

2019 - 2021

Three-Year Plan for IT
in the Public Administration

To Antonella Giulia Pizzaleo, patient and brilliant innovator of the Public Administration, who has represented the Regional Authority of Lazio at multiple tables in many discussions during the preparation of this Plan and who has made an effectively contribution through her suggestions and courteous observations.

With our thanks for having guaranteed, through her constant commitment and constructive approach, a strong, innovative drive on the digitisation of the PA on both a local and national level.

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PART 1 - REFERENCE FRAMEWORK

CHAPTER 1. The Three-Year Plan for IT in the Public Administration

The Three-Year Plan for IT in the Public Administration (hereinafter, the “Three-Year Plan” or the “Plan”) is an essential tool by which to promote the digital transformation of the Italian administration and country. This transformation must take place within the context of the single European market for digital goods and services¹, according to a strategy that seeks to improve on-line access to goods and services throughout Europe for consumers and businesses and to create a favourable context whereby digital services and networks can be developed to maximise the potential growth of the European digital economy.

The expectations of citizens and businesses regarding access to simple and efficient digital public services are, in Italy, at the heart of the digital transformation process, which is outlined in the 2014 - 2020 Digital Growth Strategy and in the National Ultra-Wideband Plan, approved by the Council of Ministers, in respect of the 2014 - 2020 Partnership Agreement. These national initiatives uphold the planning of the European Digital Agenda, one of the seven flagship initiatives of the 2020 European Strategy, which seeks to best exploit the potential of ICT in order to foster innovation, economic growth and progress. The Three-Year Plan derives directly from this.

1.1 Digital transformation strategy

The digital transformation strategy of the Public Administration (PA) contained in the Three-Year Plan is entirely consistent with the European eGovernment Action Plan², with reference to which the Member States are busy defining their own domestic policies on the basis of the following principles:

- “digital by default”: the public administrations must supply digital services as a pre-defined option;
- “once only: the Public Administrations must avoid asking citizens and businesses for information that has already been supplied;

¹ [Communication “A Digital Single Market Strategy for Europe”, COM \(2015\)192, 6.5.2015.](#)

² [Communication “EU eGovernment Action Plan 2016-2020”, COM \(2016\) 179, 19.4.2016.](#)

- “digital identity only”, the PA must act prior to adopting generalised digital identification systems (the Italian PAs will need to adopt SPID);
- “cloud first”: when defining a new project and/or developing new services, by way of priority the public administrations will need to consider adopting a cloud paradigm before any other technology, taking into account the need to prevent the risk of lock-in. They will also need to assess public, private or hybrid cloud use, according to the nature of the data processed and the related confidentiality requirements;
- inclusiveness and accessibility of services: the public administrations must design digital public services that are inclusive by definition and which meet with the various requirements of the people, such as the elderly and disabled;
- territorial inclusiveness: the public administrations must design digital public services that are also inclusive for the linguistic minorities present on national territory;
- open, transparent data and administrative processes;
- cross-border first: the public administrations must make relevant digital public services available cross-border;
- interoperable first: the public services must be designed in such a way as to function in an integrated, uninterrupted manner throughout the single market;
- faith and security: right from the design phase, profiles must be integrated relative to personal data protection, the protection of privacy and information security.

In line with the indicators of the European Digital Agenda, Italy has prepared its own national strategy, which emphasises the complementary position on a national, regional and local level and identifies priorities and action to be taken and measured on the basis of specific indicators.

Its concrete implementation was launched with the 2017 - 2019 Three-Year Plan for IT in the Public Administration, approved by the President of the Council on 31 May 2017.

The 2017 - 2019 Plan refers to the “Strategic model for the evolution of the IT system of the public administration” (hereinafter the “Strategic Model”)³, on which it has hinged the projects, initiatives and programmes for the digital transformation of the PA, as also described in said document “2014-2020 Digital Growth Strategy”. This document sets out the strategic requirements to be met, namely:

- to facilitate coordinating all digital transformation projects and launching the

³Resolved by the AgID Steering Committee on 04/02/2016

centralization of digital transformation planning and public spending;

- to consider the principle of “digital first” as a priority, designing and implementing services for citizens, starting from the use of digital technology;
- to facilitate modernising the Public Administration, starting with processes, and overcoming an approach based on technical rules and strict guidelines issued by law. Instead, they must be dynamic and focus on the centrality of the experience and the users’ needs;
- to adopt an architectural approach based on the separation of the back-end and front-end levels, with open logics and public standards that can guarantee other public and private players accessibility and the greatest possible interoperability of data and services;
- to promote solutions that stimulate cost reductions and improvements in service quality, with remuneration mechanisms that encourage suppliers to strive for increasingly innovative methods of constructing, providing and using services.

The Digital Growth Strategy highlights the need for a radical rethink of the strategy adopted for the design, management and supply of public services on the internet, which envisages, amongst others, the adoption of multi-layer architecture and the principles that determined the affirmation of the business model of the “API economy”.

The Strategic model has therefore been designed to encourage the development of a real Public Administration Information System (hereinafter the “PA Information System”), which:

- considers the needs of citizens and businesses as a starting point for the identification and development of modern, innovative digital services (front office services);
- standardises and rationalises the IT infrastructures and services used by the public administration (back office services);
- fosters the creation of a new market for private businesses that will be able to operate in an agile manner in a context that is no longer based on large, isolated, monolithic projects, but rather on services with added value. These services must comply with the Three-Year Plan guidelines, always be available on mobile devices (mobile first approach) and be constructed using secure, scalable, highly reliable architectures based on clearly-defined application interfaces (APIs);
- optimises the existing resources of the Public Administration so as to safeguard investments already made, also encouraging and creating conditions for the re-use of quality existing interfaces and software;
- does not disperse the experience accrued in previous digitisation projects of the country, with the aim of taking successful cases as models (best practices) and avoiding

any repetition of errors made in the past;

- improves security thanks to a multi-layer architecture that ensures a separation of back end and front end, only granting access to back end in a controlled manner and by means of standard APIs;
- promotes the development of new services, according to the principle of subsidiarity (e.g. through API interactions), reducing development time and economic commitments for administrations, both during development and update;
- facilitates the control of spending relating to the digital technologies of the public administration, integrating mechanisms for the measurement of progress on activities planned (e.g. through shared project management systems);
- enables data-driven policies to plan future activities, based on the optimisation of spending and investments.

1.2 Map of the strategic model

The experience with the PA in 2017-2018 and the evolution of the projects specified in the 2017 - 2019 Plan results, in the 2019 - 2021 Three-Year Plan, in a representation of the strategic model that can be schematically summarised by the graphic map illustrated in figure 1.1.

It is important to point out once more that the Map should be viewed as the representation of macro areas that aggregate the homogeneous elements concerned by the Plan. The macro areas indicated do not correspond to layers of a stack architectural model.

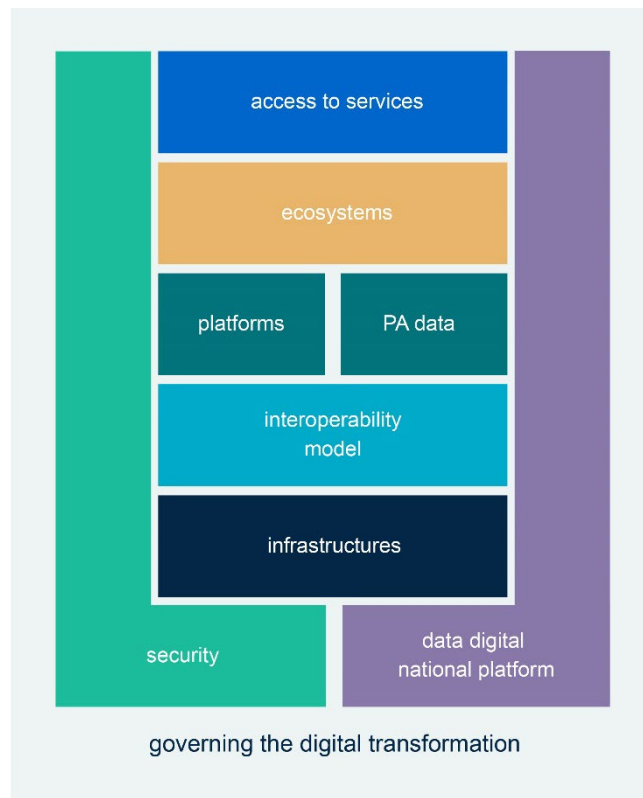


Figure 1.1 - Map of the strategic model

With reference to the Map, as will be seen in the next chapters:

- the national IT **infrastructures** pursue the aim of increasing security, reducing the cost of technological infrastructures and improving the quality of services of the Public Administration through the rationalisation of data centres, the systematic adoption of the cloud paradigm and the development of connectivity, with specific reference to the internet in public places and in the offices of the Public Administration;
- the **interoperability model** defines the mechanisms that facilitate and guarantee the correct interaction between the system players (citizens, businesses and public administrations), fostering the transparent sharing of data, information, platforms and services. The interoperability model therefore comprises elements such as guidelines, technological standards and interoperability profiles that each Public Administration must follow in order to guarantee the interoperability of its systems with those of other subjects for the comprehensive implementation of the PA Information System;

- the **PA data and platforms** encourage the centralisation and rationalisation of systems for the management of processes and data, reducing the fragmentation of interventions:
 - the **Platforms** contain all infrastructural services (e.g. identification service, payment service, ANPR), which on the one hand facilitate and cut costs for the development of new services and on the other, standardise the tools used by end users in their interaction with the Public Administration. These also host all application solutions that are sufficiently generic as to be shared by the public administrations (e.g. the system for managing payslips);
 - relative to the **PA Data**, a distinction is drawn between the databases of national interest, open data and controlled vocabularies. The latter is a repository needed to create and/or maintain all the resources that are essential to the full appreciation of the information held by the Public Administration.
- **security** comprises activities for the regulation and governing of cybersecurity in the PA for assessment testing and CERT-PA as an operative tool by which to support the adoption of correct security levels at the Public Administration. All other aspects are also identified as come together to make the IT systems secure and reliable, as well as guidance and correlated instruments for compliance in respect of privacy;
- the **ecosystems** are the policy areas or sectors in which the public administration takes action: from health to agriculture, school, cultural heritage, etc. Each ecosystem may include several domains, involving public entities and organisations, starting from the reference ministries, but may also include private subjects operating in the same area of interest and which, for various reasons, play important roles in the ecosystem. For example, the “Public finance” ecosystem comprises the Revenue Agency, the Regional Authorities, the Financial Police Force and, in terms of private subjects, certified accountants, tax assistance centres, tax layers, etc. The ecosystems group together the subjects concerned, which interact to achieve shared goals through the sharing of needs and operating procedures, the pooling of different competences and the planning and development of ICT projects;
- the **tools for the generation and dissemination of digital services** define common rules for the designing of interfaces, services and contents, improving and increasing consistency in browsing and the overall experience of the citizen and businesses, facilitating the design, development and dissemination of digital services, defining guidelines and development kits, and ensuring the creation of communities of developers, designers and anyone wishing to exchange information, collaborate and take part;

- **governance of the digital transformation** is a component defined to cope with the need for coordination, management and monitoring of the activities functional to the Plan's development. It is transversal to other components and aggregates all lines of action, governance and support to the PA involved in the Plan's development.

1.3 Players

The process of sharing the Model and Map with all players involved in the processes and action lines envisaged in the 2017 - 2019 Three-Year Plan has meant that the roles and interactions of each of the stakeholders were best defined more accurately, as shown in fig. 1.2. The following are players in the digital transformation processes sparked by the Three-Year Plan:

- the Government, which provides strategic guidelines to the digital transformation of the Public Administration and, through regulatory instruments, facilitates their adoption;
- the Minister for the Public Administration, which, by Decree of the President of the Council of Ministers of 27 June 2018, has the power to exercise functions of coordination, guidance, promotion of regulatory, administrative, encoding and other initiatives, supervision and verification, as well as all other functions assigned by current provisions to the President of the Council of Ministers in respect of the digitisation of the public administrations.
- the Department of Public Function, which promotes and coordinates innovation policies in the public sector. It also promotes the use of tools and models that can pursue the principles of digital citizenship and open government;
- the Ministry for the Economy and Finance (MEF), which, on the one hand is the spending control body and on the other, the promoter of the most important initiatives for the development of enabling platforms and projects for digital transformation (NoiPA, e-procurement, health files, etc.);
- the Agency for Territorial Cohesion, which, with the aim of supporting, promoting and assisting, according to criteria of effectiveness and efficiency, programmes and projects for economic development and cohesion, offers support to the implementation of the European Community and national planning through action taken to help the central and regional administrations holding programmes and the related beneficiaries, with specific reference to local entities;

- the Administrator for the implementation of the Digital Agenda, who has the task of coordinating the work of the entities, agencies and administrations with delegations and competences in matters of innovation and implementation of the Digital Agenda, as well as public-private companies operating in information technology and communication and of assisting the President of the Council of Ministers with strategic actions on matters of technological innovation;
- AgID, which translates strategic objectives into projects, coordinates the planning, development of the national platforms and projects catalysing change, managing relations between players, issuing technical rules, transforming the indications of the Digital Administration Code (CAD) into implementing processes, rules and projects that are integrated into the Plan, and monitoring the implementation of projects by the administrations;
- the regional administrations and autonomous provinces that help update implementation and adjustment of planning of the Three-Year Plan for IT in the Public Administration. Through the technical structures and political representation of the Conference of Autonomous Regions and Provinces and, specifically, with the coordination exercised by the Special Digital Agenda Commission;
- all administrations coordinating the initiatives indicated in the plan and governing the individual projects. With the identification of the party responsible for the transition to digital operating procedures, they assure the harmonisation of the relevant strategy with the principles and guidelines of the Strategic Model and the implementation of the relevant designs and development of the initiatives;
- the in-house companies that take part in the development of the projects of the individual administrations and the development and management of the enabling platforms, including to supply assistance and consultancy services;
- the instrumental entities, which are involved in the implementation of the Italian Digital Agenda;
- Consip and the purchasing bodies that manage tenders and stipulate contracts for central and local administrations. They operate on the basis of the Three-Year Plan to aggregate the needs and ensure the consequent acquisition of goods and services.

Figure 1.2 highlights the relations between said players and summarises the functions with respect to the definition and implementation of the Plan:

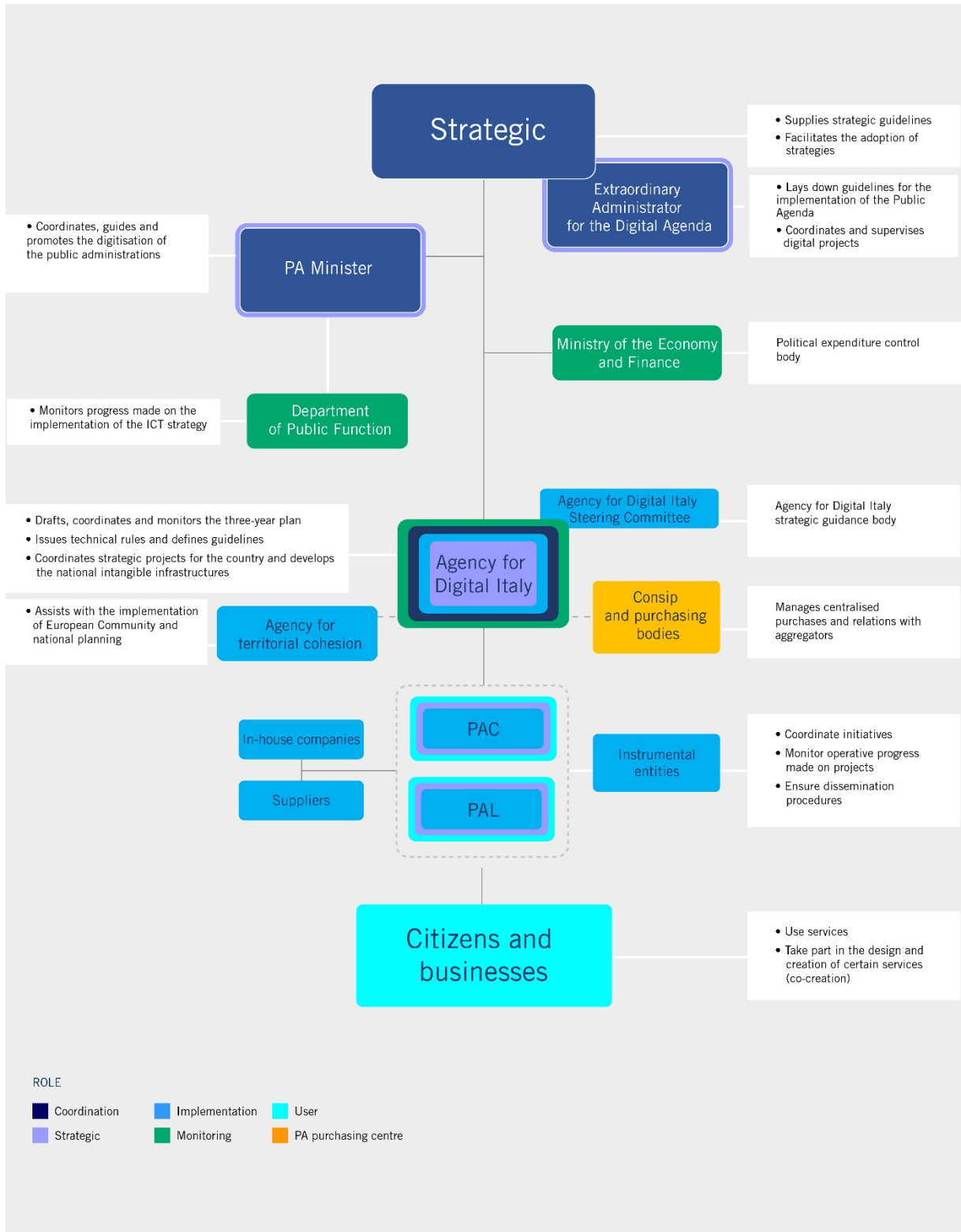


Figure 1.2 - The players in the PA digital transformation process

In this representation, local administrations, citizens and businesses have taken on an increasingly important role, providing feedback and making suggestions to improve the Three-Year Plan, through forums and other tools of sharing, as will be mentioned further on.

1.4 Approach to the drafting of the Three-Year Plan

The 2019 - 2021 Three-Year Plan has been prepared together with central and local public administrations: regular meetings, working parties, cooperative working tools, forums, training/dissemination initiatives and webinars are just some of the ways by which this collaboration takes concrete form.

For this Three-Year Plan too, quantitative data was collected and analysed on ICT spending and qualitative data on design aspects that can be ascribed to the strategic indications of the Plan. With respect to that carried out for the previous Three-Year Plan, the panel has been extended: the central administrations, regions, metropolitan cities and their capital municipalities, were involved. In many cases, their in-house too.

As already specified in the previous edition, it is stressed that this Plan too should be viewed as a dynamic instrument, the implementation of which depends on the update of contents and a transparent exchange of information with the public administrations already involved, as well as the progressive extension to other administrations.

Implementation of the Three-Year Plan envisaged a gradual involvement of the public administrations:

- 2017 was the year of construction through the consolidation of the digital transformation strategy and completion of sharing with the public administrations;
- 2018 was the year of Plan consolidation, which saw a greater involvement of purchasing bodies and administrations;
- 2019 is the year of completion of the actions of the first three-year cycle of the process, which will therefore be able to be further refined for the next three years;
- 2020 and 2021 will be the years of conclusion of the main digital transformation projects launched and integration of the Plan itself of a vision focussed on citizens and businesses.

From this standpoint, the Plan, as specified several times, is a continuous evolution and for the next edition, some topics are already being considered that will be investigated in light of the activities launched and which will become an integral part of the digital transformation strategy involving the PA:

- the involvement of some major administrations to develop important switch-off software actions towards digital;

- the definition of an economic model that will underlie the Interoperability Model;
- attention paid to emerging technologies, such as blockchain and artificial intelligence, also relying on the results of experiments carried out by the laboratories operating at AgID and the outputs of the groups of experts chosen by the Ministry of Economic Development.

1.5 Guide to reading the Three-Year Plan

The 2019 - 2021 Three-Year Plan essentially has the same structure as the previous Plan, with a few updates brought about by its evolution during the two years 2017-2018.

It is structured into three parts: in the first part, which also includes this chapter, the general reference framework is described, into which the Plan's initiatives come; in the second part, the model structure is reviewed with the updates as mentioned; in the third part, final considerations are set out and guidelines for the PA.

In detail:

Part one - Reference framework:

- This chapter lists the key topics of the digital transformation, as they are represented in the strategic model for the evolution of IT in the PA. The players are identified that have contributed towards the evolution of the Plan and its new drafting, showing the approach taken;
- chapter 2 offers a brief overview of the European and national regulatory context.

Part two - Technological components and governance of the digital transformation:

- chapters 3 - 11 review the components of the Strategic Model, with some minor changes with respect to the previous Three-Year Plan:
 - the position of the chapter on the Interoperability Model has been inverted, as this represents the interpretation of what follows;
 - the structuring has been modified - for ease of reading and representation - of the previous chapter on intangible infrastructures, into two chapters: one on platform and one on the PA data.

The structure of these chapters is as follows:

- scenario: summarises some elements that are useful in describing the current situation with respect to the topics covered in the chapter; it summarises the action carried out as at the date of publication of the 2019 - 2021 Plan and those currently in progress;
- objectives: presents the strategic objectives and those relating to the subsequent

action lines;

- action lines: describes the actions necessary to achieve the objectives set. Each action line is described as follows:
 - timing: the action start date is specified, or if the action is already in progress;
 - players: the players involved are specified, as collaborating towards the achievement of the results;
 - description: a brief overview is given of the activities and/or phases of work;
 - results: the players are indicated who are assigned responsibility for the action line, the end results and/or interim results expected and the release time. For the latter, the end date of the output release is indicated or if it is a recurring action. Where possible, the results are defined in such a way as to be measurable, to identify monitoring indicators, to be correlated, where appropriate, with the Digital Growth indicators;
 - areas of intervention: impacts are indicated of the action lines on the PA, citizens, businesses, other institutional subjects and other categories of professionals, specifying if the impact is envisaged in the short-term (by December 2019), medium-term (December 2021) or long-term (after 2021), or beyond the period of effect of this Three-Year Plan.

Part three - Final considerations and guidelines:

- chapter 12 specifies elements relating to the objectives for rationalising the PA's ICT spending;
- chapter 13 provides a brief overview of the action that the public administration will be called to take.

A joint reading of parts one and three provides sufficient information to obtain a general idea of the Strategic Model and action that the public administration is called to take.

Reading part two is instead useful in terms of acquiring a more in-depth knowledge of the activities envisaged.

Appendix 1 gives a list of the acronyms used in this document and appendix 2 (the Three-Year Plan for IT in the Public Administration, the measurement of results and the country context) investigates some of the topics broached in chapter 2, in greater depth.

Finally, the document has the following annexes:

- Annex 1 – Glossary;
- Annex 2 - Summary report on the recording of PA ICT spending, 2018;
- Annex 3 - Operative instructions for the migration of SP-Coop services.

CHAPTER 2. European and national regulatory context

2.1 The European strategy

The 2017 - 2019 Three-Year Plan, approved by the President of the Council on 31 May 2017, was the first implementation of the European Union planning and the European Digital Agenda, which the Member States are called to develop in order to satisfy the expectations of citizens and businesses in respect of simple, effective digital public services and, therefore, to thus implement the digital transformation.

In both the first edition of the Three-Year Plan and this edition, which refers to the three-year period 2019 - 2021, consideration was given to the ten-year strategy pursued by the European Union to ensure growth and employment (“Europe 2020”).

The European Digital Agenda is one of the seven flagship initiatives of the 2020 European Strategy, which seeks to best exploit the potential of ICT in order to foster innovation, economic growth and progress.

The country’s digital transformation cannot fail to consider the development of the European Single Market for smart, sustainable, inclusive growth. Under this scope, the European Commission strategy has three aims:

- to improve on-line access to goods and services throughout Europe for consumers and businesses, so as to break down the barriers blocking on-line activity through frontiers;
- to create a favourable context so that digital services and networks can develop through the availability of high-speed, protected, reliable services and infrastructures, supported by regulatory conditions seeking to ensure innovation, investments, fair competition and equal conditions;
- to maximise the growth potential of the European digital economy, through investments in ICT technologies and infrastructures, cloud computing and big data, research and innovation to strengthen industrial competitiveness and improve public services, inclusion and competences.

In 2017, half-way through its mandate, the Commission reviewed the progress made to date and identified the digital single market as Europe’s main resource in the economy and society. To this end, the European Commission promotes additional actions on the on-line platform, economy of data and cybersecurity.

The contents of the new Three-Year Plan are also entirely consistent with the “Ministerial Declaration on eGovernment”, signed by Italy in Tallinn in October 2017, eight years after the

“Malmö Declaration on eGovernment” (November 2009). With the Tallinn Declaration, the signing countries renewed their political commitment to certain significant priorities, aimed at ensuring high quality digital public services focussed on the user and interconnected cross-border public services for businesses.

Our country and the other Member States thereby confirm their desire to implement the principles and objectives of the 2016 - 2020 eGovernment Action Plan, which already supported the acceleration of the digital transformation of governments on all levels - national, regional and local - and set out the basic criteria to be applied by the Member State administrations in establishing their own domestic policies.

More specifically, certain principles were set, as mentioned in Chapter 1, the aim of which is to increase the dissemination of digital services, including cross-border. Simpler, more secure, accessible and inclusive services, focussed on the user and designed to ensure that citizens and businesses are not required to supply information and data that the public administrations already have on record.

For more details, table 2.1 gives references to the documentation relating to the strategies described:

European strategy	Subject
Europa 2020	A strategy for smart, sustainable and inclusive growth.
A Digital Agenda for Europe	It defines a prospect for achieving high levels of employment, productivity and social cohesion and a low carbon emission economy, to be implemented through concrete actions on an EU and Member State level.
A Single Market Strategy for Europe	The document gives indications on how to improve on-line access to goods and services throughout Europe, create a favourable context for digital services and networks and maximise the growth potential of the European digital economy.
Mid-Term Review on the implementation of the Digital Single Market Strategy - A Connected Digital Single Market for All	Document reviewing the strategy that assesses the progress made in the development of the digital single market, identifies the main objectives and guides new European actions and activities in light of the digital transformation.
EU eGovernment Action Plan 2016 - 2020	The aim is to accelerate the digital transformation of the public administration
The 2017 Tallin Declaration	New political commitment on an EU level regarding significant priorities for the guaranteeing of high quality digital public services, focussed on the user, for citizens and uninterrupted cross-border public services for businesses.

Table 2.1 - References to the European strategies

The 2019 - 2021 Three-Year Plan promotes actions based on some architectural and technological aspects defined by European rules of interoperability.

Reference is made generally to the new EIF - European Interoperability Framework, concerned by the Communication (COM (2017) 134) adopted by the European Commission on 23 March 2017.

On a sector level, reference is made to all the EU rules on social security coordination, which allow the institutions throughout the EU to exchange information more quickly and securely, as takes place through the EESSI (Electronic Exchange of Social Security Information) computer system. Another example comes in the form of the incorporation of the INSPIRE Directive on the sharing of territorial data.

The 2019 - 2021 Three-Year Plan is entirely consistent with the European regulatory framework, considering the rules on electronic identification and trust services for electronic transactions in the internal market set out in Regulation EU no. 910/2014 (eIDAS - Electronic Identification, Authentication & Signature).

Moreover, the Plan is also consistent with EU Regulation no. 679/2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data in respect of rights and fundamental freedoms and promotes data protection right from the design stage and for the predefined configuration of digital services offered by the public administrations.

On the specific matter of accessibility and inclusion, Directive EU 2016/2102 should be mentioned on the accessibility of websites and mobile applications of the public bodies.

For more details, table 2.2 gives references to the documentation relative to the European rules mentioned:

European rules	Subject
EIF - European Interoperability Framework	The framework provides specific guidance on how to institute interoperable digital public services
EESSI - Electronic Exchange of Social Security Information	The EESSI computer system benefits citizens in terms of offering quicker handling of provisions, calculation and payment of such
Regulation (EU) no. 910/2014 eIDAS - Electronic Identification, Authentication and Trust Services	It establishes conditions for mutual recognition under the scope of electronic identification and common rules for electronic signatures, web authentication and the related trust services for electronic transactions

European rules	Subject
Regulation (EU) no. 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC	It outlines a more solid, consistent framework on privacy and seeks to reinforce the legal and operative certainty for natural persons; economic operators and public authorities
Directive (EU) 2016/2102 on the accessibility of websites and mobile applications of public sector bodies	Public bodies take the measures necessary to make their websites and mobile applications more accessible, so that they are able to be perceived, used, understood and solid

Table 2.2 - References to European rules

The architecture proposed on a national level by the 2019 - 2021 Three-Year Plan must consider the architecture defined on a European level for the supply of services through programmes managed directly by the European Union. These include the European CEF Telecom Programme, the “ISA² Interoperability Solutions for European Public Administrations” Programme (which replaces the development of digital solutions enabling the public administrations, businesses and citizens in Europe), the “Horizon 2020” Programme, the 2014 - 2020 “Justice Programme” and the “Structural Reform Support Programme - SRSP” (that provides tailor-made support to all EU countries for their institutional, administrative and growth-enhancing reforms).

In addition to directly-managed Programmes, there are some that are competitively managed, applicable to European Structural and Investment funds 2014 - 2020, in which the function of executing the Programmes is entrusted to the Member States, which do so under the scope of the strategic structure and monitoring exercised by the Commission.

These include the National Operational Programme (NOP) “Governance and Institutional Capacity”, the main tool by which to implement strategic priorities on the strengthening and innovation of the Public Administration, agreed by Italy and the European Commission and set out in the 2014 - 2020 Partnership Agreement adopted on 29 October 2014 by the European Commission by Decision C (2014) 8021.

For more details, table 2.3 gives references to the documentation relative to said Programmes:

Programmes	Subject
Connecting Europe Facility (CEF) Telecom	This is the essential financial instrument for promoting growth, employment and competitiveness through targeted infrastructure investment in telecommunications and digital services at European level
ISA² Interoperability solutions for European Public Administrations	The programme aims to promote interoperability solutions between the public administrations of the EU
Horizon 2020	It supports scientific research and innovation projects in the period 2014-2020
Justice Programme	It supports projects for the pursuit of the development of a European justice space, promoting legal cooperation in civil and criminal matters
Structural Reform Support Programme - SRSP	It provides voluntary assistance to Member States for the preparation and implementation of their institutional, administrative and growth-enhancing reforms
Decision C (2014) 8021 of the European Commission - 2014-2020 Partnership Agreement with Italy adopted on 29 October 2014	National programming of European Investment and Structural Funds assigned to Italy for the 2014-2020 programmes
"Governance and Institutional Capacity" NOP	It supports the country in the development, improvement and strengthening of its administrative and institutional capacity, in line with the objectives of the Europe 2020 Strategy

Table 2.3 - Summary of programmes to be co-financed by the European Union

In order to support the public administrations in the implementation of the measures envisaged by the 2019 - 2021 Three-Year Plan, please note the Commission document entitled "[eGovernment in local and regional administrations: guidance, tools and funding for implementation](#)", a guide to help local and regional administrations implement and find EU funding for exhibit in line with the principles and priorities set out in the EU eGovernment Action Plan 2016-2020.

In order to be fully effective, the national digital strategy must be characterised by a strong local component, which is essential to the supply of services to citizens. Indeed, the local and regional administrations play an important role in both the modernisation of the administrations and services in sectors important to society and in taking the responsibility for supplying citizens directly with services designed to satisfy their expectations.

2017 - 2019 had already highlighted the need, for implementation, for close collaboration at a European, national and local level.

The new 2019 - 2021 Plan confirms this approach once again, promoting intervention by the local administrations so that they can prepare strategic plans in line with the European and national vision. In order to concretely achieve this objective, the Agency sensitises and assists local bodies in obtaining the resources necessary to contribute towards the success of the digital transformation.

2.2 The Italian regulatory context

As mentioned, the national strategy is detailed in the “2014-2020 Digital Growth Strategy” and the “National Plan for Ultrabroadband”, it is compliant with the Digital Agenda for Europe and adheres to national regulations, defined first and foremost by the “Digital Administration Code” (CAD) (Italian Legislative Decree no. 82 of 07 March 2005, as subsequently amended and supplemented).

The CAD establishes that public administrations shall organise themselves, using information and communication technology to achieve objectives of efficiency, effectiveness, economics, impartiality, transparency, simplification and preparation, in respect of the principles of equality and non-discrimination, for the effective recognition of the digital rights of citizens and businesses.

The CAD, as amended by Italian Legislative Decree no. 217 of 13 December 2017, is the main source of regulations and provides the reference context for the definition and implementation of the 2019 - 2021 Three-Year Plan, in order to achieve the process of the digital transformation of the administrations. This process involves not only IT, but also organisation and communication.

Under Article 12, the CAD lays down general rules governing use of information and communication technology in the administrative action. It introduces and regulates the figure of the Digital Transition Manager and the Digital Ombudsman (Article 17); it regulates the information file and procedure.

The public administrations are obliged to manage administrative proceedings using information and communication technology and to supply suitable interoperability or integration services. The information file must be prepared guaranteeing the possibility of its direct consultation and with input of data by all administrations involved in the proceedings, as well as by the parties concerned.

The rules regulating the digital rights of citizens and businesses are particularly important and define some tools for their exercise, such as, by way of example:

- Article 3-bis on the digital identity (Public Digital Identity System - SPID) and the digital domicile in the National Register of the Resident Population (ANPR);
- Article 5 on the making of payments using information technology via the payments platform - pagoPA;
- Article 7 on the rights of users of simple and integrated on-line services;
- Articles 8 and 9, which respectively regulate the digital literacy of citizens and connectivity to the internet in offices and public places.

The Agency for Digital Italy, established by Italian Legislative Decree no. 83/2012, is responsible for planning and coordinating the activities of the administrations for the use of information and communication technology through the preparation (including on the basis of data and information acquired from those obliged to implement the CAD) of the Three-Year Plan.

As regards the carrying out of the activities the public administrations are called to take, the issue is important by the AgID of guidelines containing rules, standards and technical guidance and steering, monitoring and control of the implementation and compliance with the provisions of the Digital Administration Code.

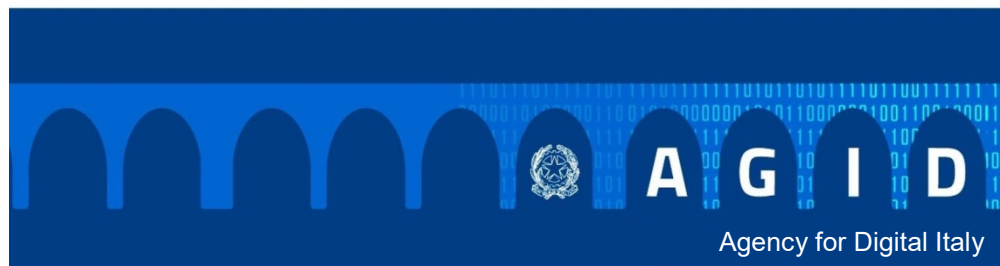
Article 1, paragraph 513 of Italian Law no. 208 of 28 December 2015 (the 2016 Stability Law) stresses that it is the responsibility of the Agency for Digital Italy to prepare the Three-Year Plan for IT in the Public Administration, approved by the President of the Council of Ministers or the appointed Minister, and sets an important principle: the savings generated by the administrations in terms of the rationalisation of ICT spending must be used by way of priority for investment in technological innovation.

Table 2.4 shows the main rules that, in addition to the Digital Administration Code, help define the regulatory reference framework for the 2019 - 2021 Three-Year Plan.

Rule	Subject
Italian Legislative Decree no. 10 of 23 January 2002	Electronic signatures
Italian Legislative Decree no. 82 of 07 March 2005, as subsequently amended and supplemented, amended by Italian Legislative Decree no. 217 of 13 December 2017	Digital Administration Code
Italian Legislative Decree no. 217 of 13 December 2017	Amends Article 1 of Italian Law no. 232 of 11 December 2016
Italian Decree Law no. 83 of 22 June 2012	Institution of the Agency for Digital Italy subject to the powers of guidance and supervision of the President of the Council of Ministers or delegated minister.

Rule	Subject
Decree of the President of the Council of Ministers of 08 January 2014	Approval of the Articles of Association of the Agency for Digital Italy which, amongst the various tasks assigned it, is also called to prepare the Three-Year Plan for IT in the Public Administration. AgID defines the main interventions for its development, annual monitoring and status of its development with respect to the Digital Agenda for Europe.
Italian Decree Lawno. 5 of 09 February 2012 and Italian Decree Lawno. 179 of 18 October 2012	The Digital Agenda for Italy
Italian Decree Law no. 90 of 24 June 2014	Urgent measures for administrative transparency and simplification and the efficiency of the legal offices
Unified Conference Agreement of 21 December 2017 between the Government, Autonomous Provinces and Regions and local bodies	2018-2020 Simplification Agenda and 2015-2018 update
2014-2020 Digital Growth Strategy and Italian Strategy for Ultrabroadband: approval by the Council of Ministers of 03 March 2015	The national plans for the achievement of the objectives of the national and European Digital Agenda under the scope of the 2014-2020 Partnership Agreement
Italian Legislative Decree no. 196 of 30 June 2003, amended by Italian Legislative Decree no. 101 of 10 August 2018 for compliance with Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016	Personal Data Protection Code on personal data processing and the free circulation of such data
Italian Law no. 124 of 07 August 2015	Delegations to the Government for the reorganisation of the public administrations
Italian Legislative Decree no. 175 of 19 August 2016	Consolidated act on publicly-owned companies that incorporates the forms enabling use of the “house providing” model in compliance with the principles and identifying indicators established in the European Community system
Italian Law no. 208 of 28 December 2015	Provisions for the preparation of the State’s annual and multi-year budget
Italian Legislative Decree no. 50 of 18 April 2016	Tender and Concession Code in implementation of Directives (EU) 23/2014, 24/2014 and 25/2014
Decree of the President of the Council of Ministers of 31 May 2017	Approval of the 2017 - 2019 Three-Year Plan for IT in the Public Administration (approved for administrative-accounting regularity prot. 1444/2017 of 06 June 2017)

Table 2.4 - Summary regulatory framework



PART 2 - TECHNOLOGICAL COMPONENTS AND GOVERNANCE OF THE DIGITAL TRANSFORMATION

CHAPTER 3. Infrastructures

Chapter 3 of the Plan describes the components of the Evolutionary Strategic Model of Information Technology in the PA, contained in the macro area of Infrastructures, i.e.:

- PA cloud;
- data centre;
- connectivity.

More specifically, it is clarified that in order to simplify this model and the Plan structure, in the **PA cloud** component of the macro area of Infrastructures, indications are given that are not strictly infrastructural, or rather indications on cloud services and the Cloud First strategy, which more correctly represent elements that are transversal to the whole model.

Thus said, below is a description of the three main lines:

1. the development of the “PA cloud model” and the application of the Cloud First principle, whereby the aim is to facilitate migration of PA services towards this model;
2. the rationalisation and consolidation of the Public Administration data centres through the progressive disposal of obsolete and inefficient data centres, with the aim of reducing operating costs of the IT infrastructures in favour of greater investment in new digital services;
3. the adjustment of the connectivity model to comply with the cloud paradigm, fostering the rationalisation of costs for the connectivity of the public administrations and the dissemination of connectivity in public places to the benefit of the PA, citizens and businesses.

Over the next few paragraphs, for each of the three lines listed above, the current scenario is outlined, which also describes what has been carried out in the two years 2017 - 2018. Future prospects are specified, in terms of the objectives to be achieved in the short- and long-term and concrete, measurable lines of action defined for the achievement of objectives in the three years 2019 - 2021.

3.1 Cloud in PA

3.1.1 Scenario

Under the scope of the digital transformation, the cloud is a form of technology described as “disruptive”, which brings about considerable advantages in terms of increasing the reliability of systems, the quality of the services supplied, savings on costs that can be achieved through the opportunity of migrating existing services to the cloud and the possibility of paying only the effective consumption (“pay-per-use”). The adoption of the cloud paradigm represents

the key to the digital transformation, enabling a real revolution of how the processes for the supply of PA services to citizens are developed.

In order to increase adoption of the cloud in the PA, the 2017 - 2019 Three-Year Plan for IT in the Public Administration introduced the PA Cloud Model, which describes all IT infrastructures and cloud services qualified by AgID available to the PA, according to a strategy that envisages the development of this model, the definition and implementation of the national PA cloud enabling programme and the application of the [cloud first](#).

principle. The development of this strategy will allow important benefits in terms of flexibility and savings to be achieved by the PA, as well as assuring a significant increase in quality, security and reliability of services for users of the services offered by the PA (citizens and businesses).

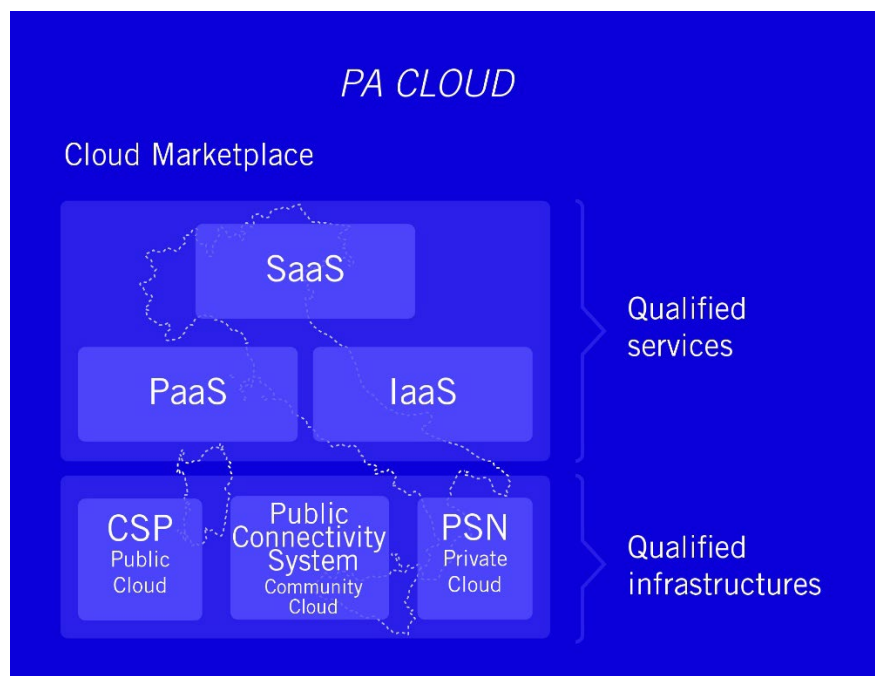


Figure 3.1 - PA cloud

As explained in figure 3.1, the PA Cloud Model consists of:

- infrastructures qualified by AgID, which supply the qualified cloud services described at the next point;
- services qualified by AgID, available for consultation by means of the Cloud Marketplace, divided up into IaaS (Infrastructure as a Service), PaaS (Platform as a Service) and SaaS (Software as a Service).

In short, the cloud services qualified by AgID enable the PA to develop new digital services, are displayed by means of the [Cloud Marketplace](#) (the catalogue of qualified cloud services)

and supplied by means of the qualified infrastructures: the Cloud Service Providers (CSPs) qualified by AgID, the National Strategic Poles (NSPs) and the Community Cloud infrastructures developed by the Temporary Consortium (RTI) awarded the [Consip SPC Cloud Framework Contract for Lot 1](#), until the end of the contract.

In order to facilitate the adoption of the PA cloud, AgID and the Digital Transformation Team have launched a **National PA Cloud Enablement Programme**, the "<https://cloud.italia.it/projects/cloud-italia-docs/it/latest/cloud-enablement.html>Cloud Enablement Programme".

The programme is inspired by the Cloud First principle, whereby when defining a new project and/or developing new services, the PA must first, by way of priority, assess the adoption of the cloud paradigm before any other technology (see also "Focus on the Cloud Enablement Programme"). The PA cloud model contemplates public, private and hybrid clouds. The assessment of the type of cloud model (public, private or hybrid) is mainly guided by the purpose of the service to the user and the nature of the data processed. The PA must Also assess and prevent the lock-in risk towards the cloud supplier. In implementation of the provisions of the 2017 - 2019 Three-Year Plan, the PA Cloud Model was published in June 2018 on the cloud.italia.it website, where the components are described in greater detail. This same website also publishes the following AgID circular letters, which define the procedures and requirements by which to achieve qualification of infrastructures and services:

- [Circular no. 2/2018](#) "Criteria for the qualification of Cloud Service Providers for the PA" and related annexes, which defines the requirements for the qualification of Cloud Service Providers (hereinafter referred to as "CSPs") and the related qualification procedure. These requirements must be met for the cloud infrastructure to be included on the Public Register of Qualified CSPs and IaaS and PaaS services on the Cloud Marketplace;
- [Circular no. 3/2018](#) "Criteria for the qualification of SaaS for the PA Cloud" and related annexes, which defines the requirements for the qualification of SaaS that can be delivered on the PA Cloud and the related qualification procedure. These requirements must be met for inclusion of the SaaS on the Cloud Marketplace.

The Cloud Marketplace platform allows administrations to consult and compare the qualified cloud services and infrastructures for the PA on the basis of technical and functional parameters, deferring acquisition to the tools envisaged by current legislation.

Consip enables access to all its purchasing tools (electronic market, agreements, framework agreements, framework contracts, dynamic purchasing system) to only Cloud Service Providers providing IaaS, PaaS and SaaS qualified by AgID.

Starting six months after the coming into force of said AgID Circulars nos 2 and 3 of 09 April 2018, the Administrations only purchase IaaS, PaaS and SaaS that have been qualified by the Agency and published on the Cloud Marketplace. This deadline has been postponed to 1 April 2019 (AgID Determination 408/2018).

In line with the provisions of the AgID Circulars nos 2 and 3 of 09 April 2018, in particular with that indicated respectively under Articles 4 and 5 “Phases of the qualification process” and, more specifically, phase 3 “Qualification maintenance”, AgID is free to verify at any time that the criteria for admissibility and the requirements envisaged for the qualification obtained, are maintained. Loss of possession of the criteria for admissibility and/or at least one of the requirements shall entail revocation of qualification.

3.1.2 Objectives

- To encourage the development of new digital services according to the Cloud First principle
- To reduce the risk of exclusive dependency on the supplier (lock-in)
- To improve the security and reliability of the PA’s IT services
- To implement the national PA Cloud Enablement Programme
- To evolve and consolidate the PA Cloud Model
- To define the technical infrastructural requirements for the national strategic poles for the PA cloud

3.1.3 Action lines

LA01 - Implementation of the National PA Cloud Enablement Programme

Timing	In progress
Players	AgID, Digital Transformation Team, Consip
Description	<p>Definition of the guidelines for the development of cloud native services for the PA Cloud and the PA Cloud Enablement Model, under the scope of the Programme.</p> <p>Publication by Consip of the tenders envisaged in the 2018 Strategic ICT Tenders Plan (defined by AgID and Consip) and subsequent stipulation of contracts in support of the PA Cloud Enablement Programme.</p>
Results	AgID and the Digital Transformation Team publish, for consultation, the Guidelines to the development of cloud native services for the PA Cloud (May 2019).

AgID and the Digital Transformation Team publish, for consultation, the Guidelines to the PA Cloud migration and enablement model and the definition of the centres of competence (November 2019).

Consp stipulates, by means of the strategic tenders “Public Cloud: Qualified Cloud Computing Services (IaaS/PaaS/SaaS) in a Public Cloud model” and “Digital Transformation: Specialised services in support of the PA digital transformation plan”, the contracts in support of the PA Cloud Enablement Programme (by December 2020).

Areas of intervention In the medium-term, impact on the PA, on Consip and on companies classed as Cloud Service Providers.

LA02 - Migration of the PA’s information systems to the cloud

Timing In progress

Players PA, AgID, Digital Transformation Team

Description A pilot group of administrations chosen by AgID and the Digital Transformation Team implement the plans for the migration of the information systems to the PA Cloud, defined under the scope of the national Cloud Enablement Programme.

In the contracts concerning the qualified cloud services (IaaS/PaaS/SaaS), the administrations envisage agreements regarding the quality of services offered, using the service level indicators (SLIs) envisaged in the “Service Quality Indicators” pursuant to Annex A to Circular no. 2 of 2018.

Results Migration to the PA Cloud of the information systems of a first pilot group of administrations (December 2019).

Conclusion of migration to the PA Cloud of the information systems of at least 5 pilot administrations and start of migration of an additional group of PAs (by December 2021).

Areas of intervention In the short- and medium-term, impact on the PA involved and Consip. In the medium- and long-term, impact on IT sector businesses and professionals.

LA03 - Definition of the technical requirements of the IT infrastructures

Timing In progress

Players	AgID, Digital Transformation Team
Description	<p>AgID and the Digital Transformation Team define the aim and purpose of the NSPs in addition to detailing the technical requirements relative to the characteristics of the geographic sites of the data centres and the operative and technical management of the NSPs.</p> <p>AgID and the Digital Transformation Team perform the assessment of the physical infrastructures of the candidates to the NSPs and send to the Government, for subsequent action for which it is competent, a gap analysis document setting out the technical proposal for the evolution of the physical infrastructures belonging to potential NSPs.</p>
Results	<p>AgID publishes a circular in which:</p> <ul style="list-style-type: none"> ● the aim and purposes of the NSP are defined; ● the technical requirements relative to the characteristics of the geographic sites of the data centres and the operative and technical management of the NSPs, are detailed; ● the technical requirements are defined for the classification of group A IT infrastructures; ● the methods are updated for the approval of data centre spending (June 2019). <p>AgID and the Digital Transformation Team publish, for consultation, the Guidelines to the design and development of data centres under the scope of the National Strategic Poles (June 2019);</p> <p>AgID and the Digital Transformation Team prepare a gap analysis document on candidates to the National Strategic Pole (December 2019);</p> <p>Following the Government issue of the Decree for identifying the NSPs, AgID implements the envisaged measures as defined in AgID Circular no. 5/ 2017 (December 2021).</p>
Areas of intervention	In the short-term, impact on the Government for the choice of NSPs and their governance model. In the medium-term, impact on the PAs that may be candidates for NSP and ICT sector businesses.

3.2 Data centre

3.2.1 Scenario

AgID Circular no. 5 of 30 November 2017 launched the [Census of the PA's ICT assets](#), as indicated amongst the action lines of the 2017 - 2019 Three-Year Plan.

A total of 778 administrations took part in the census. 625 of these declared that they had data centres, for a recorded total of 927 data centres. Another 153 administrations declared that they did not have data centres, or that they used IT services supplied by other subjects.

According to the analysis of the Census results, the infrastructures recorded are classified under the following categories:

- potential candidates for National Strategic Poles, i.e. all preliminary requirements are met as set out in [Annex B to AgID Circular no. 5 of 30 November 2017](#);
- **Group A** - Quality data centres that are not suitable as National Strategic Poles or which have minor structural or organisational shortcomings. These structures can continue to operate but no investments can be made to extend or evolve their physical infrastructures. Investments can only be made to guarantee continuity of services and disaster recovery, until a potential migration to other structures, using the cloud services available under the scope of the PA Cloud. The progressive disposal of the physical infrastructures and the transformation of services according to the National Cloud Enablement Plan, will be specifically planned and developed, to be agreed with the administrations of the group infrastructures.
- **Group B** - Data centres that do not guarantee minimum requirements of reliability and security in infrastructural and/or organisational terms or do not guarantee continuity of services or do not meet the requirements for classification in the two previous categories.

As already mentioned in the 2017 - 2019 Three-Year Plan, during the period for which this Plan is executed, the PA cannot spend or make investments in data centres according to the indications and exceptions specified in AgID Circular no. 2 of 24 June 2016 and in AgID Circular no. 5 of 30 November 2017.

3.2.2 Objectives

- To define policies for the rationalisation of the PA's IT infrastructures through consolidation and decommissioning/migration towards the PA Cloud
- To increase the quality of IT infrastructures in terms of security, resilience, energy efficiency and business continuity

- To requalify expenses deriving from the consolidation of data centres and the migration of services to the cloud

The objectives of the action lines essentially aim to plan consolidation of the group A data centres and dispose of those in group B.

3.2.3 Action lines

LA04 - Communication of the results of the ICT Assets census

Timing	In progress
Players	AgID
Description	Following completion of the census on the PA's ICT assets, AgID notifies the PA of the outcome of the classification of the physical infrastructures, according to three categories (suitable candidates for NSP, Group A and Group B).
Results	AgID reports the results of phases 1 and 2 of the ICT Assets census (by April 2019).

Areas of intervention In the short-term, impact on the PA.

LA05 - Start-up of consolidation and decommissioning of the Group A data centres

Timing	In progress
Players	AgID, Digital Transformation Team, PA
Description	The subjects holding the physical infrastructures of the PA, belonging to Group A plan, together with AgID and the Digital Transformation Team, the consolidation of the data centres in accordance with the provisions of the National PS Cloud Enablement Programme. AgID and the Digital Transformation Team ensure the control and monitoring of the migration plans submitted by the PA.
Results	AgID and the Digital Transformation Team publish the First Report on progress made on the migration to the cloud of the PA of Group A (November 2019). The Group A PAs send AgID their plans for the PA migration to the cloud (November 2020)

Areas of intervention In the medium-term, impact on Group A PAs and ICT businesses.

LA06 - Decommissioning of the Group B data centres

Timing In progress

Players AgID, Digital Transformation Team, PA

Description The physical infrastructures of the Group B PAs envisage PA migration to the cloud in accordance with the National PA Cloud Enablement Programme. The PAs notified AgID of the number of data centres decommissioned. AgID and the Digital Transformation Team prepare reports on the progress made on decommissioned data centres.

AgID ensures the control and monitoring of action taken by the PA, publishing an annual report.

Results The Group B PAs decommissioning their data centres notify AgID (June 2020, thereafter once every six months);

AgID and the Digital Transformation Team publish the First Annual Report on the decommissioning status of the Group B data centres (December 2020).

Areas of intervention In the medium-term, impact on Group B PAs and ICT businesses. In the long-term, impact on ICT professionals.

3.3 Connectivity

3.3.1 Scenario

The Public Administration's need for connectivity is expressed through four different lines:

1. the extension and adjustment of the administrations' connection capacity, including using virtual network infrastructures that allow for the development of a centralised routing paradigm and traffic processing;
2. the adjustment of connectivity to allow the offices of the public administrations to access the internet and cloud services;
3. the adjustment of connectivity to inter-connect the National Strategic Poles (NSPs) and allow them to supply cloud services;
4. the adjustment of connectivity to allow citizens and businesses to use public services.

The public administrations should therefore launch a recognition of their connectivity in order to assess the potential adjustment of such, both in terms of comprehensive capacity and security, taking into account the characteristics of the services in cooperation with other administrations, the internal administrative processes and the public services for citizens.

The Public Administration network infrastructure must satisfy the following minimum general principles:

- adequate bandwidth capacity to satisfy internal and cooperation needs;
- monitoring of the entire physical infrastructure aimed at guaranteeing timely intervention in the event of an incident;
- scalability of the bandwidth capacity in order to supply the wi-fi services for public use;
- conformity of security levels with the international standards and CERT-PA recommendations, ensuring at least compliance with the "[Minimum ICT security measures for public administrations](#)", as described in chapter 8;
- in the event of infrastructures hosting strategic services, the need to guarantee a highly reliable connection, so as to increase the resilience of the whole system, including through the exploitation of centralised and virtual control techniques that make it possible to manage reliability problems in real time;
- capacity to support the dual stack IPv4/IPv6 protocol.

The connectivity of the PA must aim to guarantee:

- the supply and use of services in interoperability;
- internet access to all PA employees for institutional purposes and by way of tool in support of productivity, including access to instruments for evolved communication;
- the interconnection between the sites distributed geographically of a single Administration and between this and the reference NSP in accordance with the terms and conditions of the latter's development; these interconnections may also be realised through the virtualisation of network services in environments that change considerably over time;
- the supply of connectivity services to the International PA Network (S-RIPA);
- the supply of services to citizens.

At present (state-of-the-art):

- a thousand or so contracts have been stipulated for connectivity services under the scope of the Public Connectivity System (SPC), of which approximately 50 refer to the State's major central administrations;
- the migration of the administrations holding previous SPC contracts has been completed to new SPC2 framework contracts and AgID has released the new QXN2

Infrastructure, on which all suppliers of the new SPC2 connectivity tender are already operative;

- in December 2017, Consip called a tender to stipulate a framework agreement concerning the design of the network and supply of connectivity services of the International PA Network;
- the cessation is envisaged, at 31 March 2019, of the services of the old QXN2 Infrastructure used by the administrations, which used the previous SPC1 contract.

The adoption of the PA Cloud Model described in paragraph 3.1 of this Three-Year Plan also requires an update to the connectivity model that meets the needs of the different scenarios and in order to guarantee administrations simple, quick and reliable internet access.

Also according to the plan to rationalise the PA's ICT resources, two separate routes should be noted, connected with the National Ultrabroadband Plan:

- for the National Strategic Poles (NSPs), with bandwidth requirements and transmission characteristics that are not seen in the availability of SPC Framework Contracts, AgID and Consip have included a specific tender in the [Strategic Tenders Plan](#), for which the timely definition of contents has already begun;
- as regards all PAs not constituting a National Strategic Pole, connectivity will continue to be guaranteed by the availability of the SPC-Connectivity Framework Contract (SPC-Conn), for which mechanisms are envisaged for the evolution and update of services or other market solutions if the offer of the Framework Contract does not meet the administrations' needs.

3.3.2 Objectives

- To have the Public Administration intervene on connectivity capacity, pursuing the objectives envisaged by the National Ultrabroadband Plan and the strategy for the rationalisation of the PA's ICT resources, also promoting the dissemination of the IPv6 protocol and the adoption of virtual networks;
- to foster the aggregation of data centres through the availability of connectivity between the NSP and PA distributed geographically;
- to rationalise spending on connectivity through use of the SPC tenders;
- to foster the interconnection of the Regions to the SPC;
- to also guarantee connectivity for the foreign offices of the public administrations;
- to standardise and increase the dissemination of wireless connectivity in the public places and offices of the Public Administration that are open to the public, also in order to encourage access to services by citizens through the use of public wi-fi networks.

3.3.3 Action lines

LA07 - Update of the connectivity model

Timing March 2020

Players AgID, Digital Transformation Team

Description AgID and the Digital Transformation Team prepare a document that describes the development of the connectivity model for the PA, in order to better support the cloud paradigm and introduce new services under the scope of connectivity.

Results AgID and the Digital Transformation Team publish, for consultation, a guidance document that describes the evolution of the public connectivity system. (March 2020)

Areas of intervention In the long-term, impact on the PA and citizens.

LA08 - Adjustment of the PA connection capacity

Timing In progress

Players PA

Description The administrations adjust their connection capacity to guarantee the complete deployment of services and platforms, adopting either:

- connectivity solutions based on adhesion to SPC Framework Contracts, except in cases where the bandwidth needs and transmission characteristics required are not potentially satisfied in these contractual scopes;
- the services made available, on the basis of the principle of subsidiarity, in the reference territory, by the Region or another local public body that has already developed territorial connection structures that are compliant with the requirements laid down by AgID and interconnected with the SPC network.

Results The administrations adjust their connection capacity (by December 2020).

Areas of intervention In the short-term, impact on the PA.

LA09 - Operation of the new contracts for S-RIPA connectivity for the foreign offices of the Public Administrations

Timing In progress

Players	Foreign offices of the PA, Consip
Description	Consip called a restricted procedure tender to stipulate a framework agreement concerning the design of the network and supply of connectivity services of the International PA Network, as well as security services, VoIP, evolved communication and professional services. It is currently being awarded. The framework agreement shall have a term of 60 months, starting from the activation date. Thereafter, the foreign offices can proceed with the migration and use of the services of the new S-RIPA.
Results	The foreign offices of the administrations, following the award of the new tender by Consip, carry out the migration and proceed with the use of the new S-RIPA services (December 2021).
Areas of intervention	In the medium-term, impact on the foreign offices of the PA and in the long-term on the Italian businesses abroad and Italian citizens abroad.

LA10 - Development of services in compliance with the Guidelines for the development of public wi-fi networks

Timing	in progress
Players	PA
Description	<p>AgID publishes, for consultation, the Guidelines for the use of wi-fi that the public administrations make accessible to citizens in offices and public places, also prepared on the basis of the best public wi-fi experiences already in place in the PA.</p> <p>The administrations define and develop the Plan for the adjustment to comply with the guidelines given by AgID for wi-fi.</p> <p>From time to time, AgID periodically adjusts the guidelines according to technological and regulatory updates and on the basis of good practices implemented by the public administrations.</p>
Results	<p>Publication of wi-fi guidelines by AgID (by September 2019).</p> <p>The administrations make available their own wi-fi for free use by citizens in offices and public places (by August 2020)</p>
Areas of intervention	In the short-term, impact on the PA, businesses, professionals and citizens.

Focus. Cloud Enablement Programme

AgID and the Digital Transformation Team have designed a **Cloud Enablement Programme**. This term is used to define the process that enables an organisation to create, operate and maintain its IT infrastructures, using cloud technologies and services, fostering the consolidation and rationalisation of the physical infrastructures and the reorganisation of the PA's IT processes (see [PA CLOUD](#)).

In the definition of the PA Cloud Enablement Programme, three main elements have been identified that characterise the strategy of this transformation route:

- the Cloud First principle, for the definition of new projects and the design of new services under the scope of new initiatives to be launched by the PA in coherence with the PA Cloud model. In accordance with the Cloud First principle, the PA, during definition of a new project and/or development of new services must, as a priority, adopt the cloud paradigm, in particular SaaS, before any other technological option, in coherence with the PA Cloud Model and the [guidelines to the purchase and re-use of software for the public administrations](#);
- the Cloud Enablement strategy for the migration of infrastructures and existing applications to the PA Cloud model;
- the Territorial Competence Centres, i.e. an extended community of technicians, experts and managers in IT, who propose standards and regulations for digital services and share information, solutions and competences that are useful to the maintenance, update and increased reliability of the systems.

Under the scope of the Cloud First principle, **SaaS First** aims to foster the adoption of SaaS solutions, where available on the Cloud Marketplace, so as to minimise the technical and administrative overheads of the administrations due to the management of IT services requiring specific competences.

Under the scope of the **Cloud Enablement** strategy, the evolutionary strategic model is defined for the migration of the existing IT assets to the PA Cloud by means of two main components:

- the national Cloud Enablement programme, i.e. the set of specific projects that will enable the PA to migrate applications to a cloud environment;
- the working environment (or “framework”) of the Cloud Enablement comprising the resources, operating strategies, methodologies and instruments necessary to implement the PA Cloud Enablement Programme.

Under the scope of the activities for the establishing of the Territorial Competence Centres (CdCT) explained in chapter 11, AgID will supply its support with the aim of consolidating the know-how and experience relative to the Cloud Services in the PA. The CdCT act as

aggregators able to administer the IT services on behalf of other PA and AgID may make available to the administrations, on request, professional resources and competences, including under the scope of the Framework Agreement stipulated in February 2018 between AgID and the Autonomous Provinces and Regions.

Focus. Review of actions on the cloud and data centre of the 2017 - 2019 Three-Year Plan

With respect to the previous version (see the 2017 - 2019 Three-Year Plan, Chapter 3.1), on the basis of the considerations that have emerged during implementation of the actions envisaged previously, the opportunity has emerged to gather some expected results into broader actions.

More specifically, the issue of the Guidelines for the rationalisation of the ICT assets of the Public Administrations and the Plans for the rationalisation of the PA's ICT assets, have been included in the action "**Implementation of the National PAL Cloud Enablement Programme**", under the scope of the Programme definition.

CHAPTER 4. Interoperability Model

The Interoperability Model (hereinafter referred to as the “Model”) is a necessary cornerstone to the implementation of the Three-Year Plan, making collaboration possible between public administrations and between them and third parties (citizens and businesses).

The Model aims to create a “PA Information System” that ensures the interaction and exchange of information without restrictions to implementations, avoiding specific integrations.

The Model is designed in line with the principles laid out in the [European Interoperability Framework](#) (EIF) version 2.0, published in 2017 under the scope of the [Interoperability solutions for public administrations, businesses and citizens](#) programme (ISA, since 2016 ISA²).

The Model fosters implementation of the once only principle, whereby the PA need to avoid asking citizens and businesses for information that has already been supplied.

More specifically, the Model defines the standards and their method of application, which the PA use to ensure communication between their computer systems and between them and third parties.

The Interoperability Model:

- identifies the standards to foster the technological choices on which to build a PA *API Economy*;
- enables the development of new applications for PA users, in line with the activities described in chapter 9 “Tools for the generation and dissemination of digital services” and with the Plan objectives;
- guarantees dialogue within the individual Ecosystems (chapter 7) and between one ecosystem and another;
- regulates the use of the Platform components (chapter 6), regulating the methods of sharing and publication;
- ensures, in compliance with the right to privacy, access to the Public Administration data (chapter 5) by third parties too.

4.1 Scenario

The new Model replaces the previous one (SPCoop) issued in 2005.

All public administrations must adopt the Guidelines to the Interoperability Model in order to have their subjects interoperate with those of other subjects.

For existing platforms and current design activities, in August 2017, AgID defined, in the [Guidelines to the transit to the new Interoperability Model \(Determination no. 219/ 2017\)](#), the actions that the public administrations must take in order to follow up on the process of transition to the new Model.

To facilitate this migration, AgID:

- collects and publishes the decommissioning plans received from the PA, which make available their services (supplying PA);
- fosters the sharing of the necessary information between the supplying PA and the subjects using the services displayed.

AgID has issued the first two chapters of the new Model, defining the technical reference framework for the implementation of web services in the PA, with particular reference to SOAP and REST standards, as good practices under the scope of the interoperability of the information systems.

All administrations adopt the technological standards and indications of the new Model to define the “Service interfaces” including API, which are laid out in the adoption of REST and SOAP standards that display a digital service.

From a technical viewpoint, in order to simplify the updates and limit the impacts of regulatory adjustments, the design and implementation of each service interface must:

- ensure great cohesion of functions;
- have a life cycle that is as autonomous as possible;
- guarantee low coupling.

The design of the Service Interface must take into account interactions between the various services, by way of more general protection of the “PA Information System” resulting from it, and its users.

Amongst other aspects, management of the Service Interface ensures:

- an adequate level of service according to the type of service supplied (Service Level Agreement - SLA);
- the traceability of the various versions (versioning) in order to allow for non-destructive evolutions;
- the presence of coordinated documentation with the version of the service interfaces (documentation);
- the authentication/authorisation to access the services;

- service availability management;
- the traceability of the requests and replies received and their outcome (logging and accounting);
- the publication of use metrics (analytics).

It envisages, to an extent measured to the service needs:

- the traceability of information necessary to avoid repudiation of communication;
- the availability of the test environment;
- the elastic configuration of resources;
- the software packages for interfacing for strategic services of third parties (SDK).

The Model does not envisage a single centralised element (middleware), which mediates access to PA services, but rather a “Catalogue of Service Interfaces” (hereinafter referred to as the “Catalogue”), which publishes the Service Interfaces and related declared service levels.

Catalogue management implements the governance model through a centralised, multi-tenant platform, which may determine the specialisation of the Catalogue, envisaging contents with a themed and/or territorial level of aggregation.

The Catalogue, that is, follows two directives:

- a thematic one, linked to the Ecosystems (e.g. Justice)
- a territorial one, linked to the specificities of the territories (e.g. regional).

The Model identifies the types of administrations that may constitute the coordination tables, both on a thematic and territorial basis:

- to coordinate the supply of the services;
- to involve new suppliers.

In turn, the Tables support AgID in the promotion of the Interoperability Model and its indications.

Adhesion to the Catalogue takes place through the signing of a Convention between the body and AgID.

For the implementation of the Model, AgID directly or indirectly:

- develops the Catalogue and defines the onboarding process;
- verifies compliance with the Model rules as a condition for accessing the Catalogue;
- establishes, publishes and controls the service quality and use metrics;

- constantly updates the Model from a technological viewpoint.

The PA will be responsible for publishing the terms of use of the Service Interface they display and for compliance with the terms of service used.

4.2 Objectives

- To act as necessary for the coordinated transit of the public administrations from SP-Coop to the new Interoperability Model and therefore foster the harmonisation of the architectural choices made by the Public Administration
- To create technological conditions able to foster the development by administrations and businesses, of innovative application solutions focussed on the citizen, the businesses and the Public Administration, and which enable use of intangible infrastructures
- In line with the principle of Interoperability by Design defined in the 2016-2020 eGovernment Action Plan, to promote the “API First” approach, regardless of REST or SOAP technology, so as to foster the separation of back end and front end levels, with open logics and public standards
- To simplify the procedures for the exchange of data and services by the public administrations and, where possible, between the Public Administration and private individuals
- To privilege open technological standards that meet the need to ensure interaction between PA and this with citizens and businesses
- To foster the implementation of service interfaces in compliance with the Guidelines and promote the quality of the services displayed by the PA.

4.3 Action lines

LA11 - Transition of SP-Coop services to the new Model by the PA

TimingIn progress

PlayersPA, AgID

Description For existing platforms and current design activities, the PA follow the indications given in the [Guidelines to the transit to the new Interoperability Model](#), as issued by AgID in its Determination no. 219/2017.

In order to decommission SP-Coop, in particular the domain ports (PdD) envisaged therein, the supplying PAs prepare a “direct interfacing plan” in order to ensure access to the services currently in production. Annex 3 “Operative instructions for the migration of SP-Coop services” gives the operative instructions for the preparation of the specified plans.

AgID publishes the planning received on its institutional website. This allows the PA to plan:

- timing for redirecting systems that use services currently in production, towards the prepared Service Interfaces with direct access;
- the date of definitive decommissioning of the domain ports, also to be communicated to the AgID.

If the service of a supplying PA within the SP-Coop domain should be used by a new entity without a domain port, the direct interfacing must be envisaged with timing compatible with the needs of the new user.

Results The PAs supplying services prepare and send to AgID the “direct interfacing plans” (by April 2019).

AgID publishes the planning received on its institutional website (by June 2019).

Areas of intervention In the short-term, impact on the PA.

LA12 - Adoption of the Guidelines to the new Interoperability Model

Timing In progress

Players AgID, PA, Public Service Managers and publicly-owned companies

Description Issue of Guidelines to the Interoperability Model for public administrations and other subjects concerned (citizens and businesses).

The Guidelines identify the technological standards and methods for use by the PA. The PAs develop the service interfaces in order to enable communication between the PA’s computer systems and these with citizens and businesses.

The Guidelines consist of:

- presentation of the 2018 Interoperability Model;
- technologies and approaches to Integration and Interoperability;

- interoperability profiles and patterns;
- Interoperability Model governance;
- registers and Catalogues.

The above-listed documents are made available for public consultation, fostering the awareness of the PA on the new model. Upon closing the consultation phase, the Guidelines will follow the issue methods envisaged by Article 71, paragraph 1 of the CAD.

Results AgID publishes, for consultation, the documents comprising the Guidelines to the Interoperability Model (by June 2019).

The PAs adopt the Guidelines upon completion of the issue process.

Areas of intervention In the short-term, impact on the PA.

LA13 - Development and population of the “Service Interfaces Catalogue”

Timing from December 2019

Players AgID, PA

Description AgID develops the “Service Interfaces Catalogue”, which enables the sharing of the Service Interfaces developed by the PA. AgID defines the methods by which to manage the Catalogue, which takes into account:

- the specificity of the territories and various areas in which the PA operates;
- the need to avoid redundancy and/or overlay in terms of competences and contents.

In implementing the rules of the Interoperability Model, the PA implement their own Service Interfaces and populate the Catalogue, so as to facilitate its use by developers.

Results AgID develops the first release of the Catalogue (December 2020).

The PAs publish the Service Interfaces (from January 2021).

Areas of intervention In the medium-term, impact on the PA and businesses; in the long-term, impact on citizens.

CHAPTER 5. Public Administration data

The data of the public administrations, together with the mechanisms and platforms created to offer services, are one of the main digital assets of the PA. The consequent optimisation of this digital asset is a strategic objective to be pursued.

The representation of the data of the Public Administration as an “asset” provides a rather realistic and effective image of the nature of the data as goods and, in particular, allows for the immediate identification of the potential that may derive from its use, going beyond the limit of administration data fulfilment in which the data is formed and generally used.

The Horizon 2020 strategy aims to improve EU competitiveness, at the same time retaining the market social economy model and significantly improving the effectiveness of resource use. Specifically as regards data, again on a European level, but also a national one, the growing need is seen for better coordination between the various policies on data, in particular for the implementation of the INSPIRE Directive in the context of eGov policies. In this sense, in particular, we have the EU eGovernment Action Plan 2016 - 2020 (COM (2016) 179 final) and the new European Interoperability Framework (COM (2017) 134 final).

In this context, it becomes essential to exploit the full potential of the data managed by the Public Administration. The tools offered by current legislation, in particular the CAD and the rules incorporating and implementing the INSPIRE Directive and the Public Sector Information (PSI) Directive, allow us to define two strategic areas: on the one hand, the sharing of data between PA, free of charge, for institutional purposes and, on the other, the reuse of data, also for commercial purposes, by stakeholders concerned).

In order to concretely implement these principles, two macro areas are identified:

- **database of national interest:** the sharing of data of the PA for institutional purposes is generally adopted for all data types for which this policy applies, under the scope of the provisions of Article 50 of the CAD. Enabling a more extensive sharing of data between administrations allows for the achievement of data rationalisation objectives, eliminating the typical silos management and, therefore, unnecessary duplications (implementation of the once only principle, thereby avoiding requesting information already held by the PA). In this regard, the databases of national interest play a strategic role, as defined by Article 60 of the CAD, i.e. databases with homogeneous type and content, relevant to the performance of the institutional duties of the public administrations;

- **open data:** enable the reuse of data by anyone and for any purpose, including commercial, as long as there are no particular restrictions (e.g. state secret, statistical secret, personal data protection restrictions, as defined by the Data Protection Authority). The opening of public data (in general data able to be known by anyone) for re-use, is a specific action under the scope of the Digital Single Market, the first pillar of the Digital Agenda for Europe, aimed at best exploiting the potential of information and communication technology to foster innovation, economic growth and competitiveness. With the Communication “Towards a common European data space” (COM (2018) 232) of 25 April 2018, the Commission proposed a package of measures as an essential step towards the creation of a common data space in the EU; these include, as particularly relevant, the proposed revision of the PSI Directive (COM (2018) 234).

Correlated to said macro areas, the data strategy envisages actions that are functional to both the sharing and reuse of data, traceable to the creation of **controlled vocabularies** and **data models**, i.e. a structured method by which to organise recurring nomenclatures and codes in a standardised, normalised manner (controlled vocabularies) and a conceptualisation in the area of a given domain (ontology or shared data model).

This being the case, it is important to highlight that at a European level, as well as at a national level, the growing need is seen for better coordination between the various policies on data, in particular for the implementation of the INSPIRE Directive in the context of eGovernment policies. In this sense, in particular, we have the EU eGovernment Action Plan 2016 -2020 (COM (2016) 179 final) and the new European Interoperability Framework (COM (2017) 134 final). In particular, the territorial information follows the rules of implementation of the INSPIRE Directive as regards the harmonisation of data, data access services, interoperability models, the obligation and methods by which data is shared amongst administrations, etc. Instead, the conditions for the reuse of data by third parties (licence, tariffs, etc.) come under the scope of the PSI Directive.

5.1 Databases of national interest

5.1.1 Scenario

The databases of national interest are one of the key aspects of ICT strategies on a national and international level, insofar as essential infrastructures offering support to interactions between public administrations and, where envisaged, between these and private individuals.

Under the scope of said [European Interoperability Framework](#), they are called “Base Registers”, particularly relevant reliable, authentic, official sources of data on the public

administrations (e.g. people, roads, buildings, organisations, etc.), which constitute the basis for the construction of public services.

In the context of the strategic model for ICT in the Public Administration, considering the growing relevance of databases of national interest, including for the carrying out of institutional duties of other public administrations (in addition to those of the holder administrations), processes should be launched aimed at guaranteeing a suitable level of data quality.

Article 60 of the CAD provides a first list of Databases of national interest and appoints AgID to identify (and publish) a list of said databases, highlighting the task of defining and publishing the plans for the update of services by the responsible administrations.

Paragraph 3-bis of the same Article indicated the following databases of national interest:

- The National Directory of Spatial Data (RNDT) - Holder: AgID;
- the National Register of the Resident Population (ANPR) - Holder: Ministry of the Interior;
- the National Public Contracts Database (BDNCP) - Holder: ANAC;
- the [Criminal Records Database](#) - Holder: Ministry of Justice;
- Companies House - Holder: UnionCamere;
- the Automated Archives on Immigration and Asylum - Holder: Ministry of the Interior;
- the National Register of Patients (ANA) - Holders: Ministry for the Economy and Finance and Ministry of Health;
- the Register of Agricultural Businesses Owners - Holders: Regional Authorities and Ministry for Agricultural, Food and Forestry Policy.

Additionally, there are also the following databases, regulated by the regulatory context of the CAD and by Italian Decree Law no. 179 of 18 October 2012:

- the National Archive of Civic Numbers of Urban Roads (ANNCSU) - Holder: ISTAT and the Revenue Agency;
- the Land Registry Database - Holder: the Revenue Agency;
- the Index of the Digital Domicile of Public Administrations and Public Service Managers (IPA) - Holder: AgID;
- the National Index of Certified E-Mail Addresses of Professionals and Businesses (INI-PEC) - Holder: the Ministry of Economic Development.

Additionally, the same Article 60 grants AgID the possibility of extending this list. In this sense, in addition to the databases present in the above-specified regulatory references, with the 2017 - 2019 Three-Year Plan, the following databases were identified:

- the Public Register of Vehicles (PRA) - Holder: ACI;
- the Tax Database - Holder: the Revenue Agency;
- the Catalogue of Data of the Public Administrations - Holder: AgID;
- the Catalogue of Services to Citizens and Businesses - Holder: AgID;
- the Federal National Information System of Infrastructures (SINFI) - Holder: the Ministry of Economic Development.

In light of the activities in progress in which AgID is involved, the following additional database of national interest has been identified:

- the National Catalogue of the Library Service (SBN) - Holder: the Ministry of Culture and Cultural Heritage.

AgID updates the list of [Databases of national interest](#) (and related descriptive records filled in by the holding administrations) on its institutional website. After publication of the 2017 - 2019 Three-Year Plan, some databases have evolved and a report is given on this below.

National Directory of Spatial Data. The National Directory of Spatial Data is the point of access to the valuable territorial, geographic and environmental heritage of our country, an essential tool for the management of territorial policies. IT gathers together the metadata that describes geospatial data and related services available at the administrations. The role of AgID in the sector of geographic information finds its main regulatory reference in Article 59 of the CAD, which institutes the National Directory of Spatial Data, the national catalogue of metadata regarding the territorial data and related services available at the public administrations; the subsequent article 60 identifies it as a Database of national interest.

The Directory implements Regulation (EC) No 1205/2008 of 03 December 2008 implementing the INSPIRE Directive as regards metadata, in Italy, also taking into account Regulation (EU) No 1089/2010 of 23 November 2010 as regards interoperability of spatial data sets and services.

It is an integral part of the national infrastructure for spatial information (INSPIRE), also taking the form of a public register of the data documented therein, of which it certifies the relevant existence. At the same time, the Directory, in referring to a subset of data of the Public Administration, is an infrastructure that aims to implement the PSI Directive, in order to reuse public information. With reference to this aspect, the coordinated management of the national catalogues becomes particularly important, with their constituting the knowledge base of the information resources of the public administrations: the [National Directory of Spatial Data](#) and the [National Catalogue of dati.gov.it](#) (see par. 5.2).

Version 2.0 of the National Directory of Spatial Data has taken on the domain [geodati.gov.it](#) and the consequent registration as a [reference infrastructure](#) for the supply of [research services](#), and for the official recording or monitoring in the context of the implementation of

the INSPIRE Directive in Italy. In this regard, in 2019, the technical rules will be reviewed (to be adopted in accordance with Article 71 of the CAD), so as to take into account, amongst others, the rules for the implementation of metadata on datasets and services defined in the context of the implementation of the INSPIRE Directive, which will come into force starting December 2019 and the implementing evidence found in the context of the Italian administrations.

The documentation on spatial data is naturally one of the reference objectives in terms of optimising the public information assets. It is a recurring activity carried out by the administrations that enter data into the National Directory of Spatial Data (RNDT) using the national metadata profile INSPIRE/RNDT⁴.

Catalogue of services. The catalogue of services - servizi.gov.it - is the tool that will allow the public administrations to take part in the guided census of the digital services (carried out in accordance with the European ontology CPSV-AP and its Italian extension CPSV-AP_IT), allowing citizens to be guided in the use of said services and providing them with simplified, up-to-date information.

The census of the services of the Public Administration - in addition to having the benefit of guiding citizens in relations with the PA - also offers a series of advantages and possible extensions that effectively make the system a useful tool, also for the optimisation of the management of services that are often documented on several systems in a heterogeneous manner.

The system will be used by several component management applications (SpID, pagoPA, Web Analytics, etc.) for own management and integration systems.

ANPR. The National Register of the Resident Population (ANPR) is the single central national database into which the municipal records are gradually entered, the single central database of all citizens and residents of Italy. It contains the personal data and residential addresses and represents the reference archive of the natural persons resident, for all other national systems (migration from local database to central database currently in progress). It is established at the Minister for the Interior, in accordance with Article 62 of Italian Legislative Decree no. 82/2005 (Digital Administration Code).

Italian Ministerial Decree no. 194/2014 establishes the requirements of security, functions for management of database-related requirements, methods for integration with the various management systems and the services to be supplied to the public administrations and bodies

⁴ Decree of 10 November 2011 Official Journal no. 48 of 27/02/2012, ordinary series no. 37

supplying public services, which, to this end, shall stipulate service agreements with the Ministry.

ANPR is not just a database; it is an integrated system that allows the municipalities to provide database services as well as to consult or extract data, monitor activities and take statistics. The start of trials is envisaged of the computerised national archives of the civil registers in ANPR.

The population of the database of national interest ANPR reveals an increase in recent times, in detail from fewer than 300,000 inhabitants and 13 municipalities in September 2017 (the date on which the contract was stipulated), to almost 19 million inhabitants and more than 1600 municipalities at end January 2019 (the real time monitoring of digital transformation projects is available in the section on [Progress on the Digital Transformation](#) of the AgID website). The increase in the process of takeover of municipalities in ANPR noted recently is due to the governance structure of the project, which identifies a Programme Office (PO) appointed by commission, assigned the task of coordinating and verifying the technical actions to develop the project.

The introduction of this new function has made it possible to:

- coordinate activities, acting as a link between the Minister for the Interior, as the Administration responsible for the project, and Sogei, as the project's technological partner;
- prepare new interventions to optimise the results achieved by the development of the ANPR system (integration of the national civil registry, national database certification, etc.);
- increase communication with all stakeholders, improving transparency on the progress made on the project;
- optimise the ANPR project under the scope of the actions set out in the Three-Year Plan, following on from the necessary actions linking up with other initiatives (Controlled Vocabularies, SPID, Interoperability Model);
- help create a technical community through open support tools, playing a role of coordination and integration with the suppliers of municipalities.

IPA. The Index of the Digital Domiciles of the Public Administrations and Public Service Managers (Article 6-ter of the CAD), IPA, is the public list of reliance containing the digital domiciles to be used for any communications and the exchange of information and to send documents to all legal intents and purposes between public administrations, public service managers and private citizens. The public administrations and public service managers are required to register with the IPA, submitting a request to AgID, providing the information necessary to identify the body and indicating in their organisation those who will manage the

information contents to be reported in the IPA. Following upholding of the request, the Body shall be responsible for keeping all information entered into the IPA up-to-date, to allow for its correct use. Each body registered with the IPA may elect one or more digital domiciles in connection with its organisation.

The IPA is the database of the PA functional to an ever increasing set of PA processes: for example, the information protocol, electronic invoicing, certification of receivables and the national register of school-employment alternation. There are approximately 23,000 accredited bodies (up-to-date figures available on the website [Index of Public Administrations](#)). In 2018, average annual levels of use of the IPA were as follows:

- more than 7 million pages displayed;
- 776,683 open data files downloaded;
- almost 13 million accesses by means of LDAP protocol;
- more than 2 million queries by means of the web service.

5.1.2 Objectives

- Databases of national interest - on the basis of the descriptive records envisaged by the previous Three-Year Plan - a shared strategy needs to be launched with the administrations holding databases of national interest, aimed at defining plans for the development and update of services for the use of such databases by other administrations (Article 60, paragraph 2-ter of the CAD)
- Databases of national interest - prepare, with the administrations holding the databases of national interest, the Guidelines for the definition of security and management standards and criteria (Article 60, paragraph 2-bis of the CAD)
- Databases of national interest - promote the use of international data quality standards [UNI CEI ISO/IEC 25012:2014](#) applying, in particular, the technical rules defined by AgID with its [Determination no. 68/ 2013](#) for critical databases, also fostering the process of measuring the quality of data, on the basis of standard [UNI CEI ISO/IEC 25024: 2016](#);
- RNDT - overcome the problem connected with the correct documentation (and access) of spatial data made available as open data, aligning the information contained in the National Directory of Spatial Data ([geodati.gov.it](#)) with the catalogue at [dati.gov.it](#), through the implementation of the standard GeoDCAT-AP
- Catalogue of Services - facilitate the progressive population by the public administrations; improve processes for the complete interoperability and usability with third party systems

- ANPR - complete data migration from the municipal databases to ANPR, ensuring, throughout all data life cycle phases, a high quality index
- ANPR - start trials on the computerised national archives of the civil registers in ANPR
- IPA - monitor the current scenario in relation to the matters described and incorporate the provisions of Italian Legislative Decree no. 217 of 13 December 2017

5.1.3 Action lines

LA14 - Definition of the development lines for the databases of national interest

Timing from January 2019

Players PAs holding databases of national interest and AgID

Description Joint working tables between AgID and the PAs holding databases of national interest work on the definition of the Plans to develop and update the services for use of the same databases, so as to foster the usability of the information contained by all subjects duly entitled to do so, in accordance with the principles laid down in the Three-Year Plan.

Results Each working table drafts a policy document for guidelines to the development of databases of national interest (December 2020).

Areas of intervention In the short-term, impact on PAs holding databases of national interest and on all PA. In the medium-/long-term, impact on businesses, citizens, other institutional subjects and specific categories of users.

LA15 - Implementation of the standard Geo -DCAT-AP_IT

Timing In progress

Players AgID, PA

Description The release of the new version of the National Directory of Spatial Data allows activities to continue on the application development for the implementation of the standard GeoDCAT-AP, in line with the indications given in the [Guidelines](#) made available by AgID (objective of the previous 2017 - 2019 Three-Year Plan).

Results Implementation of standard “Geo DCAT-AP” (by June 2019) on the [National Directory of Spatial Data](#).

Adoption of the standard by the regional authorities and central PA involved (June 2020).

Areas of intervention In the short-term, impact on the PA; in the medium/long-term, impact on businesses, citizens, other institutional subjects and specific categories of users.

LA16 - Availability of the Catalogue of services (servizi.gov.it)

Timing in progress

Players AgID, PA

Description AgID implements new functions of the Catalogue of services (servizi.gov.it) aimed at ensuring the complete interoperability with third party systems and implements initiatives aimed at populating the Catalogue. The PA proceed to populate the Catalogue both directly (through back end) and through third parties (APIs).

Results The PAs include their services in the current Catalogue (from January 2019). AgID releases the new Catalogue functions (by December 2019).

Areas of intervention In the short-term, impact on the PA.

LA17 - Completion of population of ANPR

Timing In progress

Players Ministry of the Interior, Sogei, Municipal authorities

Description Completion of the population of ANPR with the data of the municipal databases (APR) and the databases of the population resident abroad (AIRE).

Results The 7,954 municipalities of Italy populate ANPR, migrating the local APR and AIRE (release date: currently being rescheduled).

Areas of intervention In the short-term, impact on the PA and citizens.

LA18 - Trials on the computerised national archives of the civil registers in ANPR

Timing From January 2019

Players Ministry of the Interior, Sogei, Municipal authorities

Description Through trials on a significant sample of Italian municipalities, prototype civil registers will be developed, assessing possible simplifications deriving from their digitisation and centralisation.

Results Trials on the computerised national archives of the civil registers (December 2019).

Areas of intervention In the short-term, impact on the PAs involved. In the medium-/long-term, impact on citizens.

LA19 - Adoption of IPA Guidelines

Timing In progress

Players AgID, PA and public service managers

Description AgID has prepared Guidelines to the Technical rules to be applied in the registration with and update of data in IPA. The administrations and public service managers must comply with the prescribed rules.

Results AgID publishes Guidelines on the website, reporting this in the Official Journal (June 2019).

Areas of intervention In the short-term, impact on all PAs, public service managers and citizens.

5.2 Open data

5.2.1 Scenario

Reuse of data is the ultimate aim of Open data policies, i.e. the process that aims to make the data held by public bodies available to everyone, for any purpose, including for commercial use.

The reference regulatory context is that of the CAD (Article 1, paragraph 1, letter l-ter) and the PSI Directive (2003/98/EC and 2013/37/EU) incorporated with Italian Legislative Decree no. 36/2006 (as amended by Italian Legislative Decree no. 102/2015), which regulates the methods of reuse, also defining the scope of application with the related exclusions and safeguarding rules.

Open data is defined under Article 1, letter l-ter) of the CAD, which identifies the following characteristics or requirements:

- available in accordance with the terms of a licence granting its use by anyone, including for commercial purposes, in an unbundled format;
- available in open format (Article 1, letter L-bis), suitable for automatic use by processor programs and complete with related metadata;
- made available free of charge or for a minimal cost as incurred for the relevant reproduction and dissemination, except in exceptional cases, as identified by Article 7 of Italian Legislative Decree no. 36/2006).

To date, the policies for the promotion of open data have mainly regarded the supply side, i.e. the making available of data by administrations (monitoring data on digital transformation projects, updated in real time, is available in the section on [Progress made on the digital transformation](#) of the AgID website).

Continuing on from the objectives and actions envisaged in the previous Three-Year Plan, the need remains to follow up on the adoption of the [protocol](#) defined by the working party “Data e open data management” of the Steering Committee at the Department of Public Function for interventions OT11 and OT2, carried out under the scope of the Italy Partnership Agreement. This protocol specifically envisages population of the [dati.gov.it national catalogue](#), which documents, on the basis of the DCAT-AP_IT metadata profile, the open data made available by the administrations.

In line with what is already taking place internationally, the demand for and quality of open

data available today must also be considered, giving a concrete meaning to applicable national policies, promoting the effective re-use of data to develop new services for citizens and businesses and assessing the relevant social and economic impacts.

5.2.2 Objectives

- Promote and intercept the request for the reuse of data, in particular on the territory, for sectors of interest, with the involvement (and support) of the regional and local government, activating dialogue with businesses and civil society, to better understand the meeting of data demand and supply as stimulator Match this objective with the actions envisaged in the context of the Open Government Partnership (OGP), also in line with the actions envisaged in this area
- Spread the culture of open data amongst administrations and businesses, based on inclusive actions aiming to foster an understanding of the potential linked with the reuse of data, at the same time avoiding any new or greater charges for the administrations
- Ensure coordinated action by central, regional and local administrations, for particular domains or ecosystems, aimed at opening data concerning the same object but containing different information, which complete each other (domain continuity)
- Promote planned action to make some regional datasets available in all regions, so as to have coverage of all national territory (territorial continuity)

Additionally, and also in line with the commitments made through the [2014-2020 Partnership Agreement](#) and with the [Community initiatives](#) aimed at detecting the progress made and implementation of the PSI Directive, the following objectives are set:

- Ensure the continuity of action envisaged in the context of the methodological document relative to the [Governance and Institutional Capacity NOP](#), through the update of the “Dynamic dataset basket”, which acts as a basis for calculating the result indicator 2RIS “Number of public databases available as open data (as a percentage) of all public databases of a selected basket”, as defined by the 2014-2020 Partnership Agreement, following on from the [2017 results](#), which highlighted growth of around 10% in said indicator (from 45.68% in 2016 to 55.5% in 2017)
- Consolidate Italian participation in European initiatives aimed at detecting the degree of maturity of open data and progress made on the implementation of the PSI Directive in Member States, including through specific [surveys](#) with the involvement of administrations, particularly at a regional level, in order to gather useful, significant elements in respect of such initiatives
- Consolidate the dati.gov.it national catalogue, including through a targeted evolution to include in said catalogue information relating to the public administration

databases, collected in implementation of Article 24-quater, paragraph 2 of Italian Decree Law no. 90/2014, converted into Italian Law no. 114 of 11 August 2014. This will make it possible to concretely implement the principle expressed by the PSI Directive on the possibility of asking the competent administration for data that is not yet available as open data.

5.2.2 Action lines

LA20 - Comprehensive data optimisation strategy

Timing from January 2019

Player Department of Public Function, AgID and the Regional Authorities (aggregators)

Description The Department of Public Function, in collaboration with AgID and the Regional Authorities, defines a strategy aimed at reusing open data, in line with the rules for the implementation of the PSI Directive and the collaboration and discussion initiatives between PA and stakeholders, in the context of actions defined under the scope of the Open Government Partnership (OGP). A comprehensive strategy document is prepared, which outlines objectives for the reuse and optimisation of data of the Public Administration.

Results The Department of Public Function, in collaboration with AgID and the Regional Authorities, defines a first strategy document for the policies by which to optimise the public assets (June 2019).

Areas of intervention In the short-term, impact on the PA and; in the medium/long-term, impact on businesses, citizens, other institutional subjects.

LA21 - Survey on the degree of maturity of open data and progress made on the implementation of the PSI Directive

Timing from February 2019

Players AgID and participating administrations

Description Through the involvement of the administrations concerned, in particular the Regional Authorities, AgID proceeds to collect useful data and information on the Community initiative aimed at recording the degree of maturity of open data and the progress made on the implementation of the PSI Directive in the Member States.

Results AgID publishes the Report on the Survey on the national portal dati.gov.it and provides a response to the Community initiative in order to prepare the Open Data Maturity Report (October 2019).

Areas of intervention In the short-term, impact on the participating PAs.

LA22 - Evolution of the dati.gov.it national catalogue

Timing from March 2019

Players AgID

Description Evolution of the dati.gov.it national catalogue. The evolution must regard:

- the possible extension of the research service to also include information relating to the public administration databases, collected in implementation of Article 24-quater, paragraph 2 of Italian Decree Law no. 90/2014, converted into Italian Law no. 114 of 11 August 2014;
- conformity of the catalogue with the profile DCAT-AP_IT;
- inclusion of new administrations on the basis of the DCAT-AP_IT metadatation;
- matching with the Directory of Spatial Data.

Results AgID releases the new version of the national catalogue, offering said functions (by December 2019).

Areas of intervention In the medium-term, impact on the PA, citizens and businesses.

LA23 - Update of the Guidelines for the enhancement of public information assets

Timing From January 2019

Players AgID

Description AgID updates the Guidelines for the enhancement of public information assets, together with the related documents (including the Guidelines for data catalogues, the list of databases of national interest and the list of key databases), taking into account, for example, regulatory changes, European and international works and Italian works that aim, amongst others, to provide tools by which to better implement the actions listed in the guidelines.

Results Guidelines for the enhancement of public information assets, updated for public consultation (June 2019).

Areas of intervention In the short-term, impact on the PA.

5.3 Controlled vocabularies and data models

5.3.1 Scenario

In correlation with the two areas of data sharing and reuse as per the paragraphs above, actions are envisaged that aim to create **controlled vocabularies and data models**, i.e. a structured method by which to organise recurring nomenclatures and codes in a standardised, normalised manner (controlled vocabularies) and a conceptualisation in the area of a given domain (ontology or shared data model).

European level initiatives⁵ also highlight the possibility of using suitable tools to identify and define controlled dictionaries and shared data models.

For metadatation profiles of different types of data and for services, AgID has already created a network of ontologies and controlled vocabularies starting from those recognised internationally and able to be used in the Italian context. With reference to the objectives already achieved in the previous 2017 - 2019 Three-Year Plan, the network elements have also been catalogued. A very first version of the catalogue is included on the National Data Digital Platform (see paragraph 5.4).

Additionally, again with reference to objectives that have already been achieved, envisaged in the previous 2017 - 2019 Three-Year Plan, AgID has also implemented and made available (as a beta version in 2017 and officially in 2018), the [Italy INSPIRE Registers System](#), as part of the coordination of AgID, ISPRA and the Ministry for the Environment and Territorial and Sea Protection (MEPLS) for the implementation of the INSPIRE Directive in Italy. The System is based on an open source software developed by the Joint Research Centre (JRC) of the European Commission under the scope of the ISA/ISA² programme actions. It is a platform that enables a suitable management of controlled vocabularies, lists of codes, taxonomies, etc., guaranteeing both the unique nature and persistence of identifiers and contents management.

The system constitutes the point of access to a series of registers managed at a national level and published in order to comply with the provisions of INSPIRE (regarding the publication of extensions to lists of codes, pursuant to Regulation (EU) no. 1089/2010, on the interoperability of territorial services and data) and to achieve the purposes identified and defined at a

⁵ For more details, see [the website of EU vocabularies managed by the EU bodies and institutions](#)

national level, in particular for the coordination of INSPIRE and the eGovernment policies and the digital transformation.

The System is also included in the [federation of INSPIRE registers](#), which grants access to the registers of the individual Member States.

5.3.2 Objectives

- Define the roles and procedures for update and publication, which allow the public administrations holding vocabularies, taxonomies and nomenclatures, etc., to take part in the management of the registers published in the System of Registers already available (on the basis of Standard ISO 19135-1 and best practices implemented under the scope of the INSPIRE System of Registers and related Federation)
- Define specific ontologies, on the basis of the projects of the competent administrations. More specifically, in this area, projects are being prepared relative to the museum system, in close correlation with the competent Offices of the Ministry of Culture and Cultural Heritage (MiBAC), in line with the provisions of the Decree of 21 February 2018 of said same Ministry, setting out the “Adoption of standard minimum levels of quality for museums and public places of culture and activation of the National Museum System”.

5.3.3 Action lines

LA24 - Roles and procedures for registry management

Timing from March 2019

Players AgID, ISPRA, MEPLS

Description The roles and procedures for update and publication need to be defined, which allow the public administrations holding vocabularies, taxonomies and nomenclatures, etc., to take part in the management of the registers published in the System of Registers.

Results AgID releases the operative guide for administrations to help them autonomously manage the registers for which they are competent (by December 2019).

Areas of intervention In the medium-term, impact on the PA, citizens and businesses.

LA25 - Ontology development

Timing in progress

Players AgID and PAs concerned

Description Development of ontologies on the input of and in collaboration with:

- the MiBAC, for the definition of ontologies and controlled vocabularies relating to the National Museum System, in line with the objectives set by said Decree of 21 February 2018;
- the PAs concerned and the research entities, also in accordance with initiatives such as the Open Government Partnership.

Results AgID and PA work on the definition of reference ontologies and/or controlled vocabularies. (June 2020).

Areas of intervention In the medium-term, impact on the PA, citizens and businesses.

5.4 National Data Digital Platform (PDND)

5.4.1 Scenario

The National Data Digital Platform (PDND), previously known as the Data & Analytics Framework (DAF) is part of the activities aimed at optimising the national public information assets. The PDND aims to develop and simplify the interoperability of public data between PA, to standardise and promote the dissemination of the reuse of data described under paragraph 5.2 and to optimise data analysis and knowledge generation processes. The idea is to open the world of the Public Administration up to the benefits offered by modern big data management and analysis platforms, acting along five main lines:

- significantly extend the value of the information assets of the PA through the use of big data technologies that can create knowledge for those needing to make decisions and drastically reduce analysis time. The horizontal scalability of these technologies in fact makes it possible to extract information from the cross point of multiple databases and to process data in real time, making it possible to have several different analysis perspectives on a given phenomenon, in a timely manner;
- foster and optimise the exchange of data between PA, minimising transaction costs for access and use. It will, in fact, be possible to overcome the structure of the agreements one-by-one, which will lead to multiple copies of the same data and allow for standardised access to data that is always up-to-date;
- encourage the dissemination of open data and make its use more effective. Indeed, the PDND allows for the centralisation and redistribution of public data through API, guaranteeing the standardisation of formats and methods of re-use on data that is always up-to-date;

- foster the exploratory analysis of data by teams of data scientists, both within the individual PAs and centrally, so as to improve knowledge of the social phenomena. The analysis techniques used will also allow for the development of smart applications that exploit the regularity in the data to offer services to citizens, business and public administrations;
- allow for the promotion of scientific research initiatives on matters of specific interest to the PA, fostering collaboration with universities and research entities.

The PDND must be structured in compliance with that defined in the CAD and Interoperability Model, also in line with the needs relative to the Plan monitoring functions.

The PDND is based on a big data platform comprising: a data lake, a set of data engines and data communication tools.

In compliance with personal data protection regulations, the data lake stores, data of potential interest, such as, by way of example: the databases generated by the PA to fulfil their institutional mandate; the data generated by public administration computer systems, such as logs and data on use, which do not come under the scope of the previous definition.

Big data engines are useful for harmonising and processing, both in real time and deferred, the raw data saved in the data lake and for implementing automatic learning models.

Finally, data communication tools are useful for facilitating the use of data processed by the parties concerned, including through APIs, which display data and functions to third party applications.

Italian Legislative Decree no. 217 of 13 December 2017 introduced into the CAD, the new Article 50-ter, which institutionalises the technological platform project of the PDND in respect of the limits, terms and conditions laid down by the Data Protection Authority and the Decree pursuant to paragraph 4 of the same Article.

During first application, the trial of the National Data Digital Platform is entrusted to the Extraordinary Administrator for the implementation of the Digital Agenda; thereafter, in accordance with Article 8 of Decree Law no. 135 of 14 December 2018, the development and implementation functions are assigned to the President of the Council of Ministers.

The technological platform has reached an experimental stage, which is published on the website [DAF Italia](https://www.dafitalia.it) and, at present, can be used, amongst others, for the following study cases:

- ANPR monitoring dashboard;
- statistical monitoring of access to qualified services for the Region of Tuscany;
- monitoring of air quality for Rome capital city;
- map of districts for Milan City Council.

Article 7 of Italian Decree Law no. 109 of 28 September 2018 then establishes that the PDND shall be used in conjunction with the National Computer Archives of Public Works (AINOP).

The following documents have also been published:

- [Development plan](#)
- [User's manual](#)
- [Documentation for developers](#)

The data present in the PDND can also be used for the monitoring activities described in chapter 11 "Governing the digital transformation": in this regard, the Digital transformation will prepare tools that will integrate those described in paragraph 11.3.

5.4.2 Objectives

- Optimise the information assets of the Public Administration, facilitating access to data by the PA and fostering the establishment of agile analysis teams, both centrally and federally
- Strive towards standardised, high quality data. Indeed, the PDND is the operative tool that allows for the coordinated support of the efforts described in paragraph 5.2, paying attention to the processes of data generation, management, update and dissemination
- Facilitate the development and dissemination of open data and the API Economy, through which civil society can reuse, in compliance with the law, the public information assets and create new business opportunities. To this end, the PDND will enable the development of standardised APIs on databases that are always up-to-date, in order to foster the construction of applications and services for citizens
- Encourage collaborations with universities and research entities. They will be given access to experimental areas containing significant samples of data that has been suitably anonymised, in order to boost research and create knowledge that is useful for the general public
- Encourage the exchange of data between public administrations, overcoming the limits of the current practice of access to data based on conventions between individual administrations
- Rationalise the resources used in the exchange of data and initiatives under analysis, including data warehouse and business intelligence. These initiatives, which are often not coordinated, are frequently characterised by high licensing costs and dedicated hardware and tend to answer the same need multiple times

- Offer tools that promptly measure, on the spot, the progress made on the implementation of the Plan and which enable the identification of supplementary or corrective actions on the basis of data-driven logics.

5.4.3 Action lines

LA26 - Design of the PDND, trials and first application

Timing	In progress
Players	Presidency of the Council of Ministers/Digital Transformation Team, having consulted with the Data Protection Authority and the subjects indicated in paragraph 4 of Article 50-ter of the CAD.
Description	<p>The PDND is based on the development of a big data platform and the establishment of a team of data scientists, big data architects and data engineers. The Digital Transformation Team has the task of actively managing the conceptual development and implementation of the infrastructure, together with all life cycle phases of the data, from input to analysis and application development. The Digital Transformation Team designs and, having consulted with the Data Protection Authority, defines the methods for the development and use of the PA bid data platform, through:</p> <ul style="list-style-type: none"> ● the identification of the governance model, which envisages a guiding and controlling role by the President of the Council of Ministers/Digital Transformation Team, having consulted with the Data Protection Authority; ● the preparation of the acts necessary to the development of the project and proposal of any regulatory adjustments that may foster this; ● the definition, having consulted with the Authority, of the data lake data sources and related population methods. These will be included in the guidelines produced under the scope of the Interoperability Model; ● the definition of the logical architecture of the platform and identification of implementing technology; ● the identification of the information needs useful to the definition of data-driven policies and the development of the related analytical tools; ● the involvement of the scientific community for the promotion of initiatives aiming to foster the organisation of research on matters of interest to the PA; ● directives on use and consultation.

Results Update of the PDND Development Plan, including through the consolidation of the platform prepared on the basis of the cases of use fixed with the group of central and local PAs that collaborated on this, having consulted with the Data Protection Authority. (June 2019).

Areas of intervention In the short-term, impact on the PA.

LA27 - Start-up of PDND production

Timing from July 2019

Players Digital Transformation Team, PA

Description The Digital Transformation Team will prepare the procedures for the takeover of the future manager of the PDND, which will manage the project operations and evolution. The PDND manager will ensure all interaction with the PA as required to define inclusion plans of the related databases and cases of use. The PAs involved each time shall define the manner by which to input data and use of the PDND in a fashion appropriate to its activities, in respect of the limits, terms and conditions laid down by the Data Protection Authority and the Decree pursuant to paragraph 4 of Article 50 ter of the CAD.

Results Platform available to the PA (December 2020).

Areas of intervention In the short-term, impact on the PA.

CHAPTER 6. Platforms

The Platforms are solutions that offer essential, transversal, reusable functions in the digitisation of the PA's administrative proceedings, standardising the method of supply. They relieve the administrations from the need to have to develop functions *ex novo*, reducing the time and cost of the development of services and guaranteeing greater IT security.

In a vision that is functional to the choices of the PA, the Platforms can be divided up into the following categories:

- process service, all Platforms that digitally develop a complete process, for example procurement assured through the Public e-procurement tools, of which the PA become the users;
- task service, which implement individual functions transversal to the realisation of digital administrative proceedings, such as the authentication of users through SPID, which the PA integrate into their systems;
- data service, which ensure access to validated data sources, for example use of personal data assured by ANPR, needed by the PA in order to go about their institutional duties.

Below, in table 6.1, is a possible summary representation in which:

- the Platform **implementation model** indicates if its functions are made available to multiple subjects (multiple instances) or a single subject (single instance);
- the Platform **status** indicates if it is:
 - available for use by the PA (available);
 - fully designed and currently being implemented (implementation);
 - being designed (design);
 - or if evolution is planned of the solution currently available (evolution).

Category	Platform	Implementation model	Status
Process service	Public e-procurement	multiple instances	<i>implementation</i>
	NoiPA	single instance	<i>evolution</i>
	SGPA - National Administrative Procedure Management System	single instance	<i>design</i>
Task service	pagopa	single instance	<i>available</i>
	SPID	single instance	<i>available</i>
	CIE	single instance	<i>available</i>
	Storage poles	multiple instances	<i>implementation</i>
Data service	Register of the Resident Population	single instance	<i>available</i>
	Siope and Siope+	single instance	<i>evolution</i>

Table 6.1 - Summary representation of the platform implementation model and status

Through use of the Platforms, implementation is fostered of a uniform interaction model for services developed by the PA for citizens and businesses.

The general objectives of the Plan are therefore as follows:

- complete the development of the enabling Platforms and foster their adoption;
- have the existing enabling Platforms evolve by improving them or adding new functions, constantly adjusting the technology used and security level;
- identify and develop any new enabling Platforms that can act as accelerators for the PA digitisation process;
- define the deployment model, which takes into account the different institutional levels involved (central and local administrations and other PAs), so as to guarantee the most extensive participation and sharing possible for the entire process (Multilevel Governance Deployment Model).

AgID produces and maintains the list of Platforms, considering all new or existing solutions implementing basic and transversal functions for the public administrations as able to become enabling Platforms.

AgID accompanies the PAs receiving the platform services in their deployment processes and the involvement of the final recipients of the digital services supplied by the platforms.

During planning, the PAs responsible for the individual Platform must take into account aspects such as:

- set-up costs, including those for the development of the Platform and those for migration and/or adjustment incurred by the PA adhering to the Platform;
- costs when fully operative, as necessary to ensure the function of the Platform over time;
- the deployment costs necessary for the effective adoption of the platforms;
- total savings deriving from the adoption of the Platforms and potential introduced by the Platforms in terms of new digital services to be supplied to citizens, businesses and PA.

The PAs responsible for the individual Platforms must guarantee, throughout development and operation:

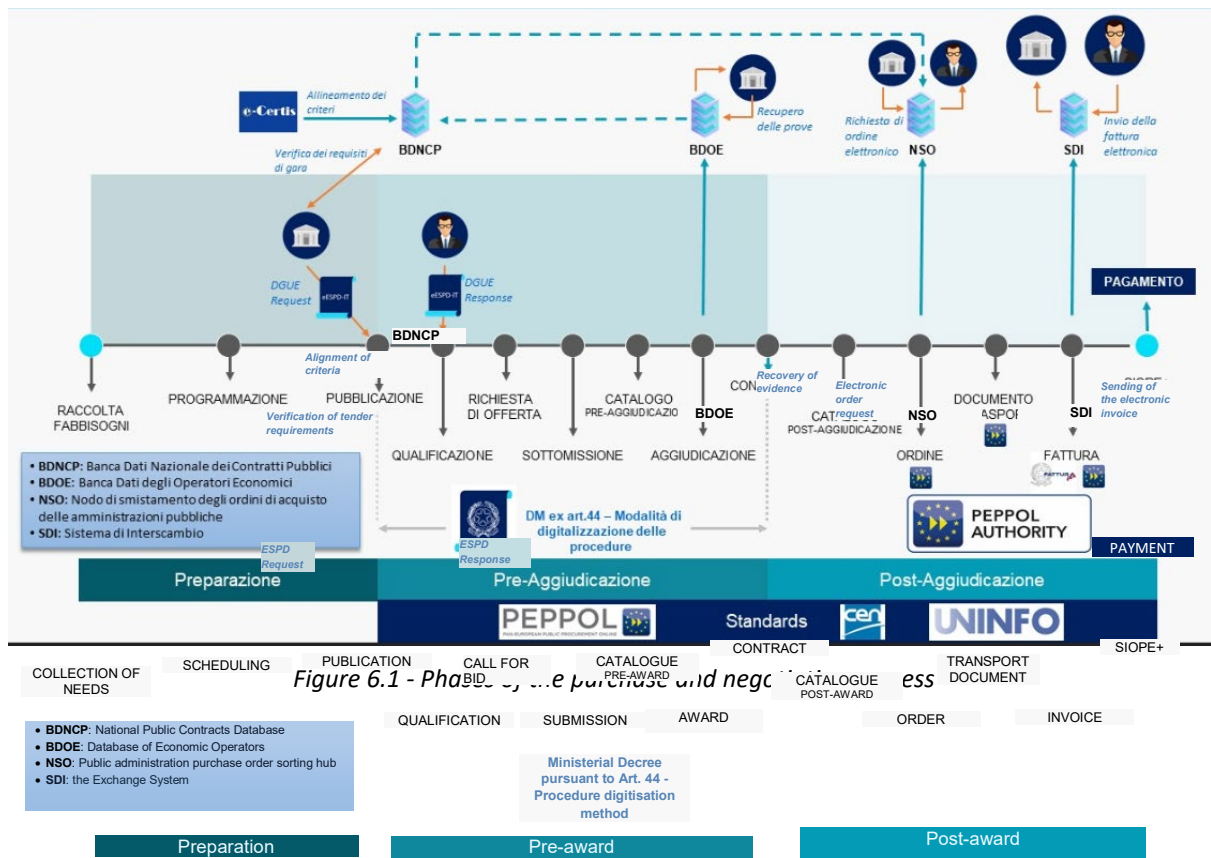
- coordination of the various initiatives, so as to foster consistency of all actions;
- monitoring of each project, in order to optimise the experience accrued in previous initiatives;
- the consistency of deployment speed with the effective level of digital transformation and the consequent capacity of the individual administrations to supply digital services;
- technical conformity with the Interoperability Model: and the evolutionary adjustments consequent to the release of new rules;
- business continuity and suitable performance levels;
- system security.

All other PAs must comply with the indications given in chapter 13 “Indications for the Public Administrations” as regards expenses for the adjustment and development of applications requiring functions offered by the enabling Platforms (e.g. the enhancing of digital payment solutions or authentication services).

6.1 Public e-procurement

The **national public e-procurement system** aims to progressively digitise the entire process of procurement of goods and services by the PA, in all the value chain, and, therefore, from

planning and programming of needs through to payment. It is a highly complex process that involves multiple players and various computer systems, as shown in figure 6.1.



The **public e-procurement reference architecture** underlying the process of buying and negotiating goods and services for the PA, consists of a set of operating rules, processes, technological standards, semantic models, databases and telematic systems, which will allow for the digital management of the entire public administration procurement process. The system consists of both public and private purchasing platforms, from institutional subjects managing services, platforms and databases involved in the purchase and negotiation process, national public registers, etc. (see figure 6.2).

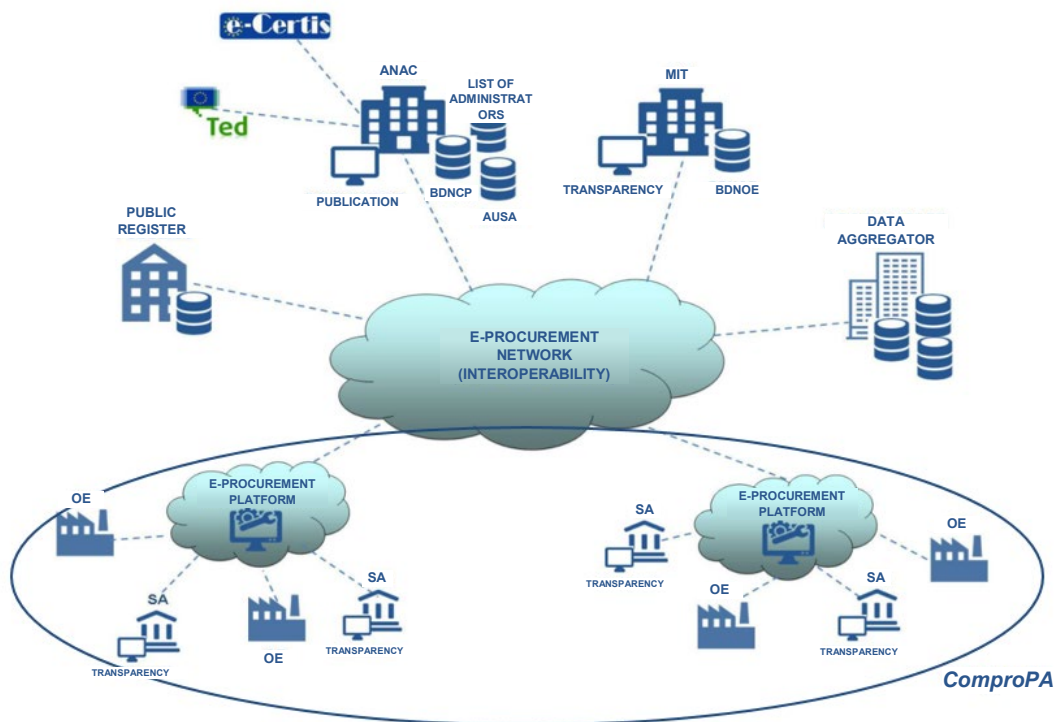


Figure 6.2 - Public e-procurement architecture

The following **components** are used by the system:

- **ComproPA:** system of architectural and interoperability rules for the interconnection of all telematic systems for purchases and negotiation. This comes in the pre-award phase of the process. The Tenders Code in fact envisages that the contracting authorities shall apply tender procedures that are fully managed with telematic purchasing and negotiation systems.
- **Database of Economic Operators (BDOE):** established in accordance with the Decree pursuant to Article 81 of the Code, it comes within the award activities (pre-award phase of the purchase and negotiation process), as the exclusive means by which to acquire documents proving that tender requirements are met. The BDOE has the following objectives:
 - to simplify the process of verification of general requirements during the verification and execution phases of the contract by the contracting authorities;
 - to allow for the request of documents of interest;
 - to automate the process of receiving documents attesting to the meeting of requirements.

The BDOE is not a real database; rather, it is an orchestrator that operates in a principle of application cooperation, using the data present in the national registers made available by: Revenue Agency, Unioncamere, Ministry of Justice, Minister for the Interior, ANAC, Ministry of Employment, INPS, INAIL, Casse Edili, Accredia, InarCassa and other professional funds, CIPAG.

- **Public administration purchase order sorting hub (NSO):** aimed at the electronic management of orders to PA suppliers during the post-award phase of the purchase and negotiation process. The general objective of the NSO is to create, in a similar manner to as has already been done for the exchange of electronic invoices through the Exchange System (Sdl), a **single hub for order transmission**⁶ by the contracting authorities to the economic operators. The NSO will keep track of orders placed by the PA during contract execution, helping enrich all data collected by the MEF **Trade Receivable Platform (PCC)**, with the aim of monitoring the entire PA spending cycle.

The NSO is currently under development. The first phase of the project focusses on the public healthcare system, which, as is known, is one of the most significant items of public spending.

- **Electronic invoicing:** this comes in the post-award phase of the purchase and negotiation process. It envisages the standardisation of the process for the issue-transmission-receipt-management of tax documents (invoices or notes) towards the Public Administration and has been compulsory in Italy since March 2015 (the monitoring of digital transformation projects is available in the section on [Progress made on the digital transformation](#) of the AgID website). The electronic invoice is a document in digital XML format (**FatturaPA**) sent by the supplier to the PA via the **Electronic Invoice Exchange System (Sdl)**. European Directive 55/2014, currently being incorporated, establishes the obligation for the PA to accept and manage the electronic invoices, including in the format compliant with European standards on electronic invoicing, starting 18 April 2019. This requires an evolution of the Exchange System platform to allow for the incorporation of electronic invoices in both the European format and in the FatturaPA format.

The Exchange System will also enable for the management of electronic invoicing

⁶ The obligation of the electronic management of orders placed with suppliers is sanctioned by the 2018 Budget Law under Article 1, paragraphs 441, 412, 413 and 414, which envisages both the adoption of specific regulations governing the technical methods and the date of coming into force of the electronic sending of documentation attesting to the order and execution of purchases of goods and services.

between private individuals starting January 2019, as envisaged by Italian Law no. 205/2017, Article 1, paragraph 909 (amending Italian Legislative Decree no. 127/2015, Article 1, paragraph 3). In these terms and with a view to payments being made to the PA, a working party will be established for the integration of data linked to payment by means of pagoPA within the electronic invoice format.

6.1.1 Scenario

AgID is working both at a national and European level, on a series of activities that go towards defining an overview of the telematic purchasing and negotiating procedures of the PA and the databases necessary to the function of the procurement processes. More specifically, under the scope of the activity of a working party on telematic purchasing procedures, a support document was produced to help with the drafting of the Ministerial Decree pursuant to Article 44 of the Code of Public Contracts, for the definition of the functions and flows exchanged during telematic purchasing and negotiation procedures.

Alongside this decree, guidelines must be prepared to determine the interoperability specifications and security requirements of e-procurement platforms. In support of the completion of the e-procurement process, various European projects are also active, financed by the CEF Telecom programme:

- **eIGOR – eInvoicing GO Regional**, which envisages the adjustment of the national electronic invoicing process for the PA in order to adopt the European electronic invoicing format;
- **IleP – Italian Interoperable eProcurement**, which envisages the integration of the eCertis service (service made available by the European Commission, which brings together the equivalences of certificates and statements of Member States) with the information system for monitoring tenders (SIMOG) at ANAC and with the e-procurement platforms;
- **ESPD – European Single Procurement Document**, which envisages the definition of the electronic European Single Procurement Document (eESPD), a self-declaration by the economic operator, used as preliminary evidence in a public tender procedure, including by cross-border operators;
- **EeISI - European eInvoicing Standard in Italy**, evolution of the eIGOR project, which envisages the complete adoption of the European electronic invoicing standards, messaging and e-delivery for the exchange of data and documents by and between the public administrations and these and the businesses and citizens, in a secure, reliable, trusted interoperable manner.

Such a complex process requires, in order to function correctly, the definition of shared,

transparent rules and the adoption of standards of data interoperability and services that enable the exchange and communication between diversified systems and solutions. To this end, the data structures adopted as part of the public procurement process are the direct application of European regulations deriving from standardisation of e-procurement under the scope of the European Committee for Standardisation, with specific reference to the CEN BII Workshop and the CEN TC 440.

European policies for the creation of the European Digital Single Market also include the Digital Services Infrastructures (DSI) defined by the European Commission. The DSI are the infrastructural components made available to the Member States to form an interoperable network for the exchange of documents in electronic format.

This paradigm was used to create a European network, comprising technical rules and infrastructures, for the exchange of documents connected with procurement (business document): the PEPPOL (Pan-European Public Procurement Online) network. PEPPOL, which is managed by the non-profit association OpenPEPPOL, uses the rules defined in CEN. AgID has been the PEPPOL authority for Italy since September 2016, which:

- governs the national specificities of PEPPOL profiles;
- manages the accreditation of PEPPOL service providers of Access Points (APs) or Service Metadata Publishers (SMPs);
- monitors the operation and performance of AP/SMP providers.

AgID takes part in the CEN tables and OpenPEPPOL to guarantee the convergence of standards.

6.1.2 Objectives

- Support a vision mainly focussed on transparency and the simplification of the entire public procurement process
- Implement the once only principle in the public sector and optimise comprehensive public spending
- Encourage the interoperability of the public administrations' systems as a necessary condition by which to increase the effectiveness and efficiency of public services
- Foster the dissemination of innovative solutions in the Public Administration through the use of qualified systems, including in subsidiarity or reuse
- Involve all those concerned under the scope of the public e-procurement system in dynamic collaboration networks, to capitalise on the experience accrued by the various subjects and optimise best practices
- Adapt the national standards to comply with European standards and foster

interoperability on a cross-border level too.

6.1.3 Action lines

LA28 - Adjustment/evolution of the telematic platforms

Timing In progress

Players PA

Description The administrations exercise their functions as contracting authorities using telematic buying and negotiating systems (telematic platforms). These systems are used in accordance with the following terms and conditions:

- use of a platform already in the possession of the administration;
- use of a platform made available by one of the aggregators and/or purchasing bodies;
- reuse of software made available by other PAs;
- use of services for platforms offered in SaaS by market operators.

During adoption of the telematic e-procurement platforms, the Agency will support the Regions in developing platforms that will be made available to the territorial administrations.

Results The platforms must adjust to comply with the technical rules of the Ministerial Decree pursuant to Article 44 of the Code of Public Contracts (from the date of publication of the implementing decree).

Areas of intervention In the short- and medium-term, impact on the PAs and companies supplying the platforms.

LA29 - Commissioning of the BDOE

Timing In progress

Players MIT, AgID, ANAC and all PAs holding national public registers (data providers), contracting authorities

Description Following the commissioning of the BDOE by the MIT, evolutionary lines of intervention will be identified with which the contracting authorities will need to comply in order to integrate their purchasing platforms with the BDOE.

Results The BDOE will be commissioned through integration with the databases of the

bodies holding public registers (from the date of publication of the implementing decree).

Areas of intervention In the short-term, impact on the PA and businesses.

LA30 - Electronic management of orders with suppliers

Timing	from October 2019
Players	MEF - State General Accounting Department (RGS), AgID, State-Regions Conference, Ministry for the Economy and Finance, Sogei, Public Healthcare Authorities, Suppliers
Description	The 2018 Budget Law envisages - for the entities of the National Healthcare System (NHS) - the transmission in electronic form of the documents attesting to the ordering and execution of purchases of goods and services. Transmission is made through the Order Sorting Hub.
Results	RGS starts and commissions the management system (Order Sorting Hub) as per the implementing decree in accordance with Article 1, paragraph 414 of Italian Law no. 205/2017 (2018 Budget Laws). The PAs adapt their systems to issue and transmit electronic orders through NSO in the healthcare sector (from October 2019).

Areas of intervention In the short-term, impact on the healthcare authorities and sector businesses.

LA31 - Management of the European format of electronic invoicing

Timing	From April 2019
Players	MEF, Revenue Agency, AgID, Sogei, Regions, ANCI
Description	Incorporation, by the Revenue Agency, of European Directive 2014/55, on electronic invoicing in public tenders, which envisages the obligation by the PA to accept electronic invoices in European format too.
Results	Adjustment of the Exchange System to manage electronic invoices in European format, envisaging the possible translation into the format FatturaPA. The central administrations update their systems for the receipt and storage of invoices (from April 2019). The local administrations update their systems for the receipt and storage of invoices (from April 2020).

Areas of intervention In the short-term, impact on central administrations.

In the medium-term, impact on local administrations.

6.2 pagoPA

6.2.1 Scenario

The electronic system for making payments to the Public Administration, pagoPA, guarantees end users (private individuals and companies) the possibility of making secure, reliable electronic payments to the PA, in complete transparency in respect of commission costs and according to their needs.

The pagoPA platform is the platform used for managing the public payments system.

The introduction of the pagoPA platform benefits citizens, the Public Administration and the whole of the country system.

Benefits for citizens:

- transparency and lower costs;
- possibility of using public services more immediately;
- simplification of the payment process that makes it possible to use the greatest possible number of channels and services;
- standardisation of the user experience for payments to the Public Administration;
- standardisation of communications of payment notices, recognisable throughout national territory.

Benefits for the Public Administration:

- reduction in collection times through the accrediting of amounts directly into the Beneficiary's accounts by the day after payment;
- reduction of cash management costs;
- improvement of efficiency of collections management through automatic reconciliation;
- overcoming the need to call tenders for the purchase of collection services, with consequent reductions in inefficiencies and off-market commission costs;
- reduction of costs and time for the development of on-line applications (re-use of solutions);
- elimination of the need for multiple collections agreements;
- greater automatic controls to avoid double payments and consequent reimbursement procedures.

Benefits for the country system:

- complete adherence to the standards of the PSD2 Directive⁷;
- incentives for the use of electronic payments at a national level through the use of transactions towards the Public Administration, which makes it possible to stimulate the market and foster, tendentiously, a greater level of competition on the payment services market and a levelling out of commission.

The pagoPA system has been developed by the Agency for Digital Italy in implementation of Article 5 of the CAD, which specifies that *“in order to implement the provisions of Article 5, the Agency for Digital Italy (formerly DigitPA) makes available, through the Public Connectivity System, a technological platform for interconnection and interoperability of the public administrations and qualified payment service providers, in order to assure, through shared, unified tools of recognition, the certain authentication of the subjects concerned by the transaction throughout all management of the payment process”*⁸.

The CAD has also assigned AgID, after consultation with the Bank of Italy, the task of defining Guidelines for the specification of the technical and operative methods for the making of electronic payments and introduced, under Article 15, paragraph 5 bis of Italian Decree Law no. 179/2012, the mandatory use of a technological platform made available by the Agency for Digital Italy for the Public Administrations and the Public Service Managers.

Starting 14 December 2018, by Decree Law no. 135 Urgent measures of support and simplification for businesses and the public administration, *“the management of the platform pursuant to Article 5, paragraph 2 of Italian Legislative Decree no. 82 of 07 March 2005, as well as the tasks, relative to said platform, carried out by the Agency for Digital Italy, are transferred to the President of the Council of Ministers who, to this end and if appointed, uses the Extraordinary Administrator pursuant to Article 63, paragraph 1 of Italian Legislative Decree no. 179 of 26 August 2016”*. Moreover, in order to carry out these activities and boost dissemination of the platform, the creation is ordered of a joint stock company that is an investee of the State, in accordance with Article 9 of Italian Legislative Decree no. 175 of 19 August 2016. The standard extends through to 31 December 2019 the expiry date envisaged by Article 65, paragraph 2 of Italian Legislative Decree no. 217 of 13 December 2017, which established *“the obligation for qualified payment service providers to only use the platform*

⁷ [Directive 2015/2366/\(EU\)](#) on payment services on the domestic market.

⁸ Italian Legislative Decree no. 82/2005, as subsequently amended.

pursuant to Article 5, paragraph 2 of Italian Legislative Decree no. 82 of 2005 to make payments to the public administrations”.

The subjective scope of application of the obligation to adhere to pagoPA has been extended over time by the national legislator⁹.

The pagoPA technological platform has been active and functional since 2012, whilst the obligation of subjects required to apply the CAD to allow users (citizens, businesses and professionals) to make payment of all amounts due for any reason to the Public Administration using electronic means has been in force since 1 June 2013.

Additionally, in accordance with Article 8 of Italian Decree Law no. 135 of 14/12/2018, starting 31/12/2019, qualified providers of payment services in accordance with PSD2 cannot, in any way, make any payments not transiting through the pagoPA system, and which have as beneficiary a public subject obliged to adhere to the same system, with the exception of only services such as:

- the Consolidated Delegation F24 (the “F24 model”) and SEPA Direct Debit (SDD), until integrated with the pagoPA system;
- any other payment services not yet integrated with the pagoPA system and which are not able to be replaced with those supplied by it, as long as a specific provisions of law does not require their being made available to users for payments;
- payments made in cash, at the subject that for this body provides a treasury or cash service.

Since the system was first produced in 2012, special care has been paid to improving the user experience, particularly with the introduction of new, centralised functions that can simplify payment in compliance with the rules set by the PSD2 and Payment Card Industry Compliance.

⁹ Firstly with the amendment to the CAD pursuant to Italian Legislative Decree no. 179/2016 (OJ no. 214 of 13.9.2016) and thereafter with the correction to the CAD pursuant to Italian Legislative Decree no. 217/2017 (OJ no. 9 of 12.01.2018). Thus said, we should point out that in order to identify the subjects obliged to adhere to the pagoPA system, reference must be made to both Article 5 of the CAD and Article 15, paragraph 5bis of Italian Decree Law 179/2012, as converted into law, because this second Article establishes that the public administrations (for the notion of which, reference is made to the interpretation circular no. 1 of 09 March 2015 of the Ministry for the Economy and Finance and the President of the Council of Ministers, issued for the subjective scope of application of electronic invoicing) are obliged to adhere to the payments platform. Equally, adhesion remains compulsory for the subjects pursuant to Article 2 of the CAD, which establishes, precisely, the subjective area of application of Article 5 of the CAD and that makes adhesion to pagoPA compulsory for public service managers and public control companies too, as defined in the Italian Legislative Decree adopted in implementation of Article 18 of Italian Law no. 124 of 2015, excluding listed companies.

A user-friendly Software Development Kit (SDK) has also been developed and is available to the Public Administrations, to develop mobile applications integrated with pagoPA.

In order to promote the activation of new services, permanent tables have been established with some important administrations, with regional intermediaries and with some particularly important technological partners.

The progress made on the level of platform adoption can be seen in the section on [Progress made on the digital transformation](#) of the Agency for Digital Italy website.

6.2.2 Objectives

The short-term objectives are:

- to raise the level of adoption of pagoPA, both in terms of public administrations adhering to the system and in respect of services activated, increasing awareness for public administrations that pagoPA is the exclusive collection tool and highlighting the relevant benefits for citizens and the PA;
- to clearly communicate which subjects are required to adhere to and activate services on pagoPA;
- to monitor the service levels of those adhering to the pagoPA system, so as to verify compliance with the threshold values expected for quality indicators;
- to identify actions to assist the administrations in adhering to the pagoPA system;
- to continue to evolve the technological components of the system to allow for the implementation of new functions with a view to assuring the continuous improvement of the user experience and the scalability of the platform.

The medium/long-term objectives are:

- to encourage integration of pagoPA in the end-to-end processes of the Public Administration;
- to carry out an architectural review of the platform in light of the new technologies.

6.2.3 Action lines

LA32 - Technological evolution of the platform

Timing In progress

Players AgID, Digital Transformation Team and Bank of Italy

Description Continuous technological adjustment of the platform to comply with the payment service standards envisaged by European and international standards in collaboration and through the coordination of the Bank of Italy in order to obtain a continuous improvement of the experience enjoyed by the citizens, public administrations and Payment Service Providers.

Results New back end version of pagoPA (June 2019).

Areas of intervention In the short-term impact, on the PA and payment service providers.

LA33 - Completion of adhesion to the platform

Timing In progress

Players AgID, Digital Transformation Team, subjects obliged to adhere

Description Completion of activation of services by all subjects obliged to adhere to the payments platform within the terms envisaged by the CAD.

AgID, in collaboration with the Regional Authorities, carries out activities on the territory aimed at raising awareness amongst the subjects obliged to adhere, in order to support the resolution of problems blocking adhesion to the platform. IT tools and technical documentation are supplied to foster integration with pagoPA and test environments in support of developers; AgID and the Digital Transformation Team publish data on the evolution of adhesion.

Results The subjects obliged to adhere activate the services within the time envisaged by the CAD (December 2019).

Areas of intervention In the short-term , impact on the PA and payment service providers.

LA34 - Technical monitoring and monitoring of the activation of services

Timing	In progress
Players	AgID, Digital Transformation Team, subjects obliged to adhere, adhering Payment Service Providers
Description	AgID both carries out continuous monitoring of the progress made on the activation of services by the subjects obliged to adhere to pagoPA and continuous monitoring of the system performance and effectiveness of the operating procedures, in respect of the defined quality indicators. It notes the presence of problems, identifies the solutions and implements accompanying actions.
Results	Increased transactions starting from the current 13 million, from January 2019, to approximately 30 million. (December 2019).

Areas of intervention In the short-term, impact on the PA and citizens.

6.3 Siope+

6.3.1 Scenario

SIOPE is the **Information System on Public Entity Transactions** for the recording of payments and collections made by the treasuries of all public administrations. It is an essential tool for monitoring public accounts, through the real time recording of the need of the public administrations and the acquisition of the necessary information to a timely preparation of quarterly national accounting statistics, so as to verify the rules envisaged by the European Community system (excessive deficit procedure and stability and growth pact).

SIOPE+ is one of the platforms that manages the complex system of collections and payments of the Public Administration, illustrated in figure 6.3. In particular, SIOPE+ intermediates the flows of Payment and Collection Orders (OPI) between the public administrations and the related treasury banks and inputs to other platforms (PCC, BDAP, SIOPE, SOLDIPUBBLICI, etc.)

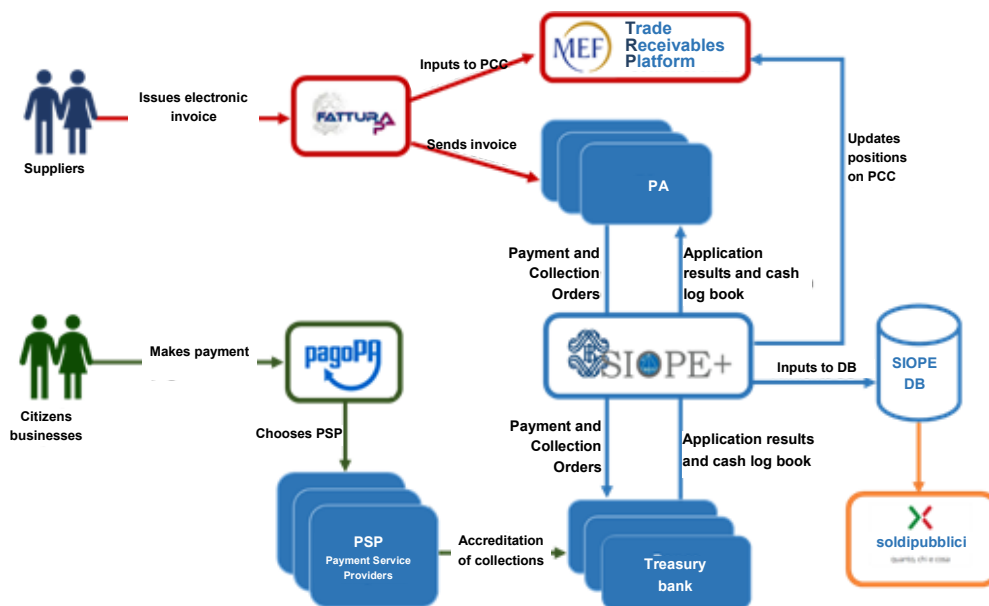


Figure 6.3 - Public Administration payment and collection system

SIOPE+ allows for the complete dematerialisation of payments and collections, improving the quality of the treasury services, fostering the elimination of excessive customisation in the relationship between the body and the treasuries and makes the supply of these services less expensive for banks and the market more contestable. SIOPE+ is the platform that will replace SIOPE once it has been fully disseminated to all administrations. The activation of SIOPE+ is regulated and marked by specific decrees of the Ministry for the Economy and Finance that, gradually, will extend the new requirements to all public administrations.

The main purpose of SIOPE+ is to improve monitoring of payment terms of trade payables of the public administrations, through the integration of information recorded with that of the invoices payable recorded by the electronic platform (PCC) and, prospectively, to follow the entire cycle of income and expense.

SIOPE+ allows information to be acquired “automatically”, thereby releasing bodies from the obligation to transmit data to the electronic platform PCC on the payment of invoices; this is the main critical issue with the current system used to monitor trade payables and the related payment terms.

The project is continuing in line with forecasts and, as the individual bodies become fully operative, the treasurers and cashiers may only accept payment and collection orders that are compliant with the OPI standard, transmitted via the SIOPE+ payments hub.

SIOPE+ is an initiative governed by the Ministry of the Economy and Finance, managed on the Bank of Italy IT infrastructure according to the standards and technical rules issued by AgID.

6.3.2 Objectives

- Order payments and collections from the treasurer or cashier, only using computerised orders issued in accordance with the standard defined by AgID
- Send computerised orders to the treasurer or cashier only and exclusively through the SIOPE+ infrastructure managed by the Bank of Italy

6.3.3 Action lines

LA35 - Deployment of the SIOPE+ system

TimingIn progress

PlayersGeneral State Accountancy, Bank of Italy, AgID and PA

Description In view of the conclusion of the trial phases, closed in 2017, the system became fully operative in 2018 for all municipalities, regions, local health authorities and hospitals. Starting January 2019, universities, research entities, port authorities and park entities will enter SIOPE+ and, by subsequent decrees, additional entities will also be identified (schools, training institutes, etc.).

AgID issues technical rules for the management of computerised documents relative to payment and collection orders and guidelines intended as a vademecum for the adoption of the technical rules, according to a plan of activities that envisages a periodic update of the OPI standards.

Results AgID issues new versions of the OPI technical rules and Guidelines (July 2019).

MEF-RGS offers the administrations support in adhering to the system and extending to other public bodies (from January 2019).

Bank of Italy manages the system's IT infrastructure (from January 2019).

Areas of intervention In the short-term, impact on the PA.

LA36 - Revision of the open data platform Soldipubblici

Timing from June 2019

Players General State Accountancy, Bank of Italy, AgID and PA

Description [Soldipubblici](#) is an open data platform that gives citizens easy access to payment data of the Public Administration. To date, the objective was to guarantee complete transparency and enable both citizens and the public administrations themselves to analyse and constantly monitor spending.

The hypothesised revision envisages an evolution of the role of Soldipubblici towards a wizard like tool for aggregation and display of forecast data and information, both incoming and outgoing. The payment data of the PA is extracted from the database of the SIOPE information system, which also inputs the Database of Public Administrations (BDAP), which, in addition to payment and collections data, also has a great deal of other information, both forecast and final, of an economic-financial nature. There are then all open data catalogues, to a large extent federated by dati.gov.it, which the central and local administrations have produced and constantly input to. All data sources can make a contribution towards the construction of structures, multi-level information of which Soldipubblici may be the evolved display tool.

The players review the platform, integrating it with additional data extraction services (e.g. by territory, by category of body, by budget item, etc.).

Results Soldipubblici platform updated (December 2019).

Areas of intervention In the short-term, impact on the PA; in the medium-term, impact on citizens and businesses.

6.4 NoiPA

6.4.1 Scenario

NoiPA is an integrated platform for the management of the salary services of Public Administration staff belonging to the various public contracting segments including Ministries, School, local entities and healthcare, police forces and armed forces. Through this platform, in line with current legislation, the following services are provided:

- processing of economic-legal data;
- processing and reconciliation of the recording of presences/absences;
- production and distribution of the monthly payslip.

Additional services are also provided in the favour of the creditor bodies on whose behalf the monthly withholdings are applied to the salary and the related payments guaranteed.

Starting January 2018, the cloud platform is already operative, in terms of infrastructural components and software products, on which the new system will be made available and able to be used by the Administrations, also enabling and simplifying the administrations' onboarding.

The evolution of the current NoiPA staff management system is envisaged, which delivers salary services to the PA, with the addition of functions for the management of non-economic staff components, also in support of the recent PA reform (Italian Law no. 124/2015 setting out "Delegations to the government on the reorganisation of the public administrations"). Specific components will be developed to optimise the information assets managed, integrating information and services supplied by other institutional stakeholders.

6.4.2 Objectives

- Complete development of the NoiPA system, including through its integration with other enabling Platforms and foster its adoption by all public administrations
- Make structured, integrated information available to stakeholders, with suitable levels of visibility and access, regarding all public employees

6.4.3 Action lines

LA37 - Evolution of the NoiPA system and optimisation of the information assets managed

Timing In progress

Players MEF, AgID and central and local PA, Department of Public Function, INPS

Description The following activities are envisaged:

- development of the new public staff management system to cover all staff management administrative processes (database services, salary integrated services, presence detection services, legal services);
- develop and release additional components connected with needs for the assessment and development of public staff;
- develop the PA staff database;
- optimise the information managed through the implementation of specific components by which to enable integration with the information and services of other institutional stakeholders involved in the public staff management processes.

Administrations not yet adhering to the system may proceed with a communication in 2019 of their adhesion, before subsequently migrating and adopting the NoiPA system, as scheduled in agreement with the MEF.

Results Completion of the new NoiPA system (release date: December 2020).

Request for PA adhesions (by 2019).

Start-up of supply of the service (June 2019).

Enabling the sharing of the information managed (June 2019).

Areas of intervention In the short-term, impact on the PAs and institutional stakeholders involved.

6.5 SPID

6.5.1 Scenario

SPID, the Public Digital Identity System, is the solution that grants access to all on-line services offered by the Public Administration with a single digital identity. By AgID Determination no. 366/2017 “Private Service Provider Agreement”, it is expected that private individuals may also adhere to SPID, if intending to use a certified identification.

Through credentials classified along three different security levels, SPID enables access to the services offered by the Public Administration and private individuals adhering to such, providing certified identification data.

SPID consists of an open set of public and private subjects that, following accreditation by AgID, manage the services of registration and the making available of credentials and network access tools, in regard to citizens and businesses. At present, there are nine [identity providers](#), one of which was accredited in 2018.

In the last two years, AgID has offered support to the PA in interfacing their systems with SPID. At present, the number of Service Providers, or public administrations, granting access to their services with SPID is approximately 4,000. In order to foster adhesion to the SPID system, agreements have been stipulated that envisage the adhesion of “aggregators”, intended as the subjects offering the aggregated administrations the possibility of making their on-line services accessible by means of SPID.

The Agency has also ensured disclosures and information to citizens and users in order to foster adhesion to SPID, offering them support in accessing the system. More than three million citizens have acquired a digital identity and the number is growing progressively, updated in the section on [Progress made on the digital transformation](#) of the Agency for Digital Italy website.

Following completion of the SPID notification procedure, completed by the Agency with 2018 publication in the Official Journal of the European Union ([OJEU C318](#) and [OJEU C344](#)), starting 10 September 2019, the digital identity SPID may be used to access the network services of all the Union's public administrations.

6.5.2 Objectives

- Evolve the system to allow for economic sustainability and foster integration also with non-public suppliers of services
- Maximise the recovery of previous identities of the PA to foster switch off in the favour of SPID of authentication systems
- Start the Attribute Authorities (qualified attributes suppliers)
- Consolidate the system of integrated controls through SCIPAFI (databases for the prevention of fraud in consumer credit and identity theft)
- Update the technical rules of SPID
- Automate the processes to verify interoperability and commission the service providers

6.5.3 Action lines

LA38 - SPID Guidelines

Timing In progress

Players AgID

Description In order to foster the start of the process for the issue in accordance with Art. 71 of the CAD, AgID prepares and publishes, for consultation, Guidelines on the following matters:

- digital identities for professional use;
- user experience;
- signature pursuant to Article 20 of the Digital Administration Code;
- adhesion of the Attribute Authority;
- OpenID Connect.

Upon closing the consultation phase, the Guidelines will follow the issue methods envisaged by Article 71, paragraph 1 of the CAD.

Results Guidelines for the release of digital identities for professional use (June 2019).
 User experience guidelines (June 2019).
 Guidelines for the implementation of signature systems pursuant to Article 20 of the Digital Administration Code through SPID (June 2019).
 Guidelines for adhesion to SPID of the Attribute Authorities as qualified attribute authorities (June 2019).
 OpenID connect guidelines (June 2019).

Areas of intervention In the short-term, , impact on the PA and businesses (private service providers and identity providers).

LA39 - Activities following notification of SPID to the European Commission

Timing In progress
Players AgID, European Commission, Member States, PA
Description Recognition of the electronic identification system SPID by Member States and possibility of its use to access networked services of the PA.
Results SPID is enabled for use to access the on-line services of the PA within the European Union (October 2019).

Areas of intervention In the short-term, impact on the PA of the Member States and on citizens.

LA40 - Integration with digital identities at a European level

Timing In progress
Players AgID
Description The digital identities, notified in accordance with the eIDAS Regulation, will grant access to the services offered by all European Union Member States. Through the FICEP project, the first “Italian cross-border server” is being completed, which allows for the circularity of digital identities.
Results Commissioning of the FICEP hub.
 First report on the onboarding of public administrations and private individuals (by December 2019).

Areas of intervention In the short-term, impact on the European PA and citizens.

LA41 - Analysis of dissemination of SPID for the purposes of switch-off

Timing In progress

Players AgID

Description AgID develops a stability study of the SPID system in order to ensure its exclusive use as on-line service identification system, in accordance with Article 64 of the CAD.

Results Publication of the study relative to SPID stability for switch-off (October 2019).

Areas of intervention In the short-term, impact on the PA.

6.6 Electronic ID card

6.6.1 Scenario

The electronic ID card (CIE) is the digital evolution of the hard copy ID card: it allows for the certain proof of the identity of the holder, both in national territory and abroad.

The CIE can be used to allow for the network authentication by the citizen, aimed at using services supplied by the PA and public service providers.

As at 15/12/2018:

- more than 6.7 million cards have been issued;
- only 23 (out of 7954) municipalities are still unable to issue CIE. The percentage of municipalities able to issue CIE is therefore 99.7%, covering 98.7% of the resident population.

6.6.2 Objectives

- Complete deployment, making all municipalities able to issue CIE, including through the completion of multilingual formats
- Enable the issue of the CIE, including through the Consulates for Italians residing abroad
- Grant access with the CIE to on-line services and related eIDAS notification.

6.6.3 Action lines

LA42 - Issue of the CIE abroad

Timing	In progress
Players	AgID, Minister for the Interior, Ministry for International Cooperation and Foreign Affairs, Municipal Councils, IPZS
Description	Make the offices of some Consulates pilot able to accept CIE requests by Italians resident abroad.
Results	Issue of the CIE abroad in the pilot Consulates (from April 2019).
Areas of intervention	In the short-term, impact on the PA and citizens.

LA43 - eIDAS notification

Timing	In progress
Players	AgID, Minister for the Interior, IPZS
Description	Recognition of the CIE as an authentication tool for the networked services of the PA and other EU Member States. Preparation by AgID of the process envisaged for the necessary notification of the European Commission of the CIE system as electronic means of identification recognised amongst the EU Member States, as envisaged by Article 9 of the eIDAS Regulation and subsequent Executive Decision EU 2015/1984.
Results	Start-up by AgID of the process envisaged for the notification of the European Commission of the CIE system as electronic means of identification recognised amongst the EU Member States, as envisaged by Article 9 of the eIDAS Regulation and subsequent Executive Decision EU 2015/1984 (from April 2019).
Areas of intervention	In the short-term, impact on the PAs of the EU Member States.

LA44 - Access to on-line services with CIE

Timing	December 2019
Players	AgID, Minister for the Interior, IPZS
Description	Development of an infrastructure able to allow for the development of on-line services, including mobile, which use CIE as an identification system.
Results	Integration of the CIE as an identification tool in the on-line services of the PA (by December 2019).
Areas of intervention	In the short-term, impact on the PA.

6.7 National administrative procedure management system (SGPA)

The national administrative procedure management system (SGPA) is one of the essential platforms for achieving the objectives of digitisation, simplification and efficiency enhancing of the administrative action of the Public Administration, envisaged by the Digital Agenda for Italy and the CAD.

The system aims to guarantee uniformity and interoperability on a national level of the document flows associated with the administrative proceedings: its development should therefore be considered within a set of actions that envisage an increasing dematerialisation of administrative documentation, the dissemination of document work flow and management systems in the public administrations and the development of a national network of storage poles.

More specifically, document management of administrative proceedings guarantees that the entire life cycle of the document, from its production through to its storage, comes as part of a single dematerialisation model of proceedings, which will make it possible to prepare new communication and interaction methods with citizens and businesses.



Figure 6.4 - The system for managing the administrative proceedings of the PA: representation of the computerised document life cycle

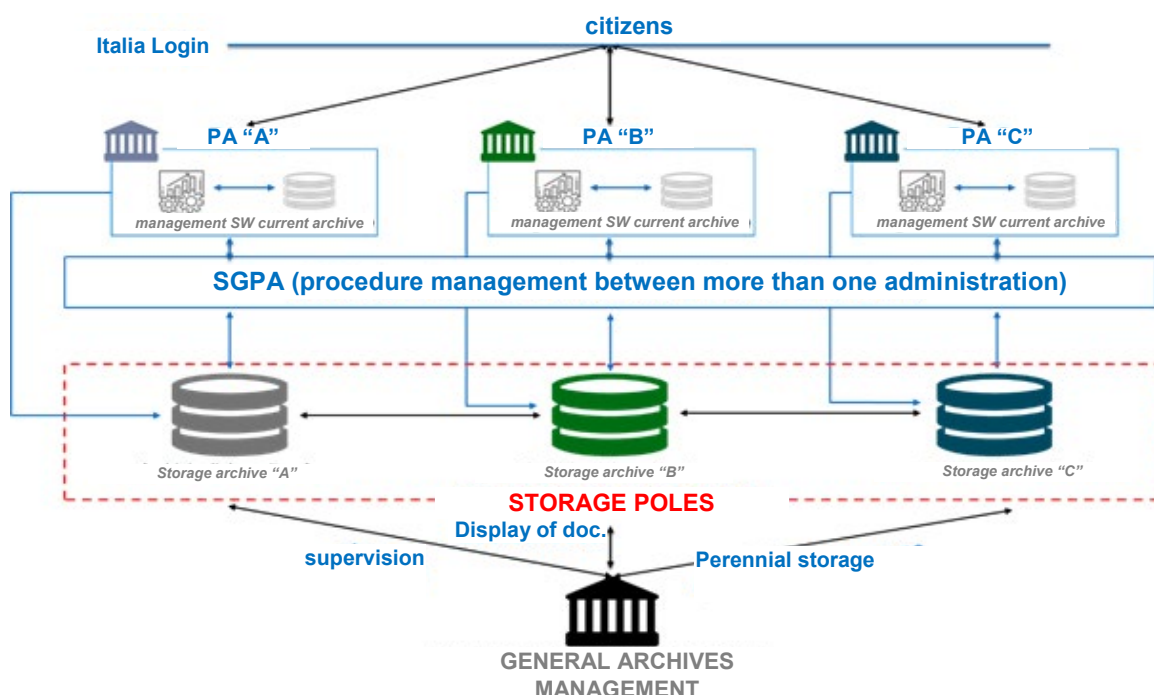


Figure 6.5 - The system for managing the administrative proceedings of the PA: overview architecture

6.7.1 Scenario

AgID is in fact proposing the evolution of the concept of document management towards a new Administrative Procedure Management System (SGPA), intended as the reference organisational and instrumental model for the entire PA Document System.

SGPA is developed through the construction of a layer of interoperability on a national level, on administrative proceedings, to be implemented through the definition of interoperability rules of document flows, with which the public administrations are called to comply. Once fully up and running, SGPA will make it possible to manage procedures, in particular those involving more than one PA, effectively and quickly, without delays or losses of information and with fewer requests made for information from citizens and businesses (once only principle). SGPA will also allow citizens and businesses to gain real time knowledge of the status of their proceedings and to quickly and easily recover documentation relating to old proceedings, including through a connection with the storage systems.

Despite the fact that AgID has implemented multiple actions in order to improve the dissemination and management of computerised documents in the public administrations, including the preparation of numerous technical rules and reference documents¹⁰, there is still a great deal to do in order to guarantee the interoperability of document flows at a national level.

AgID is today working on the update of the Guidelines for the preparation, management and storage of computerised documents and, in order to guarantee a better design of the SGPA platform, intends to start two study activities in the three years 2018-2020:

- **assessment of information and data managed by the PA document management systems**, necessary in order to identify the requirements relative to data types, information input and output of the main data flows managed within the

¹⁰ [Decree of the President of the Council of Ministers of 13 November 2014 - Technical rules on the preparation, transmission, copy, duplication, reproduction and time stamping of computerised documents;](#)
[Decree of the President of the Council of Ministers of 03 December 2013 - Technical rules on the IT protocol;](#)
[Decree of the President of the Council of Ministers of 03 December 2013 - Technical rules on the storage system;](#)
[Annex 1 to the Decree of the President of the Council of Ministers - Glossary and definitions;](#)
[Annex 2 to the Decree of the President of the Council of Ministers - Formats;](#)
[Annex 3 to the Decree of the President of the Council of Ministers - Technical standards and specifications;](#)
[Annex 4 to the Decree of the President of the Council of Ministers - Technical specifications of the archiving package;](#)
[Annex 5 to the Decree of the President of the Council of Ministers - Metadata;](#)
[Instructions for the production and storage of the daily protocol log;](#)
[Circular no. 60 of 23 January 2013 - Format and definitions of the type of minimum information and accessories associated with messages exchange between the public administrations;](#)
[Circular no. 62 of 30 April 2013 - Guidelines for the password generated electronically in accordance with Article 23-ter, paragraph 5 of the CAD; XML schemes of the electronically-generated password](#)

administrations and the methods used to manage and optimise the data for better transparency. Assessment will be carried out on a significant sample of both central and local administrations, so as to cover the different types of administrations to be integrated, in the future, into the system;

- **analysis of PA administrative proceedings and product data:** this is a detailed analysis of a sample of PA administrative proceedings, chosen from those of greatest interest in terms of administrative transparency for citizens and businesses. The analysis will identify the reference document flows underlying the proceedings examined, the administrations involved, the quantity and type of data (information and documents) exchanged by the administrations. Upon completion of this check, the basic criteria supporting preparation of the guidelines and technical rules of interoperability of document management systems will be defined, as envisaged in this Three-Year Plan.

6.7.2 Objectives

- Support a vision mainly focussed on transparency and the simplification of administrative proceedings
- Implement the once only principle in the public sector
- Encourage interoperability of document work flow and management systems in the public administration
- Encourage the dissemination of innovative solutions in the Public Administration
- Support a vision focussed on the citizens and businesses that leads to the development of services simplifying interaction with the public administrations, offering a single point of access to documentation for the user.

6.7.3 Action lines

LA45 - New Guidelines for the preparation, management and storage of computerised documents

Timing in progress

Players AgID, State-Regions Conference, Data Protection Authority, Central administrations involved

Description Through the detailed analysis of the current technical rules, the current Guidelines are updated and a single corpus completed that covers all aspects envisaged under Article 71 of the new CAD (formerly Italian Legislative Decree no. 217/2017) on the preparation, management and storage of the digital document. Preparation, consultation, approval and publication of the Guidelines (according to the institutional steps).

Results Guidelines for the preparation, management and storage of computerised documents (June 2019).

Areas of intervention In the short-term, impact on the PA and accredited keepers of records.

LA46 - Models for interoperability of PA document management systems

Timing from January 2019

Players AgID, Administrations, trade associations and industry consultants.

Description Definition, design and development of standard applications and models, compliant with Guidelines and rules of interoperability of the PA, which will be defined by AgID by 2019. The application components developed, once disseminated within the PA involved, will guarantee:

- the interoperability of the existing document management systems in the public administrations;
- the integration of the document management systems and storage poles, with advanced type search and monitoring functions.

These modules may be adopted in addition by administrations in order to speed up the all-digital management of the administrative document.

The aim is to allow citizens and businesses a rationalised access to the documents produced under the scope of such proceedings.

Results Development of interoperability modules (June 2020).

Areas of intervention In the short-term, impact on the PA and accredited keepers of records.

6.8 Storage poles

6.8.1 Scenario

The idea is that all public administrations will prepare and manage their own administrative documents throughout their life cycle, in an all-digital manner.

Documents, databases, e-mails, contributions from complex computer systems, the network and social networks will constitute a huge knowledge asset of the Public Administration, which is all electronic and which must be archived and stored in a completely different way to as is done today on paper: indeed, it is not possible to complete the dematerialisation process without using storage systems that can guarantee the authenticity of documents and their accessibility in the long-term, as envisaged by European Regulation 910/2014 (eIDAS).

The public administrations have the task of storing all documents, files and digital archives prepared under the scope of their administrative action, both as direct evidence of their action and for historic memory (permanent storage).

Digital storage, i.e. the activities aimed at protecting and keeping custody of document archives and computer data, is carried out through the use of record keepers accredited by AgID, public and private subjects specialised in the supply of storage services for the public administrations. As regards permanent storage, i.e. for historical memory purposes, administrations may contact storage poles, i.e. the National Strategic Poles that also provide storage services.

To date, the digital storage of Public Administration documents is only partially disseminated. Not all documents produced during the administrative activities of the PA are sent for storage and, at a national level, there is as yet no guarantee of interoperability between the different storage systems (keepers in fact use different archiving software and there is no common language that allows for the dialogue and exchange of information).

AgID is working on defining exchange rules for the interoperability of all storage systems on a national level and the design of a single point of access to all Public Administration documentation stored; to this end, in March 2018, the Central State Archives, the National Council of Notaries, the Ministry of Defence and AgID stipulated a specific collaboration agreement. The agreement aims to assure the sharing of experience accrued in matters of computerised document storage, trials of the exchange of storage packages, the definition of a reference model for a storage pole and, above all, the definition of rules for the interoperability of storage systems.

6.8.2 Objectives

- Define the exchange rules for the interoperability of accredited public and private keepers of records, through the definition of a logical network and technical or regulatory rules that allow for the connection of different storage systems and the exchange of packages between different systems
- Enable the management by storage systems of all possible types of documents and digital objects produced by the PA, including those classed as particularly critical both

in terms of data processing and national security, which therefore require specific solutions and attention

- Construct a single point of access to the computerised documents of the PA being stored, for AgID and the Central State Archives (ACS), which have the task of monitoring and inspecting the documentation stored and for citizens and businesses needing to access the documents stored by the PA on their behalf
- Enable the permanent storage of the memory of the national community and State, in accordance with the provisions of archiving standards

6.8.3 Action lines

LA47 - Project for the preparation of guidelines to interoperability between storage systems

Timing in progress

Players AgID, Agency for Defence Industries, National Council of Notaries, Central State Archives, General Archives Management

Description The players share the experience accrued in matters of the storage of computerised documents, with particular attention paid to methodological, organisational and technical solutions adopted, as well as to the analysis of the types of digital objects and documents (text, images, videos) produced and which must be stored by the PA (formats, security procedures, signatures, dematerialisation). A trial is carried out with the aim of identifying and analysing any problems in the transmission of storage packages by the parties and identifying the most suitable communication methods that can be adopted for communication between the various storage systems. Finally, the players define an architectural and functional scheme that can allow for permanent storage and rejection and control activities on files and documents to be stored.

The project will be developed over four phases of work:

1. identification of the solutions that can be adopted in order to guarantee interoperability and communication between storage systems;
2. definition of the most appropriate methods by which to guarantee the sending of the different types of computerised documents stored, in respect of the characteristics of quality, security, integrity and unchangeability;
3. identification of the technological-organisational characteristics of the network of storage poles and a point of access to the documents stored for the Central State Archives;

4. identification of rules for the interoperability and transferability of computerised documents between different storage systems, to be submitted for public consultation.

Results Publication, after public consultation, by AgID of the rules of interoperability for storage systems at a national level (December 2021).

Areas of intervention In the medium-term, impact on the PA.

LA48 - Project for the dematerialisation of PA documents

Timing in progress

Players AgID, PA

Description Promote the complete digitisation of the administrative activity through the progressive dematerialisation of current archives. Support administrations in identifying organisational models and solutions focussed on the complete digitisation of processes. The administrations notify AgID of the start and end of the dematerialisation process started within each Homogeneous Organisational Area (AOO). AgID publishes the first report at end 2021.

Results Dematerialisation of the current archives of the central public administrations: 40% of the PA have completed dematerialisation projects of current archives and therefore terminated lease contracts on spaces used to store hard copies. (December 2021).

Areas of intervention In the medium-term, impact on the PA.

6.9 Register of the Resident Population

The National Register of the Resident Population is the single central database of all citizens and residents of Italy. It contains the personal data, residential addresses and is the reference archive for the other PA systems of natural persons resident in Italian territory and Italian citizens resident abroad.

6.9.1 Scenario

The National Register of the Resident Population (ANPR), is the national database in which the municipal registry offices will gradually converge.

It is established at the Minister for the Interior, in accordance with Article 62 of Italian Legislative Decree no. 82/2005 (Digital Administration Code).

Italian Ministerial Decree no. 194/2014 establishes the requirements of security, functions for management of database-related requirements, services by which to ensure the integration with the various public administration computer systems, managers of public services and public companies, which, to this end, shall stipulate service agreements with the Ministry.

ANPR assures the database circularity, guaranteeing certainty and quality of the data for all public administrations. The availability of ANPR, as single database of the personal data of residents in national territory and Italian citizens resident abroad, makes it possible to create the national personal certification service, assuring its homogeneity for all those entitled.

The General Data Protection Regulation rules that all citizens shall have the right to easily access their own personal data as managed by the public administrations. ANPR makes this possible for the personal data known by the PA, through an on-line personal data record.

6.9.2 Objectives

- Implement the circularity of the record through the use of data present in ANPR by the public administrations, public service managers and public companies with the right to access ANPR data
- Make an access service available to all citizens, by which to access their own personal data (personal data record)
- Make digital services available for the personal data certification for all citizens

6.9.3 Action lines

LA49 - Promotion of record circularity

Timing in progress

Players Minister for the Interior, AgID, Sogei, PA, public service managers, companies controlled by the PA

Description The action line develops over two phases:

1. Definition of a model Service Agreement and facilitated process for stipulations, which indicates:

- the institution purpose for which access to ANPR data is requested;
- the technical-administrative means by which to gain access;
- the definition of the data service to which access can be gained.

A web system will be prepared to facilitate adhesion to the Service Agreement by those entitled.

2. Stipulation of the Service Agreements.

Results Model Service Agreement and process for stipulating Agreements (January 2019);

Stipulation of Agreements (from February 2019).

Areas of intervention In the short- and medium-term, impact on the PAs, Public Service Managers, companies controlled by the PA.

LA50 - Record certification and National database certification

Timing in progress

Players Ministry of the Interior, AgID, Sogei

Description ANPR allows all citizens to display, including through SPID, their own personal situation (record certificate) and that of his registered family, available for consultation via the web app made available at a national level.

ANPR makes it possible, including through the trust services envisaged by the European eIDAS Regulation, to guarantee the authenticity of the source, the development of a national on-line record certification service.

Results Availability of the on-line record certificate for citizens (January 2019).

Availability of certification of on-line personal data for citizens (December 2019).

Areas of intervention Record certificate: in the short-term, impact on citizens, local PAs
On-line certification: in the medium-term, impact on citizens, local PAs and professional orders.

CHAPTER 7. Ecosystems

The strategic model for the evolution of the Public Administration computer system, defined in the 2017 - 2019 Three-Year Plan, introduced the concept of the Public Administration “ecosystems”: sector-specific, homogeneous areas of intervention in which the action of the public administration is carried out (from health to agriculture, school and cultural heritage) an where services are supplied to citizens and businesses through digital systems.

The identification of the digitisation ecosystems of the Public Administration and support to their development through the simplification and re-engineering of processes, the definition of guidelines, rules and conventions, the identification of reference standards and models, the preparation of competences and specific professionalism, the adoption of innovative technological systems and infrastructures, is a necessary step in order to support the country's growth and digitisation and accordingly guarantee the interoperability of the platforms and services of both the Public Administration and private individuals managing or developing public services.

The application to the Public Administration of a model based on ecosystems can facilitate the integration of the various public administrations or between the Public Administration and businesses, thereby fostering the collaboration and joint supply of public-private services. Through the adoption of ecosystems, it is also possible to support interaction between private citizens, regulated or optimised by the public, so as to foster growth in those market segments connected with digital (start-ups, innovative companies, etc.): the data produced by the ecosystems and the interoperability of the various areas will, in fact, allow for the development of new types of innovative services for citizens, collaboration between different players and the development of added value systems.

The digital ecosystems of the Public Administration define the reference processes involving the various ecosystem players, both public and private, the applications and any services present in the catalogue an identify the general rules for access to data and the exchange of information and documents within such processes, including any reference vocabularies. The ecosystems also guarantee the adoption of the Model and the rules of interoperability defined by AgID, both within the individual ecosystem and in relations enjoyed by the latter with other ecosystems, insofar as the Interoperability Model represents the common language that enables communication and interoperability between the ecosystems of the Public Administration.

Therefore, in the Public Administration ecosystems:

- operators are part of dynamic networks of collaboration that, as necessary, involve all levels: public administrations, businesses, universities, centres of competence and service, citizens, communities, etc.;

- reference services and projects are identified, along with the data to be produced, vocabularies and ontologies of reference;
- new products and services are developed or existing products or services are renewed, through the adoption of digital platforms that enable the exchange of data and sharing of services between the various players involved;
- various innovative technologies are used, in order to improve innovative and simplify the supply of services to citizens and businesses;
- dialogue is fostered between public administrations and the circulation of data, to reduce the load of requests for information towards circulation (once only principle);
- [new ICT professionals](#) are introduced, with specific competences in terms of the digitisation of the public administration.

In line with the provisions of the Interoperability Model, within each ecosystem, the following are therefore defined:

- specific reference technological standards;
- sector APIs, collected into a specific catalogue;
- reference interfaces for all administrations belonging to the ecosystem;
- reference ontologies, vocabularies and glossaries;
- specific interoperability profiles for the ecosystem.

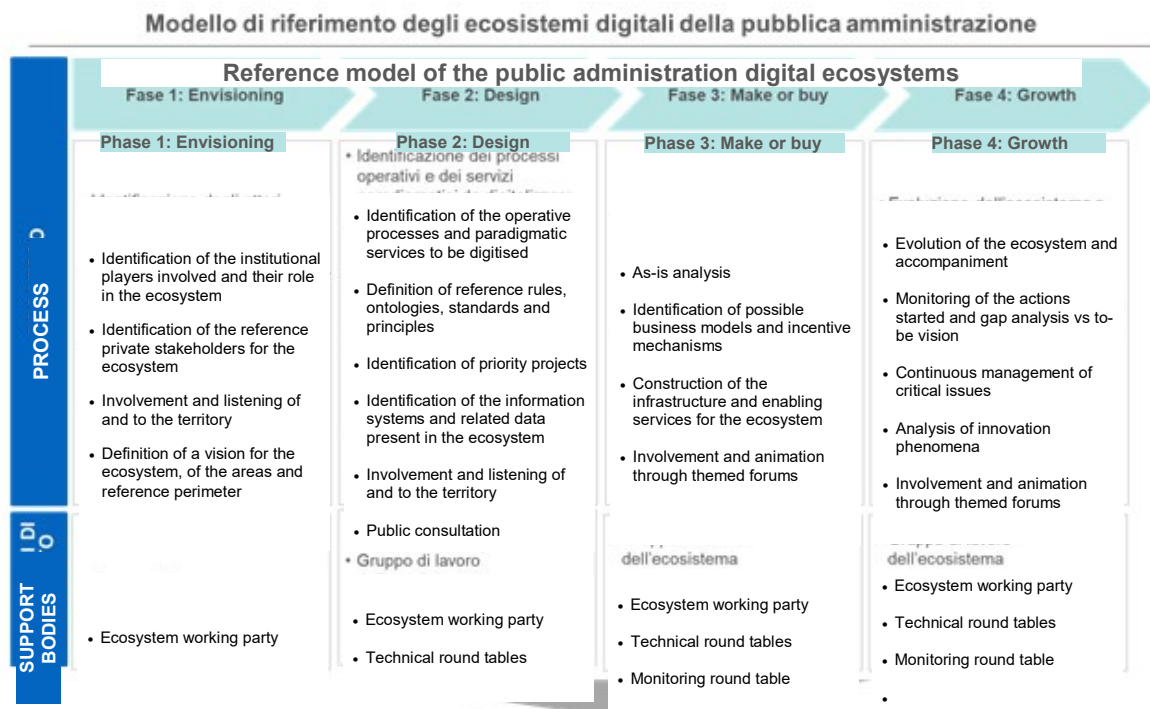
These components, designed to guarantee interoperability within the individual ecosystem, must be connected and consistent with the transversal Interoperability described in the AgID Three-Year Plan, so as to also enable interoperability and the sharing of data by different ecosystems and, more generally, interoperability between public administrations on a national level. In thus doing, the national digital ecosystem is developed for citizens and businesses.

7.1 Scenario

All public administrations and, in particular, the central administrations identified as the leaders of the ecosystems, have the task of collaborating in order to guarantee the development of the Public Administration ecosystems.

The leading administrations, in particular, have the task of defining the perimeter of the ecosystem, of identifying and involving the public and private reference stakeholders and supporting the development of the PA ecosystems; this important task can be carried out through the application of a reference model that describes a process for the construction and

evolution of the ecosystems, comprising four phases of work (envisioning, design, make or buy and growth).



Linee guida, standard di riferimento, modelli di business, ontologie, community

Guidelines, reference standards, business models, ontologies, community
Figure 1.1 - Reference model of the public administration digital ecosystems

A brief description is given of the four phases of the reference model of the digital ecosystems:

1. **Envisioning:** the phase during which the vision of the ecosystem is defined, whereby the players to be involved are identified along with their role and during which the areas and fields of priority action are defined. During the initial phase of development of an ecosystem, it is essential to establish a working party, which ensures the listening and identifies the needs of all players to be involved in the development and use of the ecosystem (PA, citizens, business, standardisation subjects, ICT associations, open data communities, consultancy firms, etc.) through hearing them, public consultation, etc. An ecosystem must, in fact, in order to be defined as such, immediately concretely involve the stakeholders operating within the ecosystem and which develop the relevant services, according to a co-design approach.
2. **Design:** phase during which the processes and paradigmatic services to be digitised are identified, the platforms and information systems present in the ecosystem and to be developed are defined, the reference projects identified, to be launched or already

existing, with a view to optimising the initiatives and investments already made. This phase is also the point where the data is defined as needing to be managed and shared within the ecosystem and specific working tables are started to identify and define standards for the development of projects and services and definition of rules for data interoperability. During this phase of the process, the involvement of and listening to stakeholders of the ecosystem, launched during the envisioning phase, continues and extends; the output of this phase of work should be a document setting out the vision, perimeter and strategy for the development of the ecosystem, to be submitted for public consultation for at least 60 days.

3. **Make or buy:** during this phase, the infrastructures are constructed, the enabling platforms and the ecosystem services. In this phase, it is best to identify possible incentive mechanisms by which to foster the development and adoption of digital services by citizens and businesses as well as business models that can foster the development by private individuals and joint public-private development of services. The development of the ecosystem projects must be pursued in line and in harmony with the approach described in the AgID Guidelines for interoperability, for the classification of SaaS cloud services, so as to guarantee input to national catalogues (e.g. catalogue of APIs, catalogue of qualified services, etc.). The ecosystems should also have predisposed mechanisms for the continuous listening to the market and citizens, as well as animation and involvement of the reference communities, such as, for example, themed forums.
4. **Growth:** this phase accompanies the growth of the ecosystem through the monitoring of design and results, the identification of any restrictions or limitations to development or regulatory requirements. During this phase, moreover, it is useful to study the innovation phenomena that may impact the future evolution of the ecosystem (e.g. introduction of new technologies, new types of services, etc.) and continue listening and involvement through themed forums.

The process described can be applied to ecosystems cyclically over the years or within shorter reference periods, according to the evolution of the project and priorities identified; therefore, the actions laid out over the next paragraph envisage development times that are consistent with this approach. Through its competence centre on ecosystems, AgID supports the leading administrations in the development of ecosystems through the application of the model explained.

As mentioned previously, in order to guarantee a quicker, easier development of ecosystems, as well as a more effective governance and support to the administrations, the leading partner administrations will need to establish an ecosystem working party with tasks of providing strategic governance, listening, steering and coordination. If appropriate, technical working

tables can be established, places for technical discussion and a comparison of notes, of which one dedicated to monitoring the main projects envisaged and started in the ecosystem.

The working parties of each ecosystem have the task of starting actions to involve and animate the territorial communities and innovation poles present in the territory, exploiting competences present in the incubators, in small and medium enterprises (SMEs), in training and research centres (e.g. universities and technical poles) so as to ensure that the development of the digital ecosystem also generates an economic inflow to the country system.

In 2017, the administrations started the activities on the 13 ecosystems described in the Three-Year Plan; the table below gives, for each of the 13 ecosystems:

- an updated description of the perimeter of intervention of each ecosystem and the key associates projects;
- a list of the administrations to be involved in the development of the ecosystem with an indication of the lead partner administration at the level of central administrations (in bold print). The lead partner administration of each ecosystem has the task of guiding the development of the ecosystem through the establishment of the working party and technical tables, of planning activities and the objectives to be achieved, of involving the other administrations and the private individuals involved by the ecosystem development;
- a summary indication of the state of development achieved by each of the 13 ecosystems: the photograph shows a very different picture with some ecosystems very far forward in the development process and others as yet during the launch phase. As a rule, the ecosystems that have historically been more dynamic or benefit from working tables described by a rule (e.g. Healthcare) are further on.

Ecosystem	Description of the ecosystem	Main administrations involved	Ecosystem status
Healthcare	The ecosystem includes the development of healthcare services for citizens, professionals and healthcare facilities, as well as the analysis of medical data for research and governance	Ministry of Health, Ministry for the Economy and Finance, ISS, Regional	The ecosystem is at a very advanced stage of development. The

Ecosystem	Description of the ecosystem	Main administrations involved	Ecosystem status
	<p>purposes. At the heart of the ecosystem is the electronic health record (FSE) to which the digital services are connected and which improve the use of treatments, diagnosis and assistance services and remote medical consultation.</p>	<p>Authorities, Hospitals, AgID, zooprophyllactic institutes, AGENAS, AIFA, INAIL</p>	<p>projects are defined and the administrations are collaborating towards the development of the ecosystem</p>
<p>Public finance</p>	<p>The support structure of the ecosystem consists of all the systems that manage the whole process, which ranges from scheduling and planning of the PA needs through to the management of the purchase and negotiation procedures, the execution of the contracts and the related invoicing and payments, as well as the management of collections made from various different sources (e.g. concessions, monopolies, etc.) or payments made by treasuries of all the public administrations. It involves systems such as the telematic purchasing platforms, the Electronic Invoice Exchange System, the BDAP, the SICOGE (System for the integrated management of economic and financial accounting), the IGRUE (control and monitoring system), SIOPE (cash flow management) and the PagoPA platform.</p>	<p>Ministry for the Economy and Finance, Minister for the Interior, Revenue Agency, Customs and Monopolies Agency, Public Property Agency, Ministry for Infrastructures and Transport, Regional Authorities, Provincial Authorities, Municipalities, ANCI</p>	<p>The lead partner administration has launched several projects, on which the administrations concerned are working</p>
<p>Development and sustainability</p>	<p>The ecosystem works for the national level consolidation of the services to businesses (SUAP, SUE, etc.) through the implementation of the services supplied by the PA, with specific reference to the administrative proceedings involving the economic and productive activity and the input of data into the Business information file and the Business Plan 4.0. Another area of reference for the ecosystem regards the part of the environmental services, relative in particular to the management of the waste cycle and environmental assessments (EIA and SEA, etc.).</p>	<p>Ministry of Economic Development, Ministry for the Environment and Territorial and Sea Protection, Ministry for the Economy and Finance, Ministry of Education, University and Research, ENEA, ANPA, ARPA, UnionCamere, Regional Authorities, Provincial Authorities, Municipalities, ANCI</p>	<p>With the support of AgID, the lead partner administrations are launching the ecosystem</p>
<p>Justice</p>	<p>The ecosystem is hinged around the different types of telematic process (e.g. civil, criminal, tax) with the related support systems to</p>	<p>Ministry of Justice, Ministry for the Economy and Finance,</p>	<p>The lead partner administration has launched various</p>

Ecosystem	Description of the ecosystem	Main administrations involved	Ecosystem status
	magistrates and lawyers (such as, for example, the digitised hearings classroom and digital desk) and the establishment of access points, i.e. technological-organisational structures supplying enabled subjects with connection services to the computer systems involved	INAIL, State Advocacy, Court of Auditors, Council of State, Court of Cassation, CSM	projects. Initiatives are in progress with the administrations involved for the organisation of the various infrastructures
Cultural heritage and tourism	The ecosystem refers to the development of digital services for the optimisation and promotion of the cultural and tourism sector. At present, collaborations are in progress between AgID and MCCHT in various areas such as museums, cultural digitisation plan, digital infrastructures for tourists	Ministry for cultural heritage, Ministry for Agricultural, Food and Forestry Policy and Tourism , Minister for the Economy and Finance, Regional Authorities, Provincial Authorities, Municipalities, ANCI, ENIT, EPT	With the support of AgID, the lead partner administration is defining the reference perimeter and launching development of the ecosystem
Welfare	The Welfare ecosystem refers to three macro areas relating to social policies, welfare policies and labour and employment policies for which operations take place to develop digital platforms that can simplify the supply of services to people and families in need, in difficulty or socially excluded, as well as for workers and the unemployed	Ministry of Employment and Social Policy , Minister for the Economy and Finance, Ministry of Education, University and Research, INPS, INAIL, Ministry of Families and for Disabilities, Regional Authorities, Provincial Authorities, ANCI, Municipalities, COVIP	Being launched
Schools	The School ecosystem is linked to the development and innovation of digital, cultural and organisational teaching in schools, using the tools of the National Digital School Plan to develop innovative schools and poles for children that take into account new teaching methods and school administrative systems that are simpler and better computerised.	Ministry of Education, University and Research , Schools (public and recognised), Regional Authorities, Provincial Authorities, Municipalities, ANCI	Being launched

Ecosystem	Description of the ecosystem	Main administrations involved	Ecosystem status
Further education and research	The ecosystem refers to the dissemination of platforms and services that can make the university system more competitive and appealing, as well as the development of projects for the support of scientific research (e.g. single database of research, digital library, innovation laboratories, etc.)	Ministry of Education, University and Research , University System and Superior Research Institutes, CNR	Being launched
Rescue, security and defence - Legality	The ecosystem refers to initiatives to modernise, renew and technologically adjust the Military Tool, including through collaboration with universities and industries, as well as initiatives for the security of the territory and coasts, IT security and cybersecurity	Ministry of Defence, Ministry of the Interior , Ministry for the Economy and Finance, Ministry for Infrastructures and Transport, Ministry for Agricultural, Food and Forestry Policy and Tourism	Being launched
Logistics and infrastructures - Mobility	The Infrastructure and logistics ecosystem ensures the renewal and strengthening of infrastructures for mobility and transport, both on a national and local level, on road, rail and by sea, as well as initiatives for urban requalification, through potential that stems from digital innovation	Ministry for Infrastructures and Transport , Ministry for the Economy and Finance, Regional Authorities, Provincial Authorities, Municipalities, ANCI, ACI, ANSF	Being launched
Communication	The ecosystem refers to the development of electronic communication services and infrastructures of radio broadcasting and postal dissemination, as well as to the reduction of electromagnetic pollution and programmes to guarantee broadband and ultrabroadband connectivity	Ministry of Economic Development , AGCOM, Ministry for Infrastructures and Transport, Ministry for the Economy and Finance	Being launched
Agriculture	The Agriculture ecosystem refers to the initiatives for the innovation and digitisation of services to simplify agricultural policy, both administrative and process, and promote “made in Italy” and national tourism	Ministry for Agricultural, Food and Forestry Policy and Tourism , Minister for the Economy and Finance, Regional Authorities	Being launched

Ecosystem	Description of the ecosystem	Main administrations involved	Ecosystem status
Italy in Europe and worldwide	The ecosystem refers to European and international cooperation, the development and support of businesses and Italian citizens abroad and the promotion of international security, through research and innovation and the digitisation of services	Ministry for Foreign Affairs and International Cooperation, Ministry for European Affairs, Ministry for the Economy and Finance, Ministry for Infrastructures and Transport, Ministry of Economic Development	Being launched

Table 7.1 - The 13 ecosystems identified

In short, as regards the actions for which the administrations are responsible, all public administrations cooperate towards the development of ecosystems involving them; the lead partner administrations of ecosystems, with the support of AgID, have the task of convening the ecosystem working parties, defining any technical working tables and fostering:

- the definition of the ecosystem reference perimeter;
- the involvement of all public and private stakeholders relating to the ecosystem;
- the definition of the specific guidelines for the ecosystem;
- the definition of shared, transparent rules for the function of the ecosystem and adoption of interoperability standards of data and services that enable the exchange and communication between different systems and solutions, so as to implement integrated services and limit the requests made for data from citizens and businesses;
- the identification of innovative cloud-based services that can optimise qualified SaaS services, in line with the AgID guidelines for the qualification of the Cloud Service Provider for the PA and qualification of SaaS services for the PA cloud;
- the use of the enabling platforms described in the Three-Year Plan;
- the use of innovative solutions, potentially through procurement platforms for innovation supplied by AgID, ensuing from the open innovation activities of the PA (e.g. AI task force, emerging technologies, etc.);
- the identification of minimum sets of information to be produced and made available to users of the ecosystems and the definition of reference vocabularies and ontologies;
- the definition of reference databases, rules for inputting into them and the implementation of communication mechanisms with the National Data Digital Platform (PDND) described in paragraph 5.4. It is in fact important, in each ecosystem,

to develop technological architectures that can collect, organise in a system and display the data relating to the services of greatest relevance with open data format and interoperability, so as to create federal ecosystems that can optimise the contributions made by all chain players (public and private) and enable the integration of applications.

The Agency for Digital Italy will support the administrations in starting up and developing the ecosystems, through:

- the definition of the reference model for the development of ecosystems and definition of Guidelines, standards of interoperability and technical rules useful to the design and construction of support infrastructures of digital ecosystems;
- the preparation of enabling platforms as described in the Three-Year Plan and support to the administrations present in the various ecosystems for their adoption;
- the definition of Guidelines for the development and qualification of digital services based on a cloud logic in support of the ecosystems;
- the development of actions assisting administrations through the identification of a specific competence centre, with tasks offering support in the definition and development of digital transformation routes;
- the preparation of monitoring dashboards, centrally-defined tools for data collection and the measurement of impact indicators (DESI), results indicators (Digital Growth) and expense (linked to the use of funds);
- the flanking of the lead partner administrations in the start-up of ecosystems and the identification of any development opportunities at launch.

7.2 Objectives

- Support a vision focussed on the citizens and businesses for each ecosystem, which leads to the development of services simplifying interaction with the public administrations, offering single points of access for the user
- Standardise the approach to the development of services of the Public Administration between the various ecosystems so as to foster the standardisation of services offered

to the citizen. These services must be simple to use, based on attention to security and the interoperability of data and applications

- Encourage the interoperability of the public administrations' systems as a necessary condition by which to increase the effectiveness and efficiency of public services and administrative proceedings involving more than one administration (e.g. the telematic conference of services)
- Implement the once only principle in the public sector
- Foster the dissemination of innovative solutions in the Public Administration, including through the procurement platform for innovation supplied by AgID
- Involve all those concerned by each ecosystem (public administrations, businesses, universities, centres of competence and service, citizens, etc.) in dynamic collaboration networks, to capitalise on the experience accrued by the various subjects and optimise best practices
- Foster the development of new competences in terms of the digitisation of the Public Administration, through the involvement of universities and research entities and the introduction of new professionals

7.3 Action lines

The strategy aims to foster the start-up of ecosystems of the public administration through the convening of specific working parties for the application of the reference model. The aim is to start, during the first year of reference of this Plan, the actions described below on at least four "priority" ecosystems:

1. Public finance ecosystem;
2. Development and sustainability ecosystem;
3. Cultural heritage and tourism ecosystem;
4. Welfare ecosystem.

Activities relating to the Healthcare ecosystem also continue, which has already been launched and is at an advanced stage of development.

LA51 - Convening of the ecosystem working parties and definition of the technical round tables

Timing From January 2019

Players Lead partner administrations, AgID

Description Envisioning phase - For each ecosystem, the lead partner administration establishes the working party, involves the reference stakeholders for the

ecosystem (through, for example, hearings) and, having gathered their needs, defines the reference perimeter of the ecosystem and describes its vision, with priority interventions and projects. The working parties also define any technical tables necessary to the ecosystem development.

Results With the assistance of AgID, the lead partner administrations establish the working parties for at least 4 ecosystems: Public finance, Development and sustainability, Cultural heritage and tourism, Welfare (by December 2019).

Areas of intervention In the short-term, impact on the lead partner PA and stakeholders of the ecosystem.

LA52 - Ecosystem designs

Timing From January 2020

Players Working parties and technical tables of the ecosystems

Description Design phase - The working parties and technical tables, by involving the various stakeholders concerned, identify the priority services and projects to be developed to the benefit of the citizens and businesses, any projects that already exist and need to be integrated into the ecosystem design and the databases and information systems to be connected and correlated. The output of this phase of the work must be a document setting out the vision, perimeter and development strategy of the ecosystem, to be submitted for public consultation for at least 60 days.

Results The working parties of priority ecosystems each produce a document setting out the vision, perimeter and development strategies of the ecosystems, to be submitted for public consultation (June 2020).

Areas of intervention In the short-term, impact on the PAs involved and stakeholders of the ecosystems.

LA53 - As-is analysis of the ecosystems

Timing From June 2020

Players Working parties and technical tables of the ecosystems

Description Make or buy phase - The working parties and technical tables foster and support the development of the projects, study incentive mechanisms to use the digital services and establish themed forums to listen to the market and citizens. They define and share a method for monitoring the actions started.

Results The ecosystem working parties monitor development of the ecosystem starting from the as-is situation, agreeing on how monitoring will take place. The ecosystem working parties also start themed forums (December 2020).

Areas of intervention In the short-term, impact on the PAs involved and stakeholders of the ecosystems.

LA54 - Assistance with ecosystem development

Timing From January 2021

Players Working parties and technical tables of the ecosystems

Description Growth phase - The working parties and technical tables of the ecosystems assist with and monitor development of the ecosystems and the various projects started and continue to listen and ensure involvement through the themed forums.

Results The ecosystem working parties start assistance actions and monitor development of the ecosystems (December 2021).

Areas of intervention In the short-term, impact on the PAs involved and stakeholders of the ecosystems.

Focus. The digital ecosystem of Italian museums

Thanks go to the Directorate General of Museums of the Ministry of Culture and Cultural Heritage for its contribution towards the preparation of this focus point.

The MiBAC, lead partner administration of the Cultural heritage and tourism ecosystem, through the work of the Directorate General for Museums and with the collaboration of AgID, has, during the last year, started the construction of the digital ecosystem of Italian museums, a “sub-ecosystem” falling within the scope of the broader Cultural heritage and tourism ecosystem.

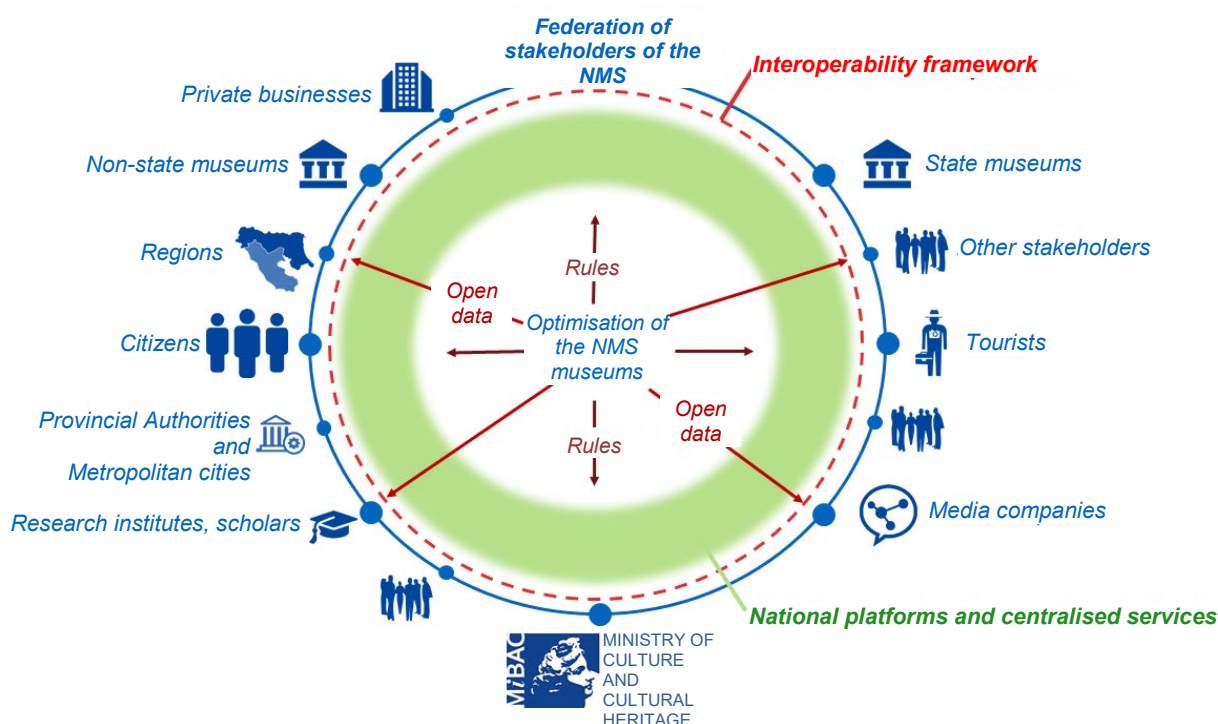


Figure 7.2 - The digital ecosystem of Italian museums

The ecosystem is being created with the reference model of the PA ecosystems: during the last year, the working party was in fact established involving the main reference public and private stakeholders, of the National Museum System; the working party then defined a reference perimeter and vision, analysed the as-is situation and identified some priority projects on which to concentrate the action to be taken.

Through the signing of a specific memorandum of understanding under the scope of the Italia Login project, AgID takes part in the working party for the digital ecosystem of Italian museums, flanked the Directorate General of Museums in defining the vision and identifying the reference projects to be started and is collaborating on the drafting of the Three-Year Plan for the digitisation of museums.

At the heart of the digital ecosystem of museums is the development of the National Museum System (NMS) Integration Platform, a tool that will enable the interoperability and exchange of data between all Italian museums on all levels (state, regional, private, ecclesiastical) and the Directorate General of Museums, which will allow new digital services to be offered to tourists and all stakeholders involved in the ecosystem. AgID is flanking the MCCHT in the design and development of the platform under the scope of said memorandum of understanding.

CHAPTER 8. Cyber security

At this historic point in time when the cybernetic threat grows constantly in both quantity and quality, and the IT and telematic services supplied by the Public Administration become increasingly crucial to the function of the country system, cyber security plays a key role as it guarantees not only the availability, integrity and confidentiality of the information of the Public Administration Information System, but also the resilience of the administrative machine as a whole. It is also directly linked to the principles of privacy envisaged by the legal system.

Current rules¹¹ grant AgID an important mandate in the implementation of technical and organisational initiatives aimed both at improving the awareness of the Public Administration in regard to the threat and increasing its capacity to prevent, protect against and respond to incidents. More specifically, the recent 2017 edition of the National Plan summarises this extensive mandate, assigning AgID the task of *“laying down guidelines, technical rules and recommendations on cyber security and the homogeneity of standards, to ensure the technical quality and security of public information systems and their interconnection networks and to monitor the ICT plans of the public administrations”*. AgID pursues this mandate both directly and through CERT-PA, a structure active since 2013 which, in 2017, was specifically strengthened both in terms of staff and technical tools.

Taking into account the indications given in the Strategic Framework and the National Plan, the Three-Year Plan has identified the rationalisation of ICT resources described in chapter 3 (“Infrastructures”) as one of the main approaches by which to increase the overall level of security level of the administration through a reduction of the “surface area” exposed to cyber-attack. This is, in fact, one of the most critical technical aspects of those identified in the *“Italian Cyber Security Report 2014”*. Another critical aspect that emerged from the report is the lack of awareness in the public administrations of the threat and the absence of local organisational structures that can effectively prepare for and respond to incidents.

On this front, AgID operates both through awareness-raising by CERT-PA, and through the publication of guidance and operative guidelines (guidelines, technical rules) aimed at increasing the awareness and capacity of defence of the administrations concerned.

¹¹ In particular: the National Strategic Framework for security of cyberspace and the related National Plan for cybernetic protection and IT security of 2013, as well as the Directive of 1 August 2015 of the President of the Council.

The activities managed by AgID are grouped into the following areas:

- CERT-PA, which includes the activities carried out by CERT-PA (Computer Emergency Readiness/Response Team, in support of the Public Administration computer systems, which operates within the AgID and which supports the public administrations in preventing and responding to IT security incidents of the domain comprising the public administrations;
- rules and regulations, which include the issue of standards, technical rules, guidelines and reference documents on aspects of IT security (e.g. minimum ICT security measures for public administrations).

8.1 Scenario

CERT-PA has been operative at AgID since 2013, offering accredited public administrations:

- analysis and guidance services, aimed at supporting the definition of security management processes, the development of methods, the design of processes and measurement metrics for the governance of cybernetic security;
- proactive services aiming to collect and process significant data in terms of cybernetic security, the analysis of threats, the issue of bulletins and security warnings, the implementation and management of information databases;
- reactive services, aiming to manage security alarms, support security incident resolution and management processes within the domain of the PA;
- training and communication services to promote the culture of cybernetic security, fostering the degree of awareness and competence within the public administrations, through the sharing of information relative to specific events in progress, new risk scenarios or specific information security matters.

Whilst awaiting issue by the Department of Public Function of the Technical Rules for the ICT security of the public administrations proposed by AgID, considering the consequent urgency as a result of the evolution of the cybernetic threats on the international scene and, in particular, in regard to the Public Administration, AgID has developed the document of [Minimum measures for ICT security of the Public Administrations](#), which supplies timely indications on how to achieve the pre-set security levels, starting from a minimum, which is compulsory for all.

This document was issued with Circular no. 2 of 18 April 2017, published in the Official Journal (general series) no. 103 of 05 May 2017 and therefore became a mandatory regulatory reference for all administrations, which need to guarantee conformity by 31/12/2017.

In 2017, through CERT-PA, AgID launched a project for trialling operating procedures for the automatic exchange of information (indicators of compromise) between the security structures through STIX and TAXII protocols, by means of platforms for the collection, archiving, distribution and sharing of indicators of cyber security and threats relative to the analysis of cyber security incidents. This trial, which includes two working parties dedicated respectively to technical aspects and the definition of a specific taxonomy, aims to produce the technical and organisational specifications that will be issued as standards for the development of a national automatic exchange system of qualified indicators of compromise between accredited operators.

In 2017, through the CERT-PA, AgID further developed the National Vulnerability Database, managed through the Infosec Platform. This latter was strengthened and enriched with additional functions as well as, on a trial basis, made available to all administrations for consultation only. The access statistics shows how Infosec had rapidly become a reference technical platform for the national and international community of analysts, highlighting a significant, ever-greater number of accesses from abroad (the monitoring of cyber security in the PA is available from the section on [Progress made on the digital transformation](#) of the AgID website).

8.2 Objectives

- Define the security profiles of the ICT components of the Public Administration and, following a specific risk analysis, supply the technical and regulatory references that the public administrations are to adopt Failure to implement the security profiles may, proportionally to the type of breach, also result in the need to interrupt supply of the services connected
- Offer the public administrations support with the prevention and treatment of cyber security incidents
- Carry out assessments and security checks in order to assess the application of the cyber security rules identified by the public administrations
- Prepare and publish a standard organisational model for the development of “proximity CERT” i.e. level two CERT, both “horizontal” (territorial) and “vertical” (themed or sector-related), which will constitute the regulatory reference for any establishment of such structures acting as hubs between CERT-PA and the local administrations
- Prepare and publish the national standard for the automated exchange between accredited operators (CERT, security structures) of security information and qualified indicators of compromise by means of STIX and TAXII protocols, using platforms for

the collection, archiving, distribution and sharing of cyber security indicators and threats relative to the analysis of cyber security incidents and the analysis of malware and adopting the specifically-defined taxonomy

- Further strengthen the National Vulnerability Database and related supporting IT tools, making more extensive functions available to administrations and researchers for support with analysis and research.

In order to achieve the Plan objectives, AgID and CERT-PA will:

- issue guidelines aimed at increasing the level of awareness and protection of the Public Administration;
- issue reference technical standards and rules that the administrations shall apply to raise the level of preparedness and response to cybernetic incidents and also strengthen the global cooperation between the structures aimed at protecting the national cybernetic space. These include:
 - the technical standard for the automatic exchange between accredited operators of qualified indicators of compromise, using the protocols STIX and TAXII and the taxonomies developed specifically;
 - the standard organisational model for the development of “proximity CERT” (territorial or themed) by the public administrations concerned.
- monitor the level of application of the Minimum ICT security measures by public administrations, continuing to supply the administrations interpretative support and a guide to the application and assessing the opportunity of ensuring their potential update according to sector evolutions;
- further increase the operative capacity of the CERT-PA both in terms of staff and technical infrastructures and processing resources, also in view of the compliance necessary following the incorporation by Italy of the NIS Directive¹²;
- further develop the Cyber Security Knowledge Base, which brings together information about security events that have taken place over time within the PA;
- further develop the National Vulnerability Database (NVD), the catalogue of IT vulnerabilities that supplements the catalogues available internationally (e.g. MITRE) with the vulnerabilities found on the systems developed nationally;

¹² At a European level, we should mention the draft “Cybersecurity Act” regarding ENISA, the EU Cybersecurity Agency, and the creation of a European certification framework for ICT security products (COM (/2017) 477), still being negotiated.

- continue to make tools and information readily available, as are useful to the prevention of and response to potential cyber-attacks;
- continue to provide the administrations with support in preparing responses to incidents;
- continue to provide the administrations with support and investigate the function of monitoring the cybernetic space of the public administrations, also be activating additional collaborations with national and international reference communities, over and above those already in progress;
- continue to provide the administrations with support in managing incidents and ensuring subsequent restoration.

8.3 Action lines

LA55 - CERT-P - Extension of operative capacity

Timing In progress

Players AgID

Description CERT-PA, which has been operative since 2013, will progressively increase its operative capacity, strengthening the ICT infrastructure that supplies the basic services and enhancing the first computer system on cyber threats (the Cyber Security Knowledge Base), also through the implementation of [Infosharing CERT-PA](#) and National Vulnerability Database (NVD) solutions.

Results Extension of the constituency, autonomous management of the infosharing platform by the accredited administrations. Establishment of the NVD by means of the Infosec Platform.

Areas of intervention In the short-term, impact on the PA.

LA56 - CERT-PA - Infosec Platform

Timing June 2019

Players AgID

Description CERT-PA redesigns and makes available the Infosec Platform in order to offer highly technical support to security analysts. The platform will be the technical-operative and information point of reference for all PAs.

Results Platform release (July 2019).

Areas of intervention In the short-term, impact on the PA.

LA57 - Adjustment of the PAs to the automated IoC transmission standards

Timing	In progress
Players	AgID, PA
Description	<p>Definition of standards for the automated transmission of the Indicators of Compromise (IoC), issue of the guidelines to the architectural model for the automated transmission of the IoCs.</p> <p>In order to adhere to the architecture for the automated transmission of the IoC, the PA adopt the standards issued and prepare a plan for compliance and provide the services in respect of the Guidelines.</p>
Results	<p>Issue of standards and guidelines to the architectural model for the management of the automated transmission of the IoC (September 2019).</p> <p>Administrations compliance plan (December 2019).</p>
Areas of intervention	In the short-term, impact on the PA.

LA58 - Development of the national platform of the PAs for the automated transmission of the IoC

Timing	In progress
Players	AgID, PA
Description	AgID trials, for the public administrations, a national automated transmission platform of the IoC.
Results	In order to be able to use this platform, the PA adopt the standards issued and prepare their infrastructures to use the platform according to the standards and guidelines issued by AgID (July 2019).
Areas of intervention	In the short-term, impact on the PA.

LA59 - Reporting of cyber incidents to the CERT-PA

Timing	In progress
Players	PA
Description	All public administrations are required to monitor and promptly report to the CERT-PA all cyber incidents and situations of potential risk, using the communication channels reported in the dedicated section of the AgID website .

For all subjects accredited on Infosharing CERT-PA, a specific reporting function is available.

Results recurring activity.

Areas of intervention In the short-term, impact on the PA.

LA60 - Issuing of cybernetic security guidelines for the PAs

Timing In progress

Players AgID, PA

Description In support of and to complete the Minimum ICT security measures, a document of a prescriptive nature, which guides timely technical compliance, AgID issues documents that guide the strategic, organisational and operative themes necessary to the PA to raise the level of awareness, knowledge, preparation and capacity to response relative to the growing cybernetic threat.

Results Issue of Cybernetic Security Guidelines for the PA (by December 2019).

Areas of intervention In the short-term, impact on the PA.

CHAPTER 9. Tools for the generation and dissemination of digital services

The citizen and businesses access the on-line, interoperable and decentralised services through digital interfaces made available by the PA. Growing ease in accessing the use of services and increased efficiency of the underlying processes, must lead the citizen to prefer the on-line channel over the exclusively analogical one.

Digital technology is gradually transforming the organisational processes of the PA and, consequently, the methods by which the on-line services are supplied. This transformation requires strong central government support and an adequate involvement of an active community, established by developers and designers for the exchange of information and improvement of processes that lead to the supply of digital services of the Public Administration.

The revision of the processes of the design, development and supply of the digital services of the PA is the result of a process that involves the design and re-engineering of services hinged on the needs of the citizen.

The Plan intends to support the development of public digital services with various strategies. In particular, through the dissemination of the platforms, the production of guidelines and development kits. The creation of a community of developers, designers and digital service managers, fosters the exchange of information and the participation in the development of the Public Administration.

To this end, knowledge of operative tools, such as, for example, the Guidelines to the design of the websites and project management principles, must become increasingly disseminated amongst central and local administrations, in the medium-term bringing about a significant culture change, in order to promote and develop concrete progress in digital innovation.

It is important to stress that Italian legislation and, in particular, the Digital Administration Code, stresses the centrality of citizens' rights in the use of the PA's digital services. https://cad.readthedocs.io/it/v2017-12-13/_rst/capo5_sezione1_art53.html Article 54, in fact, clearly indicates the need to develop the websites that respect principles of accessibility, high usability and availability, completeness of information, high interoperability, taking care to use a clear language, organised into an information structure that is easy to consult.

An additional regulatory element in favour of the centrality and involvement of the user was issued by the European Council and Parliament with [Directive no. 2102 of 2016](#), which requires all Member States to make homogeneous and consistent on a Community level, the technical requirements for accessibility of websites and mobile applications of public sector bodies.

Again at a European level, Regulation EU 2018/1724 establishes the single digital gateway for citizens and businesses, indicating mandatory quality parameters that websites of the PA of Member States must respect starting 2020.

In this context, in the last year, AgID, together with the Digital Transformation Team, has carried out numerous actions aimed at simplifying the development and use of the digital services produced by the public administrations, both through the dissemination of the platforms and through the preparation of [guidelines and kits](#) for development for the use of the administrations.

More specifically, within the community [Developers Italia](#), technological support and documentation for the use of API resources, have been made available to users. Developers Italia was in fact created with the aim of supplying validation environments, good design practices, development packages read for the main languages and frameworks, in order to encourage collaboration, re-use and continuous evolution.

9.1 Designers Italia

9.1.1 Scenario

The [Designers Italia](#) project is effectively the evolution of the Guidelines of the PA websites, prepared and published in November 2015 by AgID with the initial intention of making them more consistent and standardised between themselves and the PA websites. Designers Italia - which stems from the collaboration of the Digital Transformation Team and AgID - aims to spread design practices within the PA, fostering the creation of a community of experts that can contribute towards the growth and constant evolution of the guidelines and design of Public Administration services. The digital services are therefore modelled on the basis of users' needs, according to the principles of Human Centred Design.

Designers Italia is structured into:

- [guidelines](#) to guide the design of public digital services. During the first half of 2019, the guidelines will be consolidated in the form of technical rules, according to the procedure envisaged in Article 71 of the CAD;
- [kit](#), resources and operative tools that can support the effective design;
- [blog](#), describing experiences and pilot projects (case histories) relative to the application of the kits and guidelines;
- [collaboration environments](#) to simplify work flows in the design teams and promote collaborative design.

More specifically, the Digital Transformation Team and AgID constantly update guides, tools and front end development kits.

9.1.2 Objectives

- Improve the usability and quality of services supplied on-line by the PA
- Increase access to services by the citizen
- Increase the adoption of the design guidelines by the PA
- Monitor application of the guidelines

9.1.3 Action lines

LA61 - Adjustment to the Guidelines to the design of the PA web services and websites

Timing In progress

Players Central, regional and local public administrations

Description The central PAs indicated in [AgID Determination no. 36/ 2018](#) and note yet adhering to the Design Guidelines and the regional and local PAs notify AgID of the date by which adjustment works will be completed.

Results The PA notify AgID of the dates by which the digital services and websites will be released in compliance with the Design Guidelines (October 2019).

Areas of intervention In the short-term, impact on the PA.

LA62 - Guidelines to the design of PA websites in the tender specifications

Timing from June 2019

Players PA

Description The public administrations and related suppliers follow the methodological and implementation processes indicated by the Design Guidelines and on Designers Italia.

Results In the tender specifications relative to the development of on-line services and websites, the PA indicate the design methods and tools described in the design guidelines (from December 2019).

Areas of intervention In the short-term, impact on the PAs and ICT businesses.

LA63 - Release of a kit for the design and development of the websites of the municipalities and schools

Timing from April 2019

Players Digital Transformation Team, MEUR, schools, municipalities

Description The design kit makes available a standard for the websites of municipalities and schools, based on the Design Guidelines. The two models, constructed with tested patterns that have been verified with the users, intend to make interaction with the website more effective. Starting April 2019, all municipalities and schools may use the starter kit available. A first pilot trial will be supported by the Digital Transformation Team with a limited number of municipalities and schools, to verify and consolidate the model in view of its adoption on a broader scale.

Results Standard model of service and user experience active in the municipalities and schools taking part in the pilot trial (from August 2019).

Areas of intervention In the short-term, impact on municipalities, schools and citizens.

LA64 - Publication of the guidelines to design containing rules, standards and technical guides, in accordance with Article 71 of the CAD

Timing July 2019

Players AgID

Description In accordance with Articles 14-bis and 71 of the CAD, AgID issues, in the form of technical rules, Guidelines to the design of the PA web services and websites.

Results Publication, in a specific section of the AgID website, of guidelines to the design of PA web services and websites, in accordance with the provisions of Art. 71 of the CAD.

The Guidelines contain technical rules and definitions of details in a specific technical annex that is an integral part of the guidelines (July 2019).

Areas of intervention In the short-term, impact on the PA and suppliers.

9.2 Accessibility

9.2.1 Scenario

Within the design process of the digital services defined through the Designers Italia guidelines, accessibility is seen as a transversal topic, involving the whole area of the quality

and usability of the websites. Already Italian Law no. 4/2004 and subsequent application decrees (in particular Ministerial Decree of 05 July 2005, Annex A) establish that the PA cannot stipulate contracts for the purchase of web-based solutions, if there is no provision for compliance with accessibility requirements (adherence to the international standard ISO 40500:2012 or WCAG 2.0). It is important, therefore, to consider accessibility at the time of design, conceiving and development of the websites, applications and documents, taking a Universal Design approach.

With European Directive 2016 /2102 on the accessibility of websites and mobile applications, incorporated by [Italian Legislative Decree no. 106 of 2018](#), a rapid evolution is expected of the current scenario, with the extension of the applicability of the technical requirements and compliance by the PA. The Directive affects the PA websites starting 2018 and defines new requirements for both AgID and the individual public administrations in matters regarding:

- accessibility of websites and mobile applications of public sector bodies;
- reporting accessibility problems (feedback);
- monitoring methods;
- declarations of accessibility.

This is why AgID is trying out an automatic validation tool of the accessibility of websites and mobile applications of public sector bodies; requirements within the European project “WADcher - Web Accessibility Directive Decision Support Environment”, which aims to offer full support to the implementation of the European Directive on the accessibility of websites and mobile applications of public sector bodies. In 2019, it will also draft the Guidelines for alignment with the European Directive that incorporate the executive deeds and the harmonised technical standard (EN 301549, 2018 edition).

9.2.2 Objectives

- Adapt the PA websites to comply with the requirements laid down in European Directive 2016/2102.

9.2.3 Action lines

LA65 - Publication of accessibility objectives

Timing by March 2019

Players PA

Description The PA carry out annual internal recognition of the interventions and solutions to be implemented in order to improve the accessibility of the websites and on-line services supplied (e.g. update courses on accessibility, including those relating to the creation, management and update of accessible contents of websites and mobile applications or the elimination of documents in image format), also including the time forecast for the development of such interventions and notify this in the accessibility objectives.

Results The PA publish their [annual accessibility objectives](#) on the institutional website, in the section of “Transparent administration - Other contents - Accessibility and Catalogue of data, metadata and databases” (by 31 March of each year).

Areas of intervention In the short-term, impact on the PA.

LA66 - Implementation of European Directive 2016/2102 on the accessibility of websites

Timing In progress

Players PA

Description Websites published after September 2018 must comply with the requirements of the European Directive incorporated by Italian Legislative Decree no. 106/2018.

Results The PA publish their accessibility declaration on their institutional website by 23 September 2019.

Entry into full effect for websites published after 23 September 2018, starting 23 September 2019.

Entry into full effect for websites published before 23 September 2018, starting 23 September 2020.

Entry into full effect for mobile applications starting 23 June 2021.

Areas of intervention In the short-term, impact on the PA and citizens.

9.3 Usability

9.3.1 Scenario

As explained in detail on Designers Italia, the design of digital services must offer high criteria of usability to allow the PA to:

- avoid producing inadequate services;
- encourage citizens to access digital services rather than a traditional branch.

The design guidelines developed within Designers Italia provide the PA with a <https://design-italia.readthedocs.io/it/stable/doc/user-research/usabilita.html> - [protocollo-eglu-lg-per-la-realizzazione-di-test-di-usabilita](#) [protocol for the development of usability tests](#), prepared by a working party for usability (GLU) coordinated by the Department of Public Function with the aim of:

- directly involve the PA in assessing their websites and on-line services;
- raise greater awareness amongst public operators to the matter of usability;
- keep the costs of the testing very low or null.

9.3.2 Objectives

- Foster the carrying out of usability tests in the PA, also thanks to the adoption of the protocol for the development of usability tests
- Monitor the improvements made to the website following the critical issues detected through testing

9.3.3 Action lines

LA67 - Use of the eGLU protocol for usability tests of central PA websites

Timing	From January 2019
Players	Central PAs
Description	The public administrations listed in AgID Determination no.36/ 2018 , carry out usability tests on their institutional websites, applying the “LG eGLU protocol for usability tests” , and the related usability kits made available on Designers.italia.it .
Results	The PA send the final usability test report to AgID (June 2019) and some of the most relevant results are published on the Designers.Italia.it website.

AgID and the Department of Public Function organise an annual meeting with the PA to present and discuss the results (from December 2019, once a year).

Areas of intervention In the short-term, impact on the PA.

9.4 Re-use of the open-source PA software components and solutions

9.4.1 Scenario

The CAD has established that the administrations owning software shall make it available to the other administrations involved through the use of open licences.

This guideline has introduced a new concept of re-use, which AgID is developing, connecting:

- use of the software components and solutions owned by the PA;
- the choice of open licences;
- the sharing (community) of software management between PA through the Developers Italia platform.

To date, manners by which to raise and spread awareness of the new approach are being developed, including through the creation of centres of competence able to offer support to the PA.

9.4.2 Objectives

- Encourage the spread of the open source paradigm through the sharing of open solutions owned by the PA
- Promote the creation of community between the PA for the development, management and spread of open source software
- Develop business models around the use of open source software components and solutions owned by the PA
- Optimise the time and costs of management of the software used by the PA

9.4.3 Action lines

LA68 - New tools for the re-use of PA solutions

Timing from January 2019

Players	AgID, Digital Transformation Team, PA
Description	Operative tools will be defined and developed to provide the PA with timely indications by which to share open source software.
Results	Guidelines in implementation of Articles 68 and 69 of the CAD, containing: <ul style="list-style-type: none"> • model for the choice of the type of licence (June 2019); • indications for the management of maintenance, including the identification of the method by which costs can be shared (June 2019); • identification of the tools to spread and make available the open source software owned by the PA - new re-use catalogue with Developers Italia (June 2019).
Areas of intervention	In the short-term, impact on the PA.

9.5 Docs Italia: digital public documents

9.5.1 Scenario

[Docs Italia](#) is a platform available to all public administrations, developed by the Digital Transformation Team in collaboration with AgID for the publication and consultation of public documents. As envisaged by Article 18 of the CAD, Docs Italia also allows for the publication and consultation of documents relative to technological projects implementing the Digital Agenda.

All public administrations can publish their documents on Docs Italia [by following the instructions given in the guide](#).

The main characteristics of the Docs Italia platform are:

- an accessible, responsive front-end based on the [Designers Italia toolkit](#);
- a back-end deriving from open-source software that supports a hierarchical structuring of contents
- integration with [Forum Italia](#) to offer the possibility of commenting the documents and offering effective support to the public consultation processes;

In support of the administrations, in 2019 specific webinars will be held and training delivered on how to write project documents and technical documentation (“technical writing”).

9.5.2 Objectives

- Foster the publication of accessible, usable PA documents

- Foster public consultation and a comparison of notes between stakeholders in connection with the provisions linked to the implementation of the Digital Agenda
- Gather suggestions and proposed amendments transparently, in a qualified, effective manner

9.5.3 Action lines

LA69 - Evolution of the Docs Italia platform

Timing June 2019

Players Digital Transformation Team, AgID

Description The Docs Italia platform undergoes continuous evolution, which will include, amongst others, the creation of a new, accessible responsive front end, a document converter, an effective search engine and the possibility of commenting documents to make the consultation processes more effective.

Results Progressive publication of an increasingly extensive nucleus of document types.

Areas of intervention In the short-term, impact on the PA and citizens.

LA70 - Trial of the adoption of Docs Italia to document public projects linked to the Digital Agenda

Timing December 2019

Players PA, AgID and the Digital Transformation Team

Description Development of a pilot project that involves the identification of a small set of administrations and projects (descriptive documents, technical documents), which will only be documented through Docs Italia.

Results The public administration documents identified in the pilot project are hosted on the Docs Italia platform (from June 2019).

Areas of intervention In the short-term, impact on the PA and citizens.

9.6 Web analytics Italia

9.6.1 Scenario

The websites of the public bodies are now the main carrier that lead citizens to the information and digital services supplied by the public administrations.

This is why it is essential to increase the capacity of the administrations to track, analyse and understand the conduct of citizens when they visit the PA websites, with a view to achieving an efficient as possible user experience of the digital services offered.

The creation of the national infrastructure called “Web analytics Italia” aims to provide the PA with a central, standardised collection point of analytical data on the use of the public bodies’ digital services and websites. It also aims to flank - in its capacity as platform collecting data and performing analyses of the digital experience enjoyed by the citizen - the [Design guidelines and, in particular, the section on web analytics](#) published on Designers Italia.

9.6.2 Objectives

The pilot public administrations:

- use the free monitoring public platform made available by AgID;
- analyse the conduct of citizens on one or more websites or digital services for which they are competent;
- identify proposals by which to solve the critical issues highlighted by the monitoring.

9.6.3 Action lines

LA71 - Start of the onboarding process on the “Web analytics Italia” platform

Timing from October 2019

Players PAs involved, AgID

Description Following a pilot trial, the administrations will perform onboarding for the “Web analytics Italia” platform for autonomous use of said platform.

Results The administrations involved by AgID will take part in the pilot project and analyse the websites or digital services for which they are competent (from October 2019).

AgID opens the platform to all administrations concerned (December 2019).

Areas of intervention In the short-term, impact on the PA. In the medium/long-term, impact on the institutional subjects involved, businesses, professionals and citizens.

9.7 “IO”: the app granting access to the digital services of the Public Administration

9.7.1 Scenario

“IO” is an app that makes it possible to effectively use the digital public services, both of central and local PAs, allowing citizens to receive communications from the PA and make payments relative to public services, even from their smartphones.

The IO app is based on the development of the platform indicated [by Article 64 bis](#) of the CAD, discussing the central point of access to the Public Administration services.

The IO project is based on the design system of [Designers Italia](#), on the Guidelines to open source of [Developers Italia](#) and on the Guidelines to the Interoperability Model. The IO project is a tool by which to help the citizens realise the potential of simplification permitted by the enabling platforms pagoPA, SPID, ANPR, with which there will be close integration.

9.7.2 Objectives

- Enhance the efficiency of citizen-PA communication
- Simplify use of the digital services of central and local PAs
- Increase the number of telematic payments made by citizens
- Raise awareness that citizens have digital public services and how to use them

9.7.3 Action lines

LA72 - Design and development of the app and platform

Timing from January 2019

Players Digital Transformation Team

Description Implementation of the app (back end - front end). IO is an application designed to meet the needs of the citizen, offering a digital place granting access to the experience of digital citizenship.

The application and its components developed as open source, the backlog of activities and the code will be freely accessible.

Results Test of the first closed-beta of the app that implements the functions of notification, payment and pagoPA wallet management (September 2019)

Areas of intervention In the short-term, impact on the PA and citizens.

LA73 - Onboarding of the PA on the IO platform

Timing	January 2020
Players	Digital Transformation Team, PAs involved
Description	The entities supplying the services are qualified at the IO systems and start to also convey their services through the APIs made available.
Results	The PAs involved convey at least 50 central and local services (September 2020).

Areas of intervention In the short-term, impact on the PA and citizens.

9.8 Reorganisation of the “.gov.it” domain

9.8.1 Scenario

As indicated in paragraph 9.1, the central and local PAs must comply with the PA website design guidelines. More specifically, [AgID Determination no. 36/ 2018](#), as already mentioned in the same paragraph, establishes the obligation for parties requesting the attribution of a level three domain (SLD) in the “.gov.it” domain to comply with rules governing the quality of their websites in terms of accessibility, transparency, usability, standard format of institutional websites, according to the instructions given on the [designers.italia.it](#) website.

This Determination, in order to update and optimise the domain registration process, bringing it into line with the current European Union policies, establishes:

- that the “.gov.it” domain shall only be used by central administrations;
- that the territorial and school administrations currently using it must abandon it within the terms set by the Determination;
- that all websites of the administrations using it shall comply with the accessibility standards issued by AgID;
- that all the ICT infrastructures used to implement such websites shall be compliant with the [“Minimum ICT security measures”](#) issued by AgID.

For central public administrations required to register their websites with the “.gov.it” domain, AgID has made an on-line procedure available for registration and management of the “.gov.it” domain.

In March 2018, the domain “.edu.it” was assigned to the Ministry of Education, University and Research (MEUR). In order to support the full implementation of the application of Determination no. 36/2018, AgID - together with the MEUR and CNR - implemented a series

of carefully-targeted actions aiming to support the migration of schools to the new domain “.edu.it”. Instead, as regards the transition from the “.gov.it” domain to the “.it” domain envisaged for all territorial bodies involved by the Determination, they will be asked to comply with the procedures described in the naming regulation “Assignment and management of domain names in the ccTLD.it” available from the Registro.it website.

9.8.2 Objectives

- Reorganise the “.gov.it” domain, ensuring that it is only used for central administrations
- Assist schools and territorial bodies with the migration from the “.gov.it” domain to the “.edu.it” domain and “.it” domain.

9.8.3 Action lines

LA74 - Support with the migration to the .edu domain and .it domain

Timing	In progress
Players	MEUR, CNR, AgID, local PAs and schools
Description	<p>AgID, CNR and MEUR have established a working table to assist the move of schools to the “.edu.it” domain. MEUR and CNR have prepared a supportive information page. AgID has published an expression of interest intended for suppliers of services managing the internet domains to the PAs identified by Determination no. 36/2018 to request willingness to supply, during the transition period, the services necessary to the correct migration of domains.</p> <p>Starting September 2018, all schools of all levels can register the name on the .edu.it domain through the CNR portal, Registro.it.</p> <p>Similarly, on the same portal, all territorial bodies can proceed to register the .it domain, as indicated there.</p>
Results	Migration of schools to the “.edu.it” domain and of territorial bodies to the “.it” domain (October 2019).
Areas of intervention	In the short-term, impact on the PAs involved (MEUR, schools and territorial bodies).

CHAPTER 10. Innovation tools and models

In line with the 2016 Stability Law, this Three-Year Plan defines a manner by which to assist in reducing costs for the current management of the IT sector. On the other hand, the law also states that administrations may, by way of priority, use the savings thus generated to invest in technological innovation. This section is dedicated to the administrations dealing with innovative projects. As a rule, the term innovation is used to refer to the implementation of a product (good or service), process or organisation method that is new or improved.

This context, on the other hand, is focussed on projects innovating the public administrations, i.e. on situations where, with greater or lesser awareness, the public client:

- circumscribes the concrete need and concentrates on the specification of the need to be dealt with
- is on the lookout for new or in any case different solutions to those already consolidated, making room for the proposal of innovative solutions;
- involves the market in an increasingly broad and open manner. The external world is, also exploiting the global internet, far greater than the internal one of the client and, therefore, can express more effective solutions, which may differ from pre-existing ones.

Therefore, the client juxtaposes the conservative approach, which tender after tender merely makes marginal improvements in terms of efficiency. The client stimulates and exploits the dissemination of open innovation organisational models increasingly frequently adopted in the private world (business to business).

In light of this brief introduction, the chapter has been structured into two sections:

- the first explains some tools aimed at acquiring innovative solutions, with special attention paid to “innovation tenders” regulated by the 2014 Tenders Directive and the new Code of Contracts;
- the second presents a new smart community model called “Smart Landscape”, in line with the indications on smart cities in the document “2014-2020 Digital Growth Strategy”.

10.1 The innovation procurement platform

10.1.1 Scenario

With Communication [COM\(2010\) 546](#), “Flagship Initiative Europe 2020”, the European

Commission has laid the basis for the “Innovation Union”, one of the seven flagship initiatives in the Europe 2020 Strategy, and which will, amongst others, supplement the Digital Agenda for Europe.

With the 2014 Tenders Directive, the European Commission specifically recommends that administrations should “use public tenders as best possible to stimulate innovation”, thereby, through the purchase of innovative products, works and services, playing a “key role in improving the efficiency and quality of public services while addressing major societal changes”. The recent [COM\(2017\) 572 "Making Public Procurement work in and for Europe"](#) and the [Notice 3051 \(2018\) "Guidance on Innovation procurement"](#) focus attention on the practical and smart implementation of new rules for innovation tenders, making operative suggestions to Member States and administrations.

In recent years, Italy has paid particularly close attention to European Community guidelines, in some cases taking a proactive approach and it is one of the most active countries in the innovation and pre-commercial procurement sector. The implementing rules, connected to Decree Law no. 5/2012, amended by Italian Legislative Decree 179/2016 specifically recall the pre-commercial procurement (PCP) to be carried out taking a “demand driven” approach.

The same 2016 Stability Law highlights the need to identify solutions, goods and services that promise significant innovations with benefits over the long-term too (strategic procurement).

Our country has planned specific financial resources with which to implement innovation projects:

- these partly derive from the complete application of the mentioned 2016 Financial Act;
- in the 2014 - 2020 planning (ROP and NOP), there is a significant availability of financial resources explicitly dedicated or which can be applied to innovation projects.

The public administrations are therefore called to implement highly-innovative projects aimed not only at rationalising the management and development costs of services in terms of their modernisation, but also at strengthening a transformation process of the public services offered to citizens and businesses which stimulates the public demand, increases the competitiveness of territories and strives towards an improvement in the quality of the services supplied by the market.

In 2016 -2017, the MEUR and AgID launched a [Programme of pre-commercial procurement](#); this was on the basis of the respective support and promotion functions envisaged by Italian Decree Law 179/2012. In 2017, more than 1,000 operators formally expressed an interest in one or more pre-commercial tenders of the programme, including more than 250 large enterprises, 450 small and medium enterprises, 200 universities, institutes and university departments, public research entities, more than 100 non-profit associations and trade associations of users and consumers. The Programme results confirm that conditions concretely exist for the establishment of an institutional chain that uses public procurement not only to make savings but also to implement a strategic vision stimulating research and

innovation in a competitive market on quality and not only on price.

The scenario described frames a new action, already launched, aimed at supplying administrations with an innovation procurement platform to foster the revelation of innovation needs and the project deployment through an active dialogue of administrations and market.

The innovation procurement platform will consist of:

- a collaboration model that systematically involves the institutional subjects operating in synergy to support the administrations wishing to innovate. This institutional collaboration model is defined by the provisions of the mentioned Decree Law 179/2012. It identifies the administrations involved (MEUR, MED, Agency for Territorial Cohesion, the Regional Authorities and the Agency for Digital Italy), which, together, form the nucleus of an institutional system that can guide strategic objectives, coordinate the use of financial resources and implement strategic innovation projects of the Public Administration. The construction of this institutional system has already been launched: in the first half of 2018, agreements were stipulated that involve the Conference of the Autonomous Provinces and Regions, the Agency for Digital Italy, the Agency for Territorial Cohesion, the Regional Authority of Campania and Soresa spa, the Ugo Bordoni Foundation. The framework of institutional agreements will be completed in 2019;
- a family of digital services dedicated to administrations and economic operators, which supports use of public innovation procurement to stimulate the modernisation of the administration on the one hand and innovation of supply on the other. In the second half of 2018, development began of the web-based technological platform. The Platform seeks to be a point of reference for innovating administrations, institutional stakeholders and market operators.

Including through the launch and management of the innovation procurement platform, AgID intends to act as “serving agency” and promoter of “Innovation Procurement Broker” actions with regards to the public system, supporting public officers and administrations with the implementation of this Three-Year Plan, undertaking innovation purchases and projects. To this end, the Platform will gradually be deployed, with completion in 2019.

10.1.2 Objectives

- Foster the emergence, qualification and potential aggregation of the needs for innovation of the Italian administrations, thereby organising their representation in this Three-Year Plan and fostering the early participation of the market in an “Early Statement Public Demand” logic
- Help spread awareness by administrations of the manners and tools by which to

develop innovation projects and tenders

- Involve the market as much as possible, conveying it towards knowledge of the innovative public demand and stimulating the proposal of the best possible solutions in an open innovation logic, also seeking to mitigate particular information asymmetries intrinsic to the assumption of the risk of fostering development of innovative technological options
- Promote the implementation of innovation and pre-commercial procurement for the development of innovative prototype solutions.

The recommendations already present in the 2017 - 2019 Three-Year Plan are confirmed, intended to develop highly innovative tenders, starting now:

- to assess the value of defining the subject of the tender, privileging the specification of the question (i.e. the “problem” to be dealt with) with respect to the offer (demand pull approach). This is in order to leave sufficient room to the proposal of innovative offers;
- to assess the value of carrying out market consultation prior to starting the procurement procedure;
- to assess the applicability of specific procurement procedures for matters of innovation, such as competitive dialogue, the innovation partnership, pre-commercial procurement and contests for design and ideas, concession contracts and public-private partnership contracts;
- to verify the possibility of dividing tenders up into lots, so as to foster access by micro enterprises and small and medium enterprises;
- to verify the adaptability of the criterion of the life cycle cost, by way of offer measurement criterion.

10.1.3 Action lines

LA75 - Activation and trial of the innovation tenders platform

Timing in progress

Players AgID, other stakeholders involved

Description This action aims to release:

- the platform of institutional agreements comprising, amongst others, the administrations identified in Article 19 of Decree Law 179/2012;
- the showcase of best practices in innovation tenders by way of tool for sharing knowledge of the best experiences;

- the tool for the emergence and organisation of innovation needs;
- the forum as an open innovation tool, to foster the aggregation of public demand and market participation.

Results AgID makes the Platform available and the Innovation Procurement Broker trial (June 2019).

Area of intervention In the short-term, impact on the PA; in the medium-term, impact on businesses.

LA76 - Promotion and monitoring of innovation tenders

Timing In progress

Players AgID, central and local administrations

Description Solicit administrations to use practices for innovation tenders: market consultations, negotiated procedures, competitive dialogue, innovation partnership to share key information, thereby fostering:

- the collaboration of innovative PAs;
- the identification and sharing of best practices;
- the involvement of an increasingly extensive and heterogeneous market.

Results Activation of an expense monitoring tool in pre-commercial and innovation procurement, with expectations for an annual increase of 10% of total spending on purchases of innovation in the three years 2019 - 2021 (December 2021, with a measurement report every six months).

Areas of intervention In the short-term, impact on the PAs (continuous throughout the three-year period).

Focus. Pre-commercial procurement

In situations where the public administrations have needs that are not sufficiently well met using solutions already available on the market, they may run pre-commercial type procurement (also known as “PCP”). Pre-commercial procurement tenders are characterised as follow:

- they mainly concern technological research and development services; they envisage the sharing of risks and benefits at market conditions between the public buyer and the successful bidders for the development of innovative solutions not already present on the market, starting from the idea and through to the initial

development of limited quantities of experimental products or services able to solve an unresolved and technologically complex problem raised by the public buyer;

- they envisage non-exclusivity clauses whereby the contracting authority does not reserve the right to make exclusive use of the results deriving from the research and development;

they envisage co-financing by the successful economic operators. Where the above conditions are met, the tender does not come under the objective scope of application of the Tender Code, clearly without prejudice to the essential principles pursuant to Article 4 of the Code.

The Agency for Digital Italy (reference Italian Decree Law 179/2012, Article 19) offers support to the public administrations that are planning or intend to run pre-commercial procurement. By agreement of the administrations, the AgID may award the individual tenders as client of the Regional Authority or other public administration competent to perform the relevant management.

The implementation of pre-commercial procurement is financed, amongst others, under the scope of Action 1.3.1 “Strengthening and qualification of the demand for innovation of the PA through the support of Pre-Commercial Public Procurement and Innovation Procurement” and Action 11.3.4 “Actions strengthening and qualifying the demand for innovation of the PA through the development of competences aimed at using “Pre-Commercial Public Procurement” defined by the 2014-2020 Partnership Agreement.

10.2 Smart Landscape: towards a new model of smart community

10.2.1 Scenario

European and national scenario On the European scenario, the matter of smart communities is very topical for the prospects of evolution and economic development it guarantees. Numerous initiatives are in progress, including [the EIP-SCC](#) (European innovation Partnership on Smart City and Communities), launched in July 2012, with the aim of creating clusters of European cities, businesses and representatives of civil society to launch a significant digital transformation, developing solutions that are sustainable for the environment, society and health. At end 2017, the EIP-SCC saw more than 370 projects (3,000 partners from more than 30 countries) in the sectors of energy, ICT and mobility.

Ten European cities (Copenhagen, Amsterdam, Vienna, Barcelona, Paris, Stockholm, London, Hamburg, Berlin and Helsinki) are most involved in the smart transformation and are

ploughing considerable resources into it. These cities - none of which are Italian - have been classified starting from the analysis of successes obtained on the basis of 28 indicators ranging from sustainable mobility to the green economy, quality of life, governance, the environment and constructions¹³.

The attention paid to the matter by the European Commission is confirmed by the making available of funds for research and development projects and structural funds. With the Horizon 2020 Research and Innovation Framework Agreement, 80 billion euros was made available for the period 2014 - 2020, allocating a budget of more than 230 million euros for 2016 - 2017 under the scope of Smart and Sustainable Cities.

On a national level, structural funds were mainly used to implement 2014-2020 National Operative Programmes “Metropolitan Cities” and “Infrastructures and Networks”, which includes projects of various reach, which ensue from different territorial development needs.

At present, under the scope of smart city, a great many projects developed use the Internet of Things (IoT) as a paradigm underlying the new processes and services, including: mobility management, public transport and waste collection management; Smart building, Smart Metering & Smart Grid; territorial and environmental monitoring; security, social inclusion and tourism services.

The initiatives carried out to date on the matter, in particular by some metropolitan cities, insofar as can be appreciable, however, share a limited approach to the reference urban context and almost all take into greatest consideration the aspects correlated with the “citizen”, neglecting those with a major impact on businesses, such as, by way of example, the **movement of goods** and opportunities deriving from the integration with other subsystems (port communities, cargo communities, territorial logistics nodes, distribution businesses, etc.).

A natural impact of the digital revolution in fact regards precisely the major transformation of the world of logistics and transport. Logistics is a strategic sector for the national economy to be considered a tool of industrial policy to optimise the excellences of the production system and promote the development of environmentally-sustainable transport and environmental protection.

The structuring of the paradigm “Internet of Things” applied to goods implies the integration of services provided by different public/private players that can be obtained thanks to a complete digitisation of the logistics chain.

¹³ Smart City Index, 2017.

Smart solutions based on the use of interconnected logistics hubs and corridors, allow for the domination of the complexity in this sector, also linked to the multi-modal nature of the transport and multiple players involved - and to recover considerable efficiency, optimising time and costs of goods movement, guaranteeing safety and security.

Attention is therefore paid to an extensive, complex system, which also includes multiple “logistics hubs” (ports, airports, retro ports, inter ports, territorial logistics platforms, distribution businesses and centres, etc.) and their inter-modal connections as necessary to make the logistics environment as a whole functional, all logistics hubs and cities, pursuing, through a synergic, coordinated and integrated approach, an attempt at optimising investments and increasing the efficiency and development of system synergies, implementing “sustainable logistics” (economic, social and environment sustainability).

Global trade requires “logistics hubs” to innovate ever more quickly with the challenge being to implement solutions and systems that are fit for the needs of the various subjects intervening throughout the logistics chain.

Italy, which is filled with small ports, many of which are historic and within urban areas, requires, differently to other European countries, an even smarter interaction of city and port. With advance knowledge of the expected time of arrival of the ship laden with tracked products, it is possible, for example, to plan the transshipment of goods well in advance, without stock breakage and avoiding the formation of queues and pointless waits, with clear advantages in terms of costs and for the environment. The means of transport can be planned so as to avoid waits or blocking of the port or city areas, also integrating information on traffic conditions and the planning of alternative routes.

The national programmes activated and being activated should therefore be synergically considered in a more extensive approach to make the vertical solutions developed interoperable in order to achieve a smart and secure management of mobility, people and goods, fostering the developments of services based on the needs of citizens and businesses.

From “Smart community” to “Smart Landscape”. Article 20 of Italian Decree Law no. 179/2012 (“Smart communities”), attributes the Agency for Digital Italy steering and operative tasks such as: *“to define strategies and objectives, coordinate the implementation process, prepare technological and economic tools for the progress of smart communities”*. In particular, AgID not only prepares the National plan for smart communities and monitors its implementation but must also *“issue guidelines defining technical standards, including the determination of ontologies of services and data of smart communities and procedural data as well as innovative financial instruments for the development of smart communities; establish and manage the National platform of smart communities”*.

In relation to the tasks assigned by the specified standard, AgID has launched a series of activities, taking into account evolutions of the European and national scenario.

The qualities relating to the various concepts of “smart community” are being defined. For example, the notion of “smart city” does not yet coincide with a technical/legal definition nor does it have a unique territorial identification to which the model should be applied. In this respect, ISTAT introduces the concept of the Functional Urban Area (FUA) to overcome the limits of ordinary administrative boundaries. Additionally, in the current meaning assigned to the term, “Smart City” means a set of targeted actions on the urban structure, each of which highlights a particular characteristic of the system (e.g. sensors for lighting, for pollution control, for mobility control, for environmental control; availability of services for citizens such as looking for parking or the integration of urban safety devices; etc.). Clearly, the urban areas, just like “logistics hubs” are “complex, dynamic, non-linear systems”¹⁴ and an intervention of any of the subsystems (e.g. public lighting, waste cycle management, automation of the intake/output of goods in the “logistics hubs” etc.) impacts the intake of other subsystems, hence the spread of an action determines ultimate results that cannot be directly quantified in terms of global benefit.

Additional factors must also be considered, over and above the possible smartness of the “logistics hubs”: mass introduction of the purchase of goods or services through the various forms of e-commerce or on-line distribution and Industry 4.0 applications.

On the basis of these considerations, it is more appropriate to use, rather than the term “smart communities”, the term “smart landscape”, to highlight the characteristics of container with respect to more specialised domains. In actual fact, an urban area, just like a “logistics hub” provides services to citizens and businesses belonging to more than one digital ecosystem (healthcare, finance, development and sustainability, cultural heritage and tourism, etc.).

For the purpose of assuring an effective governance of a smart landscape, it is important to have a **Smart Landscape Engine (SLE) predictive model** that can produce what-if scenarios as the input actions change to the decision support system. This predictive model - to be developed in collaboration with universities, research centres and industry, as well as with the public administrations - will constitute a new tool available to businesses and the PA. This system will be customised for each area of interest, through specific context variables.

¹⁴ A “complex system” is a set of components or subsystems that interact between themselves and with the external environment; these closely-linked subsystems give rise to a single, larger dimension. The term “non-linear” here means that all outputs of the system are not proportional to inputs. The adjective “dynamic” is used to mean that the system changes over time, starting from the last state achieved.

From an operative viewpoint, AgID has already launched development of a general platform useful to all areas that can potentially be made smart, referred to as the Smart Landscape Platform (SLaP).

Each administration launching a smartness route for its area of competence may either supply services by itself and display the related APIs, or use those already available on the SLaP platform.

Ultimately, through SLaP and SLE, conditions are prepared by which to effectively coordinate the implementation and development of the various national initiatives, avoiding duplications/overlays and fostering re-use and integrating innovative solutions already being tried out (e.g. Fast Corridor).

10.2.2 Objectives

- Share the concept of Smart Landscape
- Share the model proposed Smart Landscape Engine (SLE)
- Implement the Smart Landscape Platform (SLaP) as per Article 20, paragraph 1 lett. d) of Italian Decree Law 179/2012.

10.2.3 Action lines

LA77 - Definition and implementation of the smart landscape model

Timing	In progress
Players	AgID, pilot group of local bodies, central PAs, Digital Transition Managers and stakeholders
Description	The definition of a model Smart Landscape Engine will first see the involvement of the Administrations and their Digital Transition Managers as well as other stakeholders mentioned previously, so as to perform an assessment of the projects in progress and obtain contributions and territorial data proactively. With the stipulation of collaboration agreements, there will be a first implementation of the model through the experimentation of technological innovations in controlled contexts that reproduce the dynamics and interactions of the urban and non-urban environment, also through study and research activities.
Results	First reference model (from December 2019).

Areas of intervention In the short-term, impact on the PA.

LA78 - Design and development of the first prototype predictive engine in support of Smart Landscape governance

Timing	January 2020
Players	AgID, Digital Transition Manager, Universities and research centres
Description	Through the definition of the procurement strategy, a research and development route will be defined of the innovative solution based on artificial intelligence techniques. The predictive engine implemented will be made available for use on a platform (a Smart Landscape Platform or SLaP), currently being designed, which will facilitate implementation of the model proposed and the integration of services between PA and economic operators, thanks to interaction with the citizen.
Results	First validation of the prototype scalable over additional areas of intervention (December 2021).

Areas of intervention In the short-term, impact on the PA.

Focus: The main international initiatives of smart communities and smart cities

Below is a summary of some key elements on what is being developed in China, India, Australia, Africa, Singapore and Dubai. These areas have been chosen because they have invested significant resources in the matter and represent different approaches taken to the matter of smart communities.

In **China**, the objectives planned are to simplify the lives of citizens through a new idea and new method of promoting the smart city with the help of new technologies: one relevant aspect is the decision to operate in a more balanced market, where government decisions do not have a major impact on the strategic choices made by private businesses. The general approach taken to smart cities is to create a digital environment that integrates economic and market aspects with the overall well-being of citizens.

In **India**, the objectives are the development of the city in a way that is able to supply the basic infrastructures to, and consequently increase the quality of life of, its citizens through, for example, a clean, sustainable environment and a widespread use of smart, ICT-based solutions. The central aim is environmental sustainability and quality of life.

In **Australia**, the smart cities plan defines the Australian government's vision for metropolitan and regional cities; implementation is taking place through specific agreements with a particular focus on economic growth, the creation of jobs and environmental outcomes. The desire of the federal government to institute reference smart city groups should be noted, for each metropolitan or regional area in order to align the planning, investments and governance necessary to speed up growth and the creation of jobs, stimulate urban renewal and drive the economic reforms. These groups have particular assonances with the Digital Transition Managers (see chapter 11) envisaged in Italy.

In **Africa**, the objectives are the use of technological solutions to improve the efficiency of citizens, as has already been the case in Rwanda, developing ICT like wi-fi in public areas, including means of transmission and cash-free payment systems. The general objectives, in this case, use innovative technologies as drivers to improve the social-economic fabric.

In **Singapore**, the objectives are to improve the standard of living and working of citizens. The approach is focussed on the population through a commitment by the parties concerned - i.e. their citizens, businesses and government agencies - involved in all phases of the smart development of the city. In 2015, the government announced the Smart Nation Initiative, which envisages Singapore becoming the world's first smart nation by 2025.

In **Dubai**, the mandate of the Commission created specifically by the government for the smart cities project has not been limited to eGovernment aspects but rather also includes the development of an effective regulatory infrastructure that can make open data readily available to all those concerned. On an organisational level, the new laws establish a Cross Government Mandate called the Smart Dubai Office, which aims to promote mixed public-private collaboration initiatives and projects. In this scenario, the creation of a national PMO in support of all smart projects is very interesting.

CHAPTER 11. Governing the digital transformation

Successful digital transition processes require strategic vision, development capacity and effectiveness of governance. With the Strategic Model of evolution of the Public Administration information system and the Three-Year Plan for IT in the PA, the basis was laid. The strategic model outlined in the 2017 - 2019 Plan requires a complete, homogeneous structure whereby the need for a holistic approach to the digital transformation is further stressed. This approach will see all possible players taking lead roles in the innovation, starting, as we will see further on, with the Digital Transition Managers. Only thus can growth be fostered: creating participation and sharing, avoiding overlays and duplications of activities, gaining transparently.

On the matter of governance and the cultural change to be implemented, we must intervene on current resources and legislation, with the parallel design of the organisation required and acting on all levers: exploiting the excellences that already exist in the PA, in the in-house companies and in the business world and encouraging the spread of a digital culture on all levels.

Vision and method must be laid out in concrete actions: shared strategies, connection with regional and municipal digital agendas, accountability and involvement of the Digital Transition Managers and top management teams of the administrations and the definition of the strict method by which to re-engineer the processes.

Governance of the digital transformation also involves some concepts seen in all previous chapters.

The first is to **simplify, simplify** and then **simplify** some more! Citizens, businesses and the administrations themselves must be able to easily and immediately access the PA services, not having to supply the same data over and over again, obtaining clear, quick answers. Simplification brings with it another extremely important concept, namely the **reorganisation of processes**: reorganising and restructuring the intra and inter-administration processes is the task, in the administrations, of those overseeing such processes, who must have solid knowledge of the opportunities offered up in this sense by digital solutions. It is a matter of giving the **coordinators established by the CAD**, the Digital Administration Code, acknowledgement and power and the resources with which to operate.

These figures must combine project management competences with system governance competences: no knowledge is required of the technicalities, but rather an in-depth knowledge of projects and initiatives, which combines with an understanding of the needs of citizens and businesses. And this is the fourth concept: **strengthening competences**, starting from the PA, with fallout on citizens and businesses.

The solutions are less complex than they would first appear and there are a great many good practices to be taken by way of example. Over the next few pages, on the basis of the concepts set out above, various topics are presented, as already outlined in the 2017 - 2019 Three-Year Plan, the actions of which, launched in 2017 - 2018, envisage further developments in the current Plan.

Governing the digital transformation is all these taken together, as well as other actions set to evolve over the next few years, but it must be stressed that this process requires the coordination of multiple subjects of different roles, functions and organisations, all called to play a part in the development of the national strategy and territory.

11.1 The levers for coordination in the territory

11.1.1 Scenario

For the initiatives and projects to be effective and truly fulfil real needs, it is important to act on the territories: in February 2018, the Agency for Digital Italy and the Conference for Autonomous Provinces and Regions, stipulated a Collaboration Agreement undertaking to reinforce their joint action in order to implement the Digital Growth Strategy, the Three-Year Plan, the “Acting on Digital Agendas” Strategy approved by the Conference of Autonomous Provinces and Regions on 05 August 2014 and the regional Digital Agenda strategies.

In this context, the role played by the Agency for Territorial Cohesion must be seen as essential, as it pursues an operating method that is characterised by continuous dialogue with the territories, in an outskirts-centre-outskirts dialectic based on a virtuous cycle of joint design, choice of objectives, interim checks and reshaping of objectives.

The joint action of all these players aims to coordinate the activities connected with the digitisation and digital transformation plans defined at a national and regional level and, therefore, the implementation by the Regional Authorities of the role of the coordinator and aggregator, which can take on a territorial scope and breadth of areas according to variable geometries, region by region, to be defined through specific territorial agreements. In December 2018, territorial agreements were concluded and signed with the regions of Abruzzo, Sardinia, Apulia and Lazio.

Integrating the regional digital agendas with the Three-Year Plan, framing them in the 2014 - 2020 Digital Growth Strategy, means developing and better defining the role of the Regional Authorities as territorial aggregators for digital and requires, in contrast, the strengthening of local capacity with the flanking, where necessary, of specialised teams supporting local technicians, both in order to give rise to discussion on the national strategy and to address specific needs and problems.

Additionally, the Regional Authorities may be co-promoters, together with the President of the Council of Ministers and AgID, of actions offering support and assistance to the digitisation of municipalities and the training of public employees on digital matters, with targets in small and medium-sized municipalities.

There are a great many initiatives that can be deployed, one of which, presented below in an action line, envisages correlating assistance and training on digital matters with the projects defined by the local councils under the scope of civil service; indeed, without the contribution and valuable involvement of young digital natives, the digital transformation of the public administration and its employees could only be slower.

11.1.2 Objectives

- Activate structured routes for the shared definition of the implementation of the Plan in the territory
- Implement technical assistance and support actions
- Start pilot initiatives involving all stakeholders and which allow for the activation of good practices that can be transferred to other territories
- Produce innovation project formats that privilege certain priorities (e.g. dissemination of the CIE) and define organisational conditions (for example: aggregations of municipalities).

11.1.3 Action lines

LA79 - Establishment of national and regional Programme Management Offices

Timing in progress

Players AgID, Regional Authorities

Description Establishment of the regional Programme Management Offices (PMOR) dedicated to regional activities with the task of coordinating the operative activities concerned by the regional agreement, developing and maintaining the Master Plan of the project and interacting with the Central AgID Project Management Office, which can, where necessary, engage the themed centres of competence (CDCT), which, in addition to supplying the specialised support required by the PMO, also have the task of developing methods for making available the assets necessary for the implementation.

Results Creation of a platform for the PMO and an operative model for action (June 2019);
Start-up of the regional PMO on 3 pilot regions (December 2019).

Areas of intervention Short-term impact on the PAs.

LA80 - Digital laboratories for the territories

Timing from January 2019

Players AgID, Public Function, local administrations and their aggregations

Description The country digitisation process must involve all territorial contexts, starting from the small municipalities and the first step is to inform, sensitise and listen to the needs from below. “Digital laboratories” will be established with small municipalities or aggregations of such, to: define organisational models, including at a territorial level, aimed at introducing the digitisation initiatives envisaged by the Plan; record the competence needs of staff in said administrations and outline the appropriate training initiatives; identify channels through which to finance the interventions, in collaboration with the Regional Authorities and metropolitan cities; launch pilot projects within the laboratories.

Results Establishment of at least 10 digital laboratories by December 2019.

Areas of intervention In the short-term, impact on the PA.

LA81 - Establishment of the civil digital service

Timing from January 2019

Players Public Function, Department of Youth and National Civil Service, AgID, Autonomous Provinces and Regions, Metropolitan cities, small municipalities and their aggregations

Description The municipalities include digital transformation projects in the tenders for civil service. Project proposals are rewarded of the unions of municipalities that, with a view to rationalising public spending and making administrative proceedings efficient, intend to aggregate functions and services. Young men and women opting for civil service and choosing a digital training or transformation project (reduction of the digital divide), after a brief training course at AgID and through a tool kit that will be made available to them, may train employees of municipalities on the matter of the Three-Year Plan for the computerisation of the public administration and/or may directly monitor the digitisation projects launched by the council.

Results Project start-up in a trial phase (by December 2020).

Areas of intervention Short/medium-term impact on the PA and citizens.

11.2 The Digital Transition Manager

This paragraph is the result of the sharing of contents and ideas matured from reflections and exchanges with the Digital Transition Managers of the Regional Authorities and metropolitan cities. The Managers have made their suggestions and in many cases were responsible for writing the following. The relevant contribution is specified. AgID would like to thank them for their participation and enthusiasm.

11.2.1 Scenario

In order to facilitate the process of the digitisation of the Public Administration, the Digital Administration Code, right from the version amended by Italian Legislative Decree no. 179 of 26 August 2016, introduced for public administrations the role of the office appointed to ensure the transition to digital operating procedures: Article 17, paragraph 1 establishes, in fact, that *“each public administration shall appoint a single general managerial office, without prejudice to the total number of said offices, for the transition to digital operating procedures and consequent reorganisation processes aimed at developing an open, digital administration, of services that can easily be used and quality, through greater efficiency and economics”*.

The Digital Transition Office acts as the “point of contact” both within and outside the relevant administration, entertain relations and dialogue with various players, including, for example:

- government bodies involved in the implementation of the Digital Agenda for Italy, including the Agency for Digital Italy, in particular for the implementation of the Digital Growth Strategy, the Three-Year Plan and the governance of institutional cooperation processes;
- the Office of the Digital Ombudsman relative to the reports to be made to the administration concerned;
- the reference Data Protection Officer (DPO) for the administration, as envisaged by the GDPR;
- other public administrations, subsidiaries and concession-holders of public services, with specific regards to the interoperability and integration of systems and services;
- citizens, businesses and stakeholders with respect to on-line services and other matters of competence.

With Italian Legislative Decree no. 217 of 13 December 2017, amending and supplementing the CAD, the tasks assigned to the Digital Transition Office are supplemented with the planning and coordination:

- of the process for the dissemination, within the administration, of digital domicile and identity systems and the integration and interoperability process between the systems and services of the administrations (Article 17, paragraph 1, letter j);
- of the purchases of It, telematic and telecommunications systems and solutions, so as to guarantee compatibility with the implementation objectives of the Digital Agenda and, in particular, with those laid down by the Three-Year Plan (Article 17, paragraph 1, letter j-bis).

The possibility is also introduced for territorial public administrations to exercise the functions of said Office in associated form (Article 17, paragraph 1-septies).

The Office is managed by the Digital Transition Manager (RTD), whose contact details must be included on the [Index of Public Administrations](#) (IPA).

The RTD has a key role in the implementation of the digital initiatives of the administration, also as regards opinions and checks, paying close attention not only to the technological aspects but also to the consequent organisational needs and transformations. Within his entity, he has powers to drive and coordinate the development of the preparatory and implementing deeds of the strategic plans and scheduling envisaged by the Three-Year Plan. His tasks include, amongst others:

- designing and coordinating the development of networked services for citizens and businesses, optimising the costs and time of delivery, promoting and implementing the simplification and reorganisation of existing analogue processes and digitised services;
- promoting and coordinating processes of the co-design of digital services with citizens;
- planning and coordinating the actions functional to the implementation of organisational changes deriving from the development of networked services and the more comprehensive progress of the transition to digital procedures, including the development of the necessary competences;
- planning and managing the dissemination of e-mail systems, collaboration tools, IT protocol, digital signature or qualified electronic signature and IT mandate;
- ensuring that rules on accessibility are respected;
- guaranteeing the integration and interoperability of the administration systems and the telematic access point activated at the President of the Council of Ministers;
- coordinating the internal digitisation processes and adoption of the computerised document;

- fostering the development and dissemination of digital competences within the administration;
- guiding, planning and monitoring aspects relating to the cybersecurity of the administration, including in compliance with the provisions of current legislation on data protection and together with the Entity's Data Protection Officer (DPO).

The actions to be taken are initially the organisation of technical tables and working parties with the RTD with the potential involvement of territorial/industry stakeholders, to share experiences relative to the adjustments required by this Plan and to identify shared technical and organisational solutions in respect of current national standards.

The importance of this figure has recently been stressed by Circular no. 3 of 2018 of the Minister for Public Administration, whereby all public administrations are called to identify their own Digital Transition Manager (RTD).

11.2.2 Objectives

- Stimulate the public administrations to identify an internal Digital Transition Manager (RTD)
- Reinforce the role of the RTD, constructing, in collaboration with the Department of Public Function, a shared system of objectives and performance indicators Spark a process of mutual collaboration of RTD through the creation of a network model that can stimulate dialogue, optimise best experiences and the sharing of knowledge and projects
- Start specific working parties to optimise available resources, analyse current digital innovation regulations and possible simplifications of existing analogue processes
- Promote coordination between the public administrations, both under the scope of the projects and actions of the Three-Year Plan for IT in the PA and under the scope of new initiatives as may be matured by the territories

11.2.3 Action lines

LA82 - Establishment of the network of RTD

Timing	in progress
Players	AgID, Department of Public Function, Central PAs, Regional Authorities, Metropolitan cities and related area capital municipalities
Description	AgID promotes the creation of a permanent working party starting from the RTD of the central PAs, Regional Authorities, metropolitan cities and related

area capital municipalities, to support the administrations and implement the digital transition objectives envisaged by the Three-Year Plan.

This network has the task of highlighting and sharing needs, experiences and critical issues, in order to define tools, methods and solutions that can be replicated throughout the PA. The Department of Public Function and AgID, in order to reinforce the role of the RTD, construct and share common organisational models and digitisation-related performance objectives.

Regular themed meetings of the RTD will allow for the definition of specific working tables within which the Administrations will play a proactive role in sharing data, experiences and proposals. To this end, discussion spaces (such as forum.italia.it) and on-line working parties will be used.

Results AgID establishes the network of RTD (by March 2019) and promotes the establishment of a permanent conference of RTD (by December 2019).

Areas of intervention Short-term impact on the PAs.

LA83 - Initiatives of the network of RTD

Timing From July 2019

Players AgID, Department of Public Function, Fornez, SNA, Central PAs, Regional Authorities, Metropolitan cities and the related area capital municipalities

Description In order to collaborate towards the achievement of the digital transformation, AgID supports the RTD making specialised support figures available, along with tools and areas for collaboration, with the goal of transferring knowledge and strategies of digitisation to be implemented within the administrations for the development of the Plan and growth of administrative capacity, as discussion spaces and on-line working parties. The Network of RTD, in synergy with the players indicated, prepares and uses common resources (e.g. application models and studies), promotes training in specialised and transversal digital competences, starts awareness-raising and spreading initiatives, also on the territory, and also with the aim of capitalising on the best practices.

Results The Network of RTD develops application models and studies and promotes meetings and training events for dissemination and sharing (by Development 2019).

Areas of intervention Short-term impact on the PAs.

11.3 Monitoring

11.3.1 Scenario

AgID is institutionally called to monitor the progress made on the implementation of digital growth on a national and territorial level, insofar as it is the body responsible for ensuring that the conditions pursuant to Art. 2.1 are met, as established by the 2014-2020 Partnership Agreement.

When approving the “Digital Growth Strategy”, the European Commission proposed to *“continue to update the monitoring system so as to guarantee an adequate, efficient follow-up on all actions of the strategy and related results expected, both at a national level and regional level, through the appropriate quantification of indicators.”*

The monitoring of the action lines present in said Strategy and the Three-Year Plan is therefore an essential component of the digital transformation process insofar as it makes it possible, starting from the recognition of the regional strategies, to record the progress made on the projects.

To this end, amongst others, it is essential to consider indicators that are consistent with those envisaged by the “Digital Growth Strategy” and those envisaged by the 2014-2020 European planning, with the aim of identifying any critical issues and the related corrective measures.

It is essential to stress that the monitoring must also regard the objectives and action lines described in the Plan and, therefore, must be implemented considering all subjects called to develop the action lines of the Digital Agenda, whether central or territorial administrations.

11.3.2 Objectives

- Define a methodology that makes it possible to identify all indicators pertinent to the measurement of the regional Digital Agendas, their timely taxonomy and, above all, the methods by which data can be obtained to allow for their measurement
- Have the central and local administrations take part in the definition of the methods and collection of data useful to calculating the indicators, as also defined through the activities of the Project Manager Office
- Facilitate the representation of the progress made and any critical issues, not only in order to obtain a proper overview, but also to allow each administration to verify the data of their own area/territory
- Monitor the technical aspects (verification of the development of the actions planned by the PA), economic aspects (systematic collection of data on ICT spending by the

PA) and results aspects (detection of indicators) on the implementation of the Three-Year Plan and regional Digital Agendas

- Optimise the contents and data produced at a national and territorial level, promoting a coordination function for a unique, shared interpretation.

11.3.3 Action lines

LA84 - Evolution of the monitoring strategy

Timing From January 2019

Players AgID and PAs involved

Description AgID has launched the recognition and definition of the methods used to calculate the current indicators present in the Digital Growth Strategy, moreover upholding requests made in this sense by territorial administrations and bodies during specific meetings held on the topic¹⁵. This recognition was the launchpad for the identification of new indicators to more incisively monitor the initiatives held to be strategically relevant for AgID and to reflect on the definition of a single method by which to collect data useful to measuring the various indicators identified. To consolidate the method, the idea is to permanently involve the territorial administrations, which will compare notes to:

- identify a minimum common level of data to be recorded at all administrations;
- identify a method by which to locate the data without burdening the administrations holding said data, avoiding their having to continuously supply the same data;
- identify a correlation with the eGovernment Benchmark indicators to allow for the verification of the impacts of the progress made on the indicators defined by Europe;
- update the methodology according to the context strategies (e.g. updates to the Three-Year Plan, new 2021 - 2027 planning, etc.);

¹⁵ As mentioned in the minutes of the meeting held at the AgID offices last 27 November, in the presence of representatives of ISTAT, the Agency for Digital Italy, some Regional Authorities and others.

- define common representations and datasets to be managed by the monitoring platform.

Results Definition of a method able to monitor the regional digital agendas and digital transformation interventions (by Definition 2019).

Areas of intervention Short-term impact on the PAs.

LA85 - Release and commissioning of the monitoring platform

Timing from June 2019

Players AgID and PAs involved

Description The monitoring platform will be released on the basis of which trials will begin on the application of the monitoring model for the collection of data useful to calculating the indicators. The platform will also allow for the monitoring of Programme Management Office activities and must be able to:

- collect information from various different databases in an automated fashion or thanks to the collaboration of other administrations holding the data. This second method will be guaranteed through access by means of SPID to a specific area of the monitoring platform, defined for the periodic allocation of data on the basis of the indicator to be input;
- publicly show the progress made on all indicators identified (progress of Plan actions, outputs and results consistent with the “Digital Growth Strategy”, etc.), making it possible to filter them through different analysis dimensions (by territory, by period of recording, by topic, etc.);
- represent the data in a user-friendly graphic format, ensuring its availability in open format.

Results Monitoring platform operative for the collection of data and representation of indicators (December 2019).

Areas of intervention Short-term impact on the PAs.

11.4 Strengthening competences

11.4.1 Scenario

The technological evolution and consequent demands for digital services by the citizen, lead to the need to identify reference models for the definition of training initiatives, assessment

and optimisation of digital competences. Under the scope of this topic, we can talk of three different levels of intervention:

- **basic digital competences:** these are the essential skills required in order to interact with the digital world. On this matter, AgID has made an Italian translation available of the European DigComp 2.1 model, containing 5 dimensions (Literacy on information and data, collaboration and communication, creation of digital contents, security, problem-solving), on 8 levels (2 basic levels, two intermediate levels, two advanced and two of high specialisation). Thanks to this model, the administrations can plan training interventions by which to increase competences in specific areas (e.g. citizen and/or staff training on the secure use of the internet), directing the suppliers of training to the mapping of the training path with respect to the European model;
- **specialised digital competences:** on this topic, Italy is cutting-edge in the cataloguing of professional ICT competences. Thanks to technical regulation, catalogues are available describing general (23) ICT professional profiles and specialised (currently 25 profiles for the web, 12 for cyber security and 5 for geographic information) profiles, which have led AgID to prepare guidelines by which to update the ICT profiles dictionary. This catalogue also defines mapping activities of additional types of cataloguing (e.g. Consip, ISTAT), so as to harmonise the terminology used on the market;
- **e-leadership digital competences:** the need to transform the PA in a digital approach leads to the need to provide decision-makers with digital leadership (or e-leadership) competences. In these terms, the AgID initiative of making available specific e-leadership guidelines will allow the administrations to understand the needs for organisational and training interventions.

On these matters, already following publication of the previous Three-Year Plan, the Department of Public Function has promoted the project on the Digital Competences for the PA, which aims to speed up the digital transformation processes of the PA and improve the relevant services, allowing all public employees to access customised training plans through which to increase their digital competences.

A first draft has resulted in the preparation of a Syllabus (thanks to a working party, comprising experts in digital competences and training) which defines all digital skills and knowledge, considered key to the public administration, such as, by way of example: the management of data and information, security, on-line services, communication and knowledge of emerging technologies. The document was submitted for consultation until December 2018.

The consultation results will be taken into account by the Department of Public Function in order to prepare the final text, with the aim of adopting a shared framework of basic digital competences and offer targeted training.

In the last two years, the National School of Administration (SNA) and Formez, in collaboration with AgID and the Digital Transformation Team, have launched and are currently working on intense training for employees of the Public Administration. The scheduling of initiatives organised by the SNA is available on the [National School of Administration](#) website; the contents and programming of the webinars organised by Formez are available on the pages of the [dedicated website](#).

11.4.2 Objectives

- Identify tools for the development of human capital, technologies and services aimed at achieving greater efficiency of the organisational processes
- Identify specific technical-professional competences in order to identify public employees competent on the digital culture to support the activities of the PA Digital Transition Manager
- Support the transformation of the Public Administration, improving digital competences - through training and administrative capacity strengthening processes - and the approach to the simplification and digitisation of territories as an enabling factor for the sustainable growth of the country system, making the most of available financing opportunities.

11.4.3 Action lines

LA86 - Design and delivery of ICT Project Management courses for RTD

Timing	From January 2019
Players	SNA, Formez, AgID, Digital Transformation Team, other training structures of the PA, research centres and the academic world, PAs involved
Description	All training structures of the PA will be involved in planning and delivering dedicated courses to the Digital Transition Managers, on various levels and with different methods by which to convey the contents: ranging from short courses with contents summarised in quick reference manuals to webinars and MOOC,

further investigation courses on the topics of the Three-Year Plan and right through to real masters degrees on process re-engineering.

Results At least 10 training initiatives delivered for each year of the Three-Year Plan: at least 30 initiatives at the end of the three-year period (December 2021).

Areas of intervention Short-term impact on the PAs.

LA87 - Design and delivery of basic and specialised training initiatives for the PA

Timing From January 2019

Players SNA, Formez, AgID, Digital Transformation Team, other training structures of the PA, research centres and the academic world

Description Following on from the experience of the previous Three-Year Plan, the design and development is currently in progress of basic and specialised training initiatives for PA employees, with a twofold purpose: to provide everyone, including those not involved in IT, with a framework through which to gain an understanding of the digital transformation of the country and to present the advantages in terms of simplification and greater efficiency of the administrative machine as a whole. The delivery of physical seminars, literacy webinars and specialised courses will be organised both on a national level and with the Regional Authorities, Metropolitan cities, municipalities, offering innovative training models.

Results At least 50 training initiatives delivered at the end of the three-year period 2019 - 2021.

Areas of intervention Short-term impact on the PAs.

11.5 First initiatives towards citizens and businesses

11.5.1 Scenario

Digital Ombudsman. Italian Delegate Law no. 124 of 07 August 2015 contains, under Article 1, the Charter of Digital Citizenship, a strong sign in support of the legislator's intention to strengthen and make effective the digital rights of the citizens in regard to public administrations. More specifically, the objective is explained of guaranteeing equal treatment of citizens and a capacity to access the network that is uniformly distributed in the main areas of protection for the citizen, such as the use of technologies, the digital identity, the digital domicile, payments using computerised means and communication by means of information technology.

The recent reform of the Digital Administration Code (CAD) has strengthened the principle of the exercise of digital rights.

The figure of the Digital Ombudsman, envisaged previously at all public administrations, has today taken on the function of a single ombudsman on a national level, with the task of collecting reports relative to alleged breaches of the Digital Ombudsman or any other rule governing digitisation and innovation, as a guarantee of the digital citizenship rights of citizens and businesses.

These rights take concrete form mainly in the possibility for the citizen and businesses to use the digital identity, the digital domicile, payments using computerised means and communication by means of information technology. Anyone can make a report. The Ombudsman examines the reports and, if he believes them to be grounded, asks the perpetrator to promptly remedy the issues and publishes the related decision on-line.

The Digital Ombudsman supports citizens and businesses to effectively assure the exercise of digital citizenship rights. Knowledge of any operative critical issues noted at the public administrations will allow for the easier identification of any action to be taken or possible corrective measures to be adopted by which to improve the administrative action as a whole. Moreover, the Ombudsman decides, at the report of the user, in order to ensure the correct implementation of the Stanca Law on IT tools for the disabled (in accordance with paragraph 3 of Article 3-quinquies of Italian Law no. 4/2004, updated by Italian Legislative Decree no. 106/2018).

Digital domicile. Italian Legislative Decree no. 217 of 13 December 2017 has introduced the digital domiciles of citizens and subjects who voluntarily choose to opt for such domicile for the receipt of communications from the PA and Public Service Managers.

Simplification agreement. As regards the initiatives and impacts that the Plan will have on businesses, close links must be drawn with those of the Simplification Agreement currently being defined by the Department of Public Function.

The 2015 - 2017 Simplification Agenda, currently being updated, has already implemented a particularly important intervention in the favour of businesses: that of the administrative simplification of the single branches for production and construction. It is an action line that is still in progress, as outlined below.

11.5.2 Objectives

- Develop a network comprising the Digital Ombudsman and Digital Transition Managers and start a synergic, profitable collaboration to plan and coordinate initiatives aimed at assuring a more effective supply of services on the network and effective dissemination of digital solutions for citizens and businesses

- Support the implementation of digital citizenship in the protection of the relevant rights/duties: right of the digital citizen to use services; duty of the citizen to comply with the methods required by eGovernment to exercise such rights
- Develop the infrastructure for the management of the digital domiciles of natural persons and private law entities not already obliged to choose a digital domicile Define communication actions towards the PA and Public Service Managers required to use digital domiciles
- From the point of view of the design and delivery of digital public services: overcome the “logic of fulfilment” whereby the extended control envisaged by the rule entails the continuous requesting of the same information from citizens and businesses. The principle must be upturned: the information, which must be supplied by the business/citizen to the PA just once, becomes an asset of the Public Administration as a whole, taking a continuous circulation and enriched approach
- As regards administrative simplification: aim for procedural simplification and standardisation, which is achieved through a series of actions ranging from the extension of the recognition of procedures impacting citizens and businesses for production to a further education of procedures still subject to authorisations and the completion of the standardisation of forms and preparation of the related XML data schemes

11.5.3 Action lines

LA88 - Interaction of the figure of the Digital Ombudsman with the network of Digital Transition Managers

Timing from July 2019

Players AgID, central administrations

Description identification and assessment of possible models that can be used for interaction between the Digital Transition Manager of the central administrations and the Ombudsman; start-up of a trial to create a synergic network.

Results AgID and Central administrations launch network activities (from January 2020).

Areas of intervention Short- and medium-term impact on the PAs.

LA89 - Preparation of the Guide to Digital Citizenship Rights

Timing in progress

Players AgID

Description Preparation of a Guide for citizens setting out the main digital rights contained in the CAD, which regulate and simplify the relationship of citizens and businesses with regard to the PA. The document is created as a practical, agile tool available to citizens and businesses to gain information and be updated as to their digital rights and the forms of protection if the administrations should prevent them from exercising such.

The Guide is also a transparency tool, also aimed at generating knowledge and awareness of the rights of citizens and businesses to make accessible, effective use of technology in relations and communications with the public administrations. In addition to describing the right, the document also presents:

- the enabling platforms (such as, for example: pagoPA, National Register of the Resident Population (ANPR), Public Digital Identity System (SPID), Digital ID card (CIE), electronic invoicing, etc.);
- regulatory references and any implementing provisions;
- specific protection tools.

The conclusive part is dedicated to the forms of protection in regard to the public administrations.

Results AgID publishes the Guide to Digital Citizenship Rights (by December 2019).

Areas of intervention Short-term impact on citizens.

LA90 - The administrative simplification of the single branches for production and construction

Timing in progress

Players Public function, AgID, Regional Authorities, municipalities, chamber system, third party entities (local and central administrations)

Description Starting out from the recognition of administrative proceedings, taking a BPM (Business Process Management) approach, the inter-institutional processes will be defined for the implementation of administrative systems. At the same time, standardisation will continue of forms for the other production activities with the related preparation of XML data schemes.

All forms, the related schemes and connected inter-institutional processes will be speed up through new unified Conference Agreements.

Results Report monitoring the level of adoption of standardised forms by the administrations concerned and the related XML schemes, which shall start out from:

- the presence of the new standardised forms on the institutional websites of the administrations concerned;
- the verification of the use of XML data schemes within the digital services provided by the PA (December 2019).

Areas of intervention Short-term impact on the PA and businesses.

Focus. Simplifying: a good practice

“The management model of the project on the administrative simplification of the single branches for production (SUAP) and construction (SUE)”

Thanks go to the Department of Public Function and the Regional Authorities for their contribution to the preparation of this focus.

Under the scope of administrative simplification, relative to the single branches of production (SUAP) and construction (SUE), the move has been started from an authorisation-centric approach to a business-centric one, through the increase in the interoperability of software solutions developed or being developed. An essential role in this transformation involves a preliminary reasoned analysis of the forms, in order to determine the portions of information that are common and those which are instead specific to each individual form. This is the premise on which basis to optimise requests made for data from businesses: tracing the

request for information to a single instance for common information and a single instance for the portion of information that is specific to each form.

The definition and sharing, at a national level, of the forms is essential to the rationalisation of the computer systems implementing the SUAP and SUE. Right from the outset, there has been full awareness that in order to define a shared logical architecture, which is the essential premise for the interoperability of computer systems, the following must be assured:

- capitalisation on past experience of the players involved (municipalities, Regional Authorities, chamber system);
- mediation between the need for standardisation and the impact on current solutions;
- definition of communication protocols between the players enabling the interoperability of systems regardless of the organisational and technological choices made by municipalities and third party entities.

In order to achieve these objectives, the Department of Public Function has established the technical table for the interoperability of the administrative simplification. Technical-IT coordination has been assigned to AgID, which, following a preliminary context analysis, has identified the following working parties (WPs):

- **WP – XML Scheme:** has the task of defining the XML Schema for the formalisation of the forms shared on a national level and approved in the Unified Conference. The WP also ensures the maintenance of the XML Schema defined, implementing any necessary refactoring actions.
- **WP – Architectures:** through the identification of the operative processes for the implementation of administrative proceedings of interest to the SUAP, using the formal representation guaranteed by BPMN (Business Process Modelling Notation), it determines the architectural components and service interfaces for their interaction. The “service interfaces” are defined in accordance with the “PA Interoperability Model”.

The operating procedures establish that each WP shall identify the details of the actions and deliverables to be achieved, in order to assure that the goal assigned it is reached, always shared and assessed by the technical table.

In order to foster sharing by the participants in the WP, a series of collaborative working tools have been used to share the product code and tools for the shared preparation of the documents produced by the WPs.

As regards the sharing of the product code, the repository used, as it is of public access, ensures its immediate usability by all stakeholders, including the Public Administrations and companies supplying application solutions.

The initiative summarised here takes the form of a good practice of synergies that can be obtained from the collaboration of PAs, by virtue of the results being achieved, in a modular, sequential approach:

- it continues the shared work experience implemented at the simplification tables that thereafter led to the identification of administrative systems;
- it identifies the objectives and their priorities so as to choose those able to be pursued with the existing (economic and time) resources;
- it considers current solutions in place and the related investments;
- it creates a model that enables, through rationalisation and standardisation, the administrations concerned to implement or adopt interoperable IT solutions;
- it involves all stakeholders through participation in working parties on specific topics.

The business Information File as a practical application of the once only principle”

Thanks go to Unioncamere for its help in preparing this focus.

The completion of the project for the development of the Business Information File has been strongly boosted by the publication of Italian Legislative Decree no. 219 of 2016 (reform of the Chambers of Commerce), where, under Article 2, paragraph 2, letter b), it is ruled that the tasks and duties assigned to the chambers of commerce include the preparation and management of the Business Information File which shall gather together data on the establishment, start-up and operation of the business, ...*omissis*.

The Business Information File is therefore a virtual computerised area (national repository) containing all documents relevant to the operation of the business, collected systematically starting from the first opportunity when the entrepreneur sent them to any public administration, typically when fulfilling a requirement.

The method of document collection is based on the obligation assigned to the Administrative Procedure Managers (starting from the SUAP) to send, in electronic format, a copy of the provisions ruled by the Chamber of Commerce in whose district the business is based, for inclusion in the Business Information File. This primary source is supplemented by the mass inclusion of documents processed by competent authorities operating for or with the businesses: for example, Accredia periodically confers all quality certifications issued in the favour of businesses by accredited certification bodies and data is made available by means of the File.

The considerable mass of documents that is gathered into the File by the business office, as referenced in Companies House, is organised into homogeneous classes so as to simplify tracing of documents by public bodies that, during a procedure or verification of self-certification, may autonomously query the File, including through service interfaces, to find out what is already known about the business: documents already supplied by the business and/or by other competent authorities, starting with Unioncamere. Thus the process achieves two results:

- 1) it avoids superfluous requests for documents that can be easily found in the File, thereby applying the once only principle;
- 2) it adds efficiency and certainty to investigations.

Finally, through the [Digital entrepreneur box](#), developed by InfoCamere, from which (using SPID or CNS), free access can be gained to all official documents and information on the business, including the whole contents of the File.

Late 2018, the digital platform developed by the Chambers of Commerce to manage the Business Information File contained just over 7,500,000 documents, split into more than 1,000,000 files, for each of the businesses located throughout Italy.

It is a considerable quantity of information and which evolves constantly thanks to the intensification of the cooperation between local entities and competent authorities and the use of interoperability models, currently being developed with AgID and the administrations concerned.



PART 3 - FINAL CONSIDERATIONS AND GUIDELINES

CHAPTER 12. Rationalisation of the PA's ICT spending

12.1 Scenario

The Three-Year Plan is prepared with reference to that indicated in the Digital Growth Strategy, with the actions, definition of financial needs and indicators set out therein. The Plan aims to direct investments of the public sector to ICT, providing the public administrations with instructions, according to the Government's guidelines, by which to streamline bureaucratic procedures, ensure greater transparency in administrative processes, increase efficiency in the supply of public services and last but by no means least, rationalise spending on IT.

In this context, the preparation of the 2019 - 2021 Three-Year Plan, as for the 2017 - 2019 edition, went hand-in-hand with the recording of ICT spending in the PA (hereinafter referred to as the "2018 Records"): this research and analysis of spending and ICT activities in the PA, with the direct involvement of the main central and local PAs in collecting data and information, supplies useful elements on defining an ever up-to-date image (according to the Plan's rolling logic) of the characteristics of this sector.

In the previous 2017 - 2019 Three-Year Plan, on the basis of the available data and mainly the III Assiform ICT Observatory and the 2017 Records on ICT spending by central administrations, carried out by AgID, the perimeter of "attackable" spending had been defined for the spending review defined in the 2016 Stability Law and, again under the terms of the law, the first assessment of the economic dimension of potential savings at the end of the three-year period 2016-2018, with respect to the average of the previous three years 2013-2015, in terms of the current portion of national annual spending (Opex expenses).

Without prejudice to the fact that only when the consolidated data is available on spending at the end of the three-year period 2016-2018 will it be possible to measure any savings and verify whether or not the overall savings objective has been achieved, the indications for the PA given in the Three-Year Plan, present and previous edition, draw out the route by which to rationalise spending, intended as a requalification of the type of expense and optimisation of the procurement channels.

More specifically, in light of Article 14-bis of the CAD on the functions of AgID, the objectives of the 2018 Records were:

- in general, to collect data and information on the activities of the public administrations, in order to support the annual update of the Three-Year Plan;
- more specifically, to verify/assess, according to a logic of requalification and optimisation, the trend of spending with respect to the digitisation objectives set each time in the Three-Year Plan, analysing:

- a. 2016 - 2019 ICT spending trend of the PA by aggregates;
- b. spending trend within/outside Consip and purchasing bodies;
- c. investment (capex) and operating expenses (opex) spending breakdown trends;
- d. map of the most significant projects in respect to the ICT Strategic Model.

The 2018 Records, obtained in the period running between October 2017 and May 2018, were structured into a pilot phase and a follow-up phase; around 70 administrations were involved, extending the panel of the previous edition from the main central administrations to include the local administrations most involved in the country's digital transformation process and indicated in the 2017 - 2019 Plan as "territorial aggregators", more specifically: the Regional Authorities, the Metropolitan cities and the related area capital municipalities.

Moreover, in order to complete the collection of data and information on the activities of the public administrations, AgID commissioned a sample survey on the activities of the Single Purchasing Bodies (see paragraph 12.4) with the aim of measuring the value of transactions for the portion allocated to the purchase of ICT goods and services, managed directly or by means of the Consip platforms.

The result was therefore a qualitative-quantitative analysis of the current phenomena, including changes with respect to the past, the main evidence of which is given in this chapter.

With this activity, AgID has launched a verification and assessment of ICT spending in the PA, in a bid to finalise a system for monitoring and classifying expenses by objectives and not only by product classes.

As per the structured used in the 2017 - 2019 Plan, the presentation of the results of the 2018 Records is set in the more general context of the trend of ICT spending in all segments of the Italian PA, according to the availability of the most recent estimates and analyses, as shown below.

12.1.1 ICT spending in the Italian PA - overall trend and breakdown

On the basis of the latest analyses in this area, during the two years 2016 - 2017, the digital market of the Public Administration recorded, as a whole, a substantially stable trend, settling at average values of just over 5.5 billion euros, in line with that recorded during the three-year period 2013 - 2015.

Figure 12.1 describes the trend for 2016 and 2017, with respect to the average value for the previous three-year period, highlighting spending trends for each of the segments (Defined in

the PA ICT Observatory) making up public ICT: Central administrations (state sector and other central administration bodies), Regional Authorities, Local administrations (local bodies and other entities on the territory), healthcare (including regional healthcare) and education (school/university/research).

ICT SPENDING IN THE ITALIAN PA

Figures in millions (€)

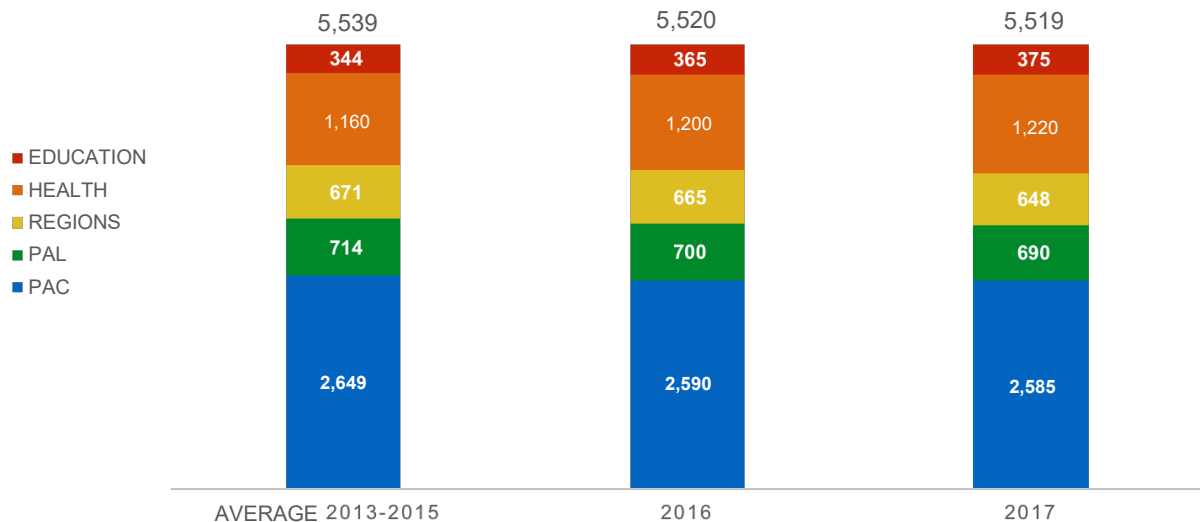


Figure 12.1 - ICT spending in the Italian PA (Source: NetConsulting cube, 2018)

Moving onto a segment level, it is the central Public Administration that generates most of the expense, with a value in the two-year period 2016 - 2017 now close to 2.6 billion euros, or 45% of total PA spending. This segment, which in previous years had reduced sharply, has remained basically stable in the last two years. More specifically, it is the Ministries and main welfare entities that spend the most on average, with a focus on system projects.

The second segment in terms of incidence on spending, of approximately 25%, is the local public administrations, which in the period under review recorded average spending in excess of 1.4 billion euros. The segment includes the Autonomous Provinces and Regions (with the exception of the regional healthcare systems whose spending is booked to a specific item called Healthcare), to which just under half of all spending by the local PA goes, whilst the remainder relates to the Provincial Authorities, municipalities, metropolitan cities, consortia between local administrations, unions of municipalities, mountain communities, island communities and other local bodies.

Differently to central and local PA spending, spending for healthcare and education are segments that in 2016 - 2017 grow, respectively by 1.7% and 2.7%.

ICT spending in healthcare, approximately 20% of PA spending, comes to 1.2 billion euros in 2017 and relates to regions (regional health systems), local healthcare administrations, hospitals/university hospitals, polyclinics and scientific hospitalisation institutes.

The picture of the macro types of PA is completed, with an average spend in the two years under review of approximately 370 million euros, by education, generated by universities and public university educational institutes, state schools and university research entities.

In general, figure 12.2, in observing the breakdown of spending for 2017 by economic nature, as capex (capital expenditure) and opex (operating expenditure), the market as a whole showed a prevalence of operating expenses (66%) over capital expenditure (34%); on a segment level, healthcare and education are those in which the investment is the highest in percentage terms (approximately 40%); the central PA is in line with the overall market average, whilst the local PA is significantly below average.

BREAKDOWN OF ICT SPENDING BY TYPE 2017

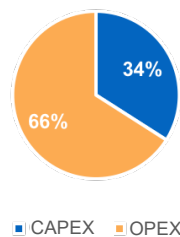


Figure 12.2 - Breakdown of spending by type (Source: NetConsulting cube, 2018)

In terms of the breakdown by macro item of cost, figure 12.3, expenditure for services (which includes, amongst others, the components linked to the cloud services, telephone services and data transmission and training), accounts for almost half all spending (approximately 45%), followed, in terms of incidence, by spending on application developments (24%) and the part share for hardware and software maintenance, including application devices, equal to 21% of the market.

Just like in previous years, the hardware segment is showing a progressive, continuous decline of spending on the PC (desktop) component and printing, as well as in telecommunications, which remains an important share of the spending of bodies. The decline is determined by major reductions in the costs of fixed and mobile networks; both in respect of hardware and telephone systems in general, the decline is due to the renewal of framework and other agreements able to assure the entities significant savings.

BREAKDOWN OF ICT SPENDING BY MACRO ITEMS

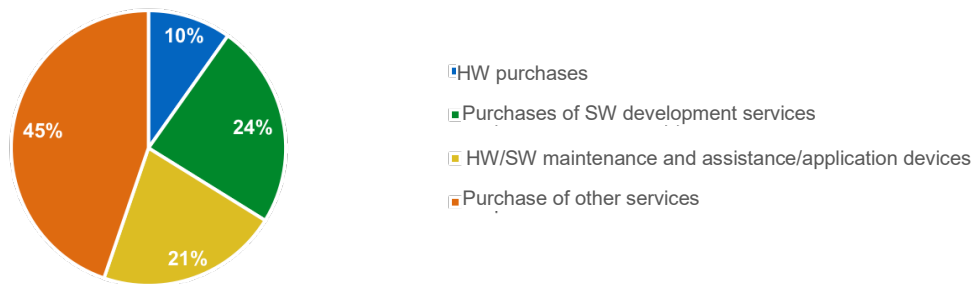


Figure 12.3 - Breakdown of spending by macro items (Source: NetConsulting cube, 2018)

These dynamics fall within a context hinged on the spending review, as initially indicated by the 2016 Stability Law and subsequently in the 2017 - 2019 Three-Year Plan for IT in the Public Administration, which outlined a strategy aimed at obtaining a requalification of IT spending.

12.1.2 The 2018 AgID Records - main panel characteristics

All PAs that took part, answering the qualitative-quantitative questionnaire on-line, consist of:

- 19 central administrations (ministries, tax agencies, INPS, INAIL and ACI) - Central PA.
- 21 Autonomous Provinces and Regional Administrations - Regions.
- 14 Metropolitan cities - local PA.
- 14 area municipalities of the metropolitan cities (more than 150,000 inhabitants) - local PA.



All Administrations involved were asked to supply comprehensive data on spending managed by means of in-house companies and regulated on the basis of one or more service contracts and/or agreements.

In consideration of the variety and complexity of the framework of relations in place between PA and in-house companies, in some cases a specific investigation was carried out, which directly involved some regional in-house companies (CSI Piedmont, Lepida, Cup 2000 and Liguria Digitale) and a central one, Sogei spa, in the collection and first reading of data. This activity on the one hand has enabled a greater completeness of the data supplied and, on the other, has marked a start to the involvement of these subjects in the more general monitoring activity described previously.

In the comprehensive context of ICT spending in the Italian PA, described previously, the panel of PA involved, as shown in the figure below, accounts for approximately 72% of total spending of the scope, comprising: state sector (Ministries - President of the Council of Ministers - Tax Agencies - Constitutional bodies), welfare entities, autonomous provinces and regions, municipalities with more than 150,000 inhabitants and metropolitan cities and does not include most of healthcare spending (territorial) and education spending (universities, public schools, university research entities).

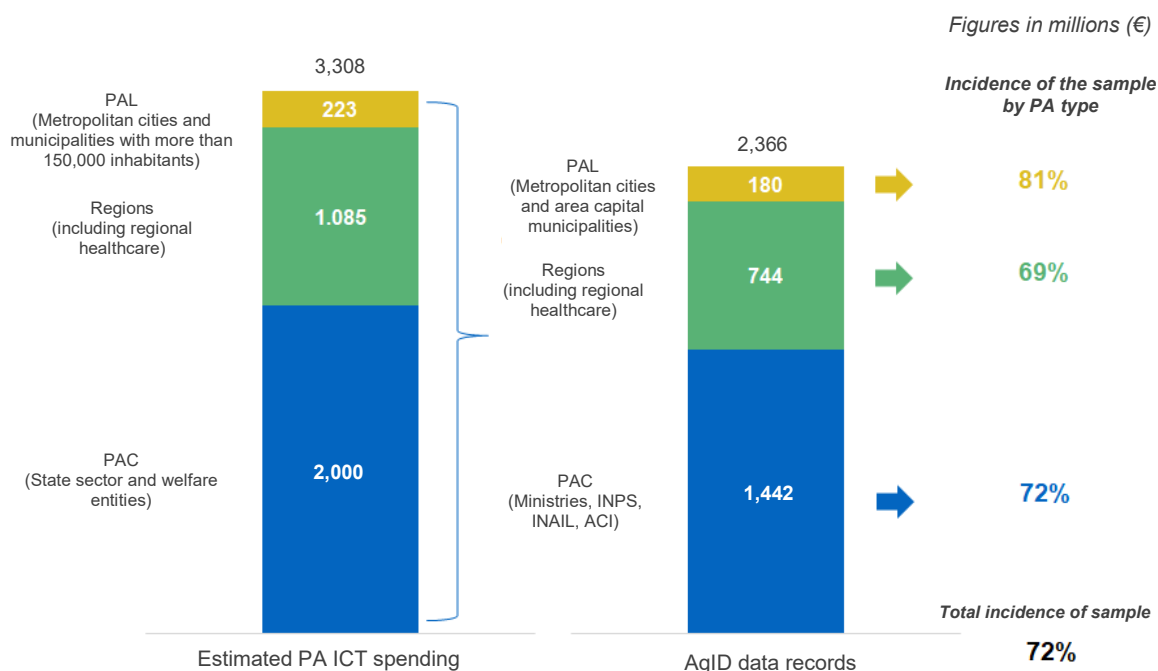


Figure 12.4 - Representativeness of the panel of the AgID Records on the reference PA scope - processing of 2016 data (Source: AgID - NetConsulting cube, 2018)

The qualitative-quantitative analysis set out below therefore seeks to highlight the most significant trends in relation to the data collected with the administrations involved, as a useful point of reference for the observation of the digital transformation process in progress more generally in the public sector.

Moving onto read the results, the first reflection that emerges from a structural and organisational viewpoint is as follows: faced with the complexity of the public sector in Italy, including the dimensional diversity of the different types of entities, the presence of staff assigned to ICT services (figure 12.5) shows a percentage incidence that is generally homogeneous in the period considered and which can be quantified as totalling around 1.7% (average over the 4 years) of the total staff in service in the PAs concerned.

The trend grows slightly on the past, but is in any case limited if considered in respect of all digitisation processes in progress or at a start-up phase, which involved, even if to differing extents, all PAs.

STAFF IN SERVICE BY SEGMENT AND % ICT STAFF OUT OF TOTAL STAFF IN SERVICE

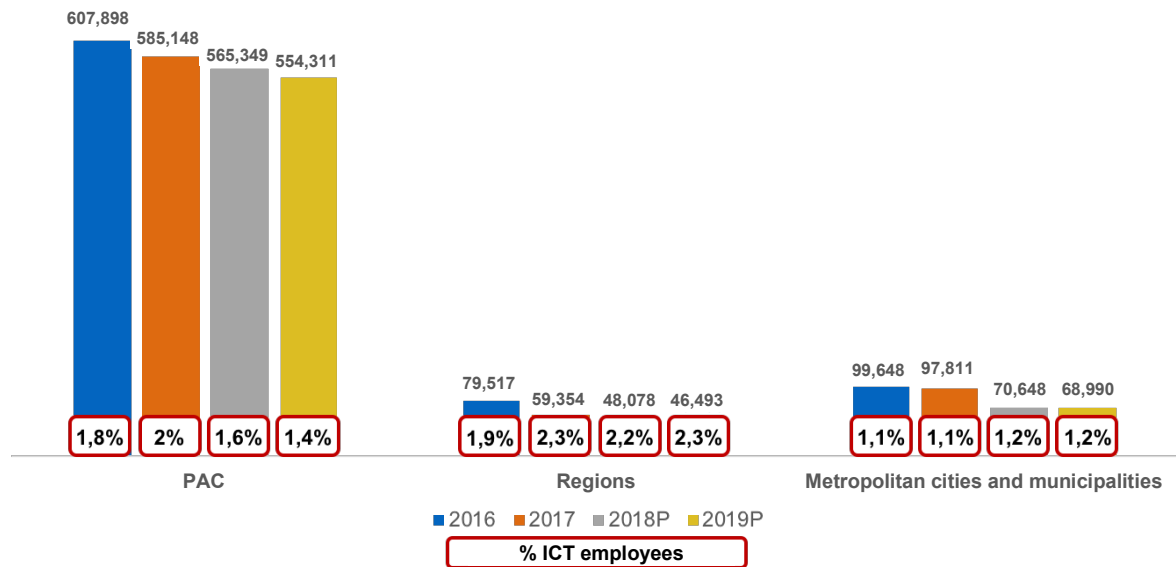


Figure 12.5 - Staff in service by segment and % ICT staff out of total staff in service (Source: AgID, 2018)

The table below shows, for the different types of PA, the main method by which information systems are managed for 2016.

Management through assignment to in-house companies is prevalent in Regional Authorities, where it comes in at 62%.

We note for central administrations, that equal use was made of in-house, outsourcing and internal management, with a slight prevalence of the latter.

For metropolitan cities and municipalities, on the other hand, use of internal management was far more frequent (70%).

MAIN METHOD BY WHICH INFORMATION SYSTEMS ARE MANAGED 2016			
ENTITY TYPE	In-house	Internal management	Outsourcing
PAC	31%	38%	31%
Regions	62%	33%	5%
PAL	15%	70%	15%

For the three-year period 2017 - 2019, just 15% of the panel expects to change the main method used to manage information systems: half expect to make the move towards outsourced management, whilst 33% will be entrusting it to in-house.

12.2 General overview and spending trend in the period 2016 - 2019

The data collected, divided up by category of cost based on the SIOPE management codes and by type of purchase tool (Consip/purchasing bodies and off Consip/purchasing bodies) on the basis of the assumptions detailed in annex 2, has made it possible to reconstruct the trend shown below.

It is considered useful to point out that the overviews shown below, to classify the comprehensive understanding above all of the provisional data, required some estimates and weightings (based on available sources) of spot data declared by the individual PAs.

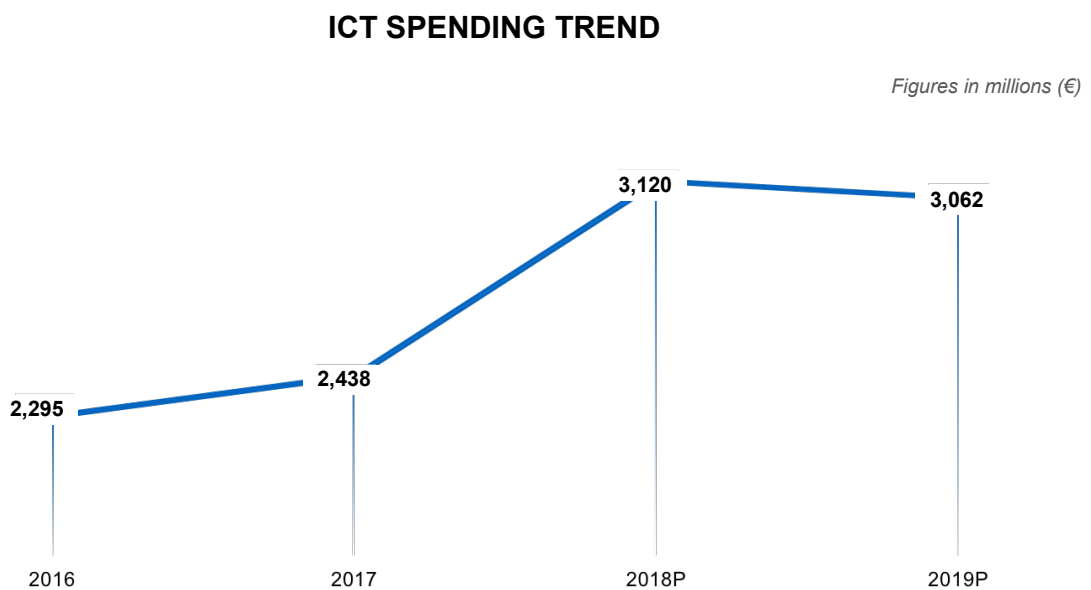


Figure 12.6 - 2016-2019 ICT spending trend of the panel of PA (Source: AgID, 2018)

Figure 12.6 shows the trend of total spending for the reference panel, showing substantial stability between 2016 and 2017 and growth between 2017 and 2018 (provisional data) that is clearer and comes to approximately 28%, before settling again in 2019 (provisional data). It is important to stress that the estimates for 2018 and 2019 are the result of processing of data taken from the budgets of the entities involved and, therefore, can only be taken for information and must be verified in subsequent records.

In any case, in evaluating the 2017 - 2018 change, we can certainly say that it is weighted by the hypotheses currently formulated by the various PAs for the part of spending applicable to programmes co-financed by European Community funds, in particular structural funds, through the National and Regional Operative Programmes of the current programming period 2014 - 2020.

2018 in fact represents a milestone for the assessment of spending of 2014 - 2020 Community programmes as it concentrates two important deadlines:

- the periodic verification of the individual programmes on the basis of which the European Commission may decide to proceed with the release of part of the total amount (the “n+3”, Article 136 [Reg. EC 1303/ 2013](#));
- the interim verification of the efficacy of each programme seen on the certified spending and physical outputs of each axis of the co-financed programmes (referred to as the “performance framework”, Articles 21 and 22 of [Reg. EC 1303/ 2013](#)).

The combination of these two elements has, very probably, led the PAs involved to concentrate their spending hypotheses on this year.

The trend seen in public spending, in any case, has always been very much influenced by Community spending and deadlines. Indeed if, by way of example, we take a look at figure 12.7, the trend of the portion of IT spending applicable to Community funds monitored by the MEF - RGS - IGRUE in the last five years, we can immediately see a peak for 2015, which coincided with the economic/financial closure of the co-financed programmes in the programming period 2007 - 2013.

TREND OF ICT SPENDING BY COMMUNITY PROGRAMMES (NOP AND ROP)

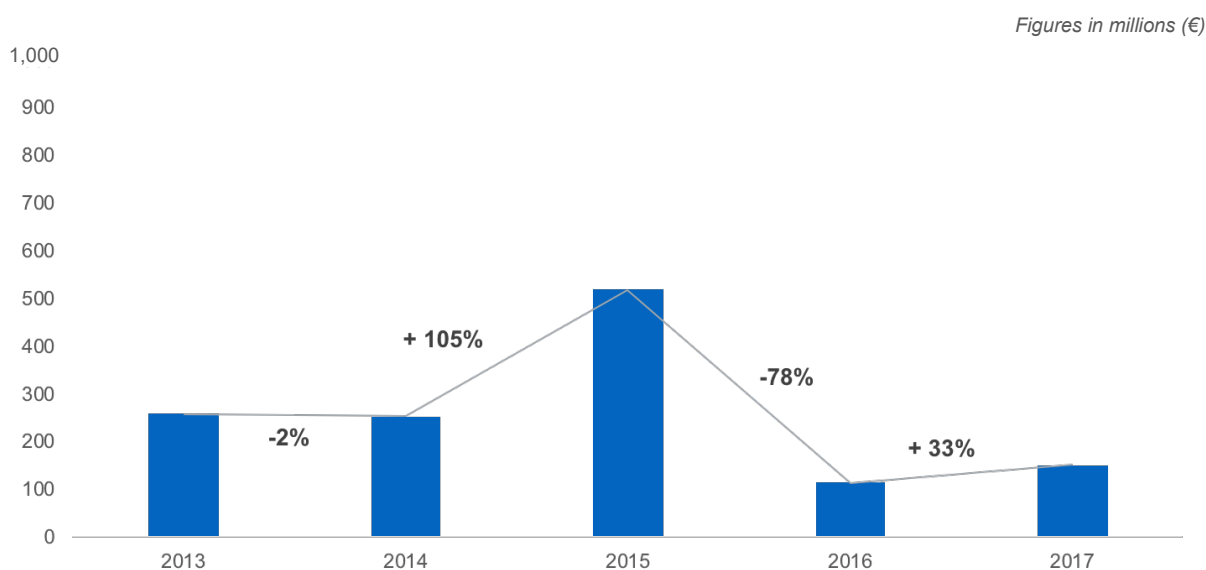


Figure 12.7 - Trend of ICT spending by Community Programmes (Source: OpenCoesione, 2018)

Below is a presentation, for the individual segments of the panel administrations, of the trend of spending on ICT goods and services for the years concerned by the survey. The data has been collected and classified by nature, as follows:

- **CAPEX spending (investments made in technological innovation)**
 - Hardware purchases
 - Purchases of software development services
- **OPEX spending (expenses for the maintenance and operative management of technology)**
 - Licence purchases
 - Hardware/software maintenance and assistance/monitoring of applications
 - Purchase of other services

It should be recalled that the macro categories and categories indicated have been correlated, through the attached transcoding table, to SIOPE management codes (2017 version local entities and regional authorities).

ICT SPENDING TREND CENTRAL PUBLIC ADMINISTRATION

Figures in millions (€)

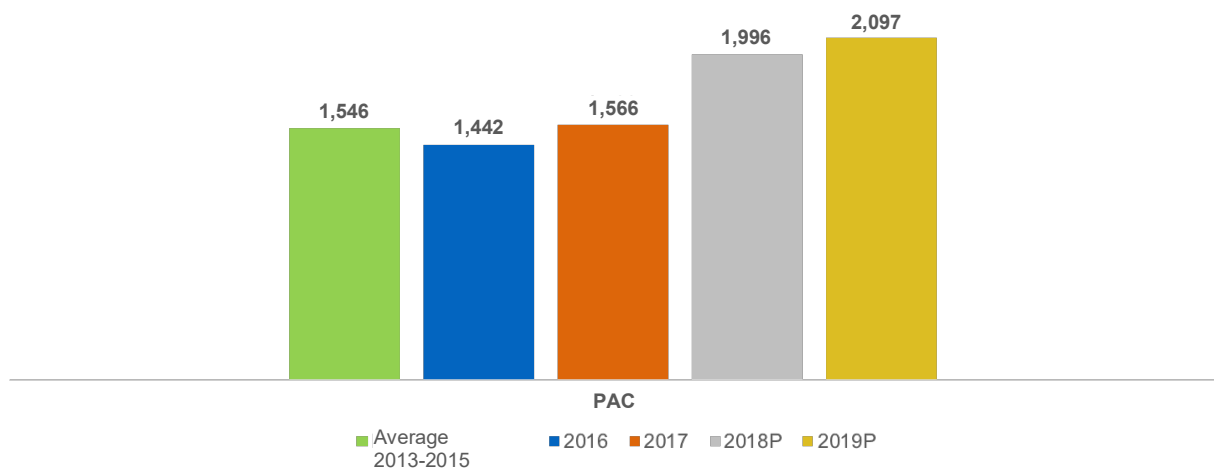


Figure 12.8 - ICT spending trend - Central Public Administration (Source: AgID, 2018)

Against a substantial stability through to 2017, with differences up or down of less than 1%, the change in 2018 is in line with the general change and comes to approximately 27%.

For the 2018 forecasts, the above consideration applies on the hypotheses linked to the programmes co-financed by the structural funds.

Moving onto then examine the individual Administrations, the most significant allocations are those of the Minister for the Interior and the National Social Security Institute (INPS). More specifically, the Minister for the Interior concentrates almost all its spending on items coming under the type of operating expenses (OPEX), which, for this year, accounts for approximately 90% of the total: the largest cost items are fixed telephone services and connectivity, telephone and data services. In both cases, purchases are made mainly off Consip/purchasing bodies.

The data supplied by INPS for this year shows an allocation of the different items, equally proportional between opex and capex, directly resources respectively towards the purchase of software packages available on the market (capex) and software management and maintenance (opex), in both cases prevalence being given to the purchases by means of centralised tools.

ICT SPENDING TREND REGIONS

Figures in millions (€)

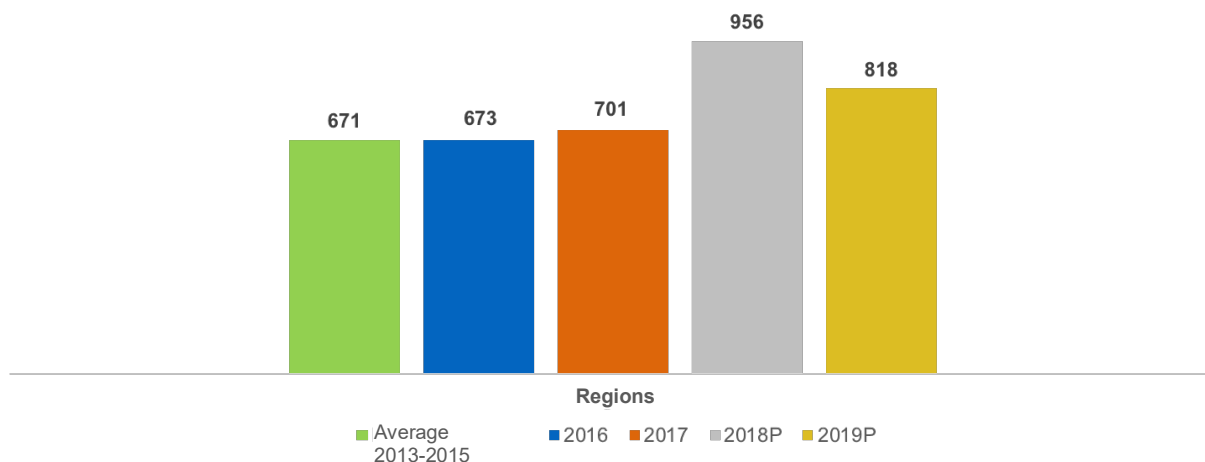


Figure 12.9 - ICT spending trend - Regions (Source: AgID, 2018)

As regards the regional administrations, 2016 showed spending in line with that recorded on average in the period 2013 - 2015, whilst for 2017, above all according to the forecasts for 2018, significant growth is seen, equal to 36% above all in the administrations of the centre-south and in particular for the regions of Abruzzo, Lazio, Apulia and Sicily. The growth trend, if confirmed, may be explained not only by the foregoing on deadlines and the programming of structural funds, but also by the growing trend, as explained in the paragraph above, of spending allocated to healthcare and therefore also including the part share assigned to regions.

The most significant allocation of resources for 2018 is that envisaged by the Regional Authority of Lombardy with the aim of directing spending mainly towards software management and maintenance and the purchase of other services, both items relating to the current portion of spending.

ICT SPENDING TREND METROPOLITAN CITIES AND MUNICIPALITIES

Figures in millions (€)

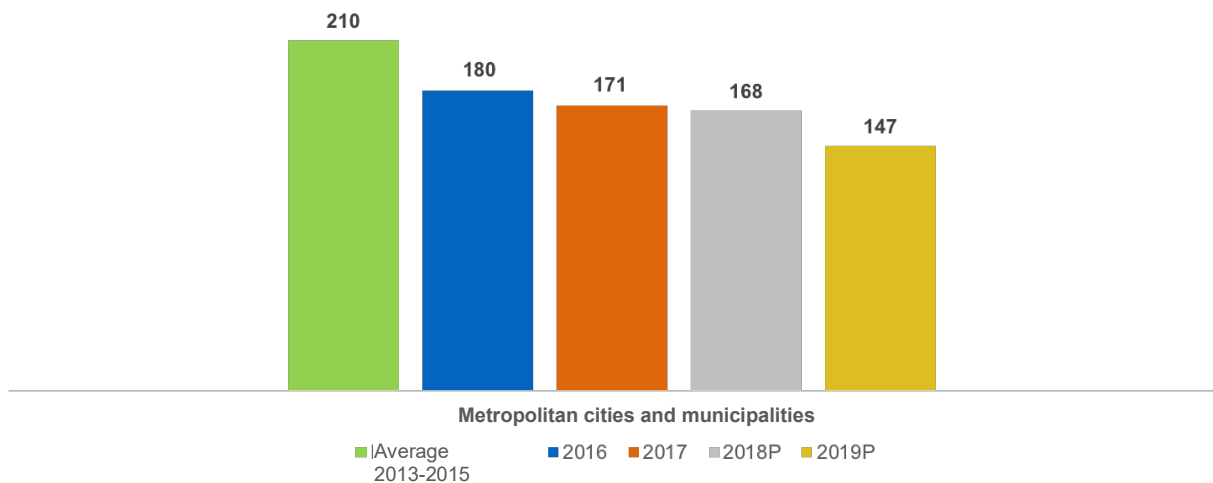


Figure 12.10 - ICT spending trend - Metropolitan cities and municipalities (Source: AgID, 2018)

Finally, and differently to the other segments, the local public administration is characterised by a reduction in spending on ICT goods and services that is constant over time and makes for around 6.5% less each year¹⁶. However, the forecasts released for 2019 by the metropolitan city of Genoa and the municipalities of Cagliari, Genoa and Naples go against the trend shown by the overall sample.

¹⁶ Compound annual growth rate 2016 - 2019: the compound annual growth rate is the average percentage growth of a figure over a period of time.

In detail, as regards the metropolitan city of Genoa and the municipality of Naples, the expected increase in resources will affect both capex and opex, whilst for the municipality of Genoa, although increasing its spending on investments in technological innovation, it will continue to plough more than 50% of its resources into operative management. Finally, the reversal of trend is noteworthy of the municipality of Cagliari, which, in 2019, expects to break down its spending as follows: 32% capex - 68% opex with respect to the previous year's 78% capex - 22% opex.

As already mentioned, all considerations on the trends with respect to the PAs considered in total, will be verified with the forthcoming monitoring of ICT spending.

However, it is perhaps useful to summarise them and compare them with the results of the previous records taken¹⁷ on the positioning maps shown in figure 12.11, to observe the changes of this part of the PA system with respect to the elements observed, the breakdown of spending by type (capex and opex) and purchasing tools.

The figure below in fact shows the positioning of the central administrations, the Regional Authorities and the local administrations (metropolitan cities and area capital municipalities) deriving respectively from: the incidence of capex over the total on the vertical axis and the incidence of spending by means of Consip and purchasing bodies again over the total on the horizontal axis, in the three-year period 2013 - 2015, in the two-year-period 2016 - 2017 (estimate on balance) and in the two-year period 2018 - 2019 (estimate on forecasts).

¹⁷ III ICT Assiform Observatory and AgID 2017 Records of ICT spending by central administrations.

ICT POSITIONING MAP

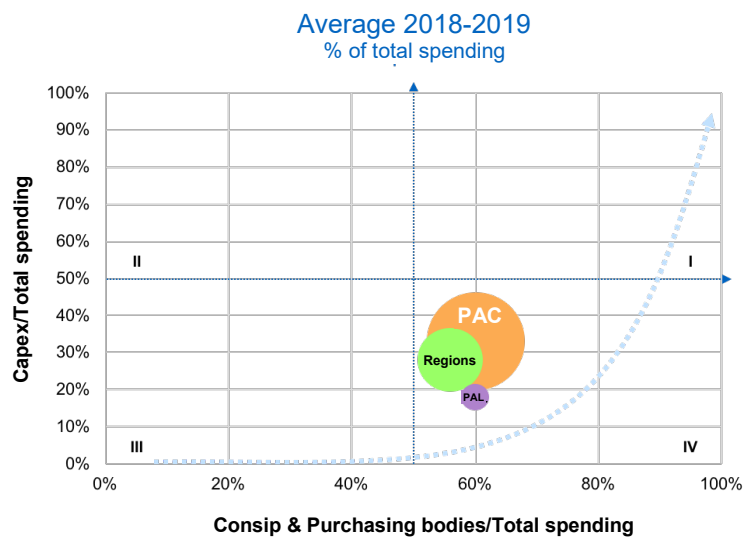
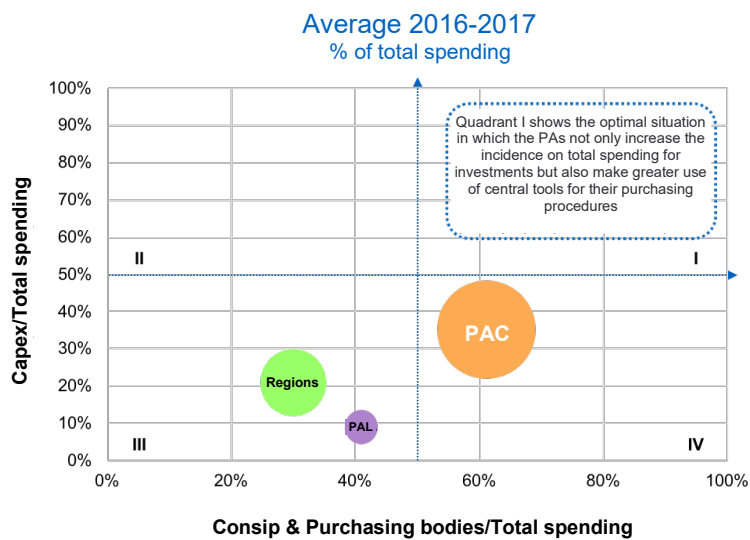
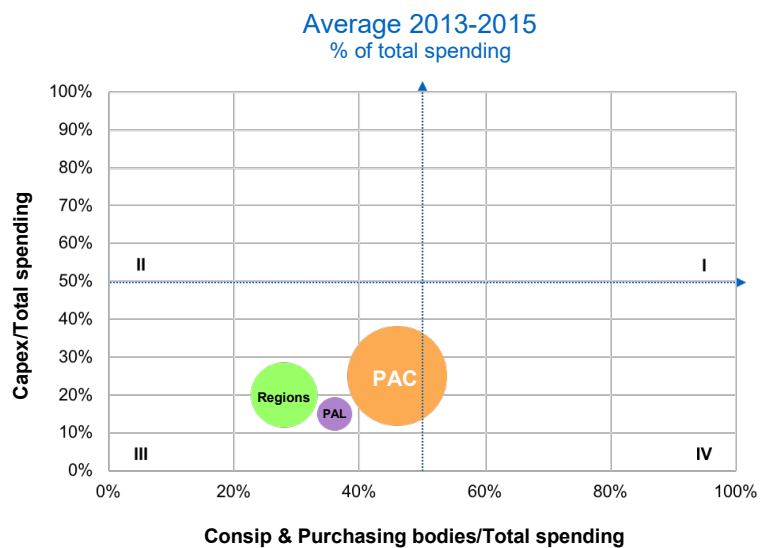


Figure 12.11 - ICT positioning map (Source: AgID, 2018)

As shown in the graph, the positioning in quadrant I shows the optimal situation in which the PAs not only increase the incidence on total spending for investments but also make greater use of central tools for their purchasing procedures, in line with the indications of the Three-Year ICT Plan.

The map of the three-year period 2013 - 2015 (average value) identifies the initial position, the so-called “baseline” on which the logics were constructed for the intervention for the requalification and optimisation of the various segments and different PAs are all concentrated in quadrant III, with spending characterised not only by a clear prevalence of the operative component over investments but also by limited recourse to central purchasing channels.

Moving onto the map of the two years 2016 - 2017, which coincided with the construction and start-up of the action logic of the 2017 - 2019 Three-Year Plan, there is a clear change made by the main central administrations in this sense, as a result of the driving role played in territorial governance and the relevance of spending and the involvement envisaged and developed in the Plan’s preparation.

Observing the graph of the two years 2018 - 2019, the change in direction indicated by the arrow shows a “virtuous” movement of consistency with the Three-Year Plan, in particular towards a greater use of central buying tools, Consip and the purchasing bodies, many of which are being concretely started up, as described further on. From a system approach, a greater homogeneity of choices is also noted in the different components of the PA system, all concentrated and almost overlaid in quadrant IV, essential to improving the overall effectiveness of the entire design.

12.2.1 2016 - 2019 Capex/Opex trend

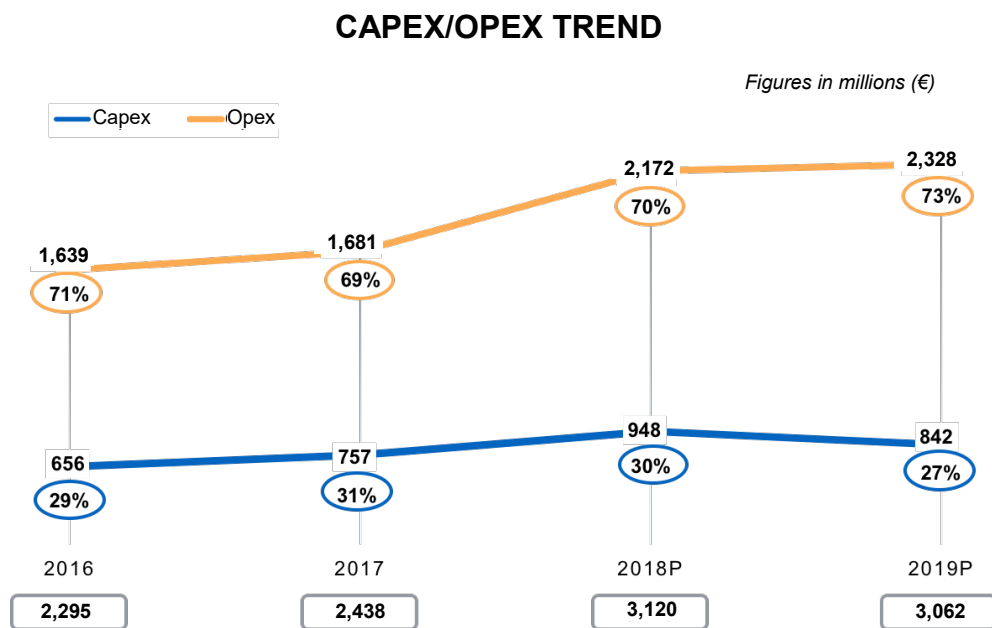


Figure 12.12 - Breakdown by type (Source: AgID, 2018)

All segments, during the years recorded, showed a constant prevalence of opex over capex, however the metropolitan cities and municipalities indicate, in 2018, a considerable increase in capex over the total (for more details, see the tables given in annex 2). It should be recalled that the panel observed, in terms of spending segments, excludes spending on healthcare (above all) and education, which, as also stressed previously (see paragraph 12.1.1) generate the greatest percentage of capital expenditure.

12.2.2 2016 - 2019 trend of Consip centres/Off Consip centres

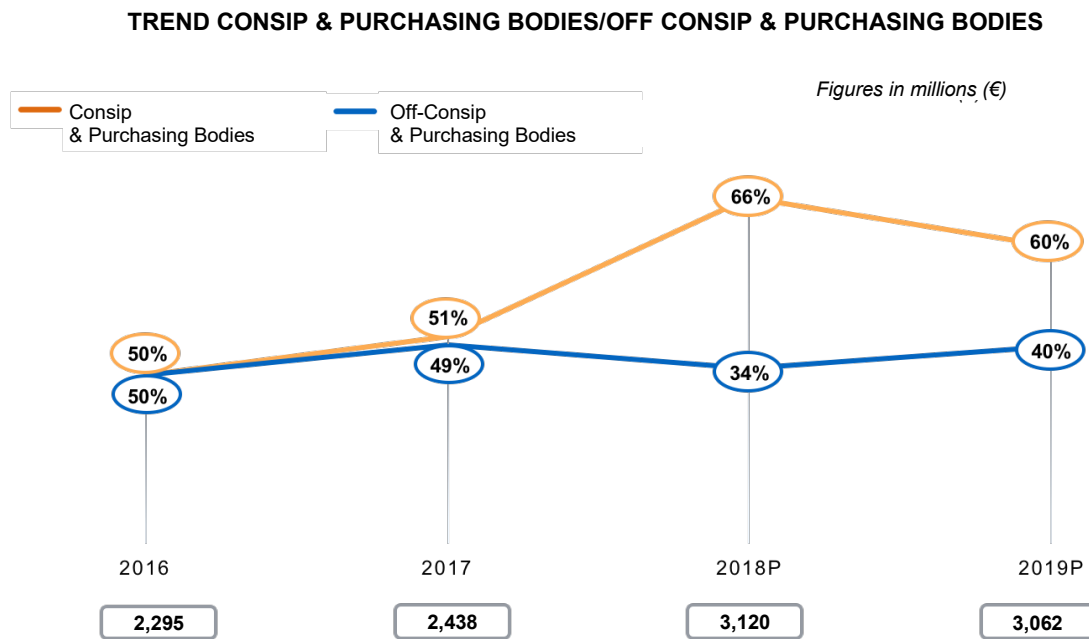


Figure 12.13 - Breakdown of spending by procurement channel (Source: AgID, 2018)

The trend of spending by type of procurement channel, by means of or outside the tools Consip/Purchasing bodies, shown in figure 12.13, reveals a clear change in direction for 2018 in terms of procurement methods, with growing use of central channels for up to 66% of total spending.

As compared with the past, this difference is mainly accentuated by the trends of the regional administrations and local administrations.

Indeed, regional administrations, between 2017 and 2018, envisaged an increase of around 3.3 times in regard to spending by means of Consip/Purchasing bodies, in particular: the Autonomous Region of Sardinia, the Region of Lombardy, the Region of Basilicata and the Region of Veneto consider a radical change to how they make their purchases.

The same trends are seen for the metropolitan cities and municipalities, which in 2017 and 2018 record a rise of 18% for spending carried out using Consip/Purchasing bodies and a decline of 25% in that carried out using other procurement tools. The forecast of Rome Capital city should be noted, which indicates a clear reversal of trend in respect of the tools used: for its purchases, in fact, the municipality expects to approximately double spending by means of Consip/Purchasing bodies and almost halve that carried out off Consip/Purchasing bodies.

Finally, as a whole, the central public administrations do not expect to change their procurement methods. For 2018, in fact, they expect to mainly make purchases through Consip & Purchasing Bodies/Purchasing bodies.

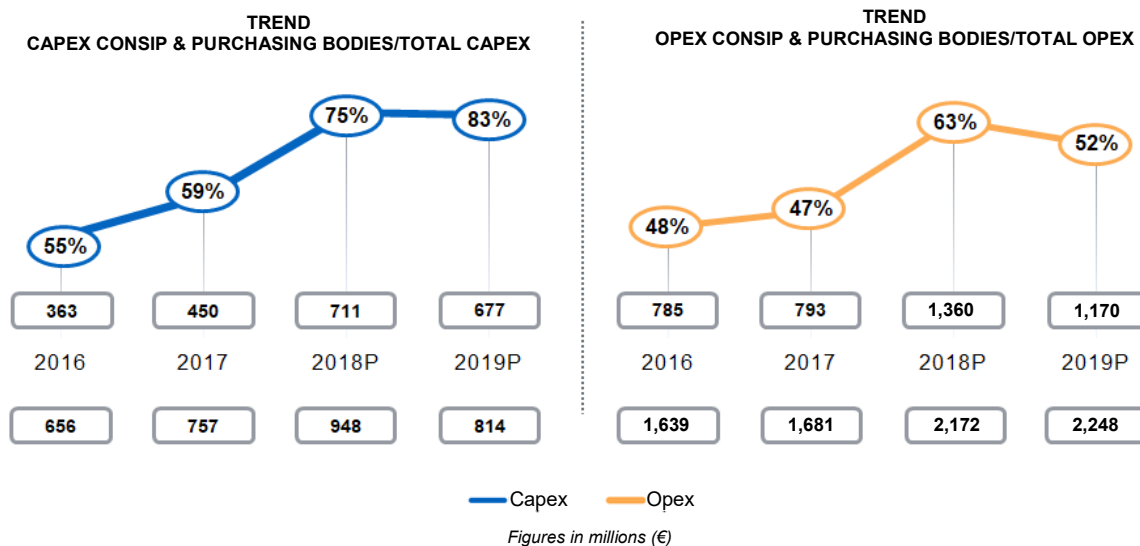


Figure 12.14 - Trend Capex/Opex and Consip/Purchasing bodies over total Capex/Opex (Source: AgID, 2018)

If we then observe the breakdown with respect to the individual Capex and Opex components, we note a more accentuated growth in the investment part. In comparing the 2016 - 2017 averages with those of 2018 - 2019, we can in fact see a 39% increase in Capex and 21% in Opex.

12.2.3 Breakdown by macro items Capex and Opex

BREAKDOWN OF ICT SPENDING BY MACRO ITEMS

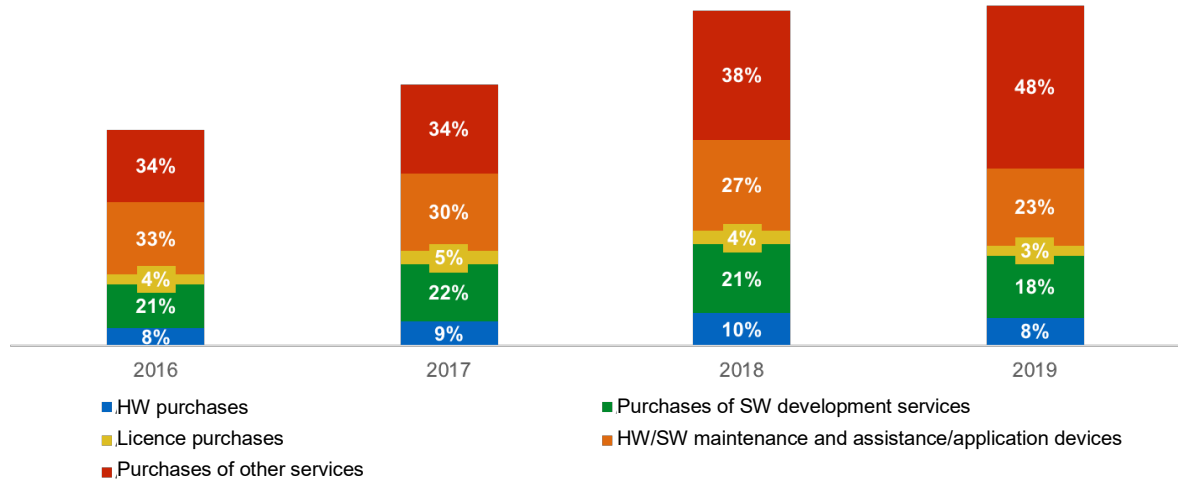


Figure 12.15 - Breakdown of ICT spending by macro items (Source: AgID, 2018)

In terms of the breakdown of Capex/Opex spending, the macro item “Purchases of other services” is the most significant in the years considered as well as the only one to record a 41% increase between 2016 and 2019.

In particular, within said macro item, the most significant average changes are seen in the items “Cloud services”, “Fixed telephone services” and “Other ICT services (Services for the recording, noting and reporting on the trend of quality of services)”.

In terms of relevance, the next item is “Hardware/Software maintenance and assistance/monitoring of applications”, which, however, from 2016 to 2019, records a 30% decrease, which mainly involves the items of Maintenance of office machinery, equipment and Global IT service and Software maintenance and management.

Instead, a constant trend is seen for the macro items “Licence purchases”, “Purchases of software development services” and “Hardware purchases”, with averages coming in respectively at 4%, 21% and 9% of total spending breakdown.

12.3 ICT projects in the PA in 2017 - 2019

During the survey, a total of 807 projects were recorded, of which 706 were concerned by this analysis, on the basis of the minimum set of information supplied (detailed in annex 2), for a multi-year cost 2017 - 2019 totalling approximately 4 billion euros.

The analysis given below aims to provide a mainly qualitative overview of the choices made by the PAs involved in ICT, according to an approach taken in the 2017 - 2019 Three-Year Plan, which may also represent a set of elements of information useful to the decision-making process and management/implementation of the individual activities.

12.3.1 Main characteristics

In order to complete the reference framework for the Three-Year Plan, a double mapping was performed of the 706 projects for which the minimum of set of information was available: both with respect to the type of project activities of the PA and in respect of the macro areas of the Strategic Model as structured in the previous chapters.

More specifically, 48% of the projects in progress or being started are headed by central administrations (340), 31% by regions (220) and 21% by local administrations (144).

Figure 12.16 shows the number and total cost of the 706 projects distributed by type, according to the following classification:

- **self-administration:** development of applications for internal function (administrative staff management, cards, budget management control, etc.);
- **institutional core business:** development of applications for the management of institutional duties (database management, collection and processing of info, support with administrative proceedings, support to powers of supervision/authorisation);
- **strategic digital PA for other PA:** enabling platforms, cloud infrastructures, security projects, development of systems/platforms for interoperability in the ecosystem or between different ecosystems;
- **strategic PA for citizens, businesses and other end users:** development of multi-channel digital services;
- **other:** projects relative to both infrastructures and applications transversal to more than one type.

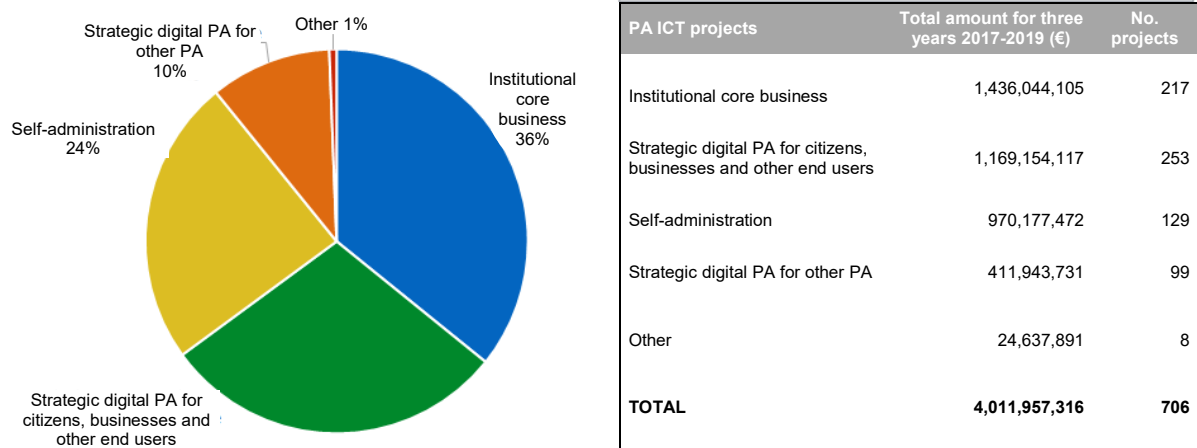


Figure 12.16 - ICT projects in the PA by type (Source: AgID, 2018)

The central public administrations have focussed their project initiatives (a total of 340 for 2.8 billion euros) mainly on the “institutional core business” areas (165 for an approximate total of 1.3 billion) and “Self-administration” (62 interventions for a total of 830 million euros).

The regional administrations (220 in total for approximately 1 billion euros), have focussed their attention on “Strategic digital PA for citizens, businesses and other end users” projects (111 for a total of 600 million euros) and “Strategic digital PA for other PA” (50 for a total of 240 million euros), which together account for around 82% of the total amount for the three years 2017 - 2019.

Finally, local public administrations (144 in all for a total of 187 million euros) also directed their investments to “Strategic digital PA for citizens, businesses and other end users” (67 for 78 million euros) and “Self-administration” (36 for 46 million euros) for a total for 2017 - 2019 of 125 million euros out of approximately 187 million euros in all.

Figure 12.17 instead show the number and total cost of the 706 projects distributed for the macro areas of the Strategic Model.

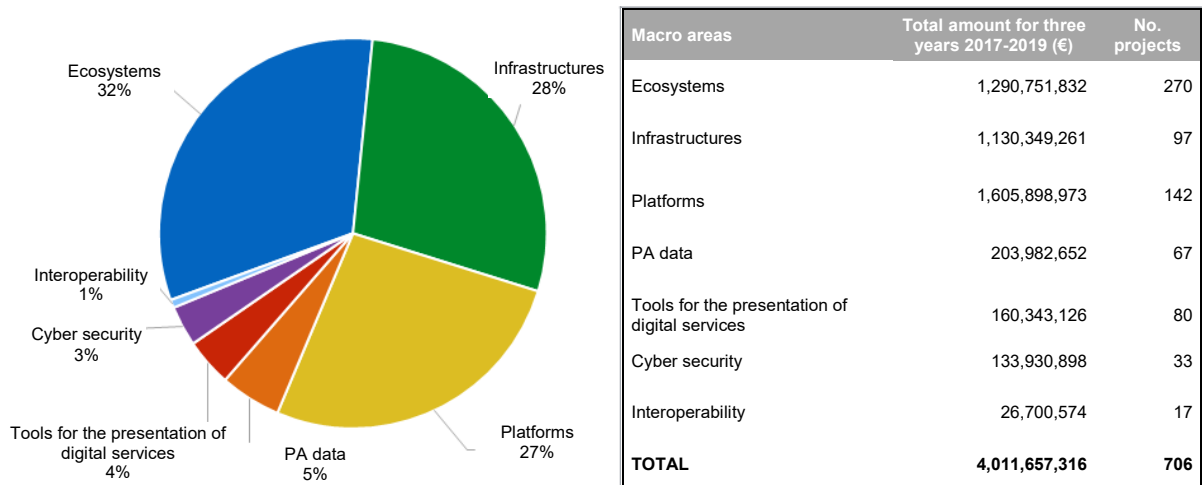


Figure 12.17 - ICT projects in the PA by macro area (Source: AgID, 2018)202

As is clear, the ecosystems, infrastructures and platforms are the main macro areas, both in terms of value and number, towards which the PA direct their projects.

More specifically, central and local administrations invest most of their resources in the macro area of ecosystems, with respective shares of 34% and 45% of the total amounts.

Regional authorities, on the other hand, direct half their resources to the macro area of infrastructures (50%).

Finally, it should be stressed that for platforms, considerable spending is recorded (approximately 1 billion euros), despite the fact that this is not the prevalent area of investment in either value or numerical terms.

12.3.2 “Ecosystem” projects

The graph below shows a breakdown of spending on projects for the macro area of ecosystem, which accounts for 32% of total project spending, for a total of around 1.29 billion euros.

The total of 270 projects relating to ecosystems can be divided up as follows:

- Central administrations: 111 - total value approximately 955 million euros;
- Regional Authorities: 94 - total value approximately 251 million euros;
- Local administrations: 65 - total value approximately 84 million euros.

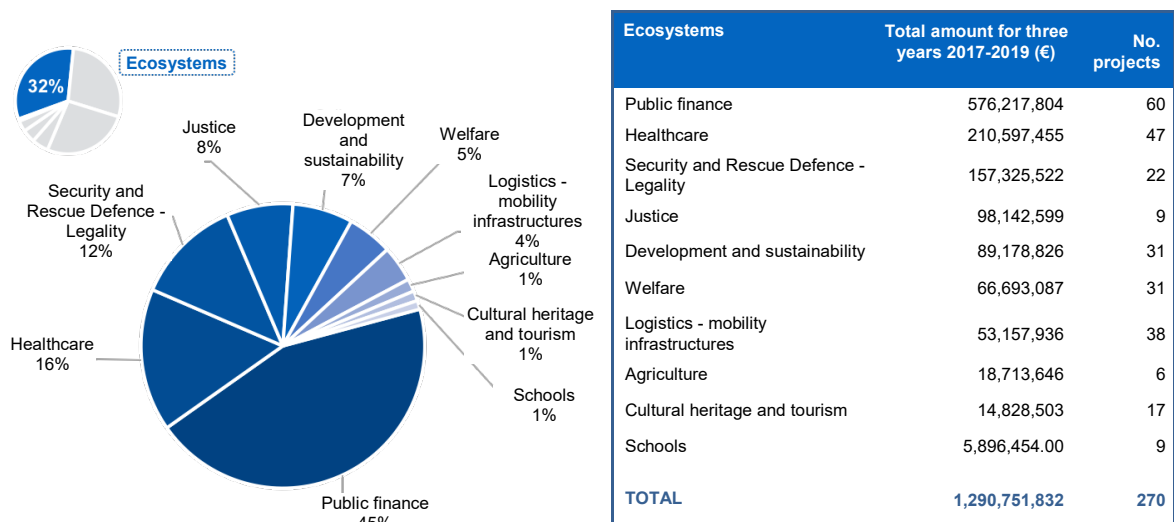


Figure 12.18 - Distribution of spending of PA projects - Macro area of ecosystems (Source: AgID, 2018)

Each of the various categories of entities involved in the survey is characterised by a different main item of expense:

- Central administrations → Public Finance Ecosystem, 38 projects for a total of approximately 500 million euros, with more significant projects by the Customs and Monopolies Agency, Revenues Agency and Collections Agency.
- Regional Authorities → Healthcare Ecosystem, 32 projects for an approximate total of 118 million euros;
- Local administrations → Logistics and Mobility Infrastructures Ecosystem, 18 projects for an approximate total of 26 million euros.

Details for central administrations, Regional Authorities and local administrations are given in annex 2.

More specifically, central administrations account for 91% of the total amount for the three years 2017 - 2019 for Public Finance, whilst 56% of spending on Healthcare is the competence of the Regional Authorities. The local public administration, on the other hand, invests 48% of its financial resources in infrastructures, logistics and mobility.

The most significant portion of spending envisaged for the “Ecosystem” projects headed by the Central Public Administration is that relating to the Revenue Agency (approximately 298 million euros), followed by that planned by the Ministry of the Interior (approximately 114 million euros), which have invested more respectively in projects relating to the fight of tax evasion and the technological update of the Regions’ video surveillance systems.

As regards the Regional Authorities, the administrations expecting to spend most are the Region of Lazio (43 million euros) and the Region of Lombardy (42 million euros), which have most directed their investments respectively towards the infrastructural management of the operating unit of the single European number and the evolution of digital services in support of agricultural policy.

Finally, of the Local public administrations, Rome capital city is that with the greatest spending forecast (approximately 23 million euros), for the implementation of 7 projects on revenue, territory, school, public works, asset and local police information systems.

In numerical terms, on the other hand, it is the MEF that envisages the greatest number of projects (20), followed regionally by the Region of Lazio (15) and locally by the Municipality of Venice (13).

Instead, as regards the type of projects, in the case of central administrations, the category “Institutional core business” prevails, whilst for Regional Authorities and local administrations, “Strategic digital PA for citizens, businesses and other end users” prevails.

12.3.3 “Infrastructures” projects

The graph below shows a breakdown of spending on projects for the macro area of infrastructures, which accounts for 28% of total project spending, for a total of 97 projects and a value of around 1.13 billion euros.

The total of 97 projects relating to infrastructures can be divided up as follows:

- Central administrations: 57 - total value approximately 600 million euros;
- Regional Authorities: 29 - total value approximately 508 million euros;
- Local administrations: 11 - total value approximately 21 million euros.

Within this macro area, the projects are split into the two areas Connectivity (total of 45) and Data centre and cloud (total of 52), with a clear predominance in terms of spending, of the first area.

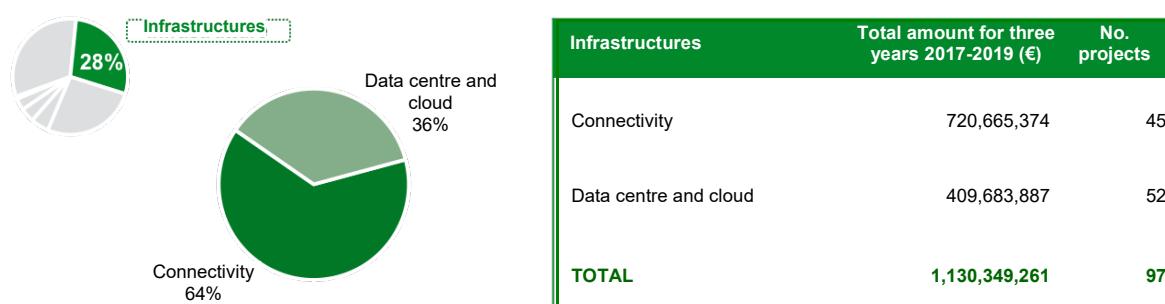


Figure 12.19 - Distribution of spending of PA projects - Macro area of infrastructures (Source: AgID, 2018)

The most significant portion amongst the central administrations, also in terms of expected spending, for these projects, is that relating to the Minister for the Interior (approximately 229 million euros), followed by the Ministry of Justice (171 million euros) and the Customs and Monopolies Agency (approximately 98 million euros).

Of the Regional Authorities, the Region of Piedmont expects to spend around 304 million euros with 60% of the total spending allocated by the segment to this macro area; finally, amongst local administrations, the Municipality of Milan stands out, which expects to allocate approximately 10 million euros.

In terms of numbers, 87% of the projects of the macro area of infrastructures are headed by the central administrations and local administrations and mainly regard the management, evolution and business continuity of the network and systems.

In the Regional Authorities segment, investments are instead mainly directed towards the Ultrabroadband Plan.

As instead concerns the type of projects, in the case of central administrations, the category “Institutional core business” prevails, whilst for Regional Authorities and local administrations, the category “Strategic digital PA for other PA” prevails.

Below are details by PA type on the distribution of projects of the macro area of infrastructures.

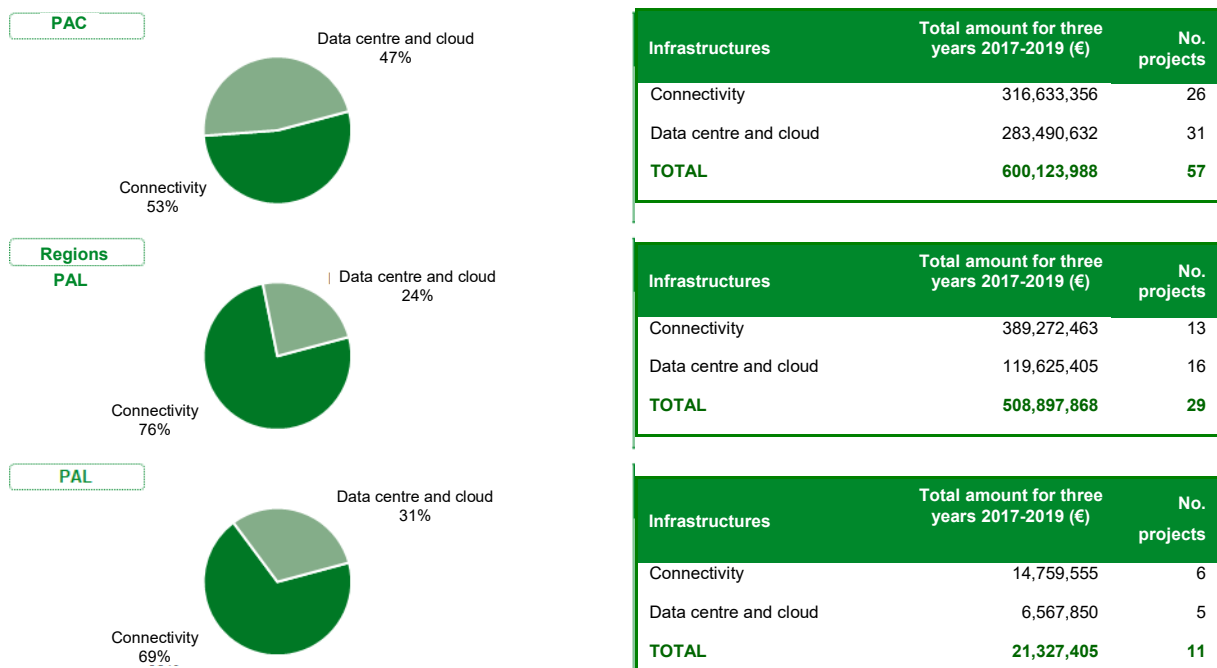


Figure 12.20 - Distribution of spending of PA projects - Macro area of infrastructures (Source: AgID, 2018)

12.3.4 “Platforms” projects

The graph below shows a breakdown of spending on projects for the macro area of platforms, which accounts for 27% of total project spending, for a total of 142 interventions and a value of just over 1 billion euros.

The projects can be broken down as follows:

- Central administrations: 67 - total value approximately 890 million euros;
- Regional Authorities: 51 - total value approximately 131 million euros;
- Local administrations: 24 - total value approximately 44 million euros.

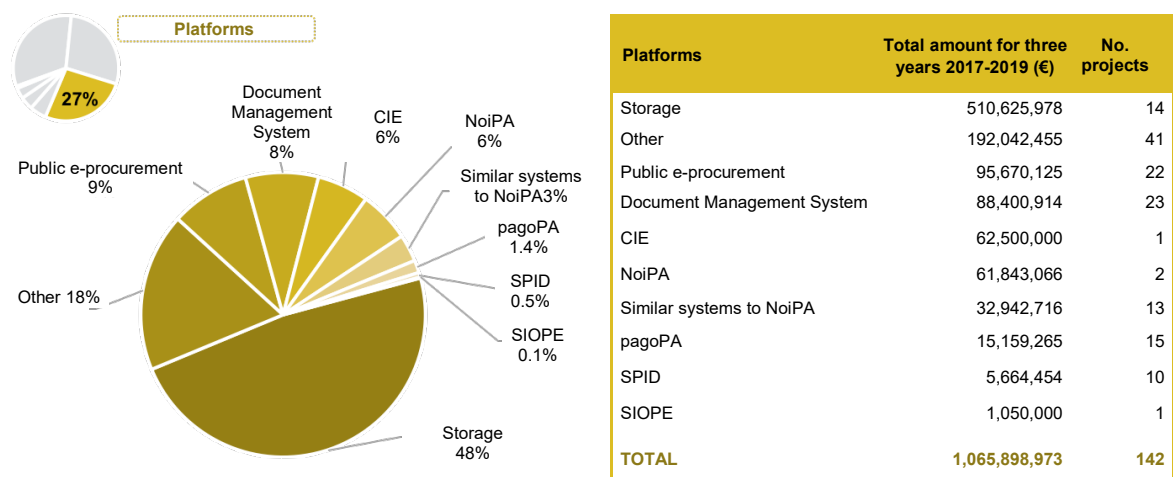


Figure 12.21 - Distribution of spending of PA projects - Macro area of platforms (Source: AgID, 2018)

the main item of expense for the macro area of platforms is “Conservation”, almost entirely headed by the Central Public Administration, where the Ministry of the Interior invested most.

The item “Other” requires some discussion (70% pertaining to the central administrations, 24% to Regional Authorities and 6% to local administrations): the analysis has highlighted a fairly significant level of projects for the development of platforms implementing basic and transversal functions for the PA - different to existing enabling ones - and which mainly regard “Management Control”, “Datawarehouse and business intelligence” and “Contact centre”.

Finally, the total amount for the three years 2017 - 2019 allocated to “Public e-procurement” projects comprises essentially investments by the central PAs (50%) and by Regional Administrations (49%).

In all, the most relevant share, in terms of expected spending, for these projects refers to the Minister for the Interior (approximately 568 million euros), whilst in numerical terms, first place goes to the MEF (10 projects).

As regards project types, for Central administrations, Regional Authorities and Local administrations, the category “Self-administration” prevails.

12.3.5 “Public Administration data” projects

The graph below shows a breakdown of spending on projects for macro area of Public Administration data, which accounts for 5% of total project spending, for a total of 67 interventions and a value of just over 200 million euros.

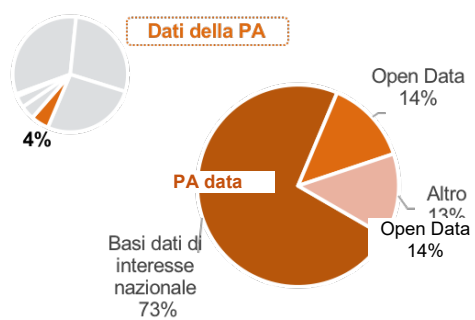


Figure 12.22 - Distribution of spending for PA projects

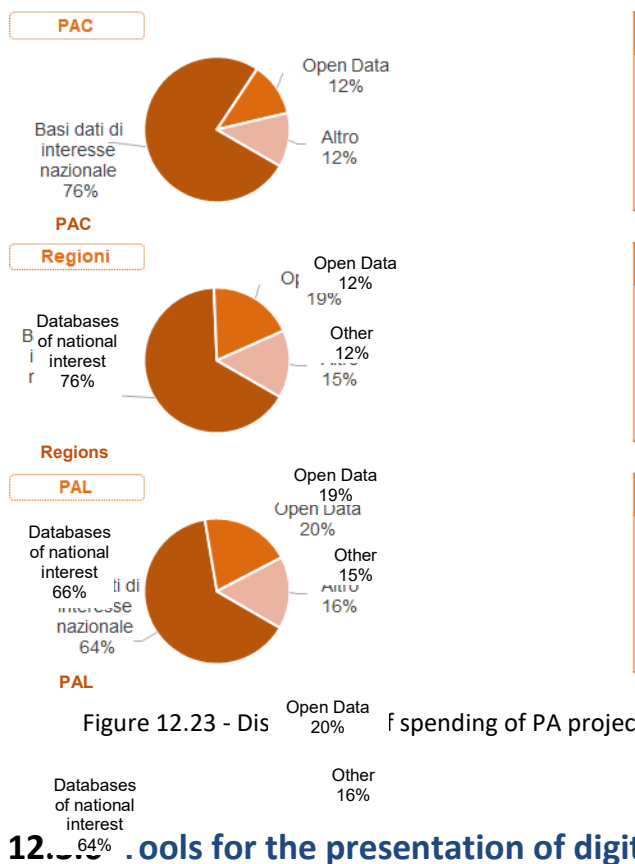
Dati della PA	Importo complessivo triennio 2017-2019 (€)	N° Progetti
Basi dati di interesse nazionale	148.941.946	43
Open Data	27.589.164	13
Altro	27.451.542	11
TOTAL	203,982,652	67

The main item of expense for the macro area is the Database of national interest, which, in numerical terms, for more than 50% is headed by the Central Public Administration, which invests a total of 112 million euros in its projects relating to this area. As regards “Data” (68% under the purview of the central administrations, 25% the Regional Authorities and 7% local administrations), the analysis revealed projects relating to both databases and the production of open data, as well as the definition of models of data and ontologies. The Revenue Agency and the Minister for the Interior are the central administrations with the largest share both in terms of expected spending and number of projects, respectively approximately 47 million euros for the development of 3 projects and around 31 million euros for the development of 7 projects.

Of the Regions, the Lombardy administration is worthy of note, expecting to allocate around 11 million euros in resources (3 projects). Instead, spending envisaged by the local PA is somewhat lesser, averaging out at around € 660,000 per project.

Instead, as concerns project types, for central administrations, the category of “Institutional core business” prevails, whilst for Regional Authorities it is “Self-administration” and for Local administrations, the category of “Strategic digital PA for citizens, businesses and other end users”.

Below are details by PA type on the distribution of projects of the macro area of Public Administration data.



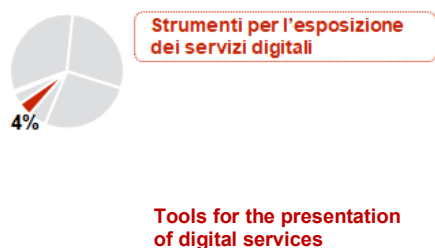
Dati della PA	Importo complessivo triennio 2017-2019 (€)	N° Progetti
Basi dati di interesse nazionale	112.487.625	25
Altro	18.541.152	6
Open Data	17.490.067	7
TOTAL	148,518,844	38

PA data	Total amount for three years 2017-2019 (€)	No. projects
Database of national interest	112,487,625	25
Other	18,541,152	6
Open Data	17,490,067	7
TOTAL	148,518,844	38

PA data	Total amount for three years 2017-2019 (€)	No. projects
Database of national interest	30,448,050	7
Open Data	8,599,097	5
Other	7,000,000	2
TOTAL	46,047,147	14

PA data	Total amount for three years 2017-2019 (€)	No. projects
Database of national interest	6,006,271	11
Other	1,910,390	3
Open Data	1,500,000	1
TOTAL	9,416,661	15

12.3.3 Tools for the presentation of digital services



Strumenti per l'esposizione dei servizi digitali	Importo complessivo triennio 2017-2019 (€)	N° Progetti
PAC	88.105.453	37
Regioni	52.293.595	22
TOTAL	140,399,048	59

Tools for the presentation of digital services	Total amount for three years 2017-2019 (€)	No. projects
PAC	88,105,453	37
Regions	52,293,595	22
PAL	19,944,078	21
TOTAL	160,343,126	80

For the macro area of “Tools for the presentation of digital services”, of the segments noted, the Central Public Administrations are those with the greatest expenditure, with approximately 55% of the total amount for the three years 2017 - 2019. However, the Regional Administrations do show an average spend per project that is higher than that allocated by other categories of entities.

The expected **Cyber security** resources allocated by the central administration, that with the most significant in the administration, which looks to launch its application segment, the Region of Molise, the Region of higher average end per project.

Cyber security	Total amount for three years 2017-2019 (€)	No. projects
PAC	115,555,007	23
Regions	13,527,464	4
PAL	4,848,427	6
TOTAL	133,930,898	33

Of the local administrations, it is the Municipality of Bari that is expecting to spend most (approximately 6 million euros); in this case too, however, other administrations allocated more per project, specifically the Municipality of Milan (5 million euros) and the Municipality of Bologna (3.5 million euros).

Instead, as regards project types, for all segments the category “Strategic digital PA for citizens, businesses and other end users” prevails.

Details for central administrations, Regional Authorities and Local administrations are given in annex 2.

12.3.7 “IT security” projects

It should be specified that reading this part of the mapping is very much impacted by the transversal nature, also shown on the map of the strategic model, of this macro area as compared with the others.

In other words, both in terms of activities and their planning and strictly economic terms, the security interventions are closely linked to those of the main asset and difficult to isolate and quantify economically. Additionally, spending on security is mainly allocated to current activities, as a guarantee of normal function of the operating cycle, rather than to specific interventions/projects.

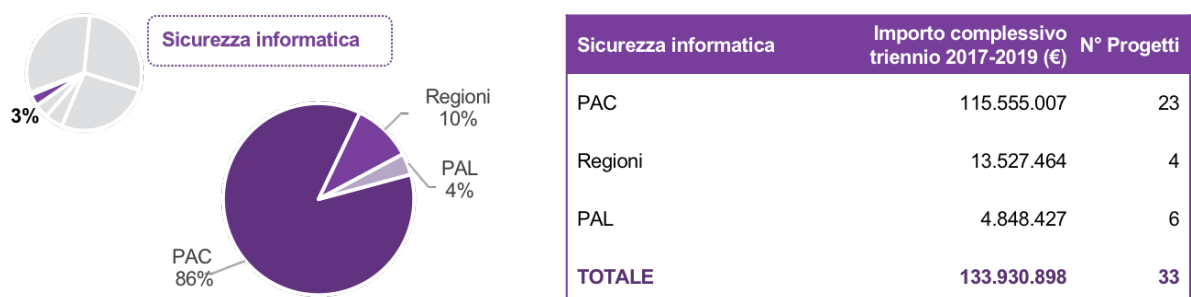


Figure 12.25 - Distribution of spending of PA projects - Macro area of security (Source: AgID, 2018)

The most significant projects in the macro area of IT Security are recorded for the central administrations, which come in first both in terms of total amount in the three years (86%) and numerically (with around 70% of total projects).

The most significant portion, also in terms of expected spending, for these projects, is that relating to the Minister for the Interior (approximately 47 million euros) and the Revenue Agency (approximately 36 million euros).

The Region of Apulia and the Autonomous Region of Sardinia are instead the two regional administrations with the greatest expected spend, respectively approximately 6.5 million euros and 6 million euros. Finally, the local PA envisages an average spend of around € 970,000 per project.

As instead concerns the type of projects, in the case of central administrations, the category “Institutional core business” prevails, whilst for Regional Authorities and local public administrations, the category “Strategic digital PA for other PA” prevails.

Details for central administrations, Regional Authorities and local administrations are given in annex 2.

12.3.8 “Interoperability” projects

Interoperability	Total amount for three years 2017-2019 (€)	No. projects
PAC	9,313,571	7
Regions	14,825,363	7
PAL	2,561,640	3
TOTAL	26,700,574	17

Interoperabilità	Importo complessivo triennio 2017-2019 (€)	N° Progetti
PAC	9.313.571	7
Regioni	14.825.363	7
PAL	2.561.640	3
TOTALE	26.700.574	17

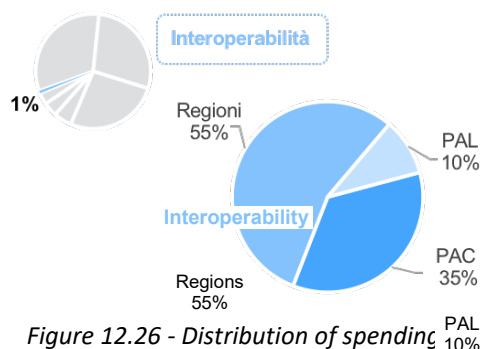


Figure 12.26 - Distribution of spending A projects - Macro area of interoperability (Source: AgID, 2018)

For the macro area of “Interoperability”, of the segments noted, the Central Public Administrations are those with the greatest expenditure, with 55% of the total amount for the

three years 2017 - 2019. However, the Regional Administrations do show an average spend per project that is higher than that allocated by other categories of entities.

The most significant portion of spending envisaged for these projects is in fact that relating to the Region of Tuscany, the Region of Sicily and the Region of Calabria (5 projects for a total cost of approximately 14 million euros).

The MEF is, of all the central administrations, that expecting to spend the most (approximately 4 million euros), with a project dedicated to the Electronic health records. Finally, local administrations expect to spend an average of around €850,000 per project.

Instead, as concerns project types, for central administrations and local administrations, the category of "Strategic digital PA for other PA" prevails, whilst for Regional Authorities it is "Strategic digital PA for citizens, businesses and other end users".

Details for central administrations, Regional Authorities and local administrations are given in annex 2.

12.3.9 Conclusive remarks on the PA’s ICT projects

A crossover reading of the projects of the various PAs involved by type and macro area of the ICT model, figure 12.27, according to the double classification explained at the start of paragraph 12.3 reveals some correlations as to how the different types of PA projects find consistency in the logic used for the Three-Year Plan, above all in terms of their role in the governance of the ICT sector of the PA system.

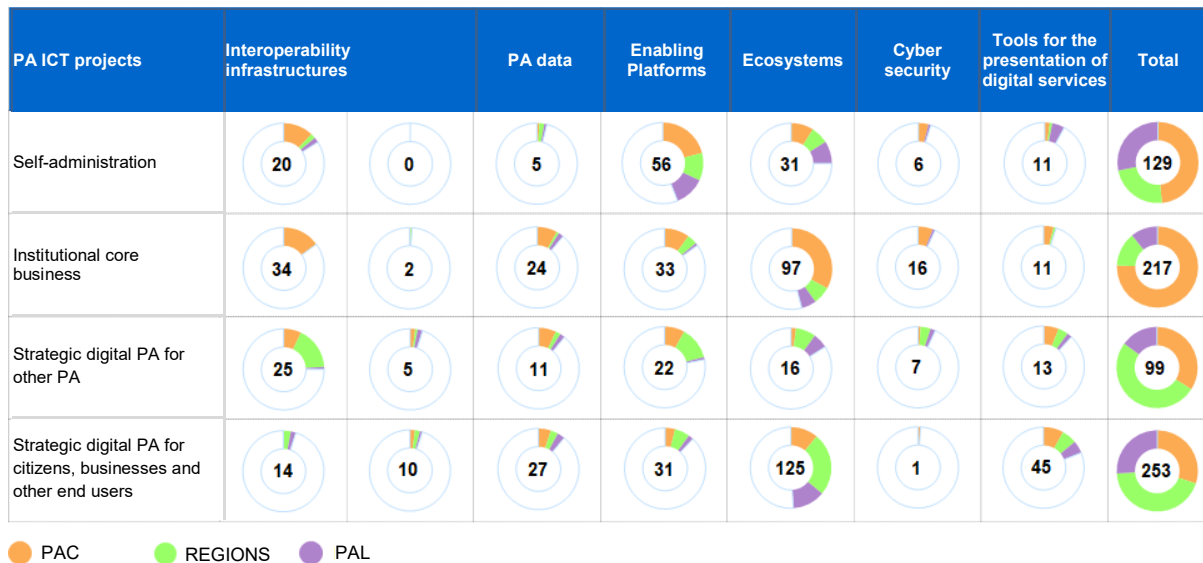


Figure 12.27 - Summary of projects by type and macro area (Source: AgID, 2018)¹⁸

Below are some reflections on the most evident correlations:

- Self-administration:** the projects for the development and/or adjustment of solutions for the internal function of the Entity are most frequently located in the map of the ICT Strategic Model under the macro area of “Platforms” (56 out of 128), where in fact, alongside the existing enabling platforms, solutions developed centrally and locally coexist, to be taken into consideration for the finalisation of new implementation aimed at ensuring the standardised digitisation of basic and transversal proceedings of the PA. Another correlation (20 projects out of 128) is seen with the macro area of “Infrastructures”, above all for the projects that the central administrations have launched or are launching to adjust connectivity and make the move to the cloud.

¹⁸ Projects classified as “other” (see § 12.3.1), 8 out of 706, are not shown here

The projects of the Regional Authorities and local administrations included from the crossover reading of the macro area of "Ecosystems" may be seen as a progressive adjustment of the basic functions to comply with the indications given in the working parties for establishing the various ecosystems.

As a rule, it comes as no surprise that it is above all the central administrations that reported projects dedicated to self-administration, in consideration of their critical mass, both in dimensional terms and availability of funds, which allows them to act as "trail-blazers" in an approach seeking to standardise and digitise processes.

- **Institutional core business:** as was very much to be expected for this type of intervention, the strongest correlation is that with the macro area of "Ecosystems", where the projects of the central administrations are particularly evident, identified as the lead partner of the various ecosystems, which, as described in the related chapter (see chapter 7) are launching their establishment and/or consolidation. A timely analysis of projects confirms the heterogeneous nature of the progress made.
- **Strategic towards other PA:** this type of project is the only one that is distributed more or less evenly over all areas of the model and can be read as a confirmation of the need to intervene and plan activities simultaneously with respect to all infrastructural and other components of the overall macro digital transformation process.
- **Strategic towards end users:** the concentration of strategic projects for end users on the macro areas of "Ecosystems" (highest) and "Access to services" (lowest) may be interpreted in two ways: again a strong need to standardise digital services at the level of common rules for the definition/design (interoperability, vocabularies, etc.), for which it is important to look carefully at what is being or will be done for the various ecosystems; and, simultaneously, to look, at this time/phase, more limited towards the aspects most linked to the exposure of the services.

It should be noted that, in moving towards an increasing number of projects aimed at allowing for interaction with other PAs and/or end users, the relevance grows of the projects of the territorial entities involved, in particular the Regional Authorities, thereby confirming their role as hub, as territorial aggregators, between the centre and outskirts in the digital transformation process underway.

12.4 Focus. Public procurement and the role of the Purchasing Bodies, survey of activities 2016 - 2018

In order to complete the collection of data and information on the activities of the public administrations, including public health authorities, in collaboration with NetConsulting Cube, we have also surveyed the single purchasing bodies. The purchasing bodies were introduced as contracting authorities in 2006 by Italian Legislative Decree no. 163 and are currently a necessary tool for purchases made above the Community threshold.

The purpose of this research was to measure the value of transactions (total value of supply orders stipulated in the year, regardless of duration - less than a year, a year, multiple years) for the portion allocated to the purchase of ICT goods and services managed by the single purchasing bodies, both directly, through proprietary platforms, and by means of the Consip platforms.

Another element that led to the conduct of this analysis was the growing importance assigned by legislation to this tool; in particular, the single purchasing bodies play a key role in achieving the objectives of the new Code of Public Contracts, relative to the reduction of the number of contracting authorities, the rise in the level of specialisation in procedure management and the rationalisation of spending. As regards the purchase of ICT goods and services, this role, which is to date still rather irrelevant, is set to grow significantly, in response to the centralisation of purchase procedures.

In accordance with Article 3, paragraph 1, letter i) of Italian Legislative Decree no. 50/2016 as subsequently amended and supplemented, with Italian Legislative Decree no. 56/2017, the “purchasing body” is a contracting administration or authority that centralises orders and, if applicable, auxiliary order activities and currently represents a necessary tool for purchases above threshold limits.

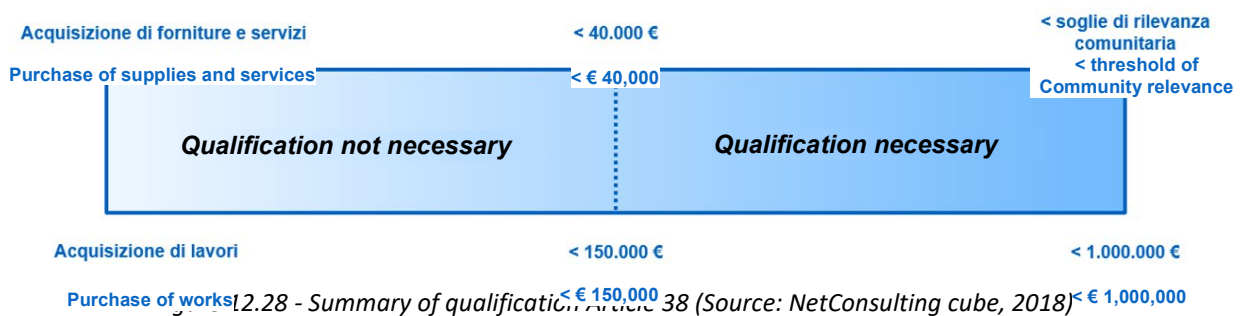
Again under paragraph 1, letters l) and m), the activities assigned to such subjects are specified:

- “order centralisation activities”, carried out permanently and regarding:
 - the purchase of supplies or services for contracting authorities;
 - the award of tenders or stipulation of framework agreements for works, supplies or services intended for contracting authorities;
- “auxiliary order activities”, which consist of assisting with orders, particularly as follows:

- technical infrastructures that allow the contracting authorities to award public tenders or stipulated framework agreements for works, supplies or services;
- consultancy on the conduct or design of procurement procedures;
- preparation of the procurement procedures for and on behalf of the contracting authority concerned; management of procurement procedures for and on behalf of the contracting authority concerned.

As defined in Article 37, Purchasing bodies can:

- award tenders, stipulate and execute contracts on behalf of the contracting administrations or authorities;
- stipulate framework agreements that qualified contracting authorities can use to award their tenders;
- manage dynamic systems for purchases and electronic markets.



If, in fact, for purchases of supplies and services worth less than € 40,000 and purchases of works worth less than € 150,000, contracting authorities may proceed directly and autonomously, for purchases of supplies and services exceeding € 40,000 and below the thresholds of Community relevance (pursuant to Article 35) and for purchases of ordinary maintenance works exceeding € 150,000 and below 1 million euros, if not having the necessary qualification pursuant to Article 38¹⁹, they must use a purchasing body, or aggregate with one or more contracting authorities qualified as necessary.

¹⁹ Qualification (Article 38, paragraph 1) is achieved in respect of the areas of activities, territorial basins, type and complexity of the contract and amount bracket; additionally, it concerns (Article 38, paragraph 3) all activities characterising the procurement process of goods, services or works in connection with the following areas:

- programming and design capacity;
- award capacity;

At the National Anti-Corruption Authority, which ensures due publication, a specific list is prepared of qualified contracting authorities, which also includes purchasing bodies. By rights, the list includes the Ministry for Infrastructures and Transport, including the Inter-Regional Councillors for public works, Consip S.p.A., INVITALIA - Agenzia nazionale per l'attrazione degli investimenti e lo sviluppo d'impresa S.p.a., as well as regional aggregators pursuant to Article 9 of Italian Decree Law no. 66 of 24 April 2014, converted, with amendments, by Italian Law no. 89 of 23 June 2014;



Figure 12.29 - Territorial aggregators published by ANAC by resolution no. 31 of 17 January 2018
(Source: NetConsulting cube, 2018)

Recognition was performed in June and July 2018 and concerned the Purchasing bodies that, in the period considered (2016 - 2018) procured or will procure ICT goods and services (table of Entities in annex 2). By way of example, please note that ACP - the Agency for proceedings and supervision of public contracts for works, services and supplies of Bolzano, has not been surveyed insofar as it only started procuring this type of goods and services in 2019.

- capacity to verify the execution and control of the whole procedure, including testing and commissioning.

PURCHASING BODIES	
PURCHASING BODY	Region
ARCA S.p.A.	Lombardy
Azienda Zero	Veneto
ESTAR	Tuscany
Intercent-ER Agency for the development of telematic markets	Emilia-Romagna
Liguria Digitale S.p.A.	Liguria
Single Contracting Authority	Basilicata
Directorate General of the regional purchasing body	Sardinia
S.C.R.- Piemonte S.p.A.	Piedmont
Umbria Salute S.c. a r.l.	Umbria

Table 12.2 - List of structures answering the survey (Source: NetConsulting cube, 2018)

12.4.1 Trend of transactions relative to the purchase of ICT goods and services

The survey has revealed that transactions managed by the Purchasing bodies and allocated to the purchase of ICT goods and services, despite being of as yet marginal value, in both absolute terms and in respect of its incidence on the Public Administration's ICT spending, shows a trend that is rising sharply, with an average percentage growth booked as 69%.

PURCHASES OF ICT GOODS AND SERVICES

Figures in millions (€)

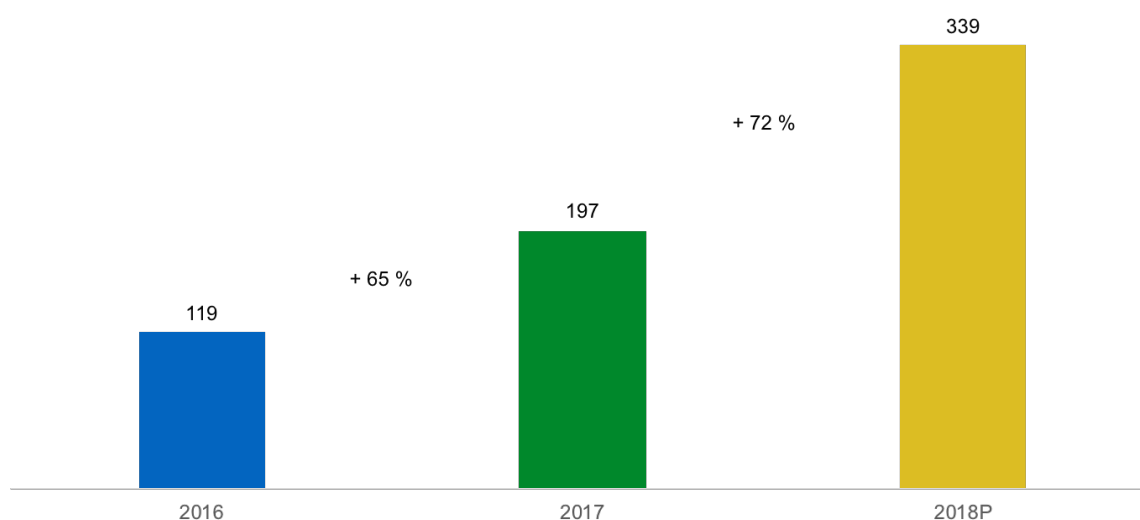


Figure 12.30 - Trend of transactions for the purchase of ICT goods and services 2016 - 2018 provisional
(Source: NetConsulting cube, 2018)

Of the respondents, those which showed the most significant changes from 2017 to 2018 were ESTAR Toscana, which doubled its transaction values, and Intercent - ER - Agency for the development of telematic markets (which tripled the value it handled in terms of purchases of ICT goods and services).

The above two contexts, together with ARCA, Azienda Regionale Centrale Acquisti S.p.A. of the Region of Lombardy, are those of greatest national relevance for the role played within the reference region.

More specifically, ESTAR Toscana, Regional Administrative Technical Support Entity, which is structured into three territorial sections of Greater Area (North-West - Central-West - South-East) operates as Purchasing body on behalf of the healthcare authorities and in the three years 2015 - 2017 managed 94 projects regarding healthcare and IT technologies.

Intercent – ER (Emilia Romagna), an agency established under Regional Law no. 11 of 2004 for the rationalisation of purchases of regional PAs, particularly healthcare authorities, uses a proprietary platform for telematic purchases, called SATER, on which, to date, 3,908 suppliers are qualified (55% Region of Emilia Romagna; 45% other regions).

Finally, ARCA S.p.A., a full subsidiary of the Region of Lombardy, supports PA procurement through digital tools such as NECA electronic trade and the e-procurement platform SINTEL; this latter platform will also be used by the Purchasing body of Liguria Digitale S.p.A. to carry out its procurement procedures. In 2017, a total of 1,784 entities were active for a total of 98,523 procurement procedures handled last year.

12.4.2 Breakdown by nature of the transaction

The breakdown of transactions shows, in all years concerned by the survey, a prevalence of “Hardware/software maintenance and assistance/monitoring of applications” with a percentage weighting of 47% in 2017, followed by “Purchases of other services” for 33% in 2017. However, above all in the 2018 forecasts, a considerable increase is seen for “Purchases of software development services”, which goes from 11% to 23%. This trend is a first sign of an increased use of purchasing bodies for purchases made for investment purposes.

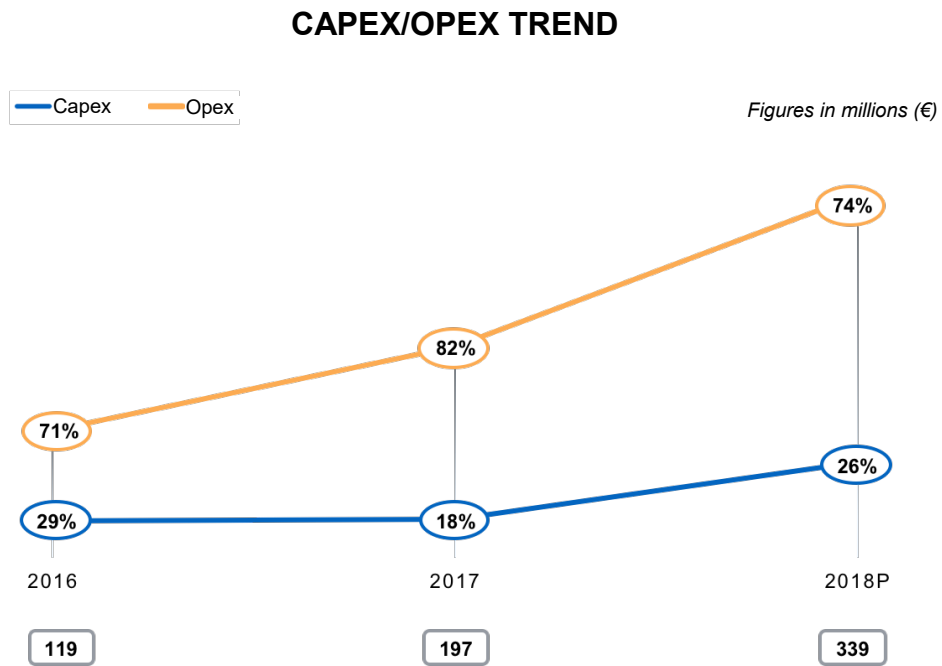


Figure 12.31 - 2016 - 2018 forecast ICT transactions by nature of cost (Source: NetConsulting cube, 2018)

TRANSACTIONS BY PURCHASE TYPE

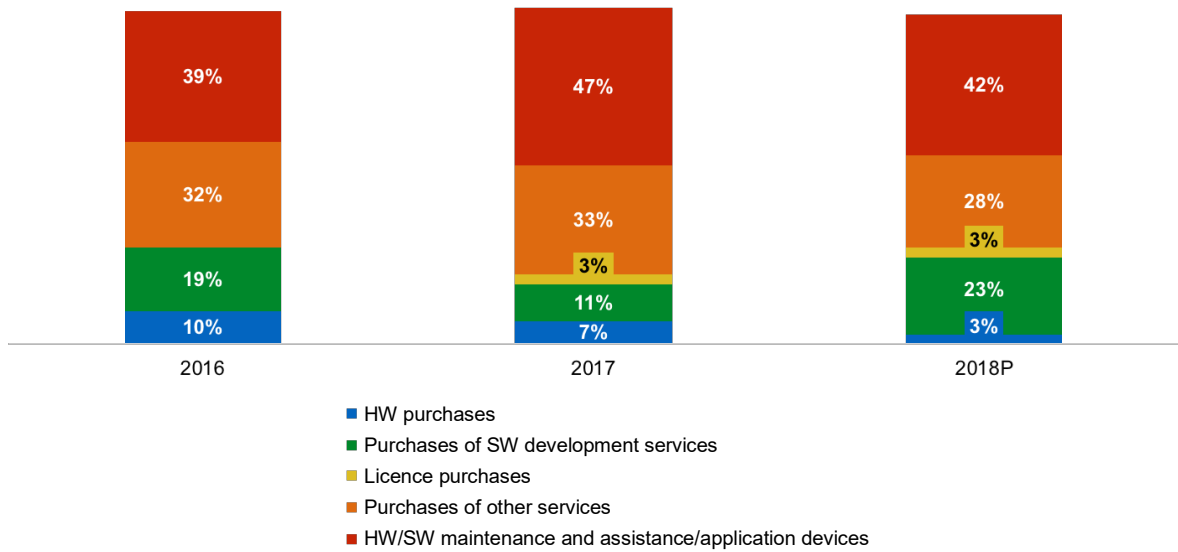


Figure 12.32 - 2016 - 2018 forecast ICT transactions by purchase type (Source: NetConsulting cube, 2018)

In analysing the breakdown of purchases intended for “Hardware/software maintenance and assistance/monitoring of applications”, we note that for both 2016 and 2017, the management and maintenance of software is by far the most relevant item, accounting for 95% in 2016 and 89% in 2017. Forecasts suggest an increase in “Maintenance of office machines, equipment and global IT service”, which, however, remains marginal.

An analysis of “Purchases of other services”, which is second in terms of incidence on total transactions, shows a radical change in its make-up, with a considerable increase in the weighting of “Other ICT services”, “Machinery hire” and “Cloud services (users and charges, access to databases and on-line publications)”, on which the investments of entities are concentrated. The weighting of the “Connectivity and telephone and data services” reduces equally significantly (from 47% to 15%), as do fixed telephone services, which clearly saw a greater concentration of tenders in 2016, and other document management services.

HW/SW MAINTENANCE AND ASSISTANCE/APPLICATION DEVICES

PURCHASE OF OTHER SERVICES

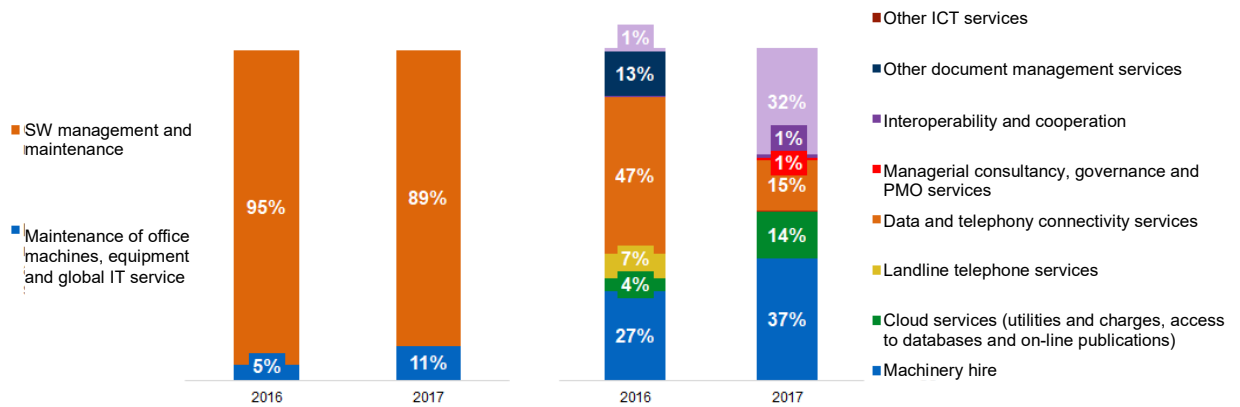


Figure 12.33 - Analysis of the breakdown of transactions 2016 - 2017 (Source: NetConsulting cube, 2018)

To complete the analysis of the items making up the opex, “licence purchases” show a reversal of trend: in fact, standard and commercial software licences see a considerable reduction in the gap with specifically developed software licences in 2017, probably mainly in order to reduce implementation time and benefit from new updates.

Licence purchases

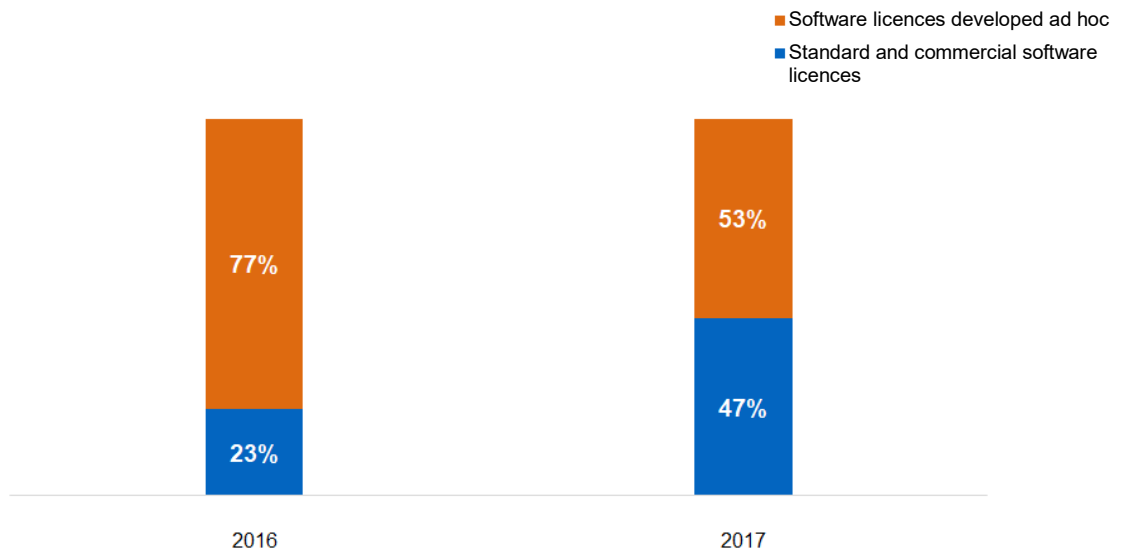


Figure 12.34 - 2016 - 2017 ICT transaction trend “Licence purchases” (Source: NetConsulting cube, 2018)

Purchasing body transactions relative to capex comprise “Purchases of software development services” and “Hardware purchases”. If 2016, as regards software development, saw a prevalence of spending on “generic applications”, which accounted for 56%, in 2017, it is “software packages available on the market” that dominates.

Consistently with as is the case for licences, the purchase of software solutions already present on the market is preferred over custom development and evolutive maintenance, which allow for certainty over implementation times and, as a rule, greater cost control.

As regards hardware purchases, we should instead note the considerable increase in transactions for the purchases of PCs, to the detriment above all of “Other hardware”.

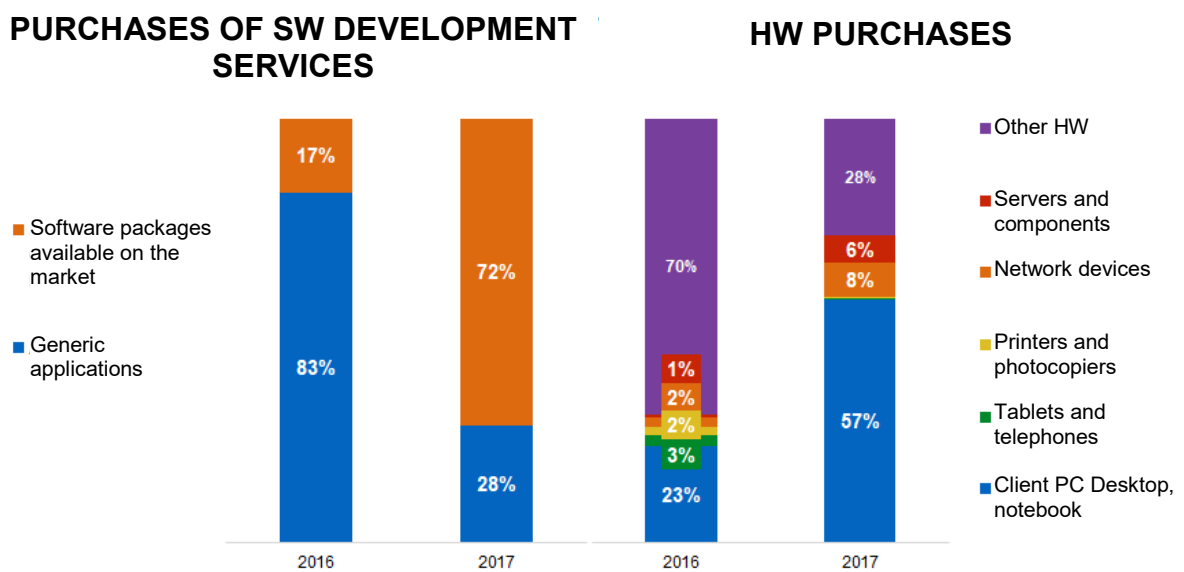


Figure 12.35 - 2016 - 2017 ICT transaction trend for “Purchases of software development services and hardware purchases” (Source: NetConsulting cube, 2018)

12.4.3 Breakdown of transactions by entity type

The entities making greatest use of purchasing bodies for the procurement of ICT goods and services are health authorities and hospitals. This is due to the greater use of Consip for ICT purchases by local PA entities (municipalities and Regional Authorities).

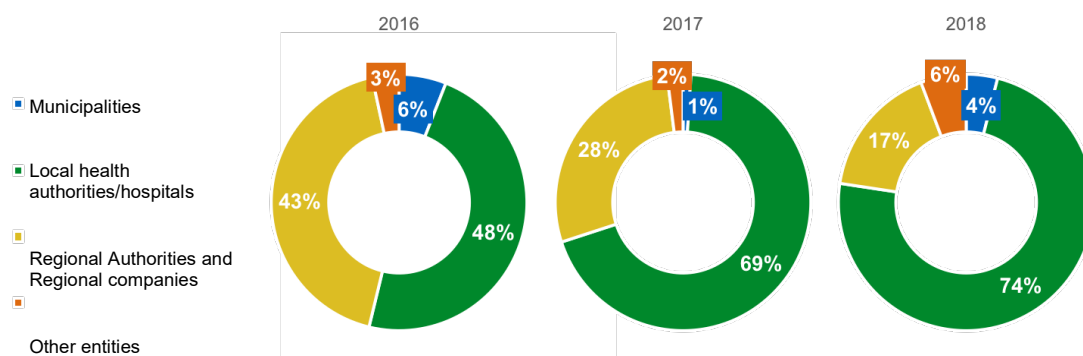


Figure 12.36 - Breakdown of transactions by type of purchasing entities (Source: NetConsulting cube, 2018)

This result is also confirmed by the type of entities with which the purchasing bodies have or envisage a framework agreement or other types of contracts for the purchase of ICT goods and services.

78% of the bodies involved in the survey, in fact, report that health authorities (local health authorities/hospitals/health protection entities/territorial social-healthcare authorities) are one of the main interlocutors.

Finally, at present, the tools used for ICT procurement/negotiation procedures show a preference for proprietary platforms (78% of cases) over Consip tools; of the latter, the most used is the Public Administration Electronic Market (MEPA) and framework agreements.

More specifically, MEPA, where the administrations and businesses can autonomously negotiate contracts for the purchase of supplies and services of a value that falls below the Community threshold and works worth less than 1 million euros, in 2017 recorded 600,000 transactions for a total value of 3.1 billion euros.

It should be noted that 99% of the companies enabled to use MEPA are SMEs which, in thus doing, despite their size, can “procure” on the public demand market.

CHAPTER 13. Indications for public administrations

The 2019 - 2021 Three-Year Plan for IT in the PA aims to pursue the route embarked upon by the previous Plan, very much involving all public administrations in the realisation of the country digitisation process through the actions described thus far and the indications and tools made available by AgID.

It is recalled that in addition to the traditional procurement tools, the PAs can also use forms of collaboration to speed up time frames and reduce the costs and risks of failure. Administrations that are unable to achieve the objectives within the envisaged time frame may use any of the following alternatives:

- collaboration agreements for the management of application services: participation in collaboration agreements by administrations that have decided to share the development of common platforms; this case includes collaboration agreements already operative between certain regions;
- “ancillary” solutions: use of “ancillary” application solutions through agreements between PAs that have already developed the strategic initiatives and those not yet operative; such agreements, which may differ and, depending on the project, must have characteristics such as to guarantee their sustainability;
- “re-use” solutions as an alternative to “ancillary” measures in cases where held to be appropriate;
- use of infrastructural services made available by other administrations.

Below is a summary of all the actions involving the public administrations, as detailed in the previous chapters.

13.1 Indications on infrastructures

From 2019 PA cloud

When defining a new project and/or developing new services, the PA must first, by way of priority, assess the adoption of the cloud paradigm before any other technology, according to the PA Cloud Model, which considers public, private and hybrid type clouds. The assessment of the type of cloud model (public, private or hybrid) is mainly guided by the purpose of the service to the user and the nature of the data processed. The PA must Also assess and prevent the lock-in risk towards the cloud supplier

The PA only purchase cloud services (IaaS/PaaS/SaaS) that are qualified by AgID and published on the Cloud Marketplace.

The pilot PAs chosen by AgID and the Digital Transformation Team implement the plans for the migration of the information systems to the PA Cloud, defined under the scope of the AgID national Enablement Programme. **(LA02)**

Data centre

The subjects holding the physical infrastructures of the PA, belonging to Group A plan, together with AgID and the Digital Transformation Team, the consolidation of the data centres and migration to the PA cloud. **(LA05)**

The Group B PAs with physical infrastructures envisage PA migration to the cloud in accordance with the National PA Cloud Enablement Programme. **(LA06)**

Connectivity

The PAs adjust their connection capacity to guarantee the complete deployment of services and platforms. **(LA08)**

2020

Data Centre

The Group A PAs send AgID their plans for the PA migration to the cloud. **(LA05)**

The Group B PAs decommissioning their data centres notify AgID. **(LA06)**

Connectivity

The PAs make available their own wi-fi for free use by citizens in offices and public places. **(LA10)**

2021

PA cloud

The pilot PAs complete migration to the PA Cloud of their information systems. **(LA02)**

Another group of PAs starts migration to the PA Cloud of their information systems. **(LA02)**

Connectivity

The foreign offices of the PAs, following the award of the new tender by Consip, start migration and proceed with the use of the new S-RIPA services. (LA09)

13.2 Indications on the Interoperability Model

2019 The PAs follow the indications given in the “Guidelines to the transit to the new Interoperability Model”, as issued by AgID in its Determination no. 219/2017, for existing platforms and current design activities. (LA11)

To decommission SP-Coop, the PAs supplying the services prepare and sent to AgID the “direct interfacing plans” as described in the “Operative instructions for the migration of SP-Coop services” attached to the Three-Year Plan. (LA11)

Starting 2019 - after completion of the issue process by AgID - the PAs adopt the Guidelines to the Interoperability Model. (LA12)

2021 The PAs publish the Service Interfaces. (LA13)

13.3 Indications relating to PA Data

2019 Databases of national interest

The PAs include their services in the Catalogue (servizi.gov.it) (LA16)

The Italian municipalities populate ANPR, migrating local APR and AIRE. (LA17)

A significant sample of municipalities takes part in the trial for the development of the national computerised registry office archive in ANPR. (LA18)

The PAs and Public Service Managers follow the instructions given in the IPA Guidelines. (LA19)

Re-use of data (open data)

The administrations involved proceed to collect data and information that is useful to the survey on the degree of maturity of open data and state of implementation of the PSI Directive. (LA21)

2020 Databases of national interest

The PAs holding databases of national interest part of the joint working tables with AgID, draft a planning document for the development guidelines for the databases of national interest. (LA14)

The central PAs involved and the Regional Authorities adopt the “Geo DCAT-AP” standard. (LA15)

PDND

The PAs involved define the manner by which to input data and use of the PDND in a fashion appropriate to its activities. (LA27)

13.4 Indications on the Platforms

2019 Public e-procurement

The contracting authorities - contracting PAs and other authorities - progressively adopt the telematic platforms. (LA28)

The PAs adapt their systems to issue and transmit electronic orders through NSO in the healthcare sector (LA30)

The central PAs adjust the Exchange System to manage electronic invoices in European format. (LA31)

pagoPA

The subjects obliged to adhere activate the services within the time envisaged by the CAD. (LA33)

SIOPE and SIOPE+

The administrations involved adhere to the system with the support of MEF - RGS. (LA35)

NoiPA

The PAs not yet adhering to the system will notify their adhesion to the portal. (LA37)

SPID

The PAs implement SPID and grant access to their on-line services with SPID credentials.

CIE

The pilot consulates accept CIE requests by Italians resident abroad. (LA42)

National administrative procedure management system (SGPA)

The central PAs involved adopted the new Guidelines for the preparation, management and storage of computerised documents issued by AgID. (LA45)

Storage poles

The central PAs proceed progressively with the dematerialisation of current archives. (LA48)

Register of the Resident Population

The PAs, Public Service Managers and companies under public control stipulate service agreements with the Minister for the Interior as necessary to database circularity. (LA49)

2020 Public e-procurement

Local PAs adjust the Exchange System to manage electronic invoices in European format. (LA31)

NoiPA

The PAs migrate and adopt the NoiPA system as planned with the MEF. (LA37)

National administrative procedure management system (SGPA)

The PAs involved adopt as an ancillary measure, the interoperability models, so as to speed up the digital management of administrative documents. (LA46)

13.5 Indications on Ecosystems

2019 For each ecosystem, the lead partner administrations constitute the working party and convene the other institutional players involved in the development envisaged by the Three-Year Plan. (LA51)

The working party establishes any technical tables. (LA51)

2020 The working party prepares the mechanisms and tools for the involvement of public and private stakeholders of the ecosystem (e.g. hearings) and, having collected their needs, defines the reference perimeter of the ecosystem and describes its vision, with priority interventions and projects, identifying the various public and private subjects to be involved. (LA52)

The working party publishes the document for consultation containing a description of the ecosystem vision, perimeter and development strategy. (LA52)

The working party, supported by the technical tables, performs an as-is analysis of the ecosystem. (LA53)

Through a comparison of notes with stakeholders, possible business models and incentive mechanisms are identified, to foster the dissemination and adoption of digital services in the ecosystem. (LA53)

The working party establishes themed forums for the involvement of and to listen to stakeholders. (LA53)

2021 The working party and technical tables support the various stakeholders of the ecosystem in developing their projects and analyse new technologies, systems and services for the evolution of the ecosystem. (LA54)

Monitoring and analyses are started on the level of ecosystem implementation. (LA54)

Activities continue of the themed forums. (LA54)

13.6 Indications on IT security

2019 The PAs must guarantee their conformity with the “Minimum ICT security measures of the public administrations” of AgID.

In order to adhere to the architecture for the automated transmission of the IoC (Indicators of Compromise), the PA adopt the standards issued by AgID and prepare a plan for compliance and provide the services in respect of the Guidelines. (LA57)

The PAs adopt the standards issued and prepare their infrastructures to use the national automated transmission platform of the IoC. (LA58)

The PAs monitor and report to CERT-PA any IT incidents and any situations of potential risk, using the communication channels on the AgID website. (LA59)

2020 The PAs follow the instructions given in the cybernetic security guidelines issued by AgID. (LA60)

13.7 Indications on tools for the generation and dissemination of digital services

2019 Designers Italia

The central PAs indicated in AgID Determination no. 36/ 2018 and note yet adhering to the Design Guidelines and the regional and local PAs notify AgID of the date by which adjustment works will be completed on their websites. (LA61)

In the tender specifications relative to the development of on-line services and websites, the PA start to indicate and adopt the design methods and tools described in the design guidelines. (LA62)

The municipalities and schools involved in the pilot trial with the Digital Transformation Team adopt the design kit for their websites. (LA63)

Accessibility

The PAs publish on the institutional website the annual accessibility objectives (by 31 March of each year) in the section on “Transparent Administration”. (LA64)

The PAs publish on their institutional website the declaration of accessibility (as envisaged by European Directive 2016/2102 on the accessibility of websites). (LA65)

The PAs apply new provisions on accessibility or websites published after 23 September 2018, starting 23 September 2019. (LA65)

Usability

The central PAs listed in AgID Determination no. 36/ 2018 and the regional administrations carry out usability tests and send AgID the final report. (LA66)

Docs Italia

The pilot public administrations start to use the Docs Italia platform to publish documents relative to the implementation of the Digital Agenda. (LA69)

Web Analytics Italia

The administrations involved in the pilot project analyse the websites or digital services for which they are competent. (LA70)

Reorganisation of the “.gov.it” domain

Schools migrate to the “edu.it” domain and territorial entities to the “.it” domain through the CNR portal, Registro.it. (LA73)

2020

Accessibility

The PAs apply new provisions on accessibility or websites published before 23 September 2018, starting 23 September 2020. (LA65)

“IO”: the app granting access to the digital services of the PA

The PAs involved convey at least 50 central and local services. (LA72)

2021 Accessibility

The PAs apply new provisions on accessibility for mobile apps starting 23 June 2021. (LA65)

13.8 Indications on Innovation tools and models

2019 The innovation procurement platform

Starting 2019 - for the three years - the PAs use practices for innovation tenders (LA76)

Smart Landscape

The PAs stipulate collaboration agreements pursuant to Article 15 l.241/90 (LA77)

13.9 Indications on Governing the digital transformation

2019 The levers for coordination in the territory

The pilot PAs start establishing the regional PMO (LA79)

The local PAs and their aggregations take part in the digital laboratories defined by the Department of Public Function and by AgID. (LA80)

The Digital Transition Manager (RTD)

The RTD of the central PAs, Regional Authorities, Metropolitan cities and related area capital municipalities take part in the work of the permanent conference, established and guided by AgID. (LA82)

The Network of RTD develops application models and studies and promotes training and awareness-raising events and meetings. (LA83)

Monitoring

The administrations involved take part in the discussion as part of the “observatory on monitoring” for the consolidation of the method. (LA84)

The administrations involved take part in the trial of the monitoring model for the collection of data useful to the calculation of the indicators. (LA85)

Strengthening competences

Starting 2019 - for the three years - all training structures of the PA will be involved

in planning and delivering dedicated courses to the Digital Transition Managers, courses investigating the topics of the Three-Year Plan and the re-engineering of processes. (LA86)

The training structures of the PAs must, in the three-year period, carry out at least 50 basic and specialised training initiatives for PA employees. (LA87)

First initiatives towards citizens and businesses

The administrations concerned publish the new standardised forms on their websites and use XML data schema within their digital services. (LA90)

2020 The levers for coordination in the territory

The municipalities include digital transformation and digital training projects in the tenders for civil service. (LA81)

First initiatives towards citizens and businesses

The Digital Transition Managers of the central PAs and the AgID Ombudsman start trials of a synergic network. (LA88)

Figure 13.1 shown on the next page sets out the times for the main deadlines for PAs as set out in the 2019-21 TP action plans. For each deadline, reference is made to the macro area of the Map of the strategic model and action line.

Agenda of the main deadlines of the 2019-21 TP for the PAs

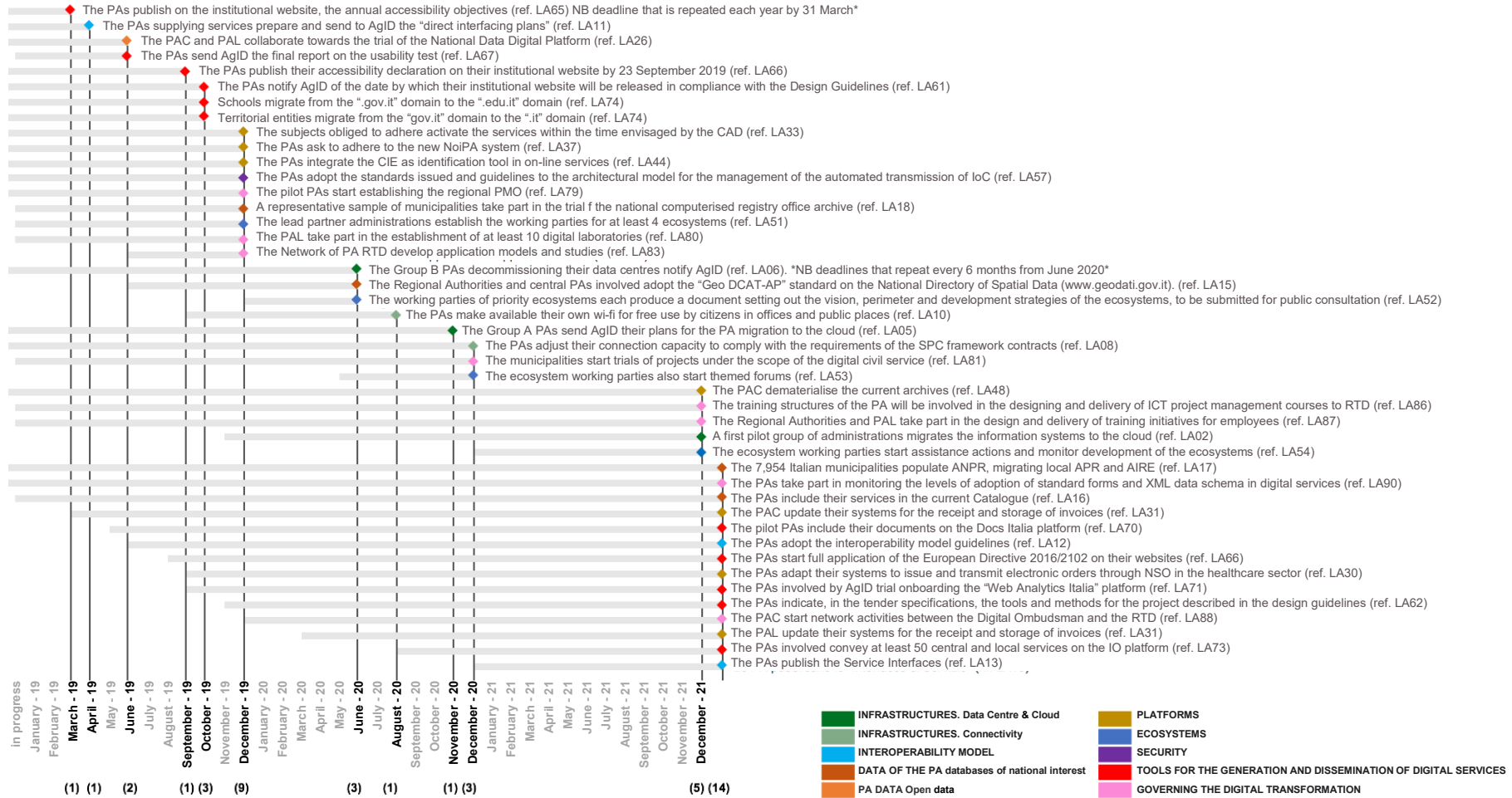


Figure 13.1. - Agenda of the main deadlines of the 2019 - 2021 TP for the PAs

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Customs and Monopolies Agency
Revenue Agency
Revenue Agency - Collections
Agency for proceedings and supervision of public contracts for works, services and supplies - Autonomous Province of Bolzano
Agency for Territorial Cohesion
Provincial Agency for tenders and contracts - Trento
Intercent Regional Agency - Emilia Romagna
Ales inhouse
ANCI
Assinform
Assintel
Assinter
Automobile Club d'Italia
Azienda Regionale Centrale Acquisti - ARCA S.p.a.
CISIS
Metropolitan city of Bari
Metropolitan city of Bologna
Metropolitan city of Cagliari
Metropolitan city of Catania
Metropolitan city of Florence
Metropolitan city of Genoa
Metropolitan city of Messina
Metropolitan city of Milan
Metropolitan city of Naples
Metropolitan city of Palermo
Metropolitan city of Reggio Calabria
Metropolitan city of Rome
Metropolitan city of Turin
Metropolitan city of Venice
Agency for Digital Italy Steering Committee
Special Commission for the Digital Agenda of the Conference of Autonomous Provinces and Regions
Municipality of Bari
Municipality of Bologna
Municipality of Cagliari
Municipality of Catania

Municipality of Florence
Municipality of Genoa
Municipality of Messina
Municipality of Milan
Municipality of Naples
Municipality of Palermo
Municipality of Reggio Calabria
Municipality of Rome
Municipality of Turin
Municipality of Venice
Conference of Autonomous Provinces and Regions
Confetra
Confindustria digitale
Consip
CRAS - Regional Healthcare Purchasing Body
CSI – Piemonte
CUP2000 - Emilia Romagna
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Department of Public Function
Regional Administrative Technical Support Entity - ESTAR - Region of Tuscany
Ernst Young
Formez
IN.VA. S.p.a.
INAIL (Corporate national insurance)
Infocamere
INPS (Social security institute)
LAZIOcrea S.p.a.
Lepida - Emilia Romagna
Liguria digitale
Ministry for International Cooperation and Foreign Affairs
Ministry of Cultural Heritage and Cultural and Tourism Activities
Ministry of Employment and Social Policy
Ministry of Defence
Ministry of Justice
Ministry of Health
Ministry of the Interior
Ministry of Education, University and Research
Ministry of the Economy and Finance - DAG
Ministry of the Economy and Finance - Finance Department
Ministry of the Economy and Finance - RGS Department
Ministry of the Economy and Finance - RGS Healthcare Department
Ministry of the Economy and Finance - Treasury Department
Ministry for Infrastructures and Transport
Ministry for Agricultural, Food and Forestry Policy
Ministry of Economic Development
Molise Dati S.p.a.
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Milan Polytechnic
Autonomous Province of Bolzano
Autonomous Province of Trento
Province of Brescia - Single contracting authority
Province of Vicenza
Region of Abruzzo
Autonomous Region of Friuli Venezia Giulia - Single Central Buying Service - Central
Directorate of Public Function
Region of Basilicata
Region of Calabria
Region of Campania
Region of Emilia Romagna
Region of Friuli Venezia Giulia
Region of Lazio
Region of Liguria
Region of Lombardy
Region of the Marches
Region of Molise
Region of Piedmont
Region of Apulia
Region of Sardinia
Region of Sicily
Region of Sicily - Regional Single Purchasing Body
Region of Tuscany
Region of Umbria
Region of Valle d'Aosta
Region of Veneto
National School of Administration
Regional Purchasing Body Service of the Region of Sardinia
Regional Single Purchasing Body Service of Molise
Sicilia Digitale S.p.a.
So.Re.Sa. S.p.a.
Società di Committenza della Regione Piemonte S.p.a. - SCR
Sogei
Single Contracting Authority Abruzzo
Single Contracting Authority Basilicata
Single Contracting Authority Calabria
Single Contracting Authority Liguria
Single Contracting Authority Marche - SUAM
Unioncamere
UOC - CRAV di Azienda Zero

APPENDIX 1 - Acronyms

ACI	Italian Automobile Club
ACP	Agency for Public Contracts
ACS	Central State Archives
AGCOM	Authority for Communications Guarantees
AGEA	Regional agricultural subsidy agency
AGENAS	National Agency for Regional Health Services
Agency for Digital Italy	Agenzia per l'Italia digitale (Agency for Digital Italy)
AI	Artificial Intelligence
AIFA	Italian Medicines Agency
AIRE	Database of Italians resident abroad
ANA	National Register of Patients
ANAC	National Anti-Corruption Agency
ANCI	National Association of Italian Municipalities

ANNCSU	National Archive of Civic Numbers of Urban Roads
ANPA	National Environmental Protection Agency
Register of the Resident Population	Register of the Resident Population
ANSF	National Rail Safety Agency
AO	Hospital
AOO	Homogeneous Organisational Area
AP	Access Point
API	Application Programming Interface
APR	Register of the Resident Population
ARCA	Regional Purchasing Body
ARPA	Regional Environmental Protection Agency
ASL	Local health authority
ASSINFORM	National Information Technology Association
B2B	Business to Business
BDAP	Database of accounting operations of the Public Administrations

BDNCP	National Public Contracts Database
BDOE	Database of Economic Operators
BPM	Business Process Management
BUL	Ultrabroadband
C-API	API approved by Italia Login
CAD	Digital Administration Code
CAF	Tax Assistance Centre
Capex	Capital Expenditure
ccTLD	Country code Top Level Domain
CDCT	Themed competence centres
EC	European Commission
CED	Data processing centre
CEF	Connecting Europe Facility (European programme)
CEN	European Committee for Standardisation
CERT	Computer Emergency Response Team
Certifying body	Service-Oriented Architecture

Certified email	Certified email
CIE	Electronic ID card
CIP	Competitiveness and Innovation framework Programme
CIPAG	National Pension and Welfare Fund for Surveyors
CM	Metropolitan cities
CNIPA	National Centre for IT in the Public Administration
CNR	National Research Council
COBIT	Control Objectives for Information and related Technology
Consip	Concession-holder for public information services
COVIP	Pension funds supervisory commission
CSM	Superior magistrate council
CSP	Cloud Service Provider
DAE	Digital Agenda Europe
DAF	Data & Analytics Framework
DCAT-AP	Data Catalogue Vocabulary – Application Profile
DESI	Digital Economy and Society Index

D.L.	Italian Decree Law
D. Lgs	Italian Legislative Decree
DPCM	Decree of the President of the Council of Ministers
DPO	Data Protection Officer
DSI	Digital Services Infrastructures
DSS	Data Security Standard
eCertis	Service that brings together the equivalences of certificates and statements of Member States
eESPD	Electronic European Single Procurement Document
EEEF	European Energy Efficiency Fund
EeISI	European eInvoicing Standard in Italy
EELL	Local bodies
EESSI	Electronic Exchange of Social Security Information
EGDI	E–Government Development Index
eIDAS	Electronic Identification Authentication & Signature
EIF	European Interoperability Framework

eIGOR	eInvoicing GO Regional - National project to enable the national electronic invoicing system for the common European standard
EIN	National hybrid meta-ecosystem
EIP-SCC	European Partnership on Smart City and Communities
ELENA	European Local Energy Assistance
electronic health records	Electronic health records
ENEA	National agency for new technologies, energy and sustainable economic development
ENIT	Italian national tourism agency
EPT	Provincial entity for tourism
ESPD	European Single Procurement Document
ESTAR	Regional Administrative Technical Support Entity
ETP	Tourism promotion entities
EU	European Union
ERDF	European Regional Development Fund
FICEP	First Italian Crossborder eIDAS Proxy

FNCS	National Cyber Security Framework
FUA	Functional Urban Area
G2G	Government-to-Government - Electronic sharing of data and/or information systems between government agencies, departments or organisations
GLAM	Galleries, Libraries, Archives and Museums
GLU	Usability working party
HARDWARE	Hardware
IaaS	Infrastructure as a Service - Physical and virtual technological infrastructure able to supply computing, networking and storage resources from a remote position and by means of API
ICT	Information and Communications Technology
IGRUE	State Accounting Organisational Structure that deals with financial relations with the EU
IleP	Italian Interoperable eProcurement - SIMOG with e-Certis and the Purchasing bodies under the scope of the European standardisation programme
INAIL (Corporate national insurance)	National insurance for accidents at work
INARCASSA	National Welfare and Assistance Fund for Freelance Professional Engineers and Architects

INI-PEC	National Index of Certified E-Mail Addresses of Professionals and Businesses
INPS (Social security institute)	National Social Security Institute
INSPIRE	Infrastructure for Spatial Information in Europe
IoC	Indicator of Compromise
IoT	Internet of Things
IPA	Index of Public Administrations
IPZS	State mint
ISA	Interoperability solutions for public administrations, businesses and citizens
ISEE	Equivalent Economic Situation Indicator
ISO	International Organisation for Standardisation
ISPRA	Superior Institute for Environmental Research and Protection
ISS	Superior Health Institute
ISTAT	National Institute of Statistics
IT	Information Technology

JESSICA	Joint European Support for Sustainable Investment in City Areas
JPSC	Joint Programme Smart Cities
JRC	Joint Research Centre
JSON	JavaScript Object Notation - Format suitable for the exchange of data between client/server applications
KPI	Key Performance Indicators
LDAP	Lightweight Directory Access Protocol
M2M	Machine-to-Machine
MAE	Ministry for International Cooperation and Foreign Affairs
MATTM	Ministry for the Environment and Territorial and Sea Protection
Ministry of the Economy and Finance	Ministry for the Economy and Finance
MEPA	PA Electronic Market
MEV	Evolutionary maintenance of the software
MiBAC	Ministry of Culture and Cultural Heritage
MiPAAF	Ministry for Agricultural, Food and Forestry Policy and Tourism

MED	Ministry of Economic Development
MIT	Ministry for Infrastructures and Transport
Ministry of Education, Universities and Research	Ministry of Education, University and Research
MOOC	Massive Open Online Courses
MVP	Minimum Viable Product
NIS	Network and Information Security
NOP	National Operational Programme
NSO	Public administration purchase order sorting hub
NVD	National Vulnerability Database
NHS	National Healthcare System
OE	Economic Operators
Opex	OPERating EXpenditure
OPI	Payment and Collection Orders
OT	Thematic objective
PaaS	Platform as a Service

PAC	Central public administration
PAL	Local public administration
PCC	Trade Receivable Platform
PCI	Payment Card Industry
PCM	President of the Council of Ministers
PCP	Pre-Commercial Procurement
PdD	Domain ports
PDND	National Data Digital Platform
PEPPOL	Pan-European Public Procurement Online - Project for the identification of infrastructural elements and technical specifications that enable and facilitate e-Procurement procedures.
PM	Project Manager
SME	Small and Medium Enterprise
PMO	Programme Management Office
PMOC	Programme Management Office Central
PMOR	Programme Management Office Regional
PO	Programme Officer

ROP	Regional Operational Programme
PPI	Public Procurement of Innovative Solution
PPP	Public-Private Partnership
PRA	Public automobile register
PSD2	Payment Services Directive 2
PSI	Public Sector Information
PSN	National strategic poles
PSP	Payment service providers
QXN2	Qualified eXchange Network
RDF	Resource Description Framework
RDO	Call for bid
RGS	General State Accountancy
REST	Representational State Transfer - Software architecture for the distributed systems
RNDT	National Directory of Spatial Data
RTD	Digital Transition Manager

RTI	Temporary Consortium
SA	Contracting authority
SaaS	Software as a Service - Software applications that can be accessed over the internet using various types of devices (Desktop, Mobile, etc.)
SAML	Security Assertion Markup Language - IT standard for the exchange of authentication and authorisation data between different security domains.
SATD	Territorial digital aggregator
SATER	Emilia Romagna Telematic Procurement System
SBN	National library service
SCIPAFI	Public system for the prevention of fraud in the consumer credit sector - Identity theft
SDD	Sepa Direct Debit - Telematic payment instrument to arrange for collections within the SEPA countries
SDI	Exchange System
SDN	Software Defined Network (technological paradigm)
SDK	Software Development Kit
SEO	Search Engine Optimisation

SEPA	Single Euro Payments Area
SGPA	National administrative procedure management system
SGSI	Information security management system
SICOGE	System for the integrated management of economic and financial accounting
SIMOG	Tender monitoring information system
SINFI	Federal National Information System of Infrastructures
SIOPE	Information System on Public Entity Transactions
SLA	Service Level Agreement
SLaP	Smart City Landscape
SLI	Service Level Indicator
SLD	Level two domain
SME	Smart City Engine
SMN	National Museum System
SMP	Service Metadata Publisher
SNA	National School of Administration

SOAP	Simple Object Access Protocol - Protocol used to exchange messages between software components, typically in the form of software components.
SOGEI	General IT company
SP-Coop	Public cooperation system
SPC	Public connectivity system
SPID	Public digital identity system
S-RIPA	International network of the public administration
SSC1	Smart Cities and Communities
SSC2 - 4	Sustainable cities through Nature-based solutions
SRSP	Structural Reform Support Programme
STIX	Structured Threat Information eXpression
SUAP	Single Office for Production Activities
SUE	Single Office for Construction
SOFTWARE	Software
TAR	Regional administrative courts
TAXII	Trusted Automated eXchange of Indicator Information

TLC	Telecommunications
TLD	Top-Level Domain
UI	User Interface
UX	User Experience
VoIP	Voice over Internet Protocol
WADcher	Web Accessibility Directive Decision Support Environment
WCAG	Web Content Accessibility Guidelines
WISP	Wireless Internet Service Provider - Supplier of internet services offering connectivity developing the last mile using technologies that exploit the radio transmission of data
WP	Working parties
XML	eXtensible Markup Language

APPENDIX 2 - The Three-Year Plan for IT in the Public Administration, measurement of results and the country context

The [Ministerial Declaration on eGovernment](#) stipulated by Italy in Tallin last October 2017 binds our country, as for other Member States, to develop the principles and objectives of the [Action Plan 2016 - 2020 eGovernment](#).

The 2017 Three-Year Plan for IT in the Public Administration incorporated into the digital transformation strategy of the Public Administration, all principles/objectives of the European plan. The new version of the 2019 - 2021 Three-Year Plan resumes the strategic and project guidelines of the previous version and confirms the complete consistency with the principles it contains.

Many of the projects that in the last two years have been re-launched or started in fact constitute an important step towards the achievement of the principles, objectives and actions envisaged by the eGovernment Action Plan 2016 - 2020 and the Tallin Declaration (see the comparative [analysis](#) of the Three-Year Plan with the Ministerial Tallin Declaration).

The [eGovernment Benchmark 2018](#) (average data 2016 - 2017) published late November of this year²⁰, however, reveals that Italy is still characterised by a dichotomy. As regards digitisation, i.e. the availability of digital public services, Italy, with 58%, is just below the EU average of 63% (2016 - 2017).

²⁰ For a more in-depth analysis of the eGovernment Benchmark 2018, see "[L'Italia nell'eGovernment Benchmark 2018: un problema di maturità digitale dei servizi o del Paese?](#)"

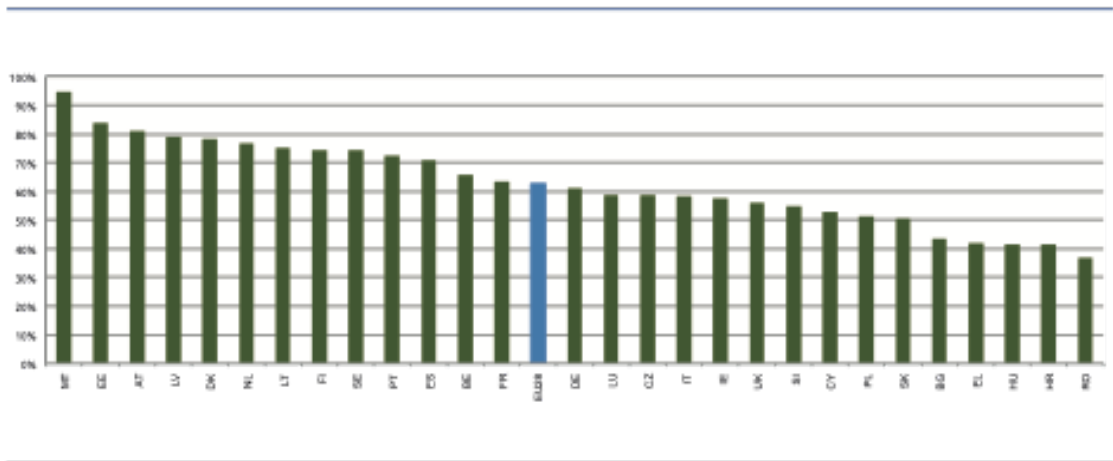
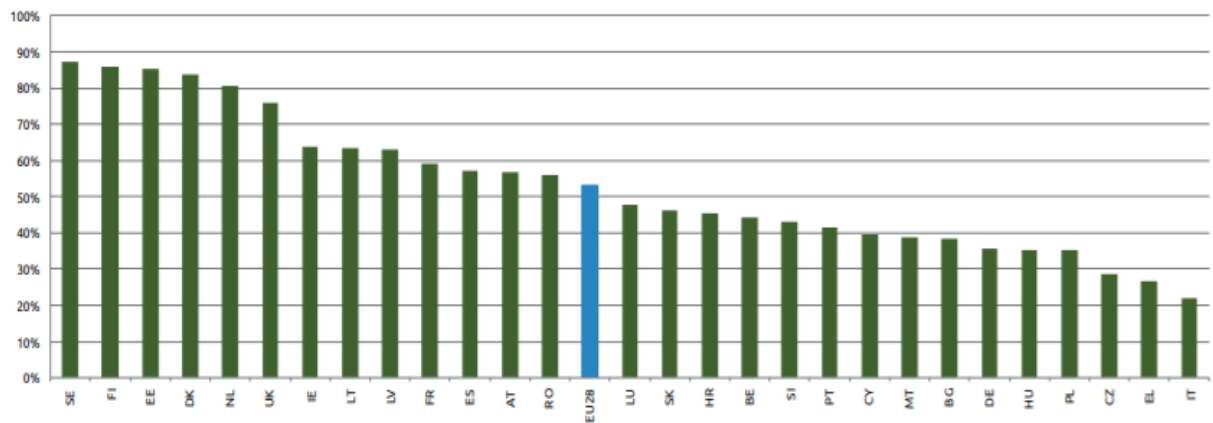


Figure A2.1 - Digitisation Index

Penetration²¹, i.e. the effective use of services by citizens, remains very low with only 22% of individuals interacting on-line with the public administration, as compared with the EU average of 53%.



²¹ For a definition of penetration, see eGovernment Benchmark 2018, p. 101 and note 3. For the specific indicator, see the [European Commission website](#)

Figure A2.2 - Penetration Index

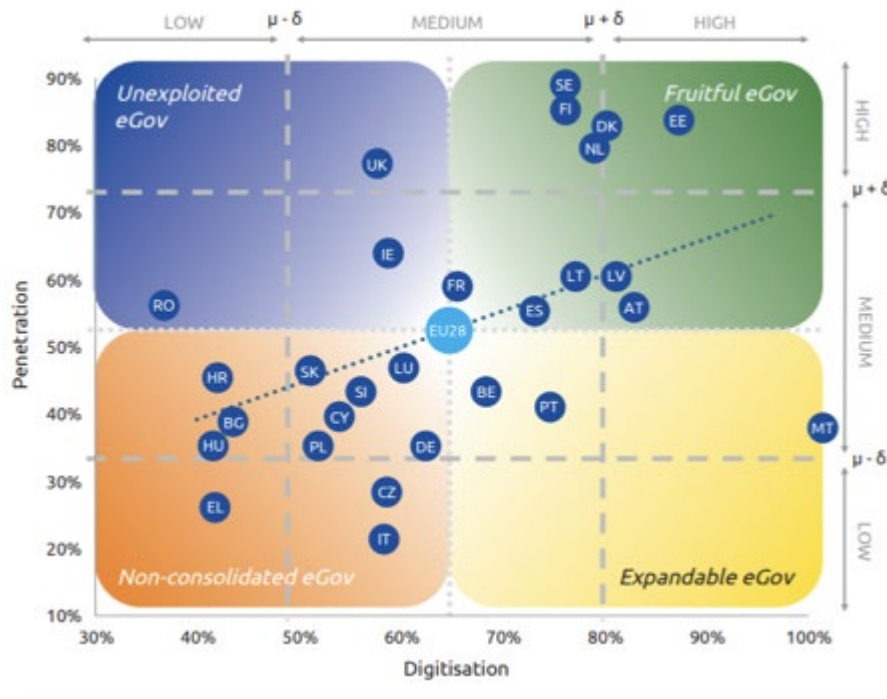


Figure A2.3 - Penetration vs digitisation

If the digitisation strategy of public services is contextualised within the country, its effectiveness would appear to be very much impacted by factors such as internet use and the country's digital competences. Improvement of the availability and quality of public services clashes, in fact, with a context marked by a major digital divide and little interest in digital technology.

Another indicator of digitisation comes from the Digital Economy and Society Index - [DESI](#), a compound index that assesses the set of 5 "dimensions" (Connectivity, Human capital, Internet use, Integration of digital technology, Digital public services), which, in turn, comprise a set of indicators that should be analysed individually to correctly understand both the gap and improvements.

the Profile sheet in Italian is available for consultation on the [European Commission website](#).

According to 2018 [DESI](#) data, only 69% of the Italian population uses the internet, as compared with an EU average of 81% and a total of 23.2% of the Italian population has never used the internet, as compared with an EU average of 12.9%. This is flanked by another major structural disadvantage: only 13.5% (13.5 people out of 1,000) have a degree in STEM (Science, Technology, Engineering and Mathematics) and performance has worsened on last year; we are below the EU average, which stands at 19.1 and have slipped back in the ranking because other countries have clearly improved their performance.

However, in respect of the low use of public services, we cannot fail to consider that stressed by DESI, i.e. that this is partly due to a poor quality of offer; the usefulness, usability and ease of use are, in fact, a major reason for citizens to adopt digital services.

All public services must not only be guided by the principle of user-centricity, as also stressed in the Tallinn Declaration on eGovernment, as mentioned above, but in 2017 and this year, AgID and the Team have launched as founding partners of the digital transformation strategy, numerous initiatives by which to identify the performance gaps and improve the usability and accessibility of the digital services.

Please remember that the 2017 Three-Year Plan has envisaged a section dedicated to digital services with guidelines for the design of PA services. AgID, together with the Team, has issued the Guidelines to design for the PA services and websites, with the aim of defining common rules for the design of interfaces, services and contents that can be used and are accessible and to improve the browsing and experience of citizens.

The 2018 DESI acknowledges this commitment, mentioning the best practice of “Designers e Developers Italia”, which is characterised as a competence centre for design of services that makes available kits and tools to help design modern, simple digital services. Both community platforms are dedicated to the design and development of public digital services, making available technical documentation, guidelines, development and design kits, test environments, APIs and an issue tracking system to make an active contribution towards the development of technologies enabling the country’s operating system by developers, designers and suppliers of technology (SPID, PagoPA, ANPR, etc.).

AgID and the Team have worked a great deal to promote the usability of existing digital services; a new User Interface has been released and a new User experience for PagoPA and SPID. A map has been outlined for the integration of SPID as a single or preferential channel for authentication within the public services most used by citizens: SPID has been integrated as the only authentication channel within the 18-year-olds bonus and the teachers’ bonus, ACI has integrated SPID into the automotive services and shortly the tax services managed by the Revenue Agency and those of welfare managed by INPS will offer SPID as a preferential channel for authentication.

Our country was and will remain behind in the growth curve with respect to most of the other EU countries; the digital strategy requires consistency and continuity to measure the relevant benefits, where Italy has continued to invest in a clear, consistent vision, the results are seen. Strategic and investment continuity are required to overcome the gap.

But this is not sufficient, as the effort must be a joint one: the negative results are often the sum of all the inefficiencies disseminated between the public administrations. The first phase of digitisation in many countries, including our own, has been characterised by the individual services made available by the individual administrations; digital technologies have been “applied” to traditional structures and procedures to supply analogue services on digital platforms.

Over the years, this approach has replicated, in the implementation of IT projects, the same organisation into silos and fragmentation already present in the PA, with a consequent proliferation of projects that do not dialogue with each other. The fragmentation and lack of a systemic strategy negatively impact the needs of users, which are sacrificed to the needs of the organisation, as each administration supplies a service that meets just one, specific need, supplying it as though it were a finished product.

The interaction of administration and users requires a parallel revolution of the way in which the administrations operate. The actual benefits will truly start materialising only when a systemic approach is introduced that does not consider the individual projects separately but rather as part of a single digital transformation programme.

From a technological viewpoint, it would therefore be necessary to start out from the traditional, horizontally-structured IT silos projects, able to transcend the individual entities of the PA, i.e. platforms supported by common data and information: the so-called “government as a platform”, as trialled by the British government²². All PAs must therefore strive to work towards transversal integration to achieve a common aim.

Lastly, it should be recalled that when these national rankings are analysed, often we forget that many digital services are offered on a local level, above all, although not exclusively, in countries with a very decentralised institutional organisation, like Italy. The recent European Commission report [eGovernment in local and regional administrations: guidance, tools and funding for implementation](#) shows that the national digital strategy must be characterised by a major local component if it is to be effective, as this is crucial to the supply of services to citizens. Again in the eGovernment Action Plan Benchmark 2018, it is pointed out that the percentage of digital services available at a national level (EU average 69%) far exceeds the average services supplied at a regional (EU average 65%) and local (EU average 49%) level, even if the local services are often those which effectively make a difference to citizens’ lives.

²² For more information, see the British [Government Digital Service website](#).

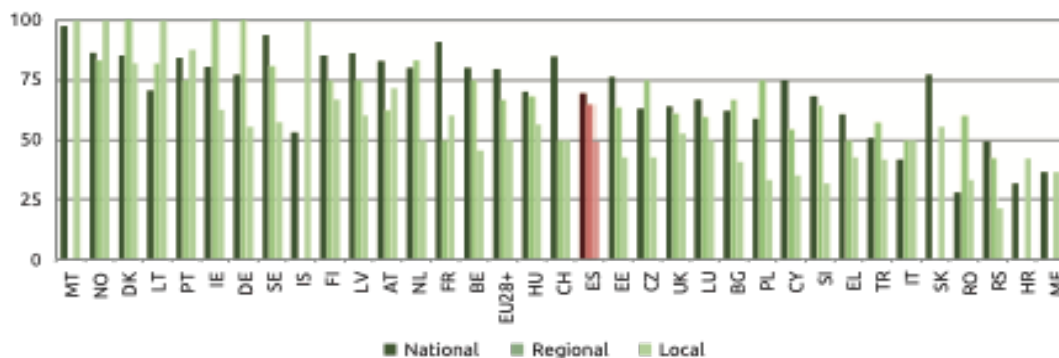


Figure A2.4 – Online availability of public services at national, regional and local level (country biennial 2016 and 2017 average)

The 2017 Three-Year Plan had already envisaged major collaboration at a national/local level, requiring local administrations to prepare strategic plans that are consistent with the European and national vision.

In order to concretely achieve this objective, work was done to ensure that local entities had the necessary financial resources to be able to concretely pursue the digital transformation.

Through Article 66 of Italian Legislative Decree no. 217 of 13 December 2017, a precise commitment was made for local entities to be able to request, starting 2019, financial spaces also for investments aimed at implementing the Three-Year Plan.

Together with Cassa Depositi e Prestiti, a financial instrument has been made available - a loan for a minimum of €5,000 and with an average term of 10 years - intended specifically for local entities to cover investments in digital services.

In collaboration with the Department of Public Function, resources were used of the Governance NOP to help local entities take over in ANPR: contributions are recognised automatically to municipalities migrating in ANPR between 06 December 2017 and 31 December 2018.