Panel on Education and Societal Needs – Corporations, Unions and Government Perspectives

Rome 16/11/2017

@luigiperissich november2017

Organizations members of CSIT

35 Sector associations
48 territorial associations established at provincial and regional level

Confindustria Innovative and Technological Services represents the following sectors:
- Innovative services and ICT technologies
- Software, cloud, outsourcing;
- Satellite Services and applications
- **Plant engineering and installation, Facility management**;
- **Energy services;**
- Professional services, Engineering, Consulting, Marketing and communication;
- Certification;
- Services for financing and credit;
- Knowledge and education;
- Creative and cultural industries;
- Gaming.

Our sector in Italy amounts to **800.000 small, medium and large companies. 2.100.000 employed**; **255 billions € of turnover and e 110 billions € of added value.**

CSIT: INNOVATE THE REGIONS WITHIN THE REGIONS

LOMBARDIA
LECCO, MANTOVA, BRESCIA, BERGAMO
VENETO
ROVIGO, TREVISO, VICENZA, BELLUNO, PADOVA, VENEZIA, VERONA
FRIULI VENEZIA GIULIA
TRIESTE, UDINE, PORDENONE, GORIZIA
LIGURIA
LA SPEZIA
EMILIA ROMAGNA
BOLOGNA, FERRARA, MODENA, PARMA, PIACENZA, RIMINI
TOSCANA
 FIRENZE, PRATO
UMBRIA
(TERNI, PERUGIA)
MARCHE
ANCONA, MACERATA, PESARO-URBINO
LAZIO
UNINDUSTRIA (ROMA, VITERBO, FROSINONE, RIETI, LATINA)
ABRUZZO
CHIETI, PESCARA
MOLISE
CAMPOBASSO
CAMPANIA
CASERTA, NAPOLI, SALERNO
PUGLIA
BARI, BRINDISI
BASILICATA
CALABRIA
CATANZARO, COSENZA
SICILIA
MESSINA, PALERMO

**We cohordinate the Italian DIH I4MS:
Piemonte, TriVeneto, Emilia Romagna, Lazio, Marche, Puglia**
+ 3 Competence Center CINECA AFIL an University of Florence

ITALIAN DIGITAL INNOVATION HUBS NETWORK

The Digital paradigm shift a strong challenge for companies and entrepreneurs

From a world of... | **To a world including...**

From a world of...	The shift to services requires business model innovation	To a world including...
Products		Solutions
Outputs		Outcomes
Transactions		Relationships
Suppliers		Network partners
Elements		Ecosystems

Commissione Europea: High Level Group on Business Service Report

The Digital revolution changes the way we think about business

Every area of activity of an enterprise must be completely redesigned with the know how coming mainly from Business Services and ICT technologies
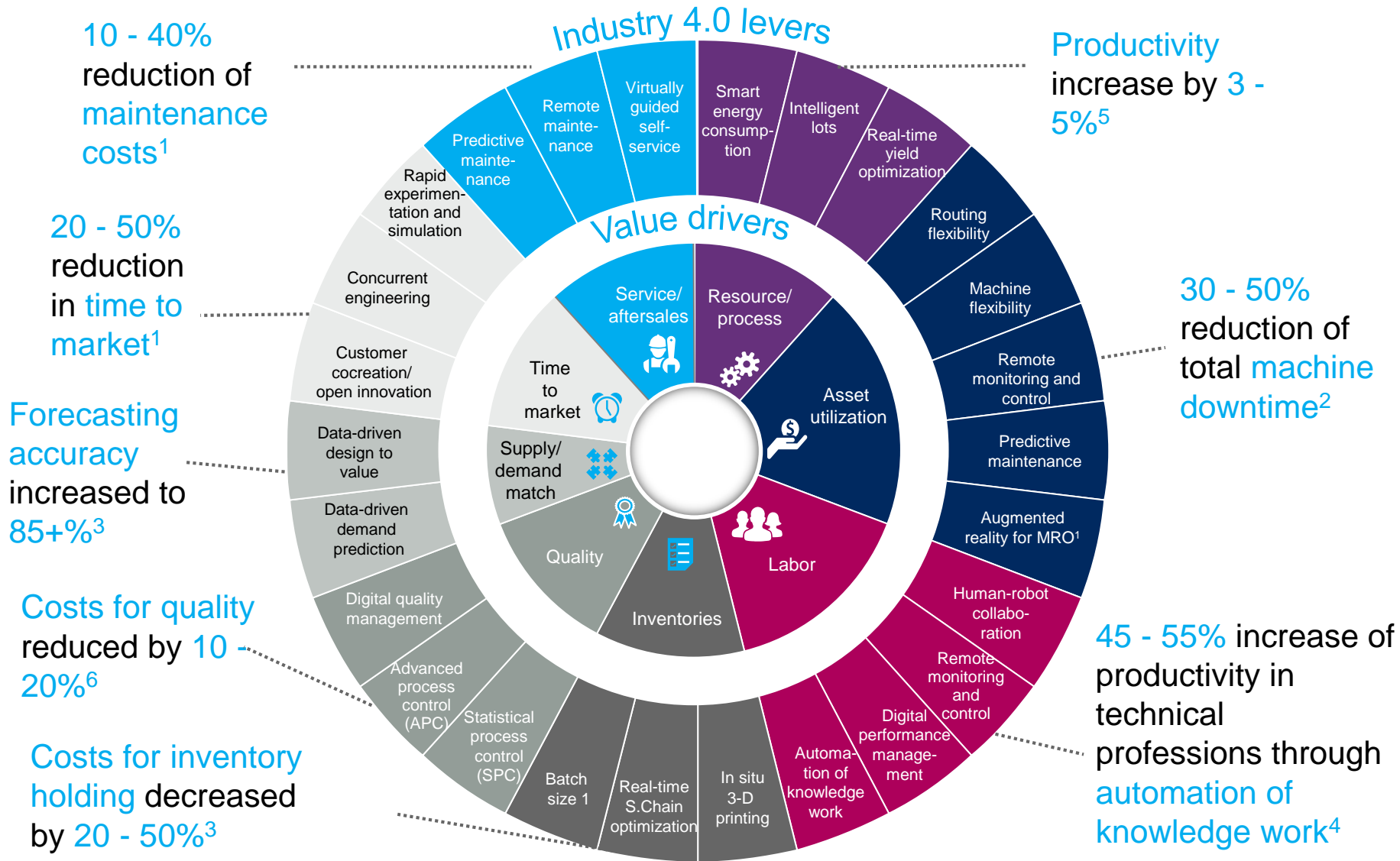
Rethink your business model

- Identify the specific competences of your enterprise and the specific digital capita that allow the differentiation of your business model
- Strategically build upon new services as a source of new markets and a new competitive advantage

Re-design your production system

- Focus on most efficient production systems and create new value areas moving from digital to physical as late as possible in your production process
- Think digital from start when you design your new production system

Re-design your company

- When you make any decision think digitally
- Define your investment development needs in relation to your digital strategy

Source: McKinsey

Digital Industry is not only about digital technologies: all value drivers are enhanced and transformed by digital revolution

10 - 40% reduction of maintenance costs[1]

20 - 50% reduction in time to market[1]

Forecasting accuracy increased to 85+%[3]

Costs for quality reduced by 10 - 20%[6]

Costs for inventory holding decreased by 20 - 50%[3]

Productivity increase by 3 - 5%[5]

30 - 50% reduction of total machine downtime[2]

45 - 55% increase of productivity in technical professions through automation of knowledge work[4]

Industry 4.0 levers

Value drivers

Resource/process
- Smart energy consumption
- Intelligent lots
- Real-time yield optimization

Asset utilization
- Routing flexibility
- Machine flexibility
- Remote monitoring and control
- Predictive maintenance
- Augmented reality for MRO[1]

Labor
- Human-robot collaboration
- Remote monitoring and control
- Digital performance management
- Automation of knowledge work

Inventories
- In situ 3-D printing
- Real-time S.Chain optimization
- Batch size 1

Quality
- Statistical process control (SPC)
- Advanced process control (APC)
- Digital quality management

Supply/demand match
- Data-driven demand prediction
- Data-driven design to value

Time to market
- Customer cocreation/open innovation
- Concurrent engineering
- Rapid experimentation and simulation

Service/aftersales
- Predictive maintenance
- Remote maintenance
- Virtually guided self-service

Lack of 4.0 knowledge creates a digital divide

The 2017 **Smart Manufacturing** Report of Politecnico di Milano says that in Italy the market of industry **4.0 in Italy amounts *1,7 billions euro, +25% from 2016***

- **8%** of companies know nothing about 4.0 (38% in 2016)
- **41%** has read online articles,
- **32%** has taken part to events on Industry 4.0
- **28%** is thinking to do something about it
- **28%** has started to invest in new solutions (avg3.4 applications per company)

- **These are mainly technological upgrades but only 10% thinks that it is necessary to radically transform the organization and business models.**

Our Government recipe for Italy 4.0

On September 21° 2016 our Government has presented the
National Plan Industry 4.0 2017 – 2020

- **Strategic axes:**
  - **Competences:**700 M€ public and 300M€ private
  - **Infrastructures:**6,7 b € public and 6,0 b € private

  - **Innovative Investments:**3,3 B€ public 24,8 B€ private
  - **Policy Instruments:** 13 b€ public and 23,9 b€ private

National Plan Industria 4.0

Direttrici chiave

Investimenti innovativi

- Incentivare gli investimenti privati su tecnologie e beni I4.0

- Aumentare la spesa privata in Ricerca, Sviluppo e Innovazione

- Rafforzare la finanza a supporto di I4.0, VC e start-up

Competenze

- Diffondere la cultura I4.0 attraverso Scuola Digitale e Alternanza Scuola Lavoro

- Sviluppare le competenze I4.0 attraverso percorsi Universitari e Istituti Tecnici Superiori dedicati

- Finanziare la ricerca I4.0 potenziando i Cluster e i dottorati

- Creare *Competence Center* e *Digital Innovation Hub*

Direttrici di accompagnamento

Infrastrutture abilitanti

- Assicurare adeguate infrastrutture di rete (Piano Banda Ultra Larga)

- Collaborare alla definizione di standard e criteri di interoperabilità IoT

Strumenti pubblici di supporto

- Garantire gli investimenti privati

- Canalizzare il risparmio verso impegni produttivi

- Rafforzare e innovare il presidio di mercati internazionali

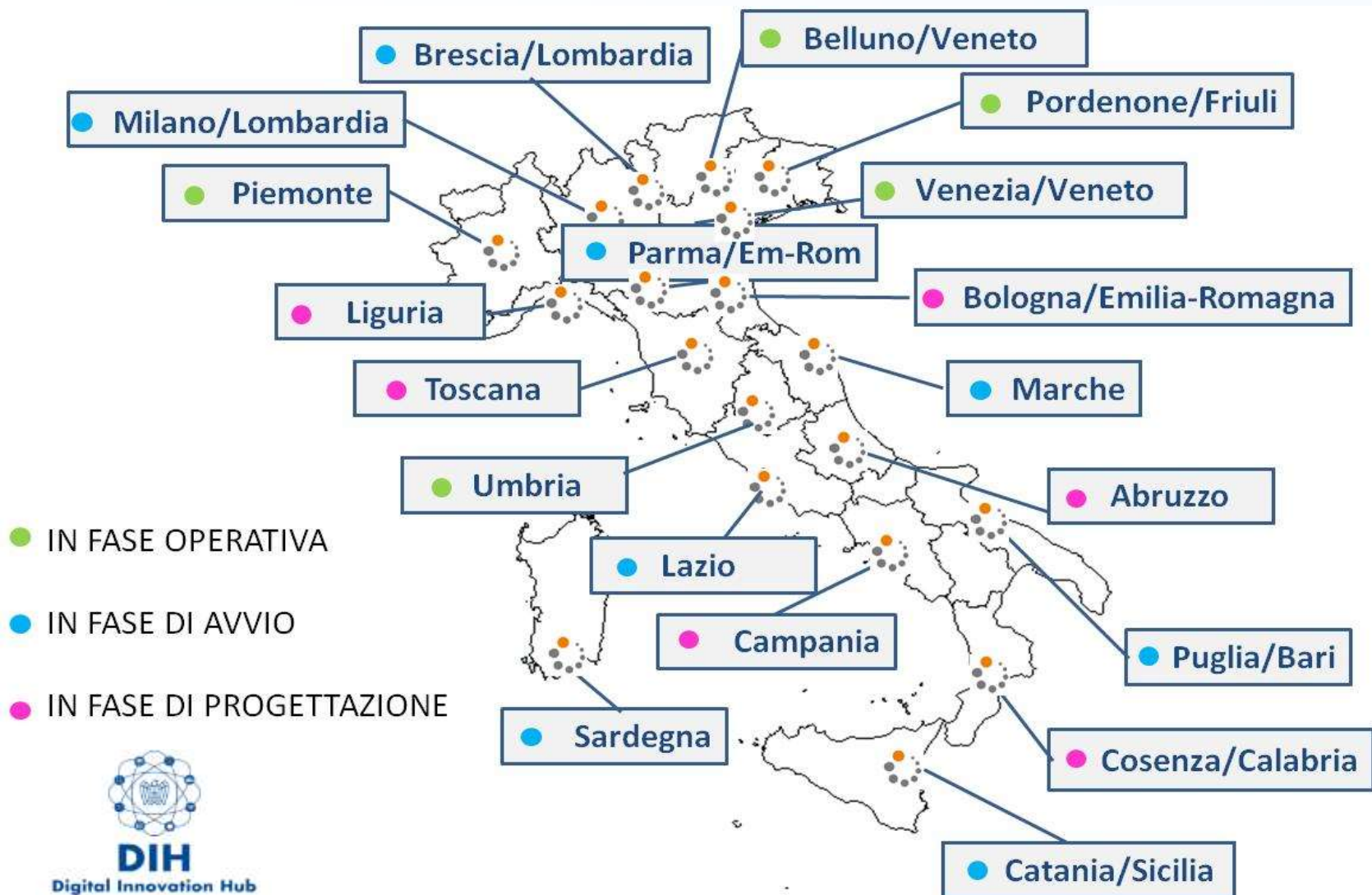- Supportare lo scambio salario-produttività attraverso la contrattazione decentrata aziendale

Governance e awareness

- Sensibilizzare sull'importanza dell'I4.0 e creare la *governance* pubblico privata

DIH: Building the Confindustria Network

Brescia/Lombardia
Belluno/Veneto
Milano/Lombardia
Pordenone/Friuli
Piemonte
Venezia/Veneto
Parma/Em-Rom
Liguria
Bologna/Emilia-Romagna
Toscana
Marche
Umbria
Abruzzo
Lazio
Campania
Puglia/Bari
Sardegna
Cosenza/Calabria
Catania/Sicilia

IN FASE OPERATIVA

IN FASE DI AVVIO

IN FASE DI PROGETTAZIONE

DIH
Digital Innovation Hub

- The evidence shows that digital technologies are increasingly and extensively used across the economy.

- **Polarization and risk of Digital Exclusion:** Digital skills appear to be currently **required mostly for the high-skilled and, to a lesser extent, medium-skilled employees** to perform their job tasks, and are less likely to be required for the low-skilled or the unskilled (or frequently not required at all, even at basic level). These polarising trends, draws attention to the sharp decrease in demand for workers in low-skilled occupations which do not require (or require to a very limited extent) digital skills.

- **Digital skills gaps in the workforce**, even as regards basic digital skills: Different factors contribute to this situation. The **speed** at which workers are being provided with the right digital skills in the right locations is frequently slower than the speed at which digital technologies are evolving. As a result, digital skills are often also more subject to obsolescence. An **age-related issue** can also be identified, as older workers are less likely to be equipped with digital skills than younger workers

- **Relationship between workplace size and access to digital technologies**. For **micro and small-sized workplaces, it may not be viable to invest to increase ICT use**. Also, for those micro and small-sized employers who have a high demand for digital skills, simply allocating staff time to acquire them is both difficult (loss of productive time), and expensive (training and development programmes need to be brought in).

- **Skills challenges appear highly dispersed**, as **different sectors have different demands**, and the balance of supply and demand is different across Member States. The sectoral analysis indicates that the use of digital technologies is uneven across economic sectors, particularly concerning the types of digital technologies, their speed of penetration and also the related demand for digital skills, with some sectors clearly leading the 'digital revolution' and some others following at a slower pace.

Recommendations

1. Raise awareness on digital technologies and the need for digital skills
2. Promote access to digital technologies
3. Expand the availability of digital skills through the education and training system
4. Promote access to training
5. Build multi-stakeholder partnerships based also on effective social dialogue to increase the availability of digital skills
6. Provide access to funding for digital technologies and digital skills development
7. Include digital skills in a wider skills strategy
8. Consider diversity and avoid the 'one-size fits all' approach
9. Reduce the digital divide

THANK YOU

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www.italian-dih.eu

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