SMART GOVERNMENT

We design a more effective and sustainable government system, from core processes to the new digital citizenship.

WHAT ARE WE DISCUSSING?

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in Dario Buttitta

His professional career began on the technical side
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Antonio came to Engineering in 2020, following a 20-year
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Arianna has participated in numerous scientific
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For 15 years Natalia has been involved in improving the
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Over 30 years of experience as a Business Analyst in
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Alessandro has worked in IT for around 23 years,
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he has worked in Engineering for 5 years. Here, he has
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he is responsible for Central Italy LPA Administration
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For over 12 years, he has been involved in the Labour
Market and Vocational Training, supporting Local
and Central Public Administrations in the process of
Digital Transformation. In 2021, the position of Director
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An expert in European Union law and structural funds,
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interventions for economic development for over
20 years. She has helped assist numerous public
administrations in designing complex interventions
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capacity and digitizing processes.

Giovanni Candigliota

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Over a decade of experience in the public sector
focused on the provision of strategic, management and
IT consulting services and the development of complex
projects. Today, he is Sales Manager for Central Public
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Paolo Pesaresi

Defense & Space Sales Manager,
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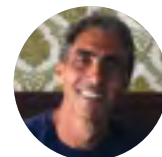✉ paolo.pesaresi@eng.it

in Paolo Pesaresi

In Engineering since 2000 and with a background in the
Italian Navy's General Staff, Paolo has held increasingly
important positions in the area of commercial
development in the Defence & Space Business Unit,
which he has headed since 2011. In particular, Paolo
is responsible for meeting the needs of the various
groupings of the Ministry of Defence (Interforces, EI,
MM, AM), NATO and international institutions dealing
with Defence, Security and Space. Since 2018, he has
also been responsible for the Client Ministry of the
Interior and Civil Protection. Paolo is an expert in
Telecommunications and passionate about literature,
especially that with a naval connection.

Giorgio Cosimelli

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Over the past 26 years, he has held Technical
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particular focus during the last 18 years on redesigning
the Group's E-Health product and service platform. He
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PA.

Ersilia Gennarelli

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in Ersilia Gennarelli

During her 20+ years of working experience in the Group, Ersilia has gained in-depth knowledge and skills in the management of large contracts and complex and innovative projects in the Public Administration and Healthcare sector, for the creation and evolution of Information Systems and the digitalization of processes and procedures, through the application of enabling methodologies and technologies.
She is also a member of the Engineering Project Management Center of Excellence.

Francesco Pisani

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in Francesco Pisani

With over 25 years of experience, after an initial period as an engineer and consultant, he has devoted himself to a career in IT. Starting out on the technical side, he consolidated his professional career by gradually adding commercial expertise. Today, he is Technical and Commercial Director of Engineering's "Pensions and Welfare" unit and assists major clients with their innovation processes.

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in Elena Minafra

For over 15 years, she has been engaged in the development, conception and coordination of activities and operational tools in the field of communication and marketing for the entire Engineering Group. After almost ten years managing Corporate projects, she currently works in the Public Administration and Health sector, where she began her career.

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Since 2006, Isabel has been working in EU co-financed research and innovation projects, developing skills in the dissemination and exploitation of IT research results and in the management of EU co-financed projects. Isabel is Chief Communication Officer R&D and supports R&D laboratories teams in communicating and disseminating project results.

Fabio Barba

Defense, Space and Homeland Security Business Unit Technical Director, Engineering

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Fabio has 26 years of work experience, 20 of them in the ICT sector. Once an officer in the Italian Navy, after completing his course of study at the Naval Academy in 1995 he went on to graduate in 2000 with a Master's degree in Command & Control Systems from the Marine Corps University in Quantico, Virginia, United States. Fabio has worked with Engineering since 2001 and is currently Technical Director of the Defence, Space and Homeland Security Business Unit. He is in charge of all projects with the Italian Ministry of Defence, the Italian Ministry of the Interior, NATO, the European Council and several European Agencies. He assists in drawing up commercial strategies in the following sectors: defence, maritime, border control and national security.

Alice Forestan

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in Alice Forestan

Alice studied for a Master's degree in Product Design and Communication, she began working in Engineering in the Innovation Design & Marketing team, dealing with research and design of UX methodologies and Service Design tools, applied mainly to the design of innovative solutions for Public Administrations' digital services.

We design a more effective and sustainable government system, from core processes to the new digital citizenship.

1 TRENDS, CHALLENGES AND OPPORTUNITIES

The forced acceleration of Digital Transformation in the public sector brought about by the Covid-19 pandemic and the consequent opportunities linked to the PNRR (Italian Recovery and Resilience Plan are opening up an extraordinary opportunity for change in the Public Administration that has long been hoped for and can no longer be postponed.

The Digital Transformation of the Public Administration is one of the main objectives being pursued by the Italian Recovery and Resilience Plan (PNRR, Piano Nazionale di Ripresa e Resilienza), which plans investments of €40.3 billion on Measure 1, dedicated to "Digitalisation, Innovation, Competitiveness, Culture and Development". Here we find the strategic and operational objectives that must be pursued by the transition to digital PA infrastructure and services, starting with the national enabling platforms:

– SPID (Sistema Pubblico di Identità Digitale) or Public Digital Identity System as a single digital identity management channel that is useful for accessing public services

– APP IO as a "single digital gateway" via mobile phone for accessing and using public digital services

– PagoPA for the management of electronic payments

– National Digital Data Platform for the management of interoperability between databases

– ANPR (Anagrafe Nazionale della Popolazione Residente) or national regster office, for the 'once only' management of the data of the Italian resident population and the digitalisation of the main registry certifications

– PSN (Polo Strategico Nazionale) or National Strategic Hub as the national infrastructure capable of supporting the migration of PA applications to the Cloud.

Indeed, the goal of **'Cloud first'**, for which by 2026 around 75 % of Italian PAs will have to use cloud services, is the most stimulating and ambitious goal and defines the path towards which all innovation initiatives should be heading.

Between 2020 and 2021, both central and Local Public Administration bodies stepped up their strategies and actions to adopt new technologies and paradigms, with a particular focus on:

- collaboration platforms to support remote working and the virtualisation of services for citizens and businesses

- platforms and tools for the complete digitalisation of procedures in a 'cloud ready' perspective

- cloud services for the provision of configurable, reliable and remotely available services

- Cybersecurity strategies for preventing cybercrime and guaranteeing the privacy of citizens

- evolution towards platform-enabled microservice architectures through API management, resulting in the migration of application solutions

- CXM and Digital Analytics platforms including the use of digital assistants integrated with multi-channel call centres to enhance the citizen experience

- Big Data and Advanced Analytics to both develop data-driven decision-making processes and make them predictive.

Even some technologies that until a few years ago might have been regarded as 'frontier' technologies are now being attentively looked at by the public sector, with a number of experiences, ranging from the prototype stage to actual use: Digital Twin, Blockchain, RPA, IoT, Virtual and Augmented Reality, as well as the use of drones in territorial monitoring and management processes. In this scenario, 5G will breathe new life into the Digital Transformation process through a more powerful network for the exchange of mobile data and services.

All Digital Transformation processes are changing the user experience of citizens, which makes it necessary to consider operational and organisational models that favour interaction. It is crucial, also for the public sector, that the adoption of Design Thinking and Human-Centred Design methodologies in the design phase, as well as of agile methodologies in the development phase, become standard, and that we invest in the growth of new skills capable of guaranteeing governance of innovation processes.

2 ENGINEERING IN SMART GOVERNMENT

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Our vision is that all digitally-supported innovation solutions should live within a single ecosystem of Digital Citizenship services, linking people, organisations, society and the planet in which we live and work together: this should be done in a way that is open, simple and tailored to people's skills and contexts of use across the board, and with an attitude that is sensitive to the ethical impacts that digital technology has on people's lives and culture and on the life of the planet.

Dario Buttitta
General Director Public Administration & Healthcare, Engineering

Competences, innovation, and local presence in all spheres of government, with a focus on the individual.

On the strength of these pillars, Engineering is a key partner for Central and Local Public Administrations in the paths towards Digital Transformation. **In over thirty years we have guided Italian public bodies** in the transformations that have changed the way they manage processes, store data, make professionals work, and communicate with citizens and businesses, bringing digital technology into everyday life: from the first data centres to modern cloud infrastructures, from office automation to the native digitalisation of processes, from websites to the user experience designed around each person.

In every sphere of public governance - whether it be **accounting, finance, welfare, health, justice, security, environment, infrastructure, labour, economic development, education or cultural heritage**- we are seen as a partner for technology and processes at all levels of government: **institutional bodies, central authorities, supervisory and control authorities, public security forces, local authorities and Local entities at regional and municipal level.**

More than 90 large Central and Local Administrations have chosen Engineering for the management and innovation of their core activities aimed at achieving their mission. We have **around 2,000 professionals who are devoted exclusively to public administration,** and who work every day alongside Local and Regional Authorities in the Digital Transformation process.

Today, we are committed to building an effective, user-friendly, user-focused and sustainable Smart Government system to achieve a new digital citizenship. We are designing it together with PA stakeholders, using our deep knowledge of administrative processes, employing enabling technologies and our **Digital Platforms,** with the aim of building a large and unique **open and interoperable digital citizenship ecosystem** that can **integrate data, processes and services around the needs of citizens and businesses.**

We design a more effective and sustainable government system, from core processes to the new digital citizenship.

Digital citizenship consists in the construction of a large and unique informative ecosystem that attends to each individual, in his or her relations with institutions and the community, merging information relating to every area of life. This evolution takes the experience of citizenship to a higher level, in which needs are anticipated, responses are personalised, and relations are simplified, by overcoming individual information barriers and using increasingly intelligent technologies that are able to link together and derive **value from the relationship between data and the automation of processes.**

We at Engineering, more than others, have the ability to build this ecosystem of new citizenship for several reasons: our involvement in all administrative levels throughout Italy, our in-depth knowledge of the specific processes in almost all areas of public life and how institutions operate, our native vocation as a **system integrator of proprietary and third-party systems, which is becoming fundamental in the current migration of applications to the Cloud,** and our ability to make tangible the use of new technologies that enable this transformation, **enhancing and evolving the investments in digitalisation** already made by the public sector.

To tackle this new phase of the Country's digitalisation, Engineering Group is also renewing its organisational models, in order to anticipate the opportunities for innovation and to further specialise its project proposals even faster. An example of this is the **Innovation Area which, through user experience, innovation in technology and processes, allows us to support the Digital Transformation of PA.** Similarly, our PA & Healthcare Competence Centres are dedicated exclusively to topics such as European Funds, Labour, Agriculture, Accounting and Budgeting.

These **Competence Centres** are of strategic importance in the range of services offered by the Group, such as the Centre of Competence for European (but also national) Funds, which helps administrations to make the best use of the resources that will come from European funds and the PNRR (Italian Recovery and Resilience Plan). One of our t**ask forces is dedicated to helping administrations use the funds:** to manage and report on them through technology platforms; to devise measures, especially relating to Digital Transformation; and to use and deploy such funds for the benefit of citizens and businesses.

The Group' s involvement, experience and knowledge of technology and processes in the world of public administration are today increasingly reflected in its commitment to **"making innovation a reality"**, giving also members of the public the drive - and the courage - to embrace the most innovative opportunities. One example of this commitment can be seen in our projects or prototypes for the public sector, which already use technologies such as Blockchain or Artificial Intelligence. This is also supported by our international research activities on Smart Government, including projects such as **DECIDO**[1], through which we analyse and aim to maximise the impact of the adoption of innovative data, methodologies, and tools in the development of more targeted and effective policies based on evidence provided by real data.

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1 The project has received co-funding from the European Union's Horizon 2020 programme for research, technological development and demonstration - Contract no. 101004605

◉ RESEARCH PROJECT / <u>DECIDO</u>

The use of data sources, analytical techniques and computing power can support policymakers in their decisions, while involving Local communities in co-creation activities to support more targeted policies using real data analysis. With the innovation project DECIDO connects Public Administrations to the data and computing infrastructure of the European Open Science Cloud (EOSC), thus favouring access to and exploitation of a wealth of resources.

The project is developing four pilot projects across Europe: forest fire prevention in Finland and Spain, flood management in Italy, and electricity black-out management in some Greek cities.

The primary objectives of the DECIDO project are:

– To enable public authorities to adopt data and cloud technologies (from the PA and research sectors) to support data-driven policies

– To support emerging strategic management to ensure that data can contribute to evidence-based policy-making processes in line with public administration objectives and priorities

– To facilitate the active involvement of Local actors in the generation of data, making them participate in a transparent way in how the data are analysed and used

– To assess the impacts, benefits and transformational (including ethical) risks of implementing big data tools and methodologies and using cloud infrastructure in the following disaster risk management domains: floods, forest fires, power outages

– To pursue a sustained use of data analytics and cloud infrastructure in decision-making.

◉ RESEARCH PROJECT / <u>INTERSTAT</u>

INTERSTAT project is part of the Connecting Europe Facility and aims at developing a framework that will allow the interoperability between national statistical portals and the European Data portal and the deployment of cross-border services that reuse statistical open datasets from those portals.

The project will perform a set of scientific, technical but also legal-related activities to investigate and provide a set of solutions to achieve the following specific objectives: enable interoperability among different national statistical portals and the European Data Portal, provide standards, methodologies and tools to achieve harmonisation for open data and technical interfaces.

At a Glance
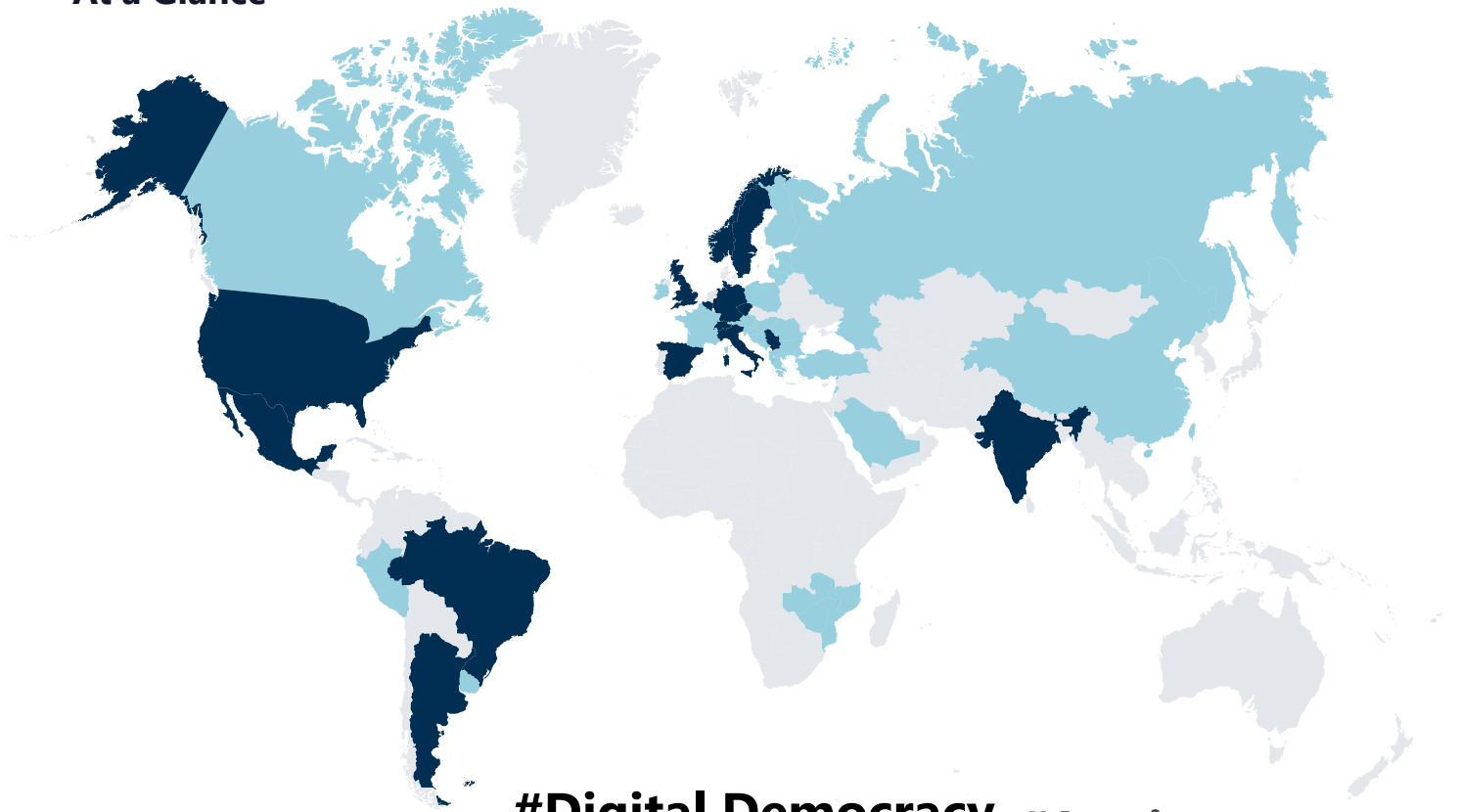
#Digital Democracy #Justice
#Welfare #Accounting #Digital Identity
#Digital Services #Central Government #Mobility
#Local Government #Education #Tax
#Employment #Tourism #Healthcare #Co-Design
#Citizen Experience #Environment #Agriculture
#HR #Finance #Collaboration #Digital Platform
#Digital Payment #Reuse #Security #Privacy
#Business Services #Digital Citizenship

30+
**Years of
Experience**

90+
**Clients in central and
local government**

Complete Coverage
Our skills cover all areas of
the **public administration
and services to citizens.**

"Core" Solutions
Our solutions **"Core"** and
strategic processes for the
life of our country.

1.900+
Specialists

**Work Agriculture
Financing
Human resources
Accounting and
finance**
Expertise of excellence

Global Partner
We cooperate with all
government levels:
Central bodies, Regions,
Local authorities, agencies.

End-to-end Portfolio
We create and integrate:
**Application solutions
Projects and
consulting
IT services**

€ 170M+
Revenues/year

3 ENGINEERING'S PORTFOLIO FOR SMART GOVERNMENT

Engineering, in order to guarantee qualified and professional support to PAs in the Digital Transformation, has adopted an organisational model that is increasingly closer to our customers, both by strengthening technical and technological skills and by reorganising the Innovation Area.

Antonio Nardelli
Commercial Director of Public Administration, Engineering

The Group's offer for the Digital Transformation of the public sector is qualified and distinguished by its **transversality along the entire life cycle of the innovation process,** from strategy design carried out jointly with customers and stakeholders, to the continuous evolution of individual projects, and by its real **presence in all the thematic areas of public governance** at all levels in which the administration and government of the State is divided.

In all these areas, we bring process expertise gained from decades of projects that have led to the digitalisation of public administration, particularly in the **core processes of bodies that oversee government functions: regulation and control, the exercise of citizens' rights and duties, growth, and sustainability.**

The Group's over 1,900 professionals working exclusively in the public sector are experts in their respective subject areas: specific processes, regulations, evolutionary trends, ecc. In addition, we have thousands of professionals specialising in individual technologies and transversal skills such as Cloud, Cybersecurity, AI & Advanced Analytics, UX & Service design, ecc.

This portfolio of competencies translates into **projects,** the use of proprietary and non-proprietary **solutions,** as well as technical and **advisory services**, which can be tailored to the specific nature of the organisation, its needs and procurement methods.

Smart Government services naturally live within the country's digital citizenship ecosystem. in this sense, this portfolio map integrates and extends with those of other areas: to Augmented Cities, Smart Agriculture, E-Health, Digital Defense, Aerospace & Homeland Security, Smart Transportation, Smart Energy & Utilities.

As we reported in our Paper "Digital Ecosystems & Composable Solutions",the Digital Citizenship ecosystem is built around 3 stakeholders, their mutual rights and responsibilities: citizens, institutions and communities. The ecosystem covers all aspects of citizenship: welfare, employment, health, security.
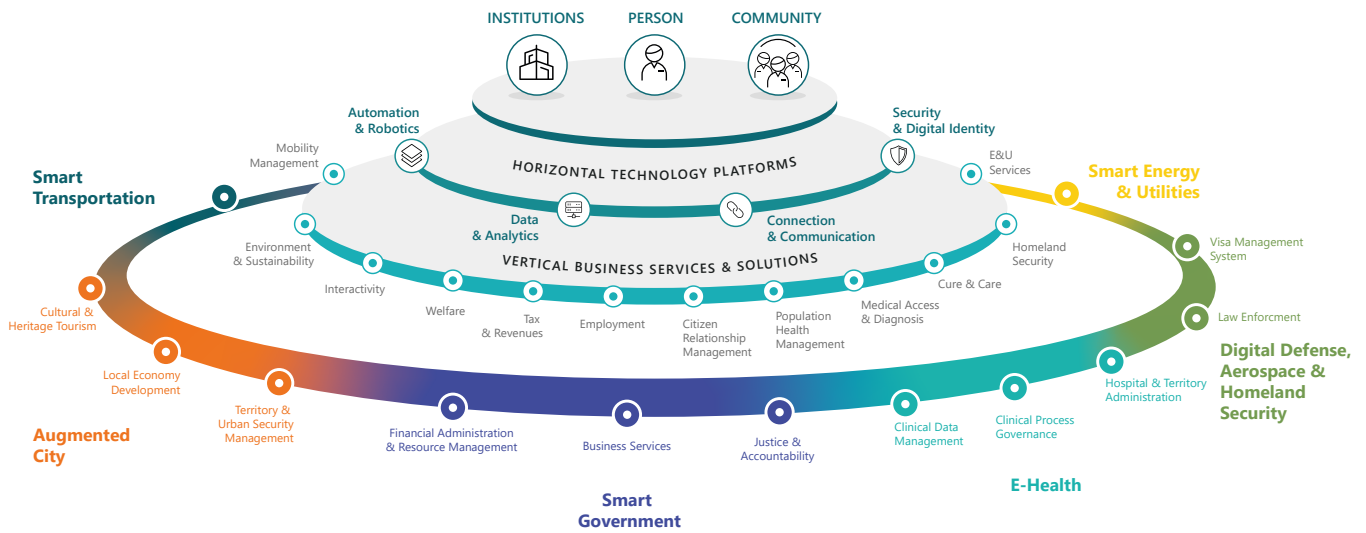
REGULATION & COMPLIANCE

EU Funds Management

The management of European financial resources has always been a testing ground for public administrations. The new 2021-2027 multiannual budget framework and the Next Generation EU have imposed a real boost to the already deep need for capacity building in the system of governance of funds, which calls for processes designed in a digital first key, in the name of ethical values of citizenship and security. The result is an unstoppable growth in the demand for innovation, according to a strongly evolutionary vision of the use and purpose of electronic data exchange systems, which have always supported the use of funds, with a shift from a merely instrumental function to a central role in the service of digitalisation and total traceability of data.

As a leading player in support of the management of European funds and complementary resources, we at Engineering have developed a "rethinking key" for our offer, which focuses on the widespread reading of processes according to digital logic and on the intelligent production and use of data.

The new "information system" model, with the strength of a complete specialist supervision of the domain ensured by its own **"European Funds" Competence Centre,** envisages a scalable, microservice, cloud-ready architecture, a multi-channel front-end, the use of BPM components, metadata technologies for the description of forms, data models, control rules and for the storage of huge quantities of information, with a decisive impact on PA performance and on the improvement of the user experience for operators, citizens and businesses. Thanks to the very high levels of flexibility, the new solution, today commissioned by Sviluppo Toscana, can be integrated in any context interested in the management of European and national public resources: Structural Funds, Complementary Funds, PNRR.

Finance & Control

The effective management and monitoring of financial resources have always been a primary need for public bodies, which are required to move in increasingly complex accounting and administrative contexts. Following the introduction of *Legislative Decree 118/2011 on the Accounting Harmonisation of Public Administrations,* Public Administrations have been required to adapt the procedures and information managed through the information systems, as well as to combine the Economic and Financial Accounting with the Financial Accounting already in force. This scenario, combined with the desire for ever greater control over the management of available resources, leads Public Administrations to request an effort to automate mechanical activities, the implementation of intuitive interfaces for the monitoring of expenditure and the development of a better overview of administrative procedures and implementation of policy guidelines.

In this scenario, our Smart Government proposal is placed with great domain expertise, offering effective and expert accounting advice through our **Centre of Competence on Administrative Accounting**, which designs and develops platforms that natively implement the latest accounting principles, fully integrating (not simply "flanking") Economic and Financial Accounting.

SICER is our proprietary solution that we are evolving with the aim of introducing latest generation technologies such as AI & Advanced Analytics and Cloud also in the accounting and administrative sector through the development of integrated and intuitive *Cloud Native systems*, with information enrichment and automation components given by the use of AI and Robotic Process Automation.

A further objective is the production of web applications that allow third parties (companies, bodies and private citizens) to manage the accounting situation undertaken with the body with a view to the **Certification of financial statements,** guaranteeing the segregation of data and the implementation by design of the rules on privacy (GDPR) and accessibility through the use of the Public Digital Identity System (SPID), improving transparency and engagement with citizens and third parties. Finally, the company aims to provide an active contribution in the identification of hidden policy lines and objectives, through the use of Artificial Intelligence technologies, allowing an effective and assisted reconnaissance of the alignment between policy line and sequencing.

In addition, our offer extends through the implementation of solutions in the area of finance and control also through the use of third-party systems (primarily SAP), making use of our Competence and Excellence Centres, which also graft onto these platforms the latest architectural innovations and usability paradigms.

We are a strategic and operational partner of many Regions, for which we support the entire regional accounting through:

–   Proprietary platforms - SICER (Liguria Region, Valle D'Aosta Region, Lazio Region (with 14 Park Authorities)

–   SAP platform (for the Regional Governments of Emilia-Romagna, Apulia, Campania, and Lombardy) and third-party platforms (Regional Governments of Veneto and Piedmont).

⭕ **CASE STUDY / LIGURIA REGION: ACCOUNTING STANDARDIZATION**

Our experience with the Liguria Region started in 2016 with important regulatory changes dictated by reform of public accounting which, through the process of budget standardization, provides for the creation of a homogeneous accounting system for better coordination of public finance.

These new provisions made the previous legacy software inappropriate for management of the economic resources of the authority and generated the need for a new and flexible solution for the regional administration.

Thanks to SICER, Enterprise Resource Planning solution, we managed to integrate Financial, Economic Asset and Analytical Accounting according to the needs of the administration. In particular, we have acted on two critical fronts:

- From a temporal point of view, ensuring functioning of the system in full compliance with the deadlines set by the accounting calendar and the reduced time available (two months) for the launch of the new system

- From the functional and operational point of view, allowing an effective approach to change management through automation of entries in the income statement and balance sheet, starting from the records in financial accounting.

SICER: REGIONAL ACCOUNTING PLATFORM

SICER is the latest generation ERP that integrates Financial, Economic-Patrimonial and Analytical Accounting in full compliance with the latest regulatory provisions. The underlying model and the high degree of parameterization make it suitable for meeting the needs of all local authorities and, in particular, regional administrations. SICER interprets the management events as part of a temporal continuum regarding all the accounting areas of Financial Statements, Management, Economic and Assets.

This approach allows:
- complete visibility, with in-depth historical information concerning events even spread across several financial years
- simultaneous operating capabilities on all open trades
- absence of technical activities for opening/closing, with balance reporting.

3.000	29.000	100.000
Users	Invoices managed	Commitments
260.000	160.000	111.000
Liquidations	Active / passive accounting documents	Investigations and collections

Human Resources

The pandemic crisis has undoubtedly accelerated Digital Transformation also within the world of work. In particular, the massive introduction of digital technologies and the adoption of **smart working** to cope with the limits imposed by the emergency and ensure business continuity have had a strong impact both on the organisational structure of large companies, PAs and SMEs, and on the knowledge and skills required of workers. On the one hand, the general approach to work is changing, especially in large companies and partly also in public administration, where new tools and processes are being rethought and tested in a flexible, results-oriented perspective. On the other hand, workers are required to have up-to-date technical skills as well as relational and behavioural soft skills, which are necessary to make the best use of digital tools for productivity and quality of work.

It follows that HR management will also evolve in the same direction, benefiting from technologies such as AI, VR and Data Analytics for CV screening and selection, recruiting and staff management, training and onboarding of new employees, and the creation of metrics and parameters to optimise skills, training and productivity.

In a context that will continue to be largely digitalised even after the end of the emergency state (in the so-called New Normal), it is vital to adapt the entire working approach not only in terms of new technological paradigms but also and above all in terms of a renewed organisational culture.

We at Engineering closely follow our clients by understanding the context and the evolving needs, adopting an approach to the transformation of work from traditional to digital, based on three pillars: design, change management activities and technology selection. In this way, by designing activities through change management and selecting innovative tools and platforms, we were able to provide support in organising the **digital workplace** from the most critical phase of the Covid-19 emergency, working to enhance remote access modes to ensure the continuity of business and ongoing activities.

Our contribution on the HR front is significant in the area of accounting processes, supporting important central and Local Governmental Authorities (Regional Governments) in the development of solutions ranging from the calculation of individual payrolls to overall economic and financial governance. With a view to reducing costs and optimising processes, various Smart Working solutions have been designed, which, by exploiting the best Cloud and Cybersecurity technologies, enable agile workers to have all the tools they need to complete their tasks, improving their digital skills and staying in touch with their co-workers in total security.

Agriculture

The healthcare emergency has brought about numerous changes, disrupting every business strategy and forcing companies to accelerate their Digital Transformation. The agricultural sector has also found itself having to cope with this change, investing in digital transformation from various points of view, from automating and increasing processes and production related to agricultural products, to controlling production remotely through sensors for monitoring livestock, monitoring yields; as a result, digital innovation has also involved all regulatory processes and management of administrative obligations on which the public sector has been called upon to accelerate the transition to digital. Through an integrated ecosystem of technologies and data systems, we at Engineering have set up a **Competence Centre** with which to support industry players in exploiting the benefits of Digital Transformation throughout the agri-food supply chain, from field operations to the management of national and international funds, not forgetting support for sales operations, logistics and maintenance of farm assets.

For example, we support companies to take advantage of the Internet of Things, new wearable technologies, GIS systems, data analytics, so as to facilitate the cross-sector application of Precision Agriculture and advanced production techniques. Thanks to the adoption of new technologies, we also contribute to innovate the offer related to Regional and private Information Systems, adopting advanced technological frameworks and integrating the most advanced GIS / Remote Sensing, AI & Advanced Analytics, Mobile, Cloud, IoT, RPA and Blockchain technologies.

Among the most relevant innovation actions, we are investing in the implementation of a "continuous" surface monitoring system in agriculture using **Remote Sensing,** Machine Learning & Artificial Intelligence techniques. The aim is to automatically recognise the agronomic practices of agricultural areas, generating the results useful for verifying the consistency between the crop declared in the aid application and the crop detected by remote monitoring using Open data from the Copernicus programme (ESA). Through this type of technology and tools, the process of recognizing crops is automated using scouting and Deep Learning techniques, through which it will be possible to automatically recognize the crop taken by the farmer by using smart devices and consequently integrate the results directly into the monitoring system.

We are carrying out innovation projects in the field of Smart Agriculture with the Regional Government of Piedmont on behalf of the client CSI Piemonte, the Regional Government of Veneto and of the Veneto Agency for Payments in Agriculture (AVEPA), the Regional Government of Emilia Romagna and the regional paying agency AGREA, the Regional Government of Lombardy on behalf of ARIA S.p.A, the Regional Government of Umbria on behalf of Umbria Digitale, and other customers, such as the Regional Governments of Abruzzo and Marche, which have recently relied on us for consultancy and specialist support, as well as opting for the **formula of reuse** to install existing solutions on other administrations, effectively completing the digitalization process of the CPA.

From 2022 we will also support Innova Puglia in the implementation and management of projects within the Agriculture Directorate General of the Regional Government of Apulia.

AREA MONITORING: OUR SOLUTION FOR PA

In recent years, the European Union has been increasingly pushing the use of new tools and technologies to complete the path towards the complete digitalisation of the CAP and strengthen satellite control systems and geospatial applications to improve the efficiency of the area aid system, which represents ¾ of the EU's funding for agriculture and rural development.
The development of the Integrated Administration and Control System (IACS) by paying agencies for area-based schemes will be based on new tools that are capable of determining a maximum eligible area for each parcel for the schemes, which, thanks to new technologies, can now be addressed quickly and automatically, overcoming the limits of the Land Parcel Identification System (LPIS) System, which is based on so-called high-resolution aerial photo flights with images taken at a low temporal frequency (one image of the area every 3 years).
This graphic application finally gives farmers the opportunity to "design" their plots and localise their requests for aid, thereby overcoming the major limitations of the alphanumeric identification system for each land parcel, using geospatial tools and leading to the declaration of homogenous plots.

In this framework, Engineering has developed an innovative solution that uses a systematic approach and automated processes based on data transmitted by the satellites Sentinel 1 and 2 launched into space as part of the European Space Agency's Copernicus Programme.

This solution helps Public Administration to overcome the current situation based on objective on-the-spot checks and, thanks to this new monitoring system, farmers can be notified of any non-compliance in a timely manner and, where appropriate, correct this in order to avoid paying penalties on the premium.

The system ensures the automatic recognition of agricultural practices on agricultural land through Remote Sensing, Machine Learning and Artificial Intelligence and generating an outcome for each agricultural parcel by verifying the consistency between the crop declared in the aid application and the crop detected through remote monitoring using the open data of the ESA's Copernicus Programme.

The solution is completed with an App that lets farmers submit evidence of agricultural practice management on the ground to the Paying Agency via geo-tagged photos, with an attached authentication based on Galileo's EGNSS4CAP European standards.

⭕ **CASE STUDY** / **EMILIA ROMAGNA REGION: DIGITAL SISTEM FOR AGRICULTURE**

The Sistema Informativo Agricoltura (SIAG) [Agriculture Information System] is the platform we have developed for the Agenzia Regionale per le Erogazioni in Agricoltura (AGREA) [Regional Agency for Agricultural Grants] of the Emilia-Romagna Region. Using free and open source technologies, our solution provides the Admistrative Authority with an innovative, modular and scalable system architecture.
SIAG allows the Regional Authorities to manage the entire administrative process for the granting of Community, national and regional aid in the agricultural sector, from funding applications to the liquidation of funds.
Thanks to a responsive, secure and accessible user interface, SIAG allows to:

– collect and update the farm dossier of the agricultural enterprise

– collect funding applications and manage the entire preliminary procedure up to liquidation

– check ex-post the Community aids granted and the information contained in the farm file (for example, territorial and zootechnical consistency, production data, ecc.)

– monitor the progress of expenditure and its distribution over the territory.

Our project has enabled the management of more than €9 billion in payments since 2007 and the simplification of more than 2 million farm dossiers.

Environment & Territory

Safeguarding the environment and territory is one of the most ambitious - but also the most pressing - objectives that the international community and institutions have to share today in order to mitigate the threats of increasingly frequent and acute extreme phenomena (precipitation, winds, heat waves), which affect natural and human systems.

In order to achieve these objectives, it is necessary for authorities and institutions to effectively manage the planning and implementation of human interventions within the complex natural, agricultural and biodiversity ecosystem in which we are immersed. A digitised and transparent management of all practices and authorisation procedures for the implementation of interventions on the territory must also take into account the short and long-term environmental impact generated by the actions implemented on the territory itself. At the same time, in order to guarantee sustainable environmental development, it is necessary to equip ourselves with **intelligent monitoring and alerting systems** capable of collecting and sharing large quantities of data to provide forecasting models useful for the operational coordination of those who, like the **territorial Civil Protection**, are engaged in control and support activities.

The demonstration that **digital technology is inextricably linked to issues of social and environmental sustainability** lies in the fact that, thanks to the infrastructure and tools offered by Digital Transformation, we are able to connect the various monitoring networks distributed across the territory and make truly intelligent use of the data collected to prevent and combat land disruption and minimise the impact of production activities on the environment. Providing decision makers with access to the data collected facilitates and speeds up the operational management of prevention, warning and emergency management plans.

In this context, we are committed to exploiting the advantages of digital transformation and, thanks to our expertise and knowledge of new technologies, we support public bodies in taking advantage of the Internet of Things and the application of enabling technologies in the management of projects with regional agencies for the protection and management of the environment related to land monitoring: for example, in the monitoring of fires, avalanches, meteorological events, control of environmental crimes, control of urbanisation and land transformation.

In addition, new technologies allow for capillary control of the ground and monitoring of the entire production chain. Through them, we also contribute to innovate the offer related to Regional and private Information Systems, adopting advanced technological frameworks and integrating the most advanced GIS / Remote Sensing, AI & Advanced Analytics, Mobile, Cloud, IoT, RPA and Blockchain technologies.

Among the most important initiatives in this area, we have created the Environmental Information System of the Regional Government of Sardinia, which achieves the complete digitalisation of authorisation processes and territorial data; the Allerta Meteo system of ARPA and Protezione Civile of the Regional Government of Emilia-Romagna, which digitally supports the entire territorial civil protection system in the hydro-geological risk management phase; the Multi-risk Functional Centre of the Regional Government of Calabria, created through the use of AI & Advanced Anaylics, and IoT for the monitoring and management of territorial environmental data.

⊙ **CASE STUDY / <u>A.R.P.A. CALABRIA: MULTI-RISK OPERATIONAL CENTRE 2.0</u>**

The A.R.P.A. (Agenzia Regionale per la Protezione Ambientale [Regional Environmental Protection Agency]) of Calabria aims to protect, control and restore the environment. Within the Agency, the Operational Centre has the task of systematically recording the values relating to the earth's climate. It also validates the data, collected in strict compliance with national and international standards, and publishes them on the WEB.

To support A.R.P.A. Calabria in its institutional activities, we have developed the CFM 2.0 software platform that integrates a series of components based on the most advanced technologies in the field of Advanced Analytics and the Internet of Things, alongside specialised activities and services for the detection and analysis of environmental data. CFM 2.0 makes it possible to monitor environmental phenomena in real time and to prevent any ensuing risks for humans. The CFM 2.0 ecosystem consists allows the acquisition of data from external sources, consult, validate them and decide which of them can be made public on the regional portal, data analysis and a web-based GIS system.

Mobility & Transport

The creation of infrastructures for sustainable mobility is one of the areas of greatest impact of the investments planned for the modernisation and economic growth of the Country. In this path, the use of digital technology becomes an enabling tool.

In the system of bodies that manage the national mobility system, we are supporting the digital transformation of two primary players: the Port System Authorities - ADSP and the National Agency for Rail, Road and Motorway Safety (ANSFISA).

The Port System Authorities are public bodies of national importance with a special system that must oversee a process of profound technological and digital innovation together with the objectives of rationalisation and organisational simplification, aimed at the adoption of application tools that enable them to comply with national and European regulations and meet the growing demand for port services in the Mediterranean area.

In particular, the regulations in force have introduced the Single Administrative Desk (Sportello Unico Amministrativo - SUA), an office of the ADSP which would be the point of reference for users requesting the issuing of a measure falling under the direct competence of the latter (or under the competence of another ADSP present in the port),

thus bringing together in a single front office all administrative and authorisation procedures relating to economic activities.

In this context, we are collaborating with various Port System Authorities through the realisation of projects that will be coherently and fully integrated with a series of planned interventions, some already being implemented and others in the process of being defined, and that will provide ADSPs with the set of application tools necessary for the effective implementation of what is defined in the Three-Year Operational Plan (POT):

- The fulfilment by ports of regulatory requirements such as the reduction of CO_2 pollution factors and more effective waste cycle management

- the ability to meet the demand for port services in the Mediterranean area, characterised by a growth trend in most sectors well above that expected in northern European areas.

The National Agency for Rail, Road and Motorway Safety (ANSFISA) is the national body responsible for promoting safety and ensuring supervision of railways, road and motorway infrastructure and rapid mass transport systems; it therefore has jurisdiction over the national railway network, interconnected regional railways, isolated networks, and tourist lines.

We are supporting the Agency in a real **Innovation program** of all application services achieved through the increasingly pervasive adoption of enabling technologies (Cybersecurity, AI & Advanced Analytics, RPA) and "Cloud first" Digital Transformation.

We design a more effective and sustainable government system, from core processes to the new digital citizenship.

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RIGHTS & RESPONSIBILITIES

Legislative Activity

Today, the social context is evolving rapidly, becoming increasingly complex and in need of transformation. This implies that legislative activity is also called upon to change in terms of revising models, regulations and operational processes so that they are agile and effective. Digital transformation is also at the service of these changes, innovating the methods and paths of the legislative function and the processes of accountability of public policies at all levels of government. The aim is to make the experimentation of forms of participation in the decision-making process more concrete every day, so as to renew representative democracy, including through digital means, and to give new legitimacy to citizenship rights.

We are also contributing on this front to the digital transformation of the country, implementing innovative technologies and paradigms to make legislative processes more agile. One example of this contribution is the platforms developed for several Regional Governments throughout Italy, solutions that make it possible to digitise the entire legislative production process, from the proposal to the final draft, so as to guarantee not only speed and simplification, but also maximum transparency in the various stages of revision and amendment.

The transformation does not only concern the digital transposition of acts, but also of the way of working. Our projects have led to the creation of tools such as apps and 'virtual desks' that allow Members and councillors to access documents, resources and functions remotely, in a more agile and organised manner.

○ CASE STUDY/ DIGITALIZING LAW PROCEDURE

The Campania Regional Council, as the legislative body of the Campania Region, has launched a challenging multi year project aimed at improving the range of services available to citizens and businesses, administrative transparency, de-materialisation of documents, reducing the costs of administrative activities, and compliance with standards.
In order to support the authority's transformation project, we have developed the "Iter Legis" platform, which plays a central role in the digital ecosystem, guiding the execution of the various stages of the legislative processes through Intelligent Automation and Advanced Analytics technologies.
In this way, in addition to implementing a digital revision process of administrative and legislative procedures, a reorganisation of the tasks and roles of those involved in the workflow was initiated.

◯ CASE STUDY/ DOCUMENT SHARING APPS FOR PA

Our client works on producing laws and monitoring government activity and matters of public interest. The business challenge was to provide members of parliament with a mobile tool for consulting the agenda of parliamentary meetings and to interact with the offices to send parliamentary documents such as bills, questions, and motions, etc. using a paperless system via mobile devices.

We have created two sets of apps to respond to our stakeholders' needs, allowing them to browse the calendar of meetings, read the basic information and read any preparatory document. consult both the meetings of the Chamber and those of the parliamentary committees.

send to the relevant offices, wherever they may be, any new acts they wish to submit to the Chamber. The latter include bills, amendments, questions, and motions. These are sent in de-materialised form, signed electronically, via an encrypted channel to the Chamber's Intranet.

Justice Administration

In the process of digitalisation of the Public Administration, the Justice sector also plays an important role, which, in order to be more effective and rapid, also needs to be rethought in terms of digital innovation. As already experimented in other European and international contexts, digitising and automating some phases of criminal, civil and administrative proceedings, judicial decisions and procedural acts with the help of Artificial Intelligence and RPA technologies can really simplify and speed up the management of processes related to Justice.

The virtualisation of the work of operators and professionals allows them to carry out tasks and activities in a flexible and continuous manner, even remotely, exploiting the benefits offered by the digital sharing of data and documents that were previously relegated to paper. In addition to the benefits in terms of procedural streamlining, digitisation also favours an increase in the degree of transparency within processes, which, by more easily respecting the time constraints imposed, make it possible to obtain the rights and guarantees provided for at constitutional level. In this context, the NRP also identifies a series of 'vertical' interventions, aimed at large Italian public bodies responsible for important processes relating to specific policy areas (justice, labour, defence, public security).

For some time already, we have been working alongside the central bodies in the Digital Transformation of the overall governance of the 'justice system' and of individual proceedings, with an absolutely central role for enabling technologies, thanks to which we can achieve the digitalisation of internal processes and services to citizens.

An example of this commitment is the project with the Court of Auditors, which has invested in a major digitalisation of core accounting justice processes and support processes. In particular, the activity saw a re-engineering that adopted the microservices paradigm based on APIs, cloud-native solutions hosted on the public cloud, with a focus on the mobile-first user experience.

This implementation allows administrative users, magistrates and prosecutors, to prepare documentation and communications relating to judgments before the Court, from the preliminary investigation phase to monitoring the execution of decisions.

⭘ **CASE STUDY/ COURT OF AUDITORS: DIGITALIZING JUSTICE**

Driven by legislative developments (certified electronic mail and electronic documentation) and by the need to adapt their systems to "best of breed" technologies, the Italian Court of Auditors has invested in major digital transformation of its core processes and supporting systems.
The guidelines with which we accompanied these developments concerned:

– Business process re-engineering of all criminal and accounting justice processes

– Implementation of applications that adopt the API-based, cloud-native microservices paradigm hosted on the public cloud and with a focus on mobile-first user experience

– Use of new development models such as Agile and DevOPS.

The goal we achieved was that of implementing an entire digital process, allowing the various types of users of the Court of Auditors - such as administrative staff, magistrates and prosecutors - to prepare documentation and communications related to judgments presented to official judiciary bodies, starting from the preparatory stage up to the monitoring of the judgement enforcement.

Security & Safety

Individual security, public order and the protection of the community, the territory and its borders are among the fundamental objectives of a State. Digital Transformation is evolving the way in which the Public Administration and other relevant bodies respond to these needs. Over the next few years, software technologies developed in the field of security, defence and homeland security will be profoundly influenced by technologies related to artificial intelligence, with specific reference to the implementation of analytical capabilities centred on knowledge and symbiotic Artificial Intelligence (human intelligence, to provide innovative capabilities in favour of the entire technological domain).

A second area will be the use of complex and heterogeneous networks, including virtual and physical domains and autonomous sensor networks, linked through new cryptographic methods and distributed computing and processing technologies (decentralised and pervasive sensing, storage and large-scale computing). The widespread use of such technologies will influence the way software developers and end-users of applications operate. The challenges that both companies and users will have to face will be mainly related to the ability to fully understand the new functional requirements, making the most of the potential made available by these technologies.

In this context, Engineering Group has been collaborating for some time with the major players in the field of public security, homeland security, defence and other protection bodies, such as the Italian Civil Protection, for which projects have been developed to alert the population in the event of weather or other emergencies, in order to be ready to face the functional and technological challenges described above with competence and awareness. In particular, in the last two years we have gained significant experience in the implementation of systems for intelligence and to support the investigation activities of the judicial police, which make extensive use of Artificial Intelligence.

Regulatory Agencies

The role of regulatory and supervisory bodies (CONSOB, ANAC, ecc.) within the Italian legal system has been recognised for a number of years, but they are acquiring increasing importance within the national and European panorama, also in relation to the process of European integration, which requires Member States to liberalise certain sectors and protect competition more effectively: hence the establishment of independent administrative authorities, with the tasks of regulation, supervision and delegation of powers (including at local level).

In order to protect public and community interests in specific economic sectors and of social relevance, and in the presence of numerous categories of interests and operators, regulators can take advantage of enabling technologies such as Blockchain, but also AI & Advanced Analytics that can make a concrete impact in operational and governance processes, thanks to prior analysis and verification, in order to identify hidden patterns, provide customised services, learn from data and thus make predictions.

In relation to regulatory, administrative and arbitration functions, and to the ever-increasing need for guarantees, in other words for effective and adequate levels of trust, transparency and security, the development of functional surveillance tools has found space, which guarantee a censorship of unlawful behaviours, not only ex post but also ex ante, when they have yet to actually occur but can, thanks to digital technology, be foreseen and therefore blocked in advance.

In this direction, Blockchain technology, on which we continue to experiment thanks to continuous research and development activities and both European and national research funding, represents one of the ideal solutions to ensure data integrity and enable transactions, guaranteeing complete transparency and security for all stakeholders.

Welfare Administration

The main Italian social security and welfare institutions have long since embarked on a path of digital transformation in line with the directives of the 2030 European Digital Agenda, AgId indications and the PNRR mission. We are the key player in the digital transformation process of pension and welfare institutions and have been overseeing the main strategic business areas for decades, managing complex application areas such as pensions and occupational insurance: indeed, for decades, we have been the digitisation partner of the two main Italian institutions with this purpose, INPS and INAIL.

The collaboration is qualified by supporting these bodies both in the core processes linked to their mission towards citizens, and in those linked to the management of the body itself. The strong domain knowledge, combined with the expertise present in its competence centres and the numerous best practices, allows us to address project initiatives aimed at the "creation of value" for citizens and enterprises, using as main drivers

–   analysis and development methodologies that achieve citizen centricity also through the use of Design Thinking and Service Design techniques

–   a quality-by-design approach with an impulse to the digitalisation of processes through innovative BPR solutions and the use of RPA techniques, AI

–   Machine Learning and Data Analytics techniques for the enhancement of information assets

–   design of Cloud solutions through a Cloud first approach and microservices development

–   improving the usability of services through a Mobile first and Interoperability approach

–   guaranteeing high levels of cybersecurity through the adoption of the DevSecOps methodology of the security by design paradigm in the design and implementation of digital solutions.

⬤ **CASE STUDY / <u>INAIL CLOUD TRANSFORMATION</u>**

At Engineering, we carried out the adaptation and migration of INAIL's huge number of applications, in collaboration with other IT companies: the area of intervention involved more than 200 Java applications, about 5,000 Cobol programs and more than 50 data exchange flows with other administrations.
In order to reduce the impacts on INAIL's operations, the migration was carried out using a 'progressive approach'. This required, during the assessment phase, the identification of appropriate application sub-domains and of the related interactions.
For each "Application Island", a specific migration and application adaptation strategy was defined, in order to eliminate incompatibilities with the new infrastructure and other possible criticalities.

WELFARE ADMINISTRATION AT A GLANCE

PENSIONS

18 m +

pensions calculated per year (Social Security and Welfare Treatments)

210 m +

pensions paid per year

1,1 m +

pensions calculated per year

CIVIL INVALIDITY

1,4 m +

applications / requests managed internally by INPS

1,7 m +

applications / requests co-managed with local health companies

2,8 m +

medical/legal reports produced

REVENUE AND CONTRIBUTIONS

920 k +

contributions managed for domestic workers

500 m +

contributions collected

SOCIAL SAFETY NETS

550 k +

applications for liquidation for agricultural unemployment

1,7 bn +

applications for agricultural unemployment payments

Healthcare Administration

The guarantee and protection of health, both individual and public, is one of the main missions that characterizes the very existence of a State, implemented at different levels of government and along the entire health system chain. If on the one hand - even in non-emergency conditions - the growing demand for health places health systems under continuous economic and organisational stress, on the other hand, the awareness of the power of data in health governance and treatment opens up strategies and models capable of responding to current and future demographic and epidemiological trends.

For over twenty-five years, we have been one of the partners of reference for the digital transformation of the health system, particularly the public one. The Group's deep-rooted domain expertise and technologies support central and regional levels in the planning and implementation of health policies, fusing together health data with economic-management data and data from other areas of life that impact on citizens' health, such as the environment.

A concrete example of this capability is the support to several Italian Regional Governments in the management of the covid-19 pandemic. Engineering is also the technology partner of choice for many Regional Governments in the implementation of large-scale projects and infrastructures that make healthcare Smart Government a reality. Examples of this are the numerous Electronic Health Records, centralised healthcare registries, portals and apps that simplify access to care.

Our presence in the digitisation of the individual processes of prevention, treatment and care in hospitals and territorial structures is described in our e-health white paper.

⭕ **CASE STUDY / DATA GOVERNANCE FOR COVID-19 BIO-SURVEILLANCE OF REGIONE VENETO**

Managing Covid-19 emergency by using data to monitor the evolution of the epidemic, to address health and organizational interventions, to predict its evolution. Strengthened by this vision, the Veneto Region has chosen our technology and ability to manage data to make it real. Eng-DE4Bios is the biosurveillance platform that has allowed the Region to monitor the evolution of the epidemic.
By mapping and geolocating the infected subjects, merging heterogeneous databases and applying advanced algorithms, it was possible to determine the density of the phenomenon in the areas of the territory, the relationships between the subjects and the most probable temporal and geographical evolution. Thanks to this cognitive and predictive capacity, all involved subjects (task-forces, health personnel, general practitioners, ecc.) have been "directed" towards the most appropriate actions and decisions: test execution strategies, organization of controls, restrictive measures, surveillance of the highest risk clusters, ecc. This experience of national reference, and not only, has demonstrated how the capacity of data governance, enabled by tools for extracting and combining data integrated with the "intelligence" of Advanced Analytics, is strongly needed today to ensure healthcare objectives of a population, in emergency and non-emergency conditions.

Education

The theme of education is central to a country's plan for growth, productivity and social inclusion, a key axis that today intersects with the technological and environmental challenges of the future. Starting from the points of primary strengthening of the Italian education, training and research system, it is necessary to aim at strengthening the conditions for the development of a knowledge-intensive, competitive and resilient economy. Within the European reform plan, great emphasis is placed on the creation of an ecosystem of **digital skills**, capable of accelerating the digital transformation of school organisation and of learning and teaching processes. This is all the more necessary in view of the changes resulting from the health emergency: distance teaching and training, platforms to support teaching and a new model of management and planning.

Our offering addresses precisely these areas. A recent example linked to the Covid-19 emergency and the massive use of online teaching is the collaboration with Alma Mater Studiorum - University of Bologna, which requested methodological and operational support in an end-to-end project aimed at delivering synchronous online training sessions, aimed at all teaching staff and teaching support positions. Another example is the collaboration with INAL in the creation of a project aimed at setting up an integrated Digital Learning system consisting of AI (Artificial Intelligence) and multimedia content to support the organisation in the Change Management process brought about by the replacement of personnel management procedures and systems.

For the INVALSI Institute (the Italian National Institute for the Evaluation of Education Systems) we are carrying out a multi-year project co-financed by the European Union and aimed at all school stakeholders with the aim of monitoring the National Evaluation System, to ensure constant control and research to support the evaluation processes of the schools in our country and for the definition of competences for the evaluation of education and training systems.

For SOGEI we are realising an integrated and dynamic system for the development of knowledge on the Taxation Information System, composed of multimedia training units on an e-learning platform and addressed also to the staff of the Agenzia delle Entrate (Inland Revenue Service); Agenzia delle Dogane (Customs Agency) and Monopoli di Stato (State Monopolies).

Tax & Revenue

Resource management is one of the pillars of a State's economic-financial balance in order to guarantee the provision of a wide range of services to the community and the overall development of the territories. For this to be possible, it is necessary to have an effective system for managing and coordinating public finances, a central pivot of which is the **management of tax revenues**. The modernisation of operational processes, the communication between the databases of the different bodies directly in charge (Revenue Agency, Guardia di Finanza, Customs, Public Prosecutor's Office) and indirectly connected, and last but not least, the cooperation between taxpayers and tax authorities, are the basis of this efficient management.

Today, also in this field, new tools are emerging that allow individual entities to act concretely towards a status of balance, efficiency and transparency, based on new digital technologies: Blockchain, for the advanced management of data and information shared among several actors to manage the control and verification of all transactions, RPA (Robot Process Automation) for automation of activities and processes, and Ai, Machine Learning and NPL to develop analysis and predictive models able to predict tax evasion and accuracy.

On the strength of its technological expertise and knowledge of tax processes, from calculation to collection, from audit to strategic analysis, Engineering is one of the main partners for Central and Local Public Administration and the specific agencies in charge of this function. The Group's services and solutions are optimised to integrate with the information systems used by public bodies for general accounting, local taxation and regional tax management

activities, and are designed to comply with the interoperability standards defined by the Agency for Digital Italy (AGID).

For regional administrations, we are managing the digitalisation of local taxes (Car Tax, Arisgam, ecc.) in full integration with the **PagoPA platform**, along with the use of Advanced Analytics **to develop the local tax knowledge system** capable of monitoring and building predictive scenarios of the impact of public finance measures.

An example of our digital transformation capacity is the project we are implementing for the Customs and Monopolies Agency (hereinafter also referred to as the Agency or ADM).

Decree Law 104/2020 (the so-called August Decree Law) provides for the possibility of setting up, by decree of the Minister of Economy and Finance, a company wholly owned by the Excise, Customs and Monopolies Agency, operating in the manner of in-house providing for the provision of services for profit to private entities. Law 126/2020 converting Law Decree August confirmed the provisions of the same decree. The new company Qualitalia S.p.A. is a strategic asset for companies that make Made in Italy the cornerstone of their competitiveness, as it provides services to guarantee the identity of products and their origin from the Italian national production chain, to combat counterfeiting and so-called "Italian Sounding", to protect brands and consumers and to support the competitiveness of companies.

After defining the application map of the entire company, identifying the interrelations between internal and external information systems, in particular with those of ADM, we are involved in the design of the "Bollinatura" system - a system that manages the production and validation of the Bollino Qualitalia, which certifies the authenticity, quality and origin of products. In addition, our solution makes it possible to acquire payments from economic operators to take advantage of the certification services and use the Qualitalia stamp and portal.

The portal is a showcase for the services offered by Qualitalia and uses innovative editorial formats (news, information pages, videos, ecc.) with the aim of promoting its activities to customers and the reference market - in compliance with AGID guidelines and according to the paradigms of **service digitalisation** (cloud service management, user-centred, mobile first, ecc.).

GROWTH & SUSTAINABILITY

Citizen Relationship

The adoption of Citizen Relationship & Experience Management strategies and solutions represents a fundamental component of the "building blocks" that must enable the digital transition of PA services. Indeed, if the enabling platforms and infrastructures of what the MITD calls the Country's Operating System can be considered the PA's nervous system, CRM solutions represent its heart.

Shaping and orchestrating the ecosystem of data and digital citizenship services on an omnichannel citizen journey allows us to look at the Digital Transformation of public services from the perspective of people's real needs, and not from the point of view of the bureaucratic organisation of procedures and 'silo' functions in which PA is divided.

Taking care of the relationship in a personalised and predictive way also means considering as a success factor of innovation solutions the information, assistance and orientation services for access and use at physical (information desks, URP), digital (web, social, APP, Chatbot) and telephone (Contact centre) points of contact.

In this sense, we are promoting at Veneto Lavoro, an Agency of the Regional Government of Veneto, a path of evolution of demand-supply matching services with a CRM approach which, for a couple of years now, has seen a Digital Assistant flanking the operations of customer care services offered via web, contact centres and Job Centres and aimed at workers and businesses. This project is also testing a new operational model of collaboration between robotic and human operators in the management of support and assistance requests.

Cultural Heritage & Tourism

Using service and ecosystem design approaches, together with our clients we are co-designing customer journeys and data strategies to enable and realise the new Destination Management services ecosystem, which will enable the omnichannel visitor experience.

We operate along three main lines of strategic and operational intervention, which respond to the objective of composing a Digital Transformation of the service model that succeeds in combining the enhancement and conservation of cultural heritage and the management of the promotion of the tourism offer in seamless mode: between digital platforms, channels and formats (Digital Assistant voice/text, Social, Gaming, Video Streaming, Podcast, AR, IoT, ecc.), traditional media channels (TV broadcast/satellite, Press, InfoPoint distributed throughout the territory.), traditional media channels (broadcast/satellite TV, press, InfoPoint distributed throughout the territory) and data driven solutions (Advanced analytics, CXM, Digital listening, ecc.):

– Complete digitisation of all cultural heritage assets, using 3D modelling environments (based on ICCD standards) and platforms for management, distribution and use via AR/MR/VR in indoor (Museums, Libraries, Exhibition Spaces, ecc.) and outdoor environments (Diffuse Museums, Places of Attraction, ecc.)

– Design and implementation of digital marketing and customer experience management strategies capable of aligning all the touchpoints of the offer, on physical and digital channels, in moments of engagement and Loyalty

- Strategic consultancy on the evolution of territorial marketing operational models that support Destination Management Organisations in managing the necessary collaboration between public and private cultural and tourism operators at regional level, as well as the synergy between regional and national levels in the construction of Italy's tourist destination offer.

For the Regional Government of Veneto, we are managing the promotion and tourist destination services of the Veneto.eu portal. For the Regional Government of Apulia, we are managing the evolution and rebranding of the digital services offered by the web, APP and social ecosystem weareinpuglia.it.

Business Services

La digitalizzazione delle infrastrutture tecnologiche e dei servizi della PA è un tassello imprescindibile per accorciare The digitalisation of the PA's technological infrastructure and services is an essential element in drastically shortening the 'distance' between institutions and individuals/businesses and radically reducing the time it takes to go through the bureaucracy. The effort towards the Digital Transformation of the PA planned for the coming years includes, among other things, the simplification and digital redefinition of administrative procedures, including for productive activities and for the operation of one-stop shops (SUAP, SUE), or for Certified Notification tools (SCIA) and an approach to simplify communication.

Simplifying bureaucracy, by speeding up administrative procedures and removing unnecessary constraints and obligations, allows citizens and businesses to access effective, secure, and fully accessible digital services on the one hand, and administrations to act with a view to data interoperability (reducing time and costs of administrative procedures) on the other.

In this context, we provide expert support to administrations in the Digital Transformation process through a two-fold approach: on the one hand, using design methodologies (e.g. Design Thinking and Human-Centred Design) that make it possible to rethink the experience of citizens and businesses in interacting with PA; on the other hand, offering in-depth knowledge of the main technologies that govern the processes of Public Administration and Smart Government in general (e.g. Big Data and Advanced Analytics, to analyse trends in the business world , Artificial Intelligence and RPA to streamline controls and practice management).

For the Regional Government of Tuscany, we created the Tuscan System of Services for Businesses, which represents the first Italian regional network of services dedicated to the **digitalisation and data-driven management of administrative services for businesses:** through the definition and management of the ontology of SUAP service data exchanged between the many public bodies involved and the development of the platform that ensures the management of the entire service life cycle and the updating of the ontology.

For the Regional Governments of Marche and Lazio, we have developed platform services that allow the complete **virtualisation of the service conferences between the various administrations** involved in the single authorisation procedure: audio/video collaboration, recording media library and digital signature of the minutes of the procedure.

Employment Service

Employment Services at the regional and national level, from now and in the years to come, are closely linked to the Guaranteed Employability of Workers (GOL) Programme, which is part of Mission 5, Component 1 of the National Recovery and Resilience Plan (PNRR) and is a project that envisages the investment of 4.9 billion euros over the five-year period 2021 - 2025, financed by the Recovery Plan, intended for reintegration into employment, training and collective outplacement for all those who are unemployed and/or have lost their jobs. The inter-ministerial decree Labour-Economy details the objectives attributed to each Region and calculated with the same allocation quotas used to divide the economic resources. Thus, for the first tranche of EUR 880 million, the objective was set to reach a minimum of 300,000 and a maximum of 600,000 beneficiaries of the GOL programme by 31 December 2022. The Guaranteed Employability of Workers programme envisages five different pathways: Work Reintegration, Upskilling, Retraining, Work and Inclusion, and Collective Outplacement.

In this context, we boast a unique experience supported by skills, tools and best practices developed in national contexts (Ministry of Labour and Social Policies, INPS, INAIL, ANPAL) and in regional contexts (our clients on the employment theme are the Regions of Valle D'Aosta, Autonomous Province of Trento, Tuscany, Emilia-Romagna, Veneto, Sardinia, Apulia, Calabria, Lazio, and Umbria).

We have set up an internal **Competence Centre dedicated to "Employment and Vocational Training"**, which for over 15 years has been accompanying clients and stakeholders in achieving the ambitious objective of combating unemployment and poverty. In fact, the Centre of Competence, has carried out and is carrying out, by way of example but not limited to:

–   technical assistance for the Regional Governments where we can boast distinctive domain competences on the topics of Targeted Employment, Compulsory Communications, Employment Services, public notices, unemployment status, matching labour demand and supply, Youth Guarantee and vocational training

–   advanced job matching models based on Artificial Intelligence algorithms that not only exploit classic matching systems but also allow to intercept the information provided in Curriculum Vitae and Vacancies according to a natural and unencoded language

–   construction of Management Dashboards dedicated to the Labour Market and more specifically to the monitoring of active and passive labour policies

–   digitalisation of processes and procedures, transforming the way in which employment services are designed and implemented into a digital perspective and integrating, where possible, information and data from different sources in a welfare ecosystem logic, so as to enhance the ability to reach citizens, businesses and all stakeholders.

⭕ **CASE STUDY / EMILIA ROMAGNA: LABOR INFORMATION SYSTEM**

An efficient labor market is based on optimal conditions of intersection between supply and demand that create effective links among citizens, businesses, public institutions and all structures involved in the process, such as the company register. The Labor Information System (SIL) has fulfilled this function for over ten years, from its first implementation in Emilia Romagna to the current situation with Calabria, Puglia, Umbria, Valle d'Aosta and the Autonomous Province of Trento also connected.

The system is a modular solution for the management of services provided by employment centers, administrative events in application of national and regional legislation, self-service multi-channel front-office. SIL is an example of excellence in the re-use of software in the PA, of shared management of project developments and of the methods for transposing national legislation, as well as effective interoperability between local and central levels. The system is aligned with the contents of the Three-Year Plan in the Public Administration, the document produced by AgID and the Digital Transformation Team.

Benefits Services

Two years after the arrival of Covid-19, we can say that this Pandemic has and is creating a new system and redesigning all processes and management of Services. It has also given an acceleration to needs that already existed but were not considered a priority. In fact, in the face of the Covid-19 pandemic crisis, resources from social and other funds were increased to support the health emergency. Consequently, it was necessary to optimise the capacity of the platforms providing **services for income support policies for citizens, families and businesses** to operate rapidly and remotely. From the earliest stages of the health emergency, we ensured full operational continuity for organisations and institutions, despite the difficulties, slowdowns and limitations imposed by the unstable and constantly changing environment. Thanks to interventions that take advantage of the enabling technologies available today (RPA, Cloud, AI & Advance Analytics) it has been possible to rethink and transform the work and service models of organisations, maximising the use of human and economic resources, thus participating in the restart of the socio-economic and cultural growth of the Country.

We at Engineering contribute to the implementation and continuity of these services, such as the processes of preliminary investigation and disbursement of extraordinary income support for citizens and businesses.

In this direction, one of the first interventions carried out was to support INPS in the management of the implementation of subsidies and allowances assigned to it by governmental provisions to support socio-economic groups facing the Covid19 crisis: from CIGO preliminary investigations to the management of the extension of the expiry date of DURCs; from the suspension of medical-legal examinations of civil invalidity (with related blocking of calendars and tracking of absentee examinations) to the management of payments of advances of 40% of the Cassa Integrazione Guadagni (extraordinary, ordinary, in deroga, FIS, agricultural - CISO), up to the management of bonuses for different categories of citizens (domestic helpers and caregivers, baby sitters, taxpayers). freelancers subject vat).

Other interventions concerned, for example, the creation for the Regional Government of Apulia of a digital solution for the management of the entire lifecycle of one of the support measures to be allocated to the strengthening of small and medium-sized enterprises, which includes, among other things, the complete integration of all communications between the entities involved (Enterprises, Banks, Regional Government of Apulia, Apulia Development).

4 WHAT IS THE FUTURE OF SMART GOVERNMENT

The migration of PA IT services to the Cloud, supported by PNRR investments, offers a unique opportunity to achieve the much vaunted - until it became a chimera of eternally announced innovation - Digital Transformation of public bureaucracy.

At Engineering, we have an in-depth knowledge of the Public Administration: multi-entity and multi-domain core processes (Central and Local PA, Health, Agency, ecc.), organisational culture and skills, structured and unstructured systems and data on which digital citizenship services are composed. From this privileged observatory of partners of the PA, in all its articulations, we can well see the impact that the adoption of the "cloud first" approach can bring on the entire ecosystem of public services: we can foresee what this can mean for the improvement of the quality of life of citizens/businesses and the effectiveness of government action and management of common goods.

We are at the starting blocks of a journey, short and intense, in which we must promote a new, mature **synergy between the public and private sectors, in order to accelerate the transition to digitalisation of the country's society and economy;** and in this tension, its nervous system, the system of administration and government cannot afford to act as a brake.

We want to make our **expertise and ability to combine the evolution of the public service model with the selection of the best technologies, in a sustainable way**, available to the governance bodies of the investments dedicated to PA innovation envisaged by the PNRR and the Funds from the next EU programming. This will take into account both the environmental and organisational impact of the investments in digitalisation already made and the culture of the public organisation that, tomorrow, will have to govern and maintain the new digital ecosystem of Digital Citizenship.

In this new, necessary cooperation between the public and private sectors, we want to participate in the **growth and dissemination of the digital culture and skills** on which DESI 2021 assigns Italy the "black jersey": a necessary condition for carrying out Digital Transformation interventions that are understood and create value by citizens and businesses.

Within the MITD's "Digital Republic" project, as well as for our clients, we will continue to make our contribution to reduce the digital skills of the population and to grow in organisations both the culture of data, enhancing our participation in the Gaia-X initiative, and the practice of "ecosystem" design, using digital platforms and cloud first and citizen centred architectures.

For us, designing next-generation public services with data means **integrating a data-driven approach with a data-aware one**[2]**,** in which we mix quantitative data with a data-driven approach. This is because service performance alone tells us little about listening to and directly investigating the feelings, expectations and needs of citizens.

Our vision is that **all digitally-supported innovation solutions should live within a single ecosystem of Digital Citizenship services,** linking people, organisations, society and the planet in which we live and work together: this should be done in a way that is open, simple and tailored to people's skills and contexts of use across the board, and with an attitude that is sensitive to the **ethical impacts** that digital technology has on people's lives and culture and on the life of the planet."

In order not to waste the unique opportunity for transformation offered to us by the dramatic global pandemic crisis, we need to **set the PA's digital transition path with systemic vision and action.** We cannot afford to tackle innovation without an open and inclusive view of the entire socio-technical system that will be impacted. And that must be involved, with co-design approaches, even in a speculative way with respect to the analysis of future scenarios, to ensure an evolution that produces responsible and universal effects.

In this sense, the goal of migrating PA to the Cloud, as well as the use of Artificial Intelligence (in the applications defined by the Strategic Programme 2022-2024 of the MISE) or the use of other new "enabling" or "exponential" technologies in the management and provision of public services, must not be managed as yet another technological update, comparable to other "waves" of IT innovation that we have witnessed in the last 50 years. Instead, a true transition requires a sensitivity capable of imagining the "preferable" future and interpreting innovation by activating reverse, "U-shaped" processes of change: in which new problems are not answered with skills, prejudices (Bias) and old ideas, often identical to those that have created the problems of rigidity and low capacity for transformation of the current system (think of the school system that in the pandemic era was saved by the existence on the market of digital platform services designed to be inclusive and scalable). [34]

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2 Designing with Data: Improving the User Experience with A/B Testing (2017)
3 Stuart Candy, Future Cone, Dunne and Raby, "Speculative Everything: Design, Fiction, and Social Dreaming" (2013)
4 C. Otto Scharmer, "Theory U: Leading from the Future as It Emerges"(2016);

Our vision of Smart Government, therefore, definitively abandons the rigid digitalisation of processes and relationships, in order to decisively embrace a change in Digital Transformation that is:

–   **Open:** we must always be willing to **embrace change**, open to **contamination** and conducive to generating **creative solutions:** able to **learn from the future that emerges.** Knowing that we cannot stop at learning and adopting new technologies, because by definition they are bound to become old in a very short time

–   **Empathic:** it is necessary to take care of the needs and the relationship, putting oneself in the shoes of the citizen to accompany him in the "journey" of access and use of the service. **Observing** behaviour and contexts of use to design the **omnichannel citizen experience** of public services and **listening** and measuring satisfaction to **continue to evolve**

–   **Collaborative:** it is primary to involve all entities affected by the innovation in the **co-design, prototyping** and **testing** of the innovation; people, organisations, processes, data and IT systems. The Digital Transformation of public digital services stems from a strong pact of **collaboration** and **civic** growth between **institutions, enterprise and society. The objective** is to improve people's **quality of life** and the **growth of the community** in which they live and work. Not the automation of a single service area with digital

–   **Simple: it is essential** to respect the **culture** (not only digital) of people in order to design solutions that reduce the cognitive load in their use. Innovation uses **IT** to become **inclusive,** in a way that is unobtrusive but always appropriate to the skills of the end users and the organisational contexts that guarantee its management and continuous improvement

–   **Ecosystemic: it is necessary** to move **from the digitisation** of single **"silo"** type administrative services **to the Digital Transformation** of the ecosystem of **Digital Citizenship** Services (Health, Welfare, Environment, Mobility, ...). Thanks to the **Digital Platforms** we compose the "best fit" between existing **processes, data** and solutions with **new emerging technologies,** enabling **new physical/digital hybrid experiences.**
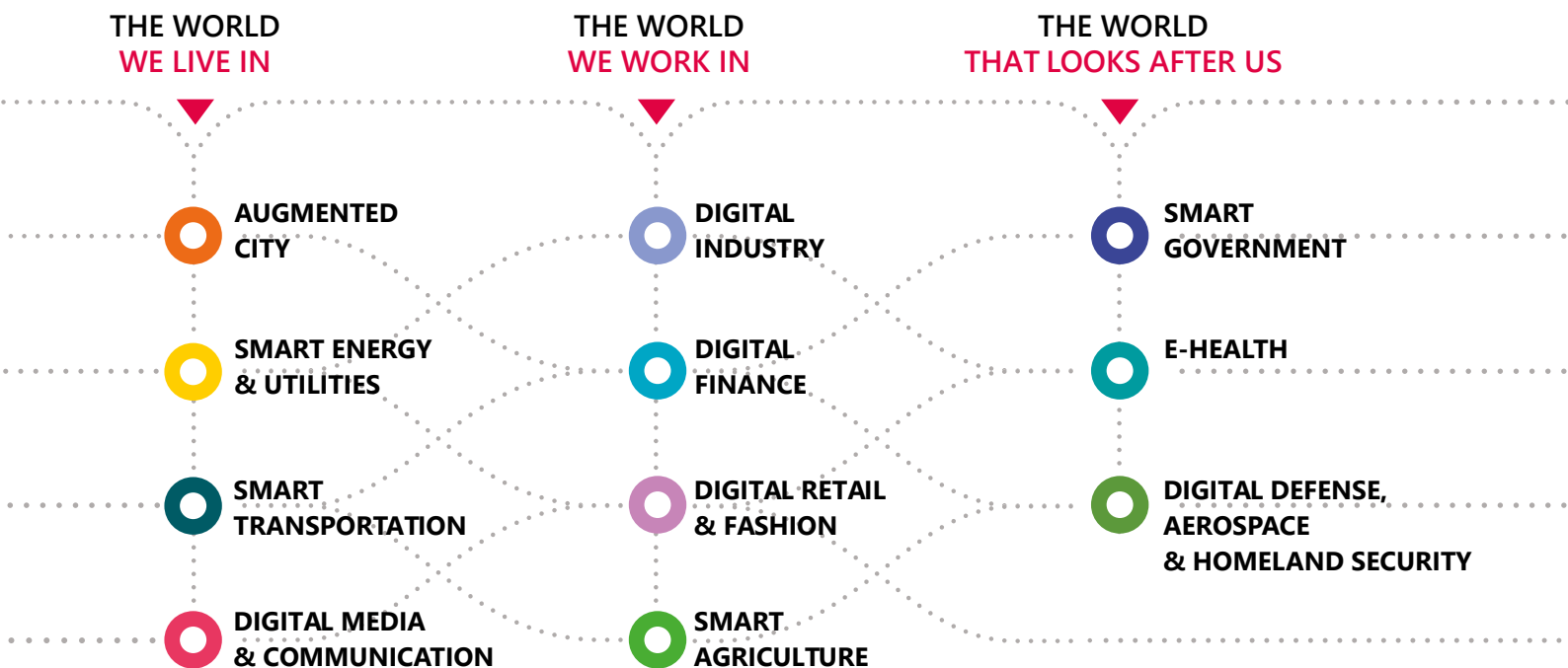
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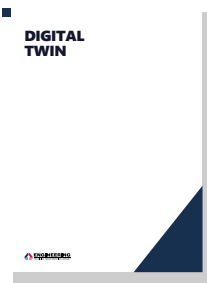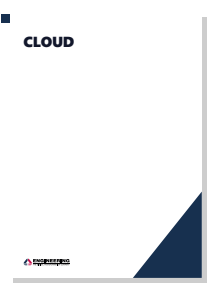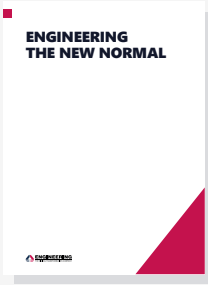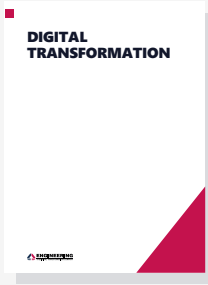
The Engineering Group, consisting of over 20 companies in 17 countries, has been supporting the continuous evolution of companies and organizations for more than 40 years, thanks to a deep understanding of business processes in all market segments, fully leveraging the opportunities offered by advanced digital technologies and proprietary solutions.

It integrates best-of-breed market solutions, managed services, and continues to expand its expertise through M&As and partnerships with leading technology players. The Group strongly invests both in innovation, through its R&I division, and in human capital, with the internal IT & Management Academy. Engineering is a key player in the creation of digital ecosystems that bridge the gap between different markets, while developing composable solutions that ultimately foster a continuous Business transformation.

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