National plan *"Industria 4.0"*

Investments, skills, productivity and innovation

Industry 4.0: growth issues at stake in Italy

Investments	**Decreasing quantity of fixed industrial investments in the last 15 years:** increasing obsolescence in installed equipment
Capital Allocation	**Low quality of investment allocation:** resources going to low performing firms, "within" misallocation among firms rather than sectors, rent seeking and poor creditors' discipline
Skills equilibrium	**Poor skills in STEMs:** only 14 out 1000 graduated in STEM **and low attraction of vocational education:** each year +200k students do not go to university nor to tertiary professional education
Connectivity	**70% of companies do not have decent connectivity (>30 Mbps) and are located in grey/white areas (where providers experience some degree of market failure)**
Digital Competitiveness	**Italy ranks 25th out of 28 EU member states in the Digital Economy and Society Scoreboard:** only 6,5% of SMEs are selling on line

"*Industria 4.0*": policy approach

Italian industrial sector peculiarities

- Few large industrial and ICT private players able to lead Italian manufacturing transformation
- Limited number of industry champions able to coordinate the evolution process of value chains
- Industrial sector deeply based on SMEs
- Key role of universities and research centers in development and innovation
- Strong manufacturing know how and Made in Italy quality

Government guidelines

- Operate in a technological neutrality logic
- Implement horizontal actions avoiding vertical or sector-based ones
- Operate on enabling factors
- Steer existing instruments to promote technological leap and productivity
- Coordinate key stakeholders without acting as a controller or decision maker

"Industria 4.0" national plan

2017-2020 Strategic guidelines

Key guidelines

Innovative investments

- Stimulate private investments in new equipment and I4.0 transformation
- Increase private expenditure in R&D
- Patent Box to sustain investments in intangible assets
- Open alternative forms of finance (non bank lending, Venture Capital and Private Equity) for more allocation of capital to innovative firms

Skills

- Spread the I4.0 culture through *"Scuola Digitale"*[1] and *"Alternanza Scuola Lavoro"*[1] programs
- Develop I4.0 skills through dedicated academic paths and Vocational education: *"Istituti Tecnici Superiori"*[2]
- Create Competence Centers and network of Digital Innovation Hubs
- National Skill Strategy

Complementary guidelines

Enabling Infrastructures

- Ensure adequate network infrastructure – Ultra Broadband Plan with a Fiber to the factory approach
- Cooperate in the definition of IoT open standards and interoperability criteria

Public instruments at support

- Attract FDI and support large investments in 4.0
- Reinforce and support internationalization of Italian companies
- Strengthen the productivity – salary taxation exchange through lower taxation on "productivity benefits" negotiated in decentralized bargaining

Governance and awareness

- Generate interest on I4.0 opportunities and create the public-private governance

1. Work-related learning; 2. Italian professional institutes

"Industria 4.0" national plan

2017-2020 Targets

Key guidelines

Innovative investments

+10 €B

private investments increase from 80 to 90 €B in '17-'18

+11,3 €B

R&D private expenditure increase over the '17-'20 period

+2,6 €B

volume of early stage investments mobilized over the '17-'20 period

Patent Box

to sustain investments in intangible assets

Skills

200.000

academic students qualified on I4.0 topics

+100%

students attending *"Istituti Tecnici Superiori"* on I4.0 topics

Creation of Competence Center and DIH

focused on solution driven tech transfer, training and collaborative R&D

National Skill Strategy

Complementary guidelines

Enabling Infrastructures

100%

of Italian companies with access to 30 Mbps connectivity within 2020

50%

of Italian companies with access to 100 Mbps connectivity within 2020

6 consortia

regarding IoT standards, monitored by Italian representatives

Fiber to the factory approach

Public instruments at support

+1 €B

Development Contracts focused on I4.0 large investments

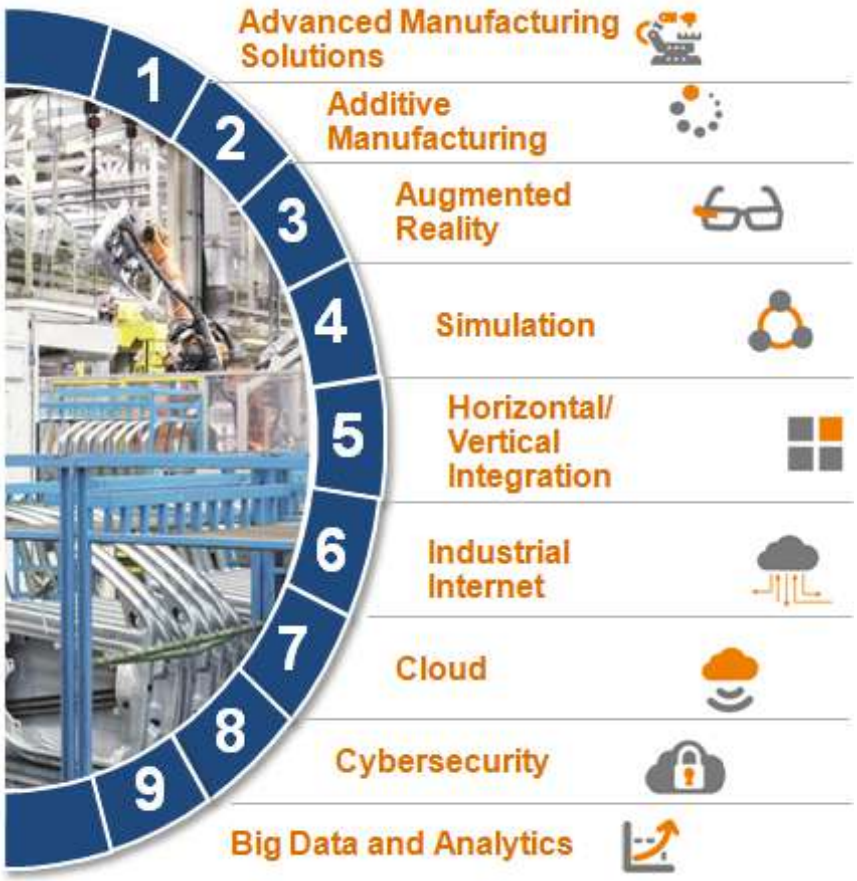
+0,1 €B

Strong investment on digital sales chains (Made in Italy plan)

Strengthening of productivity – salary taxation exchange

Hyper-Depreciation and Super-Depreciation schemes

Innovative investments



Advantages in plan

Hyper-Depreciation

- Increase of rate for I4.0 investments

As is	*To be*
140%	250%

Super-Depreciation

- 1 year extension of the Super-Depreciation with a stable rate **(140%)**

Deadline

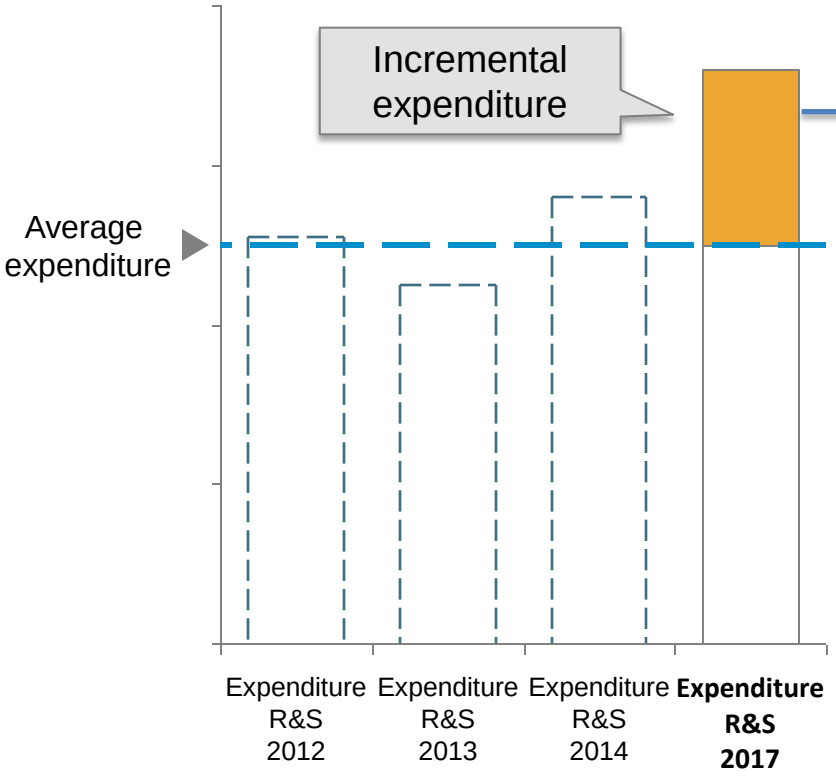
- In order to guarantee a high appeal of Hyper and Super-Depreciation schemes, item delivery date is prolonged to **30/06/18** however the order and a >20% deposit have to be placed within 31/12/17

Expected benefits within and outside the factory: smart factory and supply chain integration

Flexibility	**Higher flexibility** given by small batches production with the economies of scale of mass production
Speed	**Higher speed** from prototyping to mass production using innovative technologies and better supply chain integration
Productivity	**Increased productivity** thanks to lower set-up time and reduced downtimes
Quality	**Improved quality** and scrap reduction thanks to real time production monitoring through advanced sensors
Product Competitiveness	**Higher competitiveness** of products thanks to additional functionalities enabled by Internet Of Things

Tax credit for research and development and innovation expenditures

Research and development and innovation expenditure – '17 example



Tax Credit calculation	As is	To be
Credit for intramural expenditure	25%	50%
Credit for extramural expenditure	50%	50%
Maximum credit per taxpayer	5 €M	20 €M

Digital Innovation Hub and I4.0 Competence Center

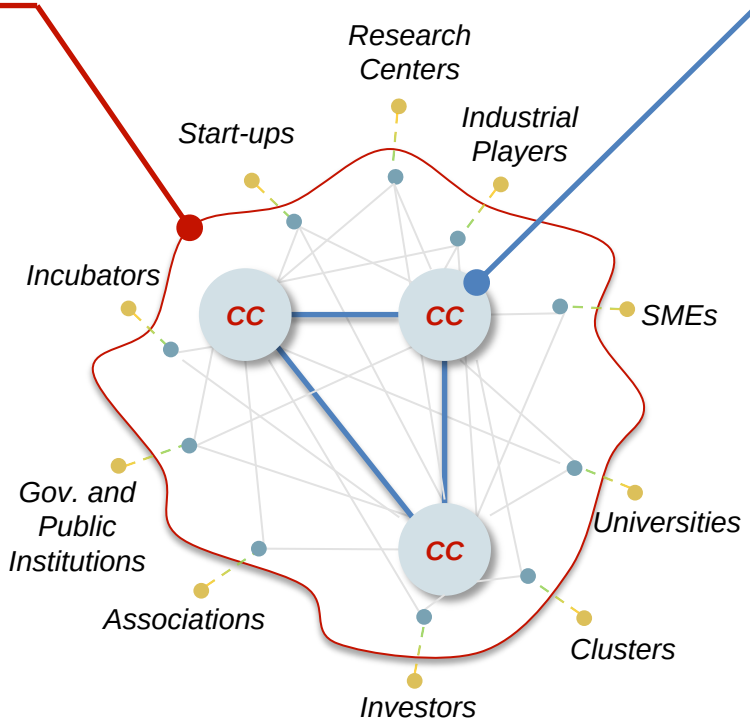
Digital Innovation Hub

Features:

- Selected DIH located at *Confindustria's* and *R.E. TE. Imprese Italia's* branches
- Point of contact between companies, research centers and public – private investors

Mission:

- Awareness creation on I4.0 opportunities
- Support in developing innovative investment plans
- Orientation to I4.0 Competence Centers
- Support in accessing to public and private financing solutions / investors
- Interactions with European DIHs



I4.0 Competence Center

Features:

- Few and selected national Competence Center
- Strong involvement of leading Italian universities and large private players
- Support of key stakeholders (e.g. research centers, start-ups,...)
- Competence Center focused on specific and complementary technology drivers
- Appropriate legal framework and managerial skills

Mission:

- I4.0 training and awareness
- Live demos on new technologies and access to I4.0 best practices
- Technical advisory on I4.0 for SMEs
- Launch and acceleration of technological development and innovative projects
- Trial support and "on-site" development of new I4.0 technologies
- Coordination with European CC