Council of the European Union

Brussels, 12 May 2017
(OR. en)

9139/17
ADD 17

TELECOM 118
MI 412
IND 123
COMPET 342
PI 58
RECH 137
DIGIT 135

COVER NOTE

From:	Secretary-General of the European Commission, signed by Mr Jordi AYET PUIGARNAU, Director
date of receipt:	11 May 2017
To:	Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of the European Union
No. Cion doc.:	SWD(2017) 160 final - PART 18/62
Subject:	COMMISSION STAFF WORKING DOCUMENT Europe's Digital Progress Report 2017

Delegations will find attached document SWD(2017) 160 final - PART 18/62.

Encl.: SWD(2017) 160 final - PART 18/62

EUROPEAN
COMMISSION

Brussels, 10.5.2017
SWD(2017) 160 final

PART 18/62

**COMMISSION STAFF WORKING DOCUMENT**

Europe's Digital Progress Report 2017

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Europe's Digital Progress Report (EDPR) 2017 Country Profile Italy

Europe's Digital Progress Report (EDPR) tracks the progress made by Member States in terms of their digitisation, combining quantitative evidence from the Digital Economy and Society Index (DESI)[1] with qualitative information on country-specific policies. It is structured around five chapters:

| 1 Connectivity	Fixed broadband, mobile broadband, broadband speed and prices
2 Human Capital	Internet use, basic and advanced digital skills
3 Use of Internet	Citizens' use of content, communication and online transactions
4 Integration of Digital Technology	Business digitisation and eCommerce
5 Digital Public Services	eGovernment

Digital Economy and Society Index (DESI) 2017 ranking
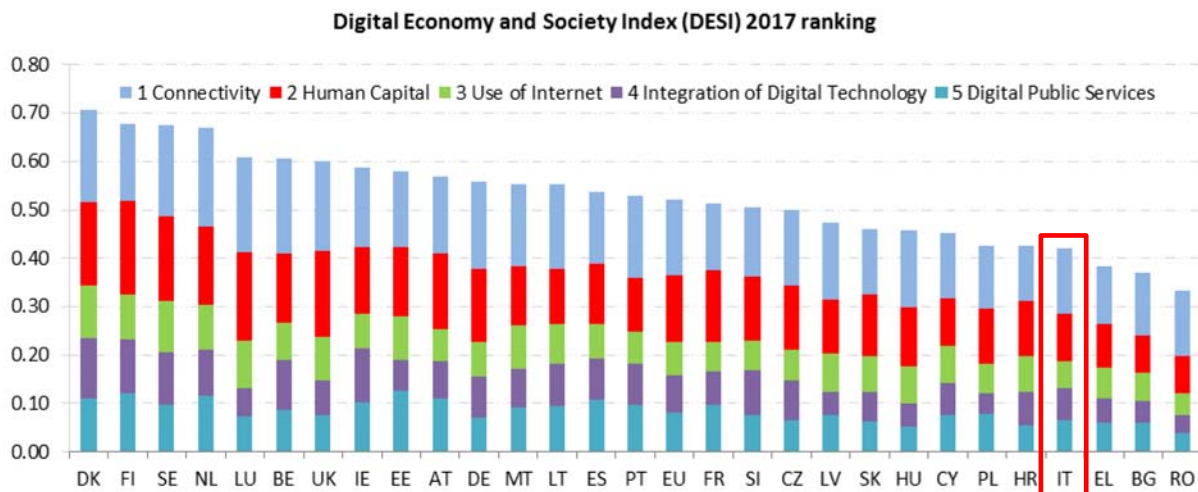
| | Italy | | Cluster | EU |
	Rank	score	score	score
DESI 2017	**25**	**0.42**	**0.41**	**0.52**
DESI 2016[2]	25	0.38	0.38	0.49

Italy ranks 25th out of the 28 EU Member States. Overall, it progressed a little faster than the EU average over the last year.

Policy initiatives undertaken in the course of 2015-2016 start showing impact: the compulsory eInvoicing to public authorities drove up eInvoicing adoption to 30% of enterprises (5th rank in the EU); the adoption of the ultra-fast broadband plan spurred both public and private investments in NGA ensuring 72% coverage in 2016, up from 41% in the previous year. Italy's slow performance is mainly driven by the usage side: low levels of digital skills translate in low levels of a range of indicators: the uptake of broadband, the number of internet users, the engagement in a variety of internet activities (including eGovernment), the use of eCommerce and the number of digital curricula (i.e. STEM degrees and ICT specialists).

Italy belongs to the Low performing cluster of countries[3].

Italy adopted the national Digital Agenda Strategy 2014-2020[4] in March 2015.

DESI 2017 - relative performance by dimension

DESI - evolution over time

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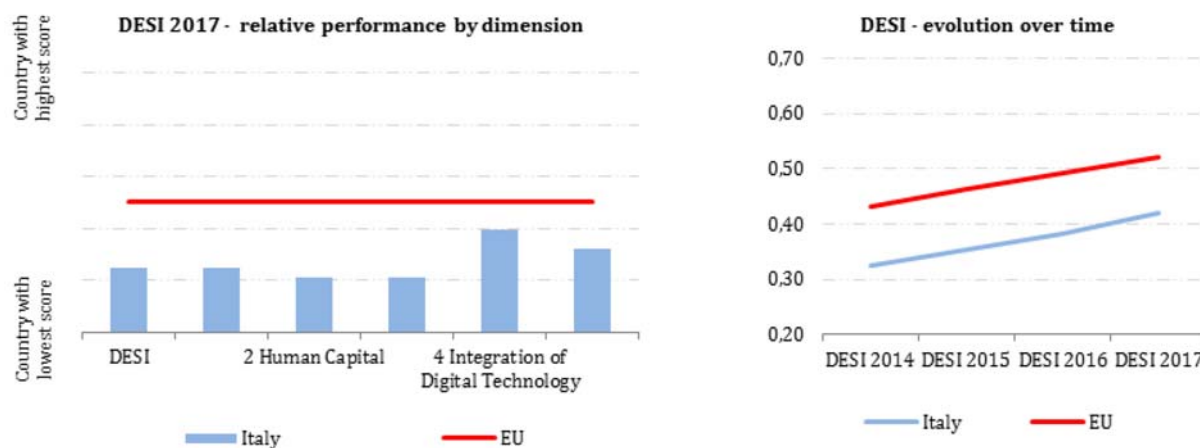
[2] The DESI 2016 was re-calculated for all countries to reflect slight changes in the choice of indicators and corrections to the underlying indicator data. As a result, country scores and rankings may have changed from the previous publication. For further information please consult the DESI methodological note at https://ec.europa.eu/digital-single-market/en/desi.

[3] Low performing countries are Romania, Bulgaria, Greece, Italy, Croatia, Poland, Cyprus, Hungary and Slovakia.

[4] Strategia per la crescita digitale 2014-2020. http://www.agid.gov.it/notizie/2015/03/24/approvati-i-piani-nazionali-la-banda-ultralarga-crescita-digitale

1 Connectivity

1 Connectivity	Italy		Cluster	EU
	rank	score	score	score
DESI 2017	**24**	**0.54**	**0.53**	**0.63**
DESI 2016	27	0.44	0.46	0.59

	Italy					EU
	DESI 2017			**DESI 2016**		**DESI 2017**
	value		rank	value	rank	value
1a1 Fixed Broadband Coverage % households	99% 2016	→	12	99% 2015	10	98% 2016
1a2 Fixed Broadband Take-up % households	55% 2016	↑	28	53% 2015	28	74% 2016
1b1 Mobile Broadband Take-up Subscriptions per 100 people	85 June 2016	↑	11	77 June 2015	10	84 June 2016
1b2 4G coverage[5] % households (average of operators)	86% 2016		18	NA		84% 2016
1b3 Spectrum[6] % of the target	65% 2016	→	17	65% 2015	20	68% 2016
1c1 NGA Coverage % households	72% 2016	↑	23	41% 2015	27	76% 2016
1c2 Subscriptions to Fast Broadband % subscriptions >= 30Mbps	12% June 2016	↑	25	5% June 2015	25	37% June 2016
1d1 Fixed Broadband Price[7] % income	1.1% price 2016, income 2015	↑	9	1.8% price 2015, income 2015	21	1.2% price 2016, income 2015

Italy performs slightly better than the EU average with regard to mobile broadband take-up (85 subscriptions per 100 people) but progress in connectivity over the past year has mainly been driven by improvements in NGA coverage - from 41% of population in 2015 to 72% in 2016, mostly in urban areas - although still below the EU average. While fixed broadband take up slightly increased, as well as the share of subscriptions to fast broadband (from 5% in 2015 to 12% in 2016), Italy is still lagging behind.

In the context of the 2015 Italian ultra-broadband plan, in 2016 the Italian government adopted a national state aid scheme[8] (endorsed in June 2016 by the European Commission) aiming at promoting the deployment of passive access infrastructure enabling the

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[5] This is a new DESI indicator measuring the average coverage of telecom operators' 4G networks.

[6] There is a decrease in most of the Member States due to the additional EU harmonisation of the 700 MHz band in April 2016.

[7] Due to a slight methodological change, historical data was re-calculated.

[8] http://www.sviluppoeconomico.gov.it/index.php/it/component/content/article?id=2019963

development of NGA broadband networks in white areas[9] (identified as clusters "C" and "D" in the Italian ultra-broadband plan). The scheme aims at providing: in clusters C (i) 70% of households with access to an infrastructure able to supply at least 100 Mbps download speed and (ii) 30% of the households with access to an infrastructure able to supply at least 30 Mbps; in clusters D, 100% of the households with access to an infrastructure able to provide at least 30 Mbps. The overall estimated (maximum) budget of the measure (will run until 31 December 2022) is about EUR 4 billion, funded by the Development and Cohesion Fund (DCF) and EU funds (ERDF and EAFRD)[10]. In this context, two calls for tenders of respectively 1.4 billion Euros[11] and 1.2 billion Euros[12] were launched in 2016. In march 2017, the first tender has been assigned covering Abruzzo, Molise, Emilia Romagna, Lombardia, Toscana, Veneto regions. The second tender is still in process following the formalities related to judicial proceeding required by law. In Italy 65% of the spectrum harmonised at EU level for wireless broadband was assigned. In absolute terms this means 706 MHz, slightly below the EU average of 737.8 MHz. Italy was the first EU country to transpose the Broadband Cost Reduction Directive.

Effective implementation of the Ultra-broadband National Plan is essential in order to facilitate the progress with NGA coverage in Italy. The finalisation of the ongoing tendering procedures in a timely fashion and a more coordinated approach between existing initiatives, e.g. coordination among the different mapping exercises, are both important for achieving this outcome, especially in rural areas.

Highlight 2017[13]: Net4all, public-private partnership for ultra-fast broadband for industrial areas

The region Emilia-Romagna has invested in the project Net4all to bring ultra-fast broadband network to industrial areas in a digital divide area. The project builds on the existing network of Emilia Romagna public administrations, Lepida Network, which connects all 340 regional municipalities, 664 schools, 199 seats of the health service and 290 further seats of public bodies. The additional capacity has been built through a public-private partnership including 1) municipalities on whose territory the under-served industrial areas are residing; 2) companies residing in the targeted industrial area 3) LepidaSpA the in-house company of

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[9] White areas are defined as those areas for which no operator has plans to invest in NGNs

[10] The exact amount will be updated on an annual base according to the investment planned by private operators and their actual degree of implementation.

[11] The first tender aims at providing fast broadband access in the white areas of six Italian regions (Abruzzo, Molise, Emilia Romagna, Lombardia, Toscana e Veneto).

[12] The second tender aims at for providing fast broadband access in the white areas of Piemonte, Valle D'Aosta, Liguria, Friuli Venezia Giulia, Umbria, Marche, Lazio, Campania, Basilicata, Sicilia and Trento.

[13] Highlight 2016: 'SPID, the Italian way to digital identity'. Italy introduced in March 2016 a digital identity system (Sistema Pubblico Identità Digitale, SPID) which will allow, when completed, access to every online public service with a unique password instead of the many that are necessary today. For the time being a first batch of 300 services (among them tax declarations, social security) has been made accessible through SPID while the remaining public administrations will follow suit by end 2017. Private service-providers (e.g. banks) could also in future use SPID for access to their services. SPID is already interoperable with other European digital identity systems since it adheres to the EU eIDAS standard. Another interesting development is the possibility to add to the profile of the user (either citizen or enterprise) additional, certified attributes like for example educational qualifications.

Emilia-Romagna region charged with managing the network 4) local Chambers of Commerce 5) telecom operators. The resulting network has already brought ultra-fast broadband to 12 industrial areas and 90 enterprises (but with plans of adding 20 more areas and 150 more enterprises). The project Net4all was one of the winners of the European Commission's European Broadband Awards 2016.

2 Human Capital

2 Human Capital	Italy		Cluster	EU
	rank	score	score	score
DESI 2017	**24**	**0.40**	**0.40**	**0.55**
DESI 2016	24	0.38	0.38	0.53

	Italy					EU
	DESI 2017			DESI 2016		DESI 2017
	value		rank	value	rank	value
2a1 Internet Users	**67%**	↑	**25**	**63%**	**25**	**79%**
% individuals	2016			2015		2016
2a2 At Least Basic Digital Skills	**44%**	↑	**25**	**43%**	**24**	**56%**
% individuals	2016			2015		2016
2b1 ICT Specialists[14]	**2.5%**	→	**20**	**2.5%**	**21**	**3.5%**
% employed individuals	2015			2014		2015
2b2 STEM Graduates	**14**	→	**23**	**14**	**23**	**19**
Per 1000 individuals (aged 20-29)	2014			2013		2014

In the Human Capital dimension, Italy is performing well below the average and is making little progress. Regular use of Internet among the population has grown by 4 percentage points, although still among the EU lowest and inadequate to the needs of a large and advanced economy like Italy. Indeed, the two stagnant indicators of ICT specialists and STEM graduates show that the supply of digitally skilled labour is constrained, limiting the possibilities of the Italian economic system of moving up the global value chain by converting to digital business models.

The national Coalizione per le Competenze Digitali[15] (coalition for digital competences) set up in early 2015 has coordinated 106 projects to develop digital competences for citizens, entrepreneurs, job holders and civil servants. However, it stopped existing, leaving promising projects such as 'Crescere in digitale'[16] and 'Eccellenze in digitale'[17]) as one-off experiments without scaling up. The Digital School National Plan, Piano Nazionale Scuola Digitale,[18] envisages actions aimed at inserting coding and computational thinking in primary school curricula. Other actions encourage digital entrepreneurship experiences in school as well as stages in digital companies for upper secondary students. This effort is not always systematic and suffers from shortage of resources (especially of digital skills among the teaching staff) but is going in the right direction. Finally, the new Italian Industry 4.0 plan has foreseen EUR 220 million Euros for the development of Industry 4.0 related curricula for

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[14] Historical data have been revised by Eurostat.

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

[16] http://www.crescereindigitale.it/

[17] https://www.eccellenzeindigitale.it/home

[18] http://www.istruzione.it/scuola_digitale/index.shtml

post-secondary schools (*Istituti Tecnici Superiori*), undergraduate and graduate courses (both Masters and Ph.Ds). As one of the initiatives for the European Code Week (a grassroot movement promoting coding), Prof. Bogliolo (the coordinator of its Italian branch) is airing a coding course on the educational channel of Italian national television[19] intended for both students and teachers of primary and secondary schools.

The Italian strategy looks adequate for providing digital skills to the young, although its effectiveness will depend much on the coordination with the needs of the enterprises (and the implementation of the Industry 4.0 strategy). On the other hand, there seems to be a shortage of strategic planning for addressing the digital skills' gap of the older generations.

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[19] http://www.raiscuola.rai.it/programma-coding/#Programma

3 Use of Internet

3 Use of Internet	Italy		Cluster	EU
	rank	score	score	score
DESI 2017	**27**	**0.36**	**0.39**	**0.48**
DESI 2016	27	0.34	0.37	0.45

	Italy					EU
	DESI 2017			DESI 2016		DESI 2017
	value		rank	Value	rank	value
3a1 News	**60%**	↑	**26**	**57%**	**26**	**70%**
% individuals who used Internet in the last 3 months	2016			2015		2016
3a2 Music, Videos and Games[20]	**79%**		**14**	**NA**		**78%**
% individuals who used Internet in the last 3 months	2016					2016
3a3 Video on Demand[21]	**15%**		**14**	**NA**		**21%**
% individuals who used Internet in the last 3 months	2016					2016
3b1 Video Calls	**34%**	→	**23**	**34%**	**22**	**39%**
% individuals who used Internet in the last 3 months	2016			2015		2016
3b2 Social Networks	**60%**	↑	**22**	**58%**	**23**	**63%**
% individuals who used Internet in the last 3 months	2016			2015		2016
3c1 Banking	**42%**	↓	**23**	**43%**	**23**	**59%**
% individuals who used Internet in the last 3 months	2016			2015		2016
3c2 Shopping	**41%**	↑	**25**	**39%**	**25**	**66%**
% internet users (last year)	2016			2015		2016

In terms of the propensity of individuals to use Internet services, Italy ranks one from bottom in the EU28 ranking and very little progress has been made since last year. Italian Internet users are still tepid users of advanced services like eCommerce and eBanking, the latter despite high costs of banking services and the reduction in the number of local branches experienced in the last years. The only Internet activity above the average is digital content consumption: listening to music, watching videos and playing games online (79%).

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[20] Break in series due to a change in the Eurostat survey.

[21] Break in series due to a change of data source. New source is Eurostat.

4 Integration of Digital Technology

4 Integration of Digital Technology	Italy		Cluster	EU
	rank	score	score	score
DESI 2017	**19**	**0.33**	**0.27**	**0.37**
DESI 2016	20	0.30	0.25	0.35

	Italy DESI 2017			DESI 2016		EU DESI 2017
	Value		**rank**	**value**	**rank**	**value**
4a1 Electronic Information Sharing % enterprises	**36%** 2015		**14**	**36%** 2015	**14**	**36%** 2015
4a2 RFID % enterprises	**4.6%** 2014		**12**	**4.6%** 2014	**12**	**3.9%** 2014
4a3 Social Media % enterprises	**16%** 2016	↑	**18**	**14%** 2015	**18**	**20%** 2016
4a4 eInvoices % enterprises	**30%** 2016		**5**	**NA** 2015		**18%** 2016
4a5 Cloud % enterprises	**12%** 2016		**17**	**NA** 2015		**13%** 2016
4b1 SMEs Selling Online % SMEs	**7%** 2016	→	**26**	**7%** 2015	**25**	**17%** 2016
4b2 eCommerce Turnover % SME turnover	**6.4%** 2016	↓	**22**	**8.2%** 2015	**14**	**9.4%** 2016
4b3 Selling Online Cross-border % SMEs	**5.2%** 2015		**22**	**5.2%** 2015	**22**	**7.5%** 2015

Italy has made some progress in this dimension, Integration of Digital Technology by businesses, although it still remains below average. Italian firms are among the leaders in the use of eInvoices, thanks mainly to the obligation of using them for contracts with the public administration[22]. Also the use of RFIDs and the adoption of software to integrate different functional areas of the enterprise (i.e. ERP) are rather widespread among Italian enterprises. Given that the cost of IT solutions can be huge for Italian enterprises, mostly of small size, the use of cloud solutions has proven quite popular. Engagement with social media has been gaining traction quite rapidly among Italian firms. However, this doesn't seem to correspond to an integrated sales strategy given that eCommerce remains relatively unexploited and Italy is losing ground with respect to other countries, where firms are starting to sell online in greater numbers.

Italy has launched an Industry 4.0 strategy in September 2016[23], with the aim of modernising Italy's manufacturing sector, mainly through the adoption of digital technologies and digital

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[22] Since March 2015 all enterprises providing goods or services to the Public Administration, both a central and local level, have to submit eInvoices in order to get paid.

[23] Piano nazionale Industria 4.0 http://www.sviluppoeconomico.gov.it/index.php/it/per-i-media/comunicati-stampa/2035187-il-ministro-dello-sviluppo-economico-carlo-calenda-illustra-il-piano-nazionale-industria-4-0

business models[24]. The multi-pronged strategy foresees, first of all, corporate tax deductions, for investments started by end of 2017 **for new equipment, ICT goods and high tech instrumental goods, the tax credit for R&D expenditures has been strengthened**. Those tax deductions will constitute the great majority of the EUR 18 billion allocated to the Industry 4.0 strategy. Additional measures include tax deductions for equity investments in innovative start-ups and other innovative financial solutions to support innovation **and industry 4.0 investments**: venture capital funds for Industry 4.0 start-ups, investment funds dedicated to exploiting intellectual property, start-up accelerators. Another pillar of the strategy centres on the creation of digital innovation hubs and competence centres. The former, organised by the employers' associations, will raise firms' awareness - especially at SME level - about the possibilities offered by the digital economy and help locating funding opportunities for innovative investments. The competence centres will give technological advice to companies, particularly SMEs on Industry 4.0 solutions also through live experimentations of digital production processes and demos of new technologies. They will be **built through the collaboration of the top universities and other** stakeholders, like private research centres, start-ups and large and medium sized companies.

The Italian Industry 4.0 plan is a major step toward the objective of moving the Italian industrial sector higher in the global value chain. But some critical issues remain: only some of the planned digital innovation hubs are operational and the competence centers won't be activated before the second half of the year with the risk that an important share of tax deductions could be misallocated. The capacity to raise awareness among SMEs of the opportunities offered by digital technologies, and ultimately the success of the Industry 4.0 strategy, will rely on the successful coordination between the various actors, that is, the government, the higher education sector and the owners' associations.

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[24] All measures envisaged in the strategy has been approved in the 2017 Italian Budget Law.

5 Digital Public Services

5 Digital Public Services	Italy		Cluster	EU
	rank	Score	score	score
DESI 2017	**21**	**0.44**	**0.43**	**0.55**
DESI 2016	17	0.46	0.42	0.51

	Italy				EU
	DESI 2017		**DESI 2016**		**DESI 2017**
	value	rank	value	rank	value
5a1 eGovernment Users	16% ↓	25	18%	24	34%
% internet users (last year)	2016		2015		2016
5a2 Pre-filled Forms	33 ↓	19	37	16	49
Score (0 to 100)	2016		2015		2016
5a3 Online Service Completion	84 ↓	16	85	14	82
Score (0 to 100)	2016		2015		2016
5a4 Open Data[25]	52% ↑	19	49%	13	59%
% of maximum score	2016		2015		2016

Italy has a lower than average performance in the Digital Public Services dimension and it has slipped down the ranking over the past year. On the supply side, the availability of public services online - online service completion - is above the EU average; but it hasn't kept pace with the improvement of eGovernment services in other countries. Also, public administration databases are not yet sufficiently inter-connected to allow for pre-filling of forms through the re-use of personal information. On the demand side, usage statistics, confirm the analysis of section 3, that Italians are not heavy users of complex online services.

The Italian eGovernment strategy, whose main initiatives are included in the administrative simplification package, *Agenda Semplificazione 2015-2017*, witnesses some initiatives substantially on track while others experience significant delays. The Italian eIdentity system, compliant with EIDAS regulation, known as SPID, *Sistema Pubblico di Identità Digitale*, can now be used to access more than 4000 public services. From 2017, the government plans to start also the certification of attribute providers, that is, those institutions that can add qualifications, e.g. academic certificates or inscription to a professional register, to the citizen's eID. This expansion and the possible adoption of SPID also by private providers, notably banks, could speed up take up of SPID by citizens, at the moment counting only 1.2 million users, well below government targets.26 The system for online payments to the public administrations (PagoPA), from education enrolment to driving fines, is rapidly recruiting new

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[25] Change of data source. The historical data have also been restated. The new source is the European Data Portal.

[26] 3 million users by Sep 2015, 10 million users by Dec 2017.

administrations, and now comprises 66% of the total.27 The number of transactions is still limited, with only 1.3 million so far but things are improving: half of the transactions have been made in the last three months, per available data. On the other hand, the consolidation of the local population registries (*Anagrafe Nazionale Popolazione Residente, ANPR*) is severely delayed as, for the time being, only three municipalities out of 7983 are operational within the national database and another 23 (totalling 11 % of the Italian population) are in an experimental phase.

Given the low level of digital skills of the Italian population, it is as important as ever that eGovernment services offer a smooth experience to the user. Key to this user-friendliness is the flawless deployment of key systems like PagoPA, SPID and ANPR. The rationalisation of the population registry is particularly important since the data it contains provide the basis for the correct functioning of a wide number of public services and any delay affecting its completion could jeopardize the Italian eGovernment strategy.

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[27] That is 15292 out of total 23062 Italian public administrations. Data extracted on 27 Feb 2017 from http://www.agid.gov.it/monitoraggio.