Eurofound Foundation Seminar Series 2016 "The impact of digitalisation on work"

"Risks and opportunities of Italian digitalisation: e-skills for e-growth"

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Country profile

In Italy the digitalisation process is undergoing towards a digital innovation, but the path from the objectives to the results is still long. In fact, as the data emerging from the DESI 2016 show, even if Italy in the past year made little progress in most of the indicators, the country, with his overall score of 0.4, ranks 25th out of the 28 EU Member states. This constitutes a significant delay compared to other industrialized economies.

Regarding the Connectivity dimension, Italy has its strength on mobile broadband spread which is in line with the EU average with 75 subscriptions per each 100 individuals, while fixed broadband subscription remain low (only 53% of households vs. 72% in the EU). As far as mobile broadband is concerned, the percentage of the population covered by LTE is 95%, ranking Italy at the second place among EU5 countries (Source: GSMA Intelligence).

Nevertheless, the major challenge for Connectivity in Italy is the low availability of next generation access (NGA) networks: Italy is almost the last place, because of an insufficient level of supply and demand for fast broadband. In fact, Italy on one hand is aligned with the European average for broadband coverage (99%), on the other, it presents a serious delay in the NGA coverage, which has improved since last year from 36% to 44%, but less than in other EU countries.

The Italian Government commitment is in:

➢ 2018: 75% of the population covered with broadband > 30Mbps and 40% with broadband reaching at least 100 Mbps;
➢ 2020: 100% of the population covered with broadband > 30Mbps and 85% with broadband reaching at least 100 Mbps.

However one of the causes concurring to the actual low adoption of fixed broadband is the lack of basic digital skills. According to Eurostat, even if in 2015 there has been a growth from 2014, only 63% of the population use Internet regularly. The main use of Internet is related to digital content fruition (as playing music, videos and games), while Italians refrain to use internet for transaction like eBanking or shopping online. This is probably strictly related to the low proportion of population that have basic digital skills: only 43% has basic digital skills. Besides, Italy records a low share of STEM graduates, with only 1.4% of Italians between 20 and 29 years, and only 2, 2% is the proportion of employees with ICT specialist skills, which may be considered an insufficient percentage for an advanced economy in the digital age.

On the Integration of Digital Technology dimension Italian enterprises has a good performance only regarding the eCommerce turnover (8.2% in 2015 vs 4.9% in 2014), but on the other subdimensions, especially the adoption of eBusiness solutions, it does not reach an equal progress.

The best dimension of DESI 2016 for Italy is the Digital public Services, where Italy scores close to the EU average, thanks to the increased availability of online public services, but the use of eGovernment remains one of the lowest in EU28.

The picture emerging from the Digital Scoreboard regarding the development towards a digital economy and societies, highlights a situation of extreme delay for Italy, more than other EU member states. But it is necessary to underline that Italy suffers its territorial differences. An analysis carried out in the "Italia Connessa - Agende Digitali Regionali " report shows that three Regions lead the way, with Emilia-Romagna, which reaches the highest score, close to the European average, followed by Lombardia and Lazio. Besides there is a strong gap between northern and southern regions. All northern regions, and one southern region (Lazio), are the ones that reach values higher than the national average; by contrast, southern regions, together with (northern region), perform below the average.
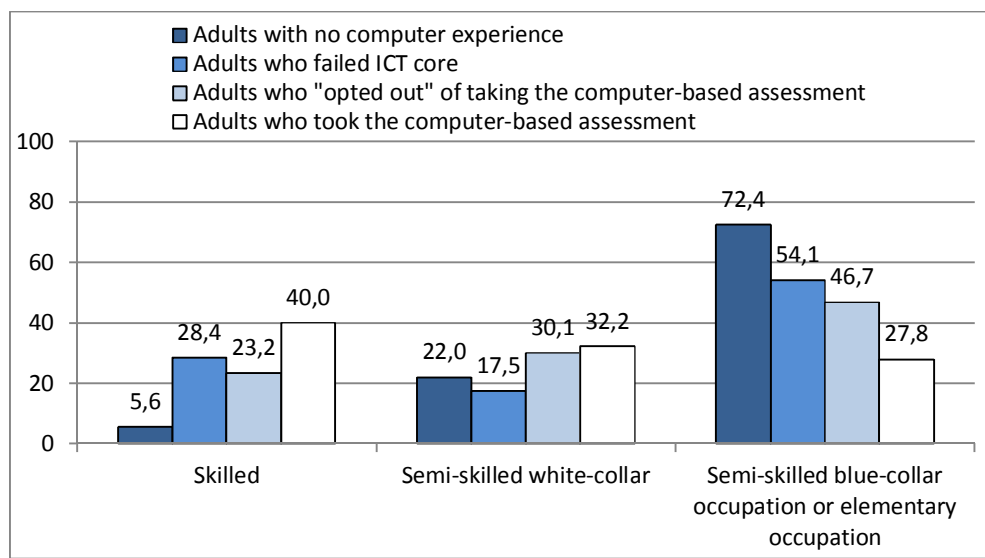
The Italian delay on digitalisation can be reduced through a cross digitalisation process that involves a technological investment, considered necessary, but it is not sufficient yet. Current society requires a profound transformation of the organizational processes, business models, culture, and, above all, the development of digital skills of workers. Digital skills are crucial for *professionals* working in SMEs in order to integrate young and unemployed people in the labour market, and they are also of vital importance for companies that need a highly skilled workforce and thus improve the European economy through innovation. There is an urgent need to encourage the spread of digital skills to meet the growing demands of the labour market, the increasing needs of enterprises and to the urgency that all citizens acquire the required skills, in particular those foundation skills which help to live in the digital world. As shown in OECD analysis (OECD 2016), to ensure that individuals can engage in digital activities and adapt rapidly to new and unexpected occupations and skills needs, a stronger emphasis has to be placed in promoting strong levels of foundation skills, digital literacies.

As measured by the OECD Survey of Adult Skills (PIAAC) in Italy there is still a large number of adults with very limited ICT skills or with no computer experience: the percentage of adults that have very low familiarity with computer devices is 26.9%. In this category people with no computer experience (24.4%) and those who failed the ICT core test (2.5%) are summed, thus demonstrating not to possess the basic ICT skills, such as the capacity to use a mouse or scroll through a web page (functions useful to take the assessment measuring the foundation skills, such as literacy and numeracy, in the computer based form).

On the other side in Italy there was a 14.6% of adults that even if they reported some prior experience with computers, they 'opted out' of taking computer-based assessment. This means that among those who claim to have experience in using computers (75%) only 58% accessed in the PC assessment. While the total OECD average of those who had access to the assessment test on PC is 77%.

There is a different proportion of adults with ICT skills according to their occupations: highly qualified workers (Skilled occupations) represent the largest group of those who took the CBA with the 40% of adults. While, on the other side, adults being employed in elementary occupation represent the category with the higher percentage of people with no experience in using computers (72,4%).

SOURCE: ISFOL - OECD/PIAAC DATA.

The link between ICT skills and foundation skills is illustrated by PIAAC main survey results, which reveal a positive association between adults - who took CBA assessment - and their score in literacy and numeracy. People that opted out had higher mean literacy (255 points) and numeracy (245 points) scores than those who failed the ICT core test (220 points as in literacy and numeracy), but they had lower scores than adults who passed the ICT core test (261 points in literacy and 263 in numeracy).

So PIAAC findings confirm the importance of foundation skills as a basis for the achievement of those skills which are (and will increasingly be) required in the digital economy.

Strategies implemented in Italy

✓ **Egov initiatives to promote the spread of digital skills**

As proposed by the European Commission, one of the seven pillars of Europe 2020 Strategy is the Digital Agenda which proposes to better exploit the potential of Information and Communication Technologies (ICTs) in order to foster innovation, economic growth and progress. This is the reason why within its Digital Agenda, Italy is evaluating the official adoption of DIGCOMP as an end user competence (Agenzia per l'Italia Digitale 2015). "One of the most urgent strategic measures to accelerate the digital transformation of our country is to reduce the gap in terms of digital skills". This is the main proposal of Agency for Digital Italy (AGID) through the Coalition for digital skills for two years. "One of its strategic axes of work is to support the dissemination of digital literacy initiatives, including promoting the use of innovative teaching technologies".

The Italian "Coalizione Nazionale per le Competenze Digitali" (that belongs to the Grand Coalition for Digital Jobs of EU Commission) which is based on a collaboration between national and local public institutions, the business community and *professionals*, the education and research sector, trade unions, associations and civil society organizations, have the mission of developing digital literacy and foster widespread awareness of technological innovation in the country, with particular attention to new professions and the

world of small enterprises, in order to support the Italian companies to better address the challenges of the digital transformation.

In 2016, through a partnership, one target for the Coalition will be not only to collect and enhance the development of active projects throughout the country, but also to put in place the initiatives promoted, which are collected and available on the website portal[1].

In this perspective, AGID has decided to launch a pilot initiative of e-skills mapping. The definition of a specific action plan, which provides the adoption of a standardized framework, will lead to a certification of digital skills. The goal is to create a model that can be replicated within the central and local administrations.

Another initiative started in Italy is 'Young Digital', a project whose primary objective is to reduce the Digital Mismatch, the gap between the skills required by ICT businesses and those owned by young Italians.

In fact, as showed above, one of the main reason related to the low level of ICT skills in Italy is strictly related to the ICT-related practices at work: in Italy there is a low request of ICT specialists yet. According to Istat (2015), in fact, 89.2% of companies with up to 50 employees, has a digitization level scored "low" or "very low." The concrete problem is that companies and workers are only partially prepared for the new digital tasks. Evidences prove that young workers (16-24 aged) use less information processing skills, including ICT skills, than prime age workers (25-54 aged), showing that effective use of skills is a key challenge among all OECD countries for all workers: younger and older ones (OECD, 2015).

Despite the Italian delay in digital innovation, there is an increasing awareness in promoting the spread of digital skills: the digital transformation relies on the availability of appropriate digital skills for all citizens, from the youngest to the oldest, considering that acquiring such skills will have a positive impact on finding jobs, reducing unemployment and integrating all citizens in the life (eSkills for Jobs project).

✓ **Supporting the innovation: the action of Fondimpresa to promote e-skills**

Fondimpresa, established in 2002 through an agreement between Confindustria and Cgil, Cisl e Uil, is the biggest Italian inter-professional training fund.

At the beginning of 2015, Fondimpresa counted more than 180.000 member companies, which means over 4.600.000 workers involved and very different training needs to be satisfied.

Fondimpresa is financed through a dedicated contribution (0,30% of the salary) paid by member companies.

70% of this contribution (percentage which member companies can raise to 80%) is allocated to a dedicated company account ("Conto Formazione"). These resources can be spent to finance specific training initiatives at company level defined through an agreement with union representatives.

30% of the contribution (20% in case of company option) is allocated to a general cumulative fund ("Conto di Sistema") and is mainly used to finance training programs evaluated by a qualified Committee of external experts accordingly to their correspondence to training objectives and the requirements provided by

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[1] http://competenzedigitali.agid.gov.it/

specific announcements. These resources are mainly addressed finance training projects presented by SME and represent an inter-sectorial solidarity measure.

From its foundation, Fondimpresa played a significant role in the training sector, financing training projects regarding a great variety of contents and skills. Particular attention has been dedicated to the challenges that companies are facing in an increasingly globalized and competitive economy.

New technologies and digital skills are, of course, one of the main topic in the agenda and Fondimpresa supported economically several training projects.
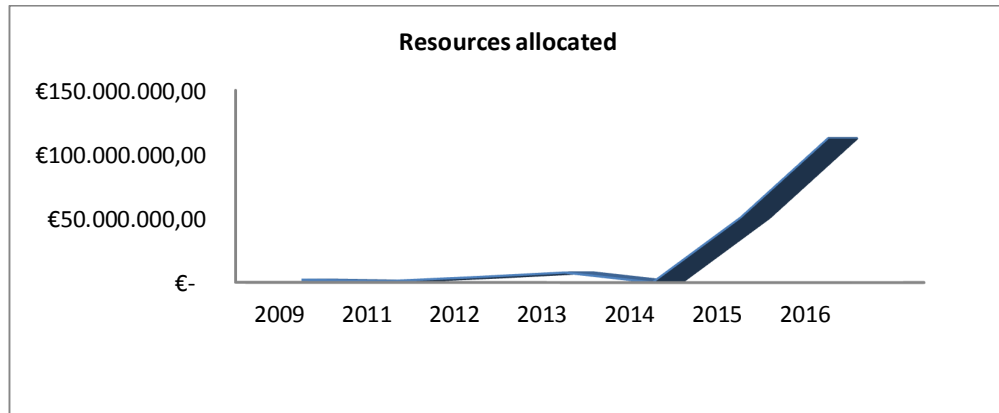
In first place, companies use their "Conto Formazione" to finance their own training programs according to their specific needs. These resources can represent a very important asset for companies especially in the perspective of Industry 4.0. For example, adequate training for workers could be supplied and financed through the fund in order to obtain the skills required by new generation high tech plants.

On the other hand, "Conto di Sistema" issued several announcements involving new technologies and digital skills. The following announcements are those which have a more specific focus on technological innovation and digital skills:

- "Training to support product or process technological innovation": this announcement finances training projects connected with process of technological innovation undertaken by member companies both introducing new products or productive processes or implementing a significant innovation in the existing productive processes.
  The announcement has been enacted also in 2016 and Fondimpresa allocated a budget of 10.000.000 euros.
- "Competitiveness": this announcement finances training projects which are connected with several topics which are considered to be strategic to enhance companies competitiveness. Among these topics, for the purpose of this paper, is important to mention "digitalization of business processes" and "electronic commerce".
  The announcement has been enacted also in 2016 and Fondimpresa allocated a total budget of 72.000.000 euros.

The following data summarize the investment in training that Fondimpresa granted in the last years for training projects related to innovation and competitiveness both through "Conto Formazione" and "Conto di Sistema".

COMPETITIVENESS AND INNOVATION - RESOURCES ALLOCATED		
Year	Training Projects	Resources allocated
2009	12	€ 1.999.198,02
2011	8	€ 969.115,00
2012	29	€ 4.103.986,29
2013	343	€ 7.667.128,15
2014	2	€ 8.070,31
2015	182	€ 50.514.271,61
2016	442	€ 112.695.799,49
Total	1018	€ 177.957.568,87

Resources allocated

€150.000.000,00	
€100.000.000,00	
€50.000.000,00	
€-	2009 2011 2012 2013 2014 2015 2016

In the end, Fondimpresa issues also "Avvisi con contributo aggiuntivo" (announcement for integrative contribution) where company training projects are financed partly by the "Conto Formazione" and partly by "Conto di Sistema" which play, in this case, an integrative role. Under this standpoint it should be mentioned:

- "Support for SME for training programs related to the development of electronic commerce and digital innovation projects"**:** this announcement is addressed to SME presenting training programs related to the development of electronic commerce (both B2C and B2B) or digital innovation concerning the introduction of new productive processes that require, in the digitalization process, dedicated training for employees.

Many training initiatives have been carried on with the support of Fondimpresa. Here is a couple of examples which clearly represent the variety of training initiatives that have been realized:

- Hewlett-Packard (HP): the Italian division of HP, global company operating in the ICT sector, since 2009 started a training project for its employees focused on the opportunities offered by cloud computing. The project concluded in 2011 and involved 92 employees. The training project, which was composed of 5 different initiatives, helped the company to promptly focus on one of most relevant technologies in the ICT sector of the last years.

- Fishermen in the Catania area – "Piccola Pesca Azzurra" cooperative: thanks to the resources allocated by Fondimpresa, the company "Civita srl", through a program named "Baroque", trained the fishermen of the Catania harbor (Sicily) in order to sell through e-commerce their fish. This action helped the fishermen to completely change their business model, reducing their commercial risk and introducing a significant innovation in a very traditional sector.

✓ **An outlook on future initiatives: Government commitment on Industry 4.0**

Last Spring, the Italian Parliament has achieved some initiatives on Industry 4.0, including a Hearing of social partners at the Chamber of Deputies (X Commission - Productive Activities, Trade and Tourism), in which all actors shared that public resources and addresses must improve enabling infrastructure, broadband and connectivity, digital skills, research and open innovation, to support growth of our manufacturing system.

In recent times, Italian institutions have declared the availability to a participatory governance and a broad involvement of all potentially interested parties, an expression of institutions, social forces (firms and workers).

Last summer, Italian Government had signed an agreement to define a path of promotion and support of manufacturing 4.0 in order to boost investment, growth, development and competitiveness of the national production system, with explicit reference to the negotiation and involvement of social partners.

In this agreement one of the objectives is "to spread the skills to Industry 4.0 and reduce the skills mismatch" through education and training.

Last September, the Minister of Economic Development has met social partners and set up a head group with institutional and social partners to share a program of investment and incentives in view of the National Budget Law.

Best Practices

To promote digital literacy and inclusion Italian Government has activated a special contest called "Actions for Digital Culture" which selected among the projects the 10 best practices who meet the objectives of the Italian National Programme for Culture, Education and Digital Skills according their sustainability, scalability, size, verifiability, actual or potential impact, user-friendliness, openness.

According the five main categories, the 10 winning good practices in digital literacy and inclusion:

Digital Culture for citizens:

- The network of local associations to disseminate digital culture. The beneficiaries of this project are citizens belonging to disadvantaged groups (the elderly, foreigners, etc.) or that are experiencing difficulties with the use of new technologies, and also the project's volunteers who support the users to interact with the municipality in a digital way.
- DITEDI - District of Digital Technologies. The project's goals are: the dissemination of digital culture in the district through the organization of seminars, workshops and events on digital issues; the overcoming of the digital divide among primary schools students and over 54 people through the organization of courses and special events. The increase in the competitiveness of ICT companies affiliated to the District, make them more familiar to create a network to facilitate collaboration and aim at foreign markets. Another important activity is targeted at young people to choose more learning and training path according to the ICT jobs.

Digital Inclusion:

- Bread and Internet. The project aims to promote access to technologies by citizens, and address the problem of "knowledge divide". It involves some action useful to spread the diffusion of digital literacy for citizens at risk of exclusion and the launch of new digital inclusion services in the territory, in particular the Digital Library facilitation service.
- CoderDojo Italy. Following the CoderDojo international guidelines, the project aims mainly to bring the children (7-14 years old) to develop their digital skills; with the help of open source software,

they realize programs, video games, presentations, animations, and share them online with the entire community.

Working Digital Skills:

- [Development of digital professional skills at INAIL according to the standard e-CF.](#) The project aims to improve the Staff Management with ICT skills workers to undertake a more functional organizational restructuring with a high-intensive training program. In the first phase, through the use of EUCIP framework, it has been detected the professional skills and profiles available on the entire IT staff. In the second phase, with the use of e-CF standard frameworks (UNI11506) Italian (and European) it will be identified among the 40 "competence cluster" of the framework those that represent the best skills considered useful and strategic for the Institute also according to the "high strategic skills for IT innovation" defined by the AgID.
- [Professional competence profiles for the Web.](#) The IWA Web Skills Profiles project' goal is to create an archive of digital competence profiles for the ICT employment, according to e-CF CEN G3. These were considered as profiles of great national interest by the Council of Ministers initiative "Italia degli Innovatori". The profiles were also used by PA for the definition of the delivery requirements (example: the City of Milan) and for the identification of skills (e.g.: Piemonte Region Agency Work), and by the private market for the profiling of the web *workers* (example: Seat SpA) as well as for creating the first service of supply/demand for staff with ICT qualifications (www.jobict.it) developed in collaboration with the union Networkers, Assintel and Fondazione Politecnico di Milano.

Digital Skills for the Enterprises:

- [The Italian school to catch up with Europe: Core EUCIP in curricula in technical colleges](#). The project's main objective is to give students a digital training, following the e-Competence Framework (E-CF). Besides, it allows to obtain an EUCIP core certification, creating specialized professionals in the field of Information Systems.
- [Meet No Neet 2](#). The project, realized by the Fondazione Mondo Digitale in collaboration with Microsoft as part of the overall program Microsoft YouthSpark, provides technological, social and business training to enhance students' skills needed to enter the labour market.

Digital Skills for PA:

- [METID MATCH: build with the digital culture.](#) This is an initiative for the dissemination of digital culture and the open sharing of data and content, promoted by METID (Metodologie e Tecnologie Innovative per la Didattica) service of Politecnico di Milano. It is based on a community, open to all actors of the university context (administrative staff, teachers, researchers and students) and civil society.
- [The 100 Schools Project.](#) The project's goal is to identify 100 schools, representative of the different situations and needs widespread in the Italian school, in order to define a more complete systematization and computerization of the school. It has been activated a trial to establish best practices, and experience an integrated management model of school innovation: moving towards a progressive digitalization and dematerialization of all operational areas of education (starting from the school secretary activities, the communication with families, the document management to digital content for teaching).

Concluding remarks and main proposal towards the spread of digital skills

As expressed in the Italian Strategy for the Digital Growth the next steps towards the spread of digital skills will be managed to achieve the following main objectives:

- For citizens: more "digital awareness" and more ability to use the digital services and participate in the new socio-economic context, as in the education, in labour market expanded to include the older adults;
- For workers: increase of digital skills in order to foster occupation opportunities and social inclusion;
- For managers: increase of the capacity of identify and make the best use of the opportunities offered by the digital economy in order to enhance productivity and competitiveness;
- For small and medium-sized enterprises: increase the potential to innovate processes and products and increase competitiveness in the global context;
- For Public administrations: increase of ability to use digital technologies and services, both for improve processes and to interact with the public; develop the capacity to manage changes and innovation in the PA in digital perspective to reach e-leadership.

To fulfill these objectives it is therefore essential to coordinate government policy, at both central and local levels, with the market but also involving in a strong collaboration among Government, Trade Union Confederations and Employers Organizations.

Under this standpoint the tripartite group agreed that is important to support the Government initiatives aimed to strengthen the role of the education and training system to increase specific competences and skills in the ICT sector. In particular, the group agreed on the importance of supporting and promoting the existing positive experiences in the training sector such as the work done in these years by Fondimpresa.

For this reason it is very important the relevant investment that Italy is doing on its infrastructure, also in order to reduce the gaps, existing also in the area of digital skills, between the different areas of the country.

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