several areas dealing with Industry 4.0. • Moreover the company is interested to develop knowledge about the **Augmented Reality technology, Cyber Security and 3D printing**.
Main AIMS	Assist the company in improving the web security and to transmit knowledge about the Augmented Reality and new technologies for 3D printing.
APPLICATIONS and RESULTS	• Knowledge about the **Cyber Security** for improving the existing web security and about the **Augmented Reality** is transmitted. • Moreover possible ways of application are discussed in the framework of company process, also by **analyzing different and new materials for the 3Dprinting technologies**, such as metallic, to be added to the already used 3Dprinting technologies (Fused Deposition Modeling-FDM and Stereolithography-SLA).

FUTURE 4.0 Final Public Event
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LPA Implementation
ACQUISITION

Company involved	**NAUTICA RANIERI**
FOCUS of the company intervention	• Nautica Ranieri is one of the main companies, for dimension and comprehensiveness of its structure and organization, able to compete with shipyards located in the rest of Europe. • It would be helpful the development of a ICT platform, in order to create a network of local companies and stakeholders.
Main AIMS	**Create a ICT platform** where data and services such as maintenance, private mooring and refueling, organization of excursions etc. from multiple users (customers/suppliers) can converge, in order to create a local network that allows the growth of boating in Puglia.
APPLICATIONS and RESULTS	The creation of the above mentioned nautical network will be functional of the growth of Apulian nautical sector. Technologies as **Cloud and Big data a**re required.

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LPA Implementation
ACQUISITION

Company involved	IMPIANTISTICA MANGINI
FOCUS of the company intervention	• Impiantistica Mangini is a family company which provides services and components for different kind of plant engineering such as electrical, hydraulic and gas. • The Local Action Plan intervention mainly focused on the **digitalization of the company and on the application of the Augmented Reality technology.**
Main AIMS	The main effort deals with the **digitalization of an artisanal small business**. In particular, the company needed to monitor the activities of the employees through video surveillance systems, to geolocate the company's van by GPS devices and to help and assist the employees during their work.
APPLICATIONS and RESULTS	• The knowledge of POLIBA will allow the digitalization of the business; • **the Augmented Reality technology can be taken into consideration to help the employees work and to improve the whole process and reduce the inconveniences.**

LPA Implementation

ACQUISITION

Company involved	MOTONAUTICA RUGGIERO
FOCUS of the company intervention	• The Local Action Plan intervention focused on the application of **the Augmented Reality technology and the Cloud** to create a network among the several involved stakeholders in the nautical Apulian sector. • In this context, it would be helpful the development of **a ICT platform** in order to create a network of local companies and stakeholders.
Main AIMS	• **Assist both the company's employees in the mounting ship phase, and both the customers** by supporting the remote diagnostic and maintenance operation of the ships in open sea. • **Creation of an ICT platform** in order to have a local network, where data and services such as maintenance, private mooring and refueling, organization of excursions etc. from multiple users (customers/suppliers) can converge.
APPLICATIONS and RESULTS	• **Augmented Reality** technology will be used for the remote diagnostic and maintenance operation of the ships in open sea for the customers and in the boat installation phase by the employees. • **Cloud technology** can be taken into consideration for the creation of a global ICT platform shared by all the stakeholders of the nautical Apulian sector

FUTURE 4.0 Final Public Event
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LPA Implementation
TRANSFORMATION

▶ **Methodology**: Blended learning and Face-to-face knowledge transfer

▶ **Future 4.0 Platform**

▶ **Feedbacks on the experimented action:** Discussions, evaluation questionnaire.

▶ **Enterprises** 3 enterprises reached from Shipbuilding Sector

▶ **Time**: 32h

Methodology/ies	Stakeholders	Enterprises Names	Date(s)	N. of hours	Location(s)
Blended learning	1	Ferrari Yacht Design	1) 01.09.2020 2) 02.09.2020 3) 03.09.2020 4) 04.09.2020	32	Ferrari Yacht Design Office
Blended learning	1	TECH-MARINE	1) 07.09.2020 2) 25.09.2020 3) 01,10,2020 4) 02.10.2020	32	TECH-MARINE Office
Blended learning	2	MARINA SPORT S.R.L.	1) 09.09.2020 2) 14.09.2020 3) 21.09.2020 4) 24.09.2020	32	Port Authority/online meeting

LPA Implementation
TRANSFORMATION

Company involved	FERRARI YACHT DESIGN
FOCUS of the company intervention	• Ferrari Yacht Design is a design company specialized in **furniture engineering for shipyards and carpenters.** • By analysing the global process, the main significant problems are: nonconformity; inaccuracy (Project/Reality); out of square, misalignments, asymmetries; etc. • There is often a lack of information in passing between the various involved actors
Main AIMS	**Create a ICT platform** where all actors of the process (shipyard, designer/architect, carpentry) can add operations carried out, notes, problems, etc. in order to control the various phases and to avoid misunderstandings, problems, errors.
APPLICATIONS and RESULTS	• The **creation of a an APP to be shared with the architect's network**, functional to the development of IT technologies into the naval sector. • To these aims, **Cloud and Big Data** have been taken into consideration.

FUTURE 4.0 Final Public Event
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LPA Implementation
TRANSFORMATION

BEST PRACTICE

Company involved	MARINA SPORT
FOCUS of the company intervention	• Operates in the nautical sector, dealing with all its segments, such as the sale of medium-large boats, inflatable boats, outboard engines, accessories etc. • The Local Action Plan intervention mainly focused on the digitalization of the company and on the application of the **Cloud, Big Data and Augmented Reality technology**
Main AIMS	the main effort deals with the **digitalization of the construction process** due to the lack of ICT systems that can manage data and activities.
APPLICATIONS and RESULTS	• An App for the management of customers and employees is proposed. By a proper QR code and also by means of **Augmented Reality** technology, this tool allows to obtain information of the boats, upload pictures and monitor the progress of the works of employees. • **Cloud and Big Data technology** are functional for the improvement of the level of the services to be offered to the customers.

LPA Implementation
TRANSFORMATION

Company involved	TECH MARINE YACHT DESIGN & SERVICES
FOCUS of the company intervention	• Tech Marine Yacht Design & Services is a company for shipyards and private owners. Mainly oriented **towards engineering, the calculation and industrialization of the product boasts for ship design and construction**. • By analysing the global process, the main problems were: Software incompatibility (printing of project); Nonconformity; Inaccuracy (Project/Reality); Out of square, misalignments, asymmetries; etc.
Main AIMS	To improve **the quality of product and reduce the processing time** it is helpful the use of same tools (as Augmented reality, Cloud, Big data).
APPLICATIONS and RESULTS	The Value Stream Mapping Methodology (VSM) is applied in the AS-IS and TO-BE situation, in particular to the refitting activity. It resulted that the company's process can significantly be improved.

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Policy Recommendations

▶ FUTURE 4.0 aims to **drive innovative maritime and marine growth** by enhancing innovation and business opportunities in blue economy sectors, with a focus on developing human capital, fostering cooperation among researchers to develop innovative products and technology transfer.

▶ Several policy recommendations are developed and proposed to transfer the project results into the industrial policy for the shipyard and maritime sector, clustered into three groups:

Competence development

Digitalisation and Industry 4.0

Relations between companies and their environments

LPA Implementation
APULIA REGION, LOCAL PUBLIC EVENT

▶ **Event name**: FUTURE 4.0 Project Local Policy Learning Event

▶ **Date and place**: December 4th 2020 via GoToMeeting Platform

▶ **Partecipants**: The online Local Public Event was attended by 60 participants (both Public and private). The audience was composed by an heterogeneous group of stakeholders, from local Companies and Educational contexts.

▶ **Feedbacks on the presented PR**: The participants to the event followed the presentation on the PRs with enthusiasm and interest. In particular, the companies agreed on the following PR:

- The **interaction «man - machine»** needs a set of technical competences, soft and relational skills.

- The **Industry 4.0 technologies must be integrated** within the organisational and production context.

- **Local synergies and sharing knowledge is fundamental** to adopt a collaboration perspective with other companies, universities, suppliers and customers by promoting partnerships among companies with different competences.

9.30-9.45	Introduction	• Prof. Maria Pia Fanti (POLIBA)
9.45-10.00	Welcoming Address	• Vice Rector Prof. Luigi Maria Galantucci (POLIBA) • Regione Puglia
10.00-10.20	Industry 4.0 in Apulia Region	• Doc. Cesare Pierpaolo De Palma (Confindustria) • Maria Francesca Ladisa (ECSA srl)
10.20-10.40	The Blue economy in Apulian Region	Arch. Paolo Ferrari (POLIBA)
10.40-11.10	Project FUTURE 4.0 results: • Policy Recommendations (PRs) • Local Pilot Actions (LPAs)	• Eng. Beatrice Di Pierro (POLIBA) • Eng. Alessandro Rinaldi (POLIBA)
11.10-11.30	Coffee Break	
11.30-11.50	Local Pilot Action (WPT3) – Yachting 4.0: difficulties and delays in adopting new technologies	Doc. Maurizio Ruggiero (Motonautica Ruggiero)
11.50-12.10	Local Pilot Action (WPT3) – The digitization of product development processes in Yachting	Eng. Amedeo Migali (MICAD)
12.10-12.30	The importance of training for Industry 4.0	Doc. Roberto Vingiani (ITS Cuccovillo)
12.30-12.50	The employment benefits generated by Industry 4.0	Doc. Michele Turchiano (MASMEC)
12.50-13.00	Conclusion and final greetings	Prof. Maria Pia Fanti (POLIBA)

CONFINDUSTRIA
Bari e Barletta-Andria-Trani

Regione Puglia

FUTURE 4.0 Final Public Event
December 17, 2020

Thanks for your attention!

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