





CORPORATE SOCIAL RESPONSIBILITY REPORT 2016

A matter of head

Betting on intellect. On the human intellect capable of transforming and improving the world, but also of respecting its delicate balances and preserving its natural resources, which are becoming increasingly scarce.

"A matter of head" is the phrase in which the Vision and Mission of Engineering converge and which affirms its approach to Sustainability.

We need "a good head", the intelligence and capacity to look far into the future to decide to bet on talent, and thereby provide sense and value to the daily commitment to customers and society.

Engineering has chosen to bet on intellect to design a better, sustainable future, with the awareness that this is the best path to take for growth and development.

INTRODUCTION

by **Sergio de Vio**

It was June 12 of this year. The phone rang and I absentmindedly responded. It was a call from Engineering's central offices in Rome, and here I am with the Corporate Social Responsibility Report relating to the three-year period ending on December 31, 2013, the 2014 Report, the 2015 Report and the draft, now completed, for the year 2016, with the kind request to write a brief introduction to it.

I thought I had completed my career and I had wrapped up all professional goals and initiatives.

My curiosity and age-old familiarity with the company Engineering drove me to more clearly focus on what I had received and I took up "paper, pen and inkwell" to jot down a few notes and observations.

First and foremost, I should express my sense of appreciation and amazement for the amount of work and for the methodological rigor that go into creating the Corporate Social Responsibility Reports. Indeed, they demonstrate the profound transformation that Engineering has experienced.

I was unable to participate in the '14, '15 and '16 kick-offs due to events outside my control. However, this year circumstances worked in my favor and I was able to hear first-hand from those involved about the significant results achieved (economic, financial and organizational) and, especially, view the presentation and description of the extraordinary innovations introduced into Engineering's activities (an exhaustive presentation is provided in the paper version of *Ingenium* - the "magazine" of Engineering and Tech Economy on the culture of data in the age of Digital Transformation dedicated to the 2017 Kick-Off).

I draw my inspiration from the statements of the other writers of the 2013, 2014 and 2015 Corporate Social Responsibility Report introductions (Marilena Menicucci, Giulio Sapelli and Domenico De Masi), citing some of their particularly relevant thoughts and observations.

Here is the translation of the technical term "social responsibility" and the indication of its ethical horizon in the words of Marilena Menicucci: "Actions are for the community! The basis of social responsibility in Engineering coincides with the simplest laws of common living, that each decent person wants to respect." Simple as water, which also meets multiple needs.

The second observation that I would like to mention is the following: "The information provided doesn't refer to an abstract notion of how we must be, postponed to some point far off in the future, but is the report of activities that have already been carried out. It is an open, public statement process following topics of social responsibility". Therefore, the Reports present facts, not hopes or desires.

Giulio Sapelli masterfully affirms that "the company incorporates various forms of allocation of property rights... This is the polyphony of the forms of exchange that are manifest in the company". It is the execution of this polyphony which gives real life to the business. The analysis, i.e., the breakdown of polyphony, therefore with the identification of the elements making up the business, allows for the rigorous identification of the stakeholders, i.e., those who have an interest in the company continuing to live on soundly and thrive.

We should not forget, G. Sapelli adds, that "companies are social constructions and, thus, the element that determines their operation consists of the relationships between people." In other words, without a complete business theory, we cannot formulate a valid Corporate Social Responsibility Report.

In the 2015 Social Responsibility Report, Domenico De Masi writes "Engineering is able to demonstrate its creativity with data in hand, because it knew how to bring into being that collective creativity born from the energetic synthesis of fantasy and practicality well directed towards a shared and sustainable objective".

He also reminds us - and his tone is one of severe admonishment - that "sustainability is the effort of contrasting the consumerist model of industrial society with a new model that, abandoning the myths of speed, ruthless competition, unconditional dedication to success and alienated labor, and the commercialization of relationships resulting in the relaxation of social ties, and in so doing recovers certain dimensions that have disappeared from our lives and makes them the cornerstone for a society that is renewed from its very foundations".

I am convinced that on its path of social responsibility, Engineering will pay close attention to these demanding recommendations.

This is the fourth Corporate Social Responsibility Report that Engineering presents to the public.

It seems to me that the tone, the overall character of the document has become stronger and more committed as the years have gone by. Indeed, this involved assimilating an innovative way of seeing general and particular corporate events such so as to require a new sensitivity and new methodological awareness. It involved expanding and in certain cases intensifying awareness of the short and long-term effects and consequences of the actions undertaken. Awareness of which actions, toward whom and toward what? Toward society? But society, understood as a community of people, is made up of many individuals and institutions.

How can we choose which individuals and which institutions we should take care of? What is the scope of my awareness? Does it encompass the world? But the world is too big and we know that distance works against awareness and therefore our sense of responsibility. (I advise my readers to read the charming story "The Mandarin" by J. M. de Eça de Queiroz if they would like to further examine this topic).

Lastly, and with this I conclude, we should recall that the size and intensity of awareness are not acquired

and fixed, but rather they need to be maintained and fueled.

The set-up and preparation of the three 2013, 2014 and 2015 Corporate Social Responsibility Reports and this last Report for 2016 bear witness to the seriousness and methodological commitment of Engineering to ensure that they are not just generic descriptions, but rather documents the content of which stands up to the most rigorous factual analysis.

I would advise readers not to overlook or underestimate the methodological appendix to the Report; indeed, to begin their reading with the letter from the Chairman and the Chief Executive Officer, obviously, and to then proceed to the pages dedicated to the areas that are relevant for Engineering, the identification of stakeholders and the reporting of their conduct (legitimacy, vicinity, expectations).

I would like to close my introduction jokingly, but not too much, by disclosing the fact that I felt a certain confusion from the use, not only in the methodological notes, of the noun "materiality" and the adjective "material". I wasn't quite able to grasp its meaning. I even listened to Madonna's famous song "Material girl", which did not lead me in the correct... direction. A small note or explanation in this regard could help readers not stumble on the "principle of materiality".

Sergio de Vio is the Past President of Engineering



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LETTER TO STAKEHOLDERS

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Dear Stakeholders,

Innovation and technology, understood as a tool to meet increasingly challenging objectives, are two variables which have arisen in the modern world. They are constantly and suddenly changing along that line on the horizon that we call the future.

Keeping pace with them means always raising the bar, replacing ambition with conquest, making what in reality is incalculable normal and quotidian.

Therefore, adopting the principles of sustainability for those which like Engineering have made innovation their business is a challenge within a challenge, an objective to be pursued with the awareness that this future that we are aiming for will make sense and will be on a human scale only if it is reached by following a responsible path of development.

The Corporate Social Responsibility Report therefore marks an occasion to describe the sustainability initiatives undertaken in the course of the year, as well as a moment for evaluating the impacts of our activities on the general public, with a view to transparency with respect to the most important topics within the Information Technology sector.

For Engineering, 2016 was a very positive year: the total revenues reached 934.6 million euros, with significant growth margins, also guaranteed by acquisitions of European companies completed during the year.

Following this development, Engineering confirmed its support of employment by hiring 866 people in Italy and 375 abroad, of which 200 recent graduates under 30 years old, reaching 8,842 direct employees and roughly 2,900 downstream resources for intellectual services at year-end.

The investment in human capital is confirmed as a strategic factor for the Group, which is committed to supporting and accelerating the process for the creation of new professions such as that of Data Scientist, in collaboration with Italian and foreign academic institutions.

Indeed, digital skills constitute a key factor in the management of the business model transformation process for the majority of our customers, and have driven Engineering to initiate a profound internal transformation marked by the migration from Information Technology to Digital Transformation. The objective is to provide customers with 360-degree support, up to and including modifying their business models to interpret changes and respond to new challenges in the market.

Due to its natural inclination, but also in response to the demands of society, Engineering aims to link its business with the country's long-term modernization, thus providing its contribution to laying the foundations for the society of the future.

In this context, for a few years now we have enhanced the section of this document that reports on a selection of our more than 700 business projects, to illustrate our impact in the most crucial areas of society (cities, the Public Administration and relationships with citizens, health-care, finance, telco, energy, the business world) and in strategic areas such as the environment, cyber security and security intelligence.

Thus, this Report becomes a summary which illustrates and highlights the many initiatives carried out based on a format that identifies the main challenges for the country's modernization, for which Engineering has taken responsibility.

Planning smart cities, providing substance to and disseminating the Internet of Things, managing Big Data and more generally supporting the development of the Digital Agenda: these are all essential objectives for our country, to which Engineering is making its own contribution.

This is an ambitious objective that becomes a shared challenge, in which Engineering is transformed into a strategic partner for private businesses which are called upon to compete in increasingly complex and sophisticated markets, and for the Public Administration, committed to a process of modernization that citizens are clamoring to see take place.

The paradigm of the future, understood as a point of reference which no one can disregard, is the categorical imperative around which Engineering has structured its

business and, at an even more basic level, its working philosophy. This is the most noble of challenges, because it has to do with the well-being of people, and this is why it is met in compliance with the Company's Code of Ethics and, more generally, in keeping with all of those principles of responsibility which make Engineering a point of reference in the market, and not only in Italy.

These are the principles of our identity and the rules of our commitment, gathered together within this 2016 Corporate Social Responsibility Report, which thus becomes a sort of white paper, a guide of shared values which is not limited to an analysis of the past year, but outlines the guidelines to be followed for our future conduct.



Michele Cinaglia

Chairman

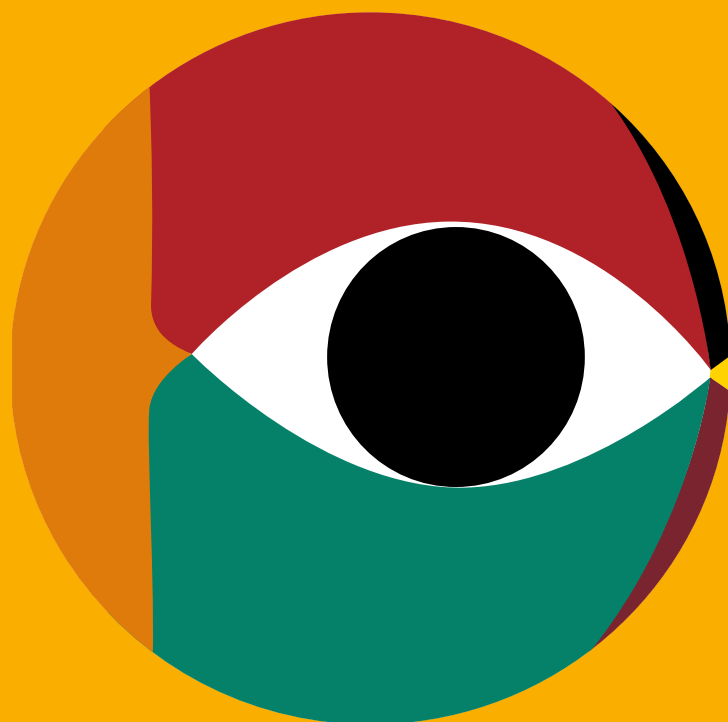
Paolo Pandozy

Chief Executive Officer

AN ITALIAN COMPANY

an international mission

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HIGHLIGHTS 2016



GROUP PROFILE

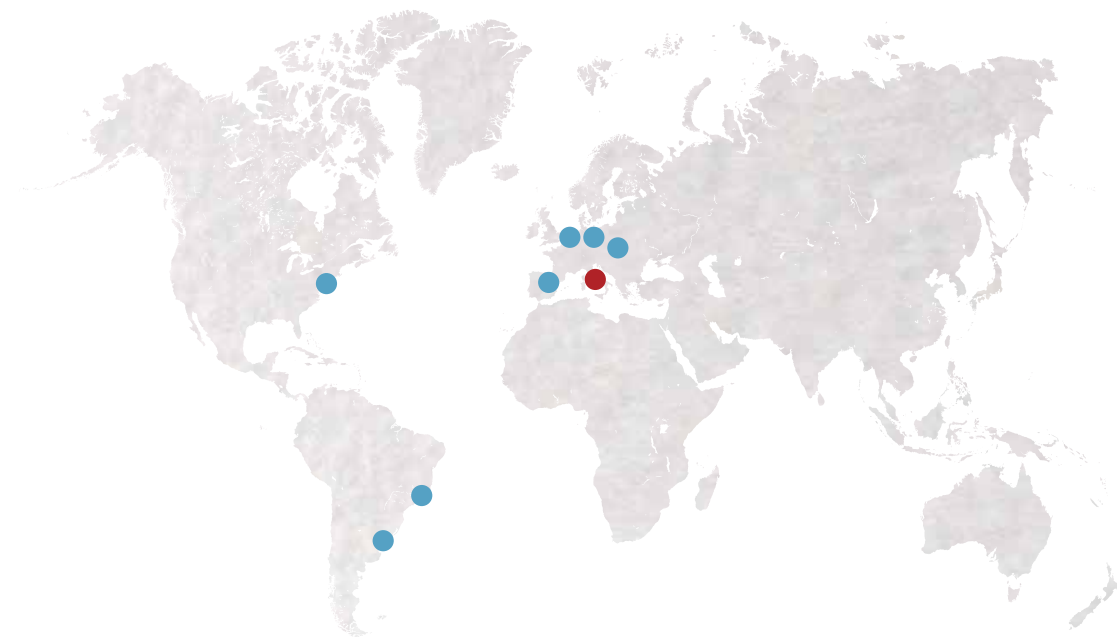
Engineering is the top Italian player in the field of Digital Transformation. It offers services, products and consulting through a network of 8,842 employees (at 12.31.2016) present in roughly 50 offices in Italy, Belgium, Germany, Spain, the Republic of Serbia, the US, Brazil and Argentina.

Italy remains its reference market. This is where Engineering generates 89% of its revenues, with projects intended for all market areas.

11% of its turnover derives from activities abroad, where Engineering manages IT projects in more than 20 countries.

The Company interacts every day with the community of its customers, numbering more than 1,000, distributed across different markets: private (banks, insurance, industry, services and telecommunications) and public (healthcare, local and central Public Administration, defense, international organizations). A leading player in the outsourcing and Cloud Computing market, Engineering works through an integrated network of 4 Data Centers located in Pont-Saint-Martin (AO), Turin, Milan and Vicenza. Its system of services and technological infrastructure guarantee the highest security, reliability and efficiency standards.

PRESENCE IN THE WORLD



● USA, Brazil, Argentina, Spain, Belgium, Germany and the Republic of Serbia

● Italy

Engineering represents a reference model within the panorama of IT research with roughly 70 domestic and international projects.

It plays a leadership role in software research, coordinating various national and international projects through a network of scientific and university partners throughout Europe.

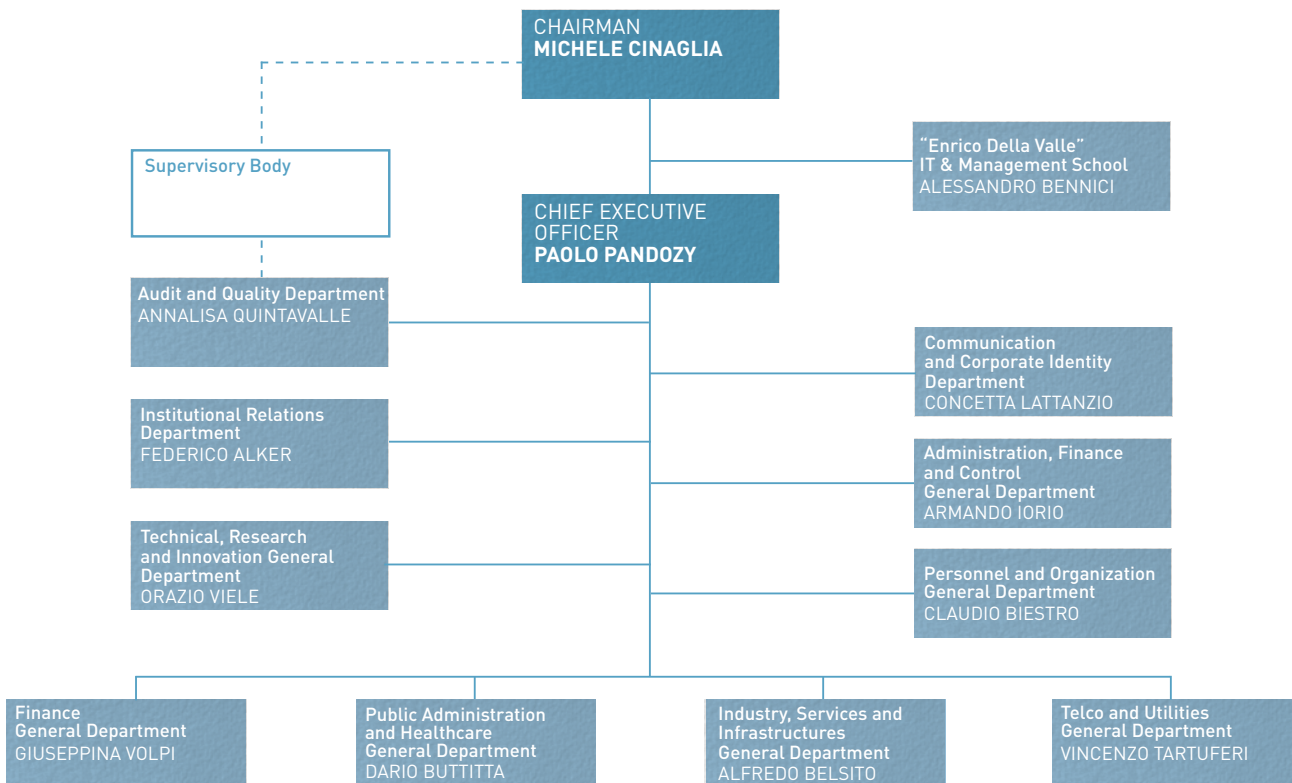
Technological excellence, combined with well-established experience, provides customers with a broad portfolio of proprietary solutions, from bank compliance (GRACE and ELISE) to billing and CRM in the area of utilities (NET@Suite); from integrated healthcare diagnostics and administration solutions (AREAS®) to Workforce Management systems (Geocall), from mobile Telco platforms, to Business

Intelligence Analytics systems (Knowage) and systems for the management of revenues by the Public Administration.

The Parent Company

The corporate structure at December 31, 2016 is the result of a careful policy of acquisitions and subsequent integration processes coordinated by the Parent Company Engineering Ingegneria Informatica S.p.A., which exercises influence over the management and business policies of its subsidiaries. This structure should therefore be understood as the representation of a Group which operates within a context of strict integration, broken down into specific centers of operating responsibility.

ORGANIZATION CHART IN JULY 2017



The organization model of the Parent Company Engineering Ingegneria Informatica S.p.A. is structured as follows:

- the staff departments offer their services to most of the Group's companies, in order to guarantee efficiency and homogeneity in rules and procedures
- four Directorate Generals oversee the vertical markets (Public Administration and Healthcare, Telco and Utilities, Industry, Services and Infrastructures, Finance)
- the Technical, Research and Innovation General Department coordinates execution of software production processes through the Engineering Software Labs (ESL); research activities through the Research Laboratories; and the development of specialized skills, both technical and application-related, across several markets, through the Centers of Competence
- the "Enrico Della Valle" IT & Management School, reporting directly to the Chairman, provides professional courses for the growth of managerial, technological and behavioral skills, two thirds of which are destined for Engineering employees and one third for the employees of client companies.

The main subsidiaries in Italy

Municipia: works alongside large Italian municipalities with *ad hoc* solutions and projects, supports more than 600 small and medium sized municipalities with support services and parameterizable solutions and plays a leading role in the innovation of cities, including in important European initiatives, first and foremost FIWARE.

Engineering D.HUB: a partner for outsourcing services and the transition to the Cloud, it offers methodological standards and a technological and services platform to support digital transformation in the Engineering market sectors.

Nexen: focused on managerial consultancy and the conception, planning and realization of organiza-

tional models to support commercial, management and governance activities in companies.

OverIT: specialized in Mobile Business solutions, Workforce Management, Sales Force Automation and Geographical Information Systems (GIS) solutions, via the application platform Geocall.

MHT: one of Italy's leading companies in the ERP and CRM management systems sector, and a Microsoft partner with Gold ERP status, with a focus on Microsoft Dynamics solutions.

Engiweb Security: an integral part of the Engineering Software Lab organizational structure, it consists of a network of laboratories located throughout the country responsible for software design and development within system integration projects. Engiweb Security provides specialized know-how on the most widespread market application platforms and on the most innovative methodologies for software design, development and testing.

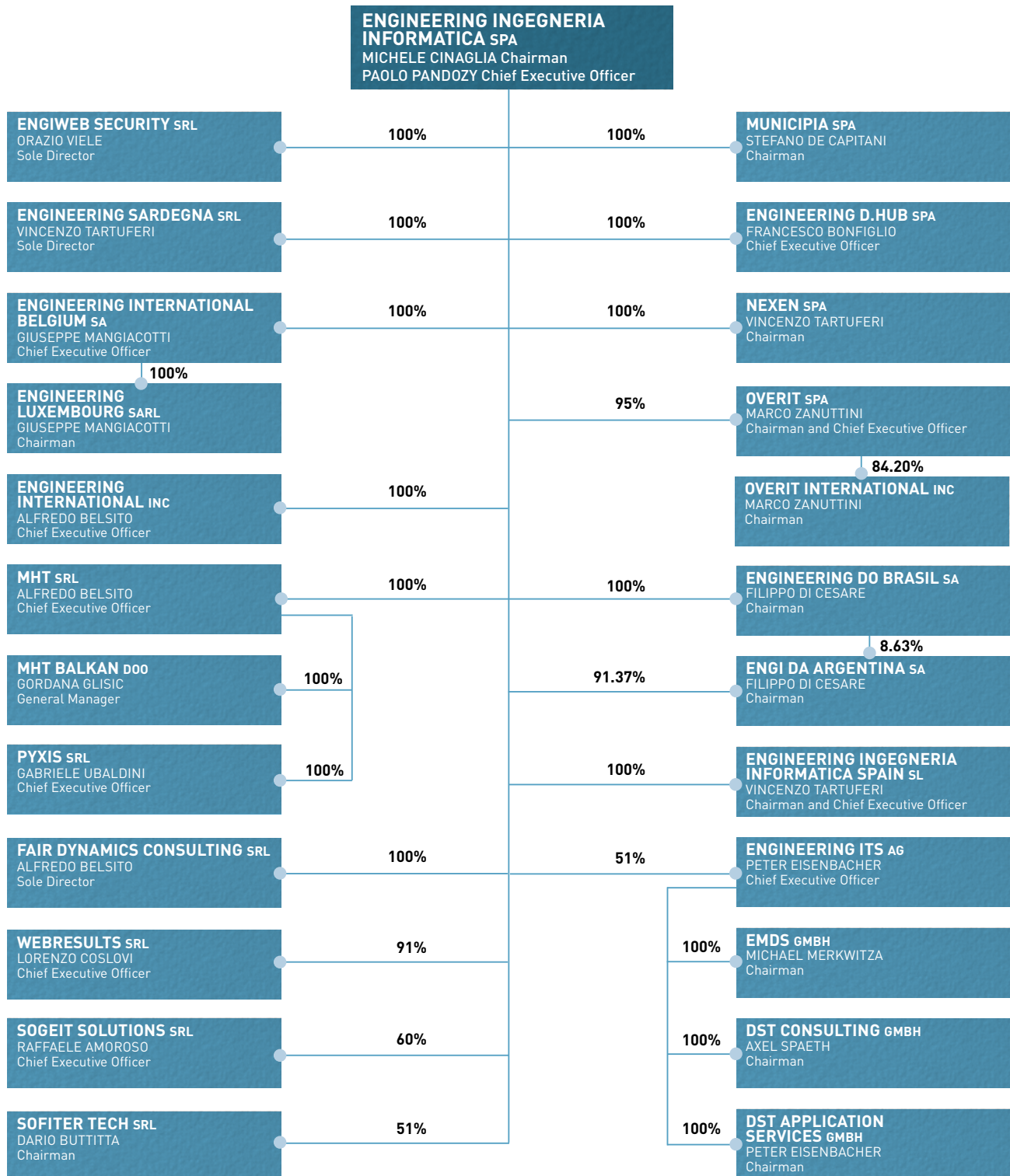
WebResults: a certified partner of Microsoft, Salesforce.com and Marketo for the design and implementation of CRM (sales, marketing, services and social) and Cloud solutions.

The main subsidiaries abroad

Engineering International Belgium: a technological partner for the European Union and active in international organizations and in the public and private market in the Benelux area and more generally in EMEA.

Engineering do Brasil: set-up to support internationalization in markets with high growth and development potential in innovative areas. It has offices in São Paulo, Belo Horizonte, Rio de Janeiro and Buenos Aires with Engi da Argentina. The acquisition of Logann was completed in 2016.

CONSOLIDATION AREA AS AT JULY 2017



Engineering International: it operates via a Center of Competence for Open Source matters, for clients and operators which use the Business Analytics Knowage suite. Its offices in the US are in Wilmington (Delaware) and Troy (Michigan).

Engineering ITS: this holding company is headquartered in Germany and was born from the acquisition of DST Consulting, EMDS and DST Application Services, German companies specialized in the IT System Integration sectors and innovative strategic and market consulting for the active and continuous support of customers in the redefinition and re-implementation of business strategies.

Engineering Ingegneria Informatica Spain: headquartered in Madrid and a Competence Center for the Energy & Utilities market, the Spanish branch supports Spanish customers in the Water, Gas and Electricity sectors, with which significant projects are ongoing, as well as Italian companies that would like to rely on an IT partner for their expansion in Spain and Latin America.

The Centers of Competence

Engineering develops its specialized skills in various areas through the Centers of Competence which support the offer and coordinate the diverse professional skills and technologies present within the Company.

The **Business Intelligence** and **DataWarehouse Center of Competence** is composed of a team of specialists in different technologies who design and manufacture end-to-end solutions for Business Intelligence (BI), with the use of proprietary and Open Source products. The center also deals with innovative themes such as Self-service BI, Big Data, In-memory Analysis, Mobile BI, Data Mining and Data Science services, operating in synergy with the Open Source Center of Competence, the Knowage Labs and the Big Data & Analytics Center of Competence.

The **Big Data & Analytics Center of Competence** operates through the coordination of the various initiatives and project activities that are developed with Big Data skills and technologies in different operational units of the Company. The Center utilizes the skills acquired in the Open Data context, such as "The Open Data Choosing Framework", and enhances them as it takes Open Data (be they data available online or data publicly issued by public administrations, organizations or businesses) and uses these alongside corporate data, making it possible to expand the traditional informational view around "what relates to the organization", "what is said about the organization" and "what revolves around the organization".

The **e-learning Center of Competence** is a working group that designs and manages learning processes in the context of continuous training, leveraging teaching methodologies and innovative communication in support of the main processes of organizational change: technological, behavioral, legislation, specialist and organizational training.

The **ERP Excellence Center** (Enterprise Resource Planning) is mainly focused on the solutions of the SAP family Business Suite and SAP BOBJ, the enterprise software that boasts the highest turnover in the world and 40 years of history and innovation. The Center, one of the largest in Italy to work on SAP, has roughly 450 consultants in Italy and 200 in Brazil, that supervise the entire ERP life cycle in the following phases: definition of solutions (process consulting, software selection, BPR, Change Management); completion of initial implementation projects, upgrades & EhP, roll-outs, mergers & spin-offs, evolution of existing solutions; on-going project management.

The experience gained in over 180 projects of full ERP implementation allows the Center of Competence

tence to work with various product sectors: from industry to telecommunications to energy & utilities, from Public Administration to banks and insurance companies.

The **Engineering Usability Lab** is involved in designing, building and testing the multidevice interfaces of sites and applications developed by the Company. At the basis of each activity, be it a new design or a re-design, the approach used is that of User Centered Design, applied by the Center of Competence in accordance with a methodology based on practices, instruments and measures that have been established over the years.

The activities of the Usability Lab are incorporated within the normal development project management phases through codified activities and deliverables: user research, benchmarking, information architecture, wireframe, visual design, prototyping and development guidelines. Each activity is reviewed and monitored through the involvement of end users, with moments of attention to topics of accessibility and security.

The **GIS (Geographic Information System) Center of Competence** specializes in the design and realization of complex cartographic systems, integrating the geographic component into the main business processes. It works through the processing and the management of data or heterogeneous events, geographical and not, correlating them strongly to the territorial aspect, in order to obtain dynamic and flexible tools useful for resource optimization and supporting decisions.

For over 20 years the **Mobile Center of Competence** has dealt with solutions in the context of mobility. With its highly specialized staff, the Center of Competence concentrates and makes available its exper-

ience in the design and development of solutions in support of business done in mobility. The Center of Competence allows for the realization of completely multi-platform innovative solutions, making it possible to quickly implement any type of business process at limited cost for every type of market, in both the business and consumer areas.

The solutions created may be developed on the proprietary Geocall platform and through the main market platforms.

The **Open Source Center of Competence** operates through initiatives and activities that develop or use Open Source solutions in various business divisions, stays in contact with the communities, participates in events and initiatives for the promotion of technologies and Open Source development model and collaboration, and creates relationships with potential partners. The Center also acts as a permanent observatory for the presence and evolution of solutions and Open Source projects and maintains a mapping of the actual skills and experiences in the Company for the purpose of directing the colleagues who require support.

The Engineering Open Source offer for Business Analytics is the Knowage suite, developed and managed by Knowage Labs. This solution makes it possible to conduct traditional and advanced analyses on data in complete autonomy and to combine traditional and structured source codes with more innovative source codes from the Hadoop ecosystem and the NoSQL world using mash-up and data federation techniques. Knowage is a modular solution that can be used by various types of users: from decision-makers who need clear, precise and punctual information, to more operational users conducting autonomous analyses, to data scientists who operate based on incremental hypothesis and validation cycles.

The **ECM (Enterprise Content Management) Center of Competence** provides solutions and services for transforming information into company assets and smart content, supporting customers in selecting instruments to satisfy requirements, with the capacity to design, implement and manage ECM solutions and infrastructure as well as cloud content. The Center supports IT initiatives with a team of domain specialists with advisory skills for the analysis of requirements and processes, with technical, application and methodological know-how for the creation of solutions, and with a full range of skills in the areas of groupware, content, workflow and knowledge management to provide services to large public and private organizations.

The **ITS (Intelligent Transportation Systems) Center of Competence** combines transport system engineering instruments with procedures, systems and devices that collect, communicate, analyze and distribute information/data amongst parties, vehicles and cargo in movement, as well as between them and transport infrastructure or services and information technology applications.

The solutions and platforms proposed implement innovative local or distributed control centers as regards: mobility within a city or a territory, public transport (Regions, Districts, Metropolitan Cities, Municipalities), hazardous goods and safety relating to road networks and infrastructure.

The **Manufacturing & Automation Center of Competence** boasts two decades of experience in the design, creation, maintenance and management of solutions to support manufacturing processes in the primary product sectors (Aerospace, Automotive, CPG, Discrete, Food & Beverage, Pharma, Process, White Goods), automation systems, control and communication for transport infrastructure (metropolitan railways, railways, highways) and

solutions for process automation in logistics centers. The solutions created by the Center of Competence are Industry 4.0 compliant, meet the most recent IoT protocols and technological standards and are oriented towards vertical and horizontal integration within the customer's ICT ecosystem.

The **CRM Center of Competence** helps customers define Customer Relationship Management and Customer Experience strategies, and designs and creates tailor-made CRM solutions capable of guiding the specific business characteristics and practices of various market sectors: from finance to the automotive industry, from fashion and luxury to the process industry, from retail sales to the mechanical industry. Through its specialized units it is able to operate on market leader CRM platforms (Microsoft Dynamics 365, Salesforce, Sap Hybris) as well as the major Digital Marketing suites. The availability of proprietary application components developed on a range of platforms makes it possible to accelerate realization timing and limit project costs.

Another year of successes

G4-DMA

Engineering achieved significant results and recorded an improvement in the main economic data in its economic/financial report.

The numbers at December 31, 2016:

- net revenues rose by 56.7 million euros, reaching 907.6 million euros
- EBITDA is equal to 108.4 million euros, with profitability totaling roughly 12%
- EBIT, which includes amortization and depreciation in line with the previous year and provisions of around 35 million euros (of which around 25 million euros allocated to the incentivized early retirement plan for 2017), is equal to 56 million euros, with profitability equal to roughly 6%

- net profit came to 45.3 million euros, substantially in line with 45.5 million euros recorded in 2015
- due to positive cash flows in 2016, the net financial position improved, with 177.7 million euros at December 31, 2016 compared to 144.9 million euros** in the same period of 2015.

Generating value for the country

G4-EC1

The economic value generated by Engineering is not exclusively the prerogative of shareholders, employees, business partners and general stakeholders, but rather it leaves a valuable legacy that contributes to the wealth of the entire country.

On December 31, 2016 the direct economic value generated by the Group exceeded 950 million euros, 90% of which was distributed. The share contributed to the State totaled 32 million euros (3.4%).



SUMMARY OF ECONOMIC RESULTS IN THE THREE-YEAR PERIOD 2014-2016

(amounts in millions of euros)

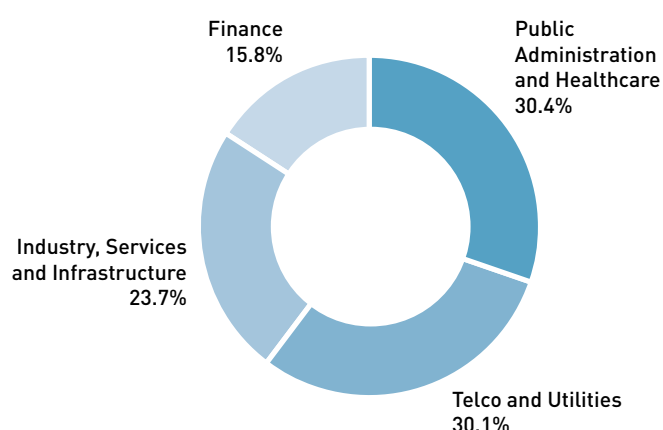
Description	2016	2015	2014
TOTAL REVENUES	934.6	877.5	853
Net Revenues	907.6	850.9	817.3
EBITDA	108.4	105.5	109.9
% on net revenues	11.9	12.4	13.4
EBIT	56.0	55.3	77.1*
% on net revenues	6.2	6.5	9.4
Net Profit	45.3	45.5	41.8*
% on net revenues	5.0	5.4	5.1
Net Equity	486.7	442	416.2*
Net financial assets	177.7	144.9**	113.5**

^(*) Data restated in application of IFRS 3 - Business combinations following the definitive allocation of the fair value of the assets/liabilities acquired of MHT S.r.l.

^(**) Data restated to allow for a proper and like-for-like comparison with the value of 2016 which, unlike in previous years, does not contain the value of treasury shares in "other cash and cash equivalents", as the securities are no longer listed as of July 8, 2016; the previous values specified in the consolidated financial statements were equal to 152.9 million euros for 2015 and 121.4 million euros for 2014, respectively.

THE MARKETS

Composition of net revenues as at December 31, 2016



Code of Ethics: the pillars of our business

G4-DMA G4-7 G4-14 G4-15 G4-56 G4-S03 G4-S04

No growth is long-lasting if it is not set within a framework of values that makes it solid and especially transparent. Aware of the social impacts of its business, and with the intent of constructing a transparent and cooperative relationship with stakeholders, Engineering has adopted a Code of Ethics since 2004.

The objective is to provide itself with an infrastructure of rules to be followed which is the same for everyone and which contributes to forming a unitary image of the Company.

Indeed, the Code of Ethics is the primary instrument of corporate social responsibility for the promotion of good behavioral practices.

DIRECT ECONOMIC VALUE IN 2014-2016

(amounts in thousands of euros)

Description	2016		2015		2014	
	Absolute V.	%	Absolute V.	%	Absolute V.	%
DIRECT ECONOMIC VALUE GENERATED*	951,826	100	901,803	100.00	858,120	100.00
DIRECT ECONOMIC VALUE DISTRIBUTED	856,759	90	807,542	89.55	804,712	93.78
Suppliers (operating costs)	351,912	37	331,343	36.75	312,992	36.47
Employees	467,050	49	433,082	48.02	420,862	49.04
Lenders	4,731	0.5	10,359	1.15	4,569	0.53
Shareholders and members	-	-	0	0	20,000	2.33
State	32,365	3.4	32,097	3.56	45,692	5.32
Community	701	0.07	660	0.07	597	0.07
DIRECT ECONOMIC VALUE RETAINED	95,067	10	94,261	10.45	53,408	6.22

^(*) Total revenues plus financial income.

The Code provides for precise commitments in relation to the mode of operation in the market, by adjusting and aligning business conduct on standards based on maximum transparency and fairness toward all stakeholders.

For Engineering, the Code of Ethics is especially a guide that can help its recipients to face the ethical dilemmas that arise in day-to-day activities, by providing guidelines and standards that must be followed by Engineering employees and everyone who works in the interests of the Company to respect our general principles and values and prevent the risk of unethical behavior.

Thus, respect for the Code is binding for employees, managers, directors, members of the Board of Statutory Auditors, members of the Supervisory Body, temporary or permanent external collaborators, partners, suppliers and customers.

The Internal Audit function is entrusted with the task of verifying the application and enforcement of the Code of Ethics, through specific activities to establish and promote continuous improvement through the analysis and evaluation of the risk control processes, and to receive and analyze reports of violation of the Code itself. These activities are carried out with the support of the business functions involved.

The Code of Ethics is also an integral and substantial part of the organizational model that the Company has adopted in compliance:

- with the provisions set out in Legislative Decree 231/2001 that governs administrative responsibility for legal entities, companies and associations also without any legal status and ratifies the principle by which the legal entities respond, in the modes and terms indicated, for crimes committed by their staff within the company structure, in the interest or for the advantage of the Company (crimes specifically indicated by the decree)
- with the requirements of law no. 262/2005, for

the development of administrative and accounting procedures for the preparation of the separate and consolidated financial statements, as well as for the dissemination of all other financial communications.

The Code of Ethics is applied consistently and made "live" through:

- periodical revisions and updates in order to make sure that it is always in line with the Company's evolution, in addition to always being compliant with the current laws in force
- publication on the company website
- illustration of the content and delivery of a copy to all new recruits
- a periodic program of information and training on the content and meaning of the Code of Ethics for employees of the Company
- constant vigilance on the correct application
- a channel of communication to report any violations (whistleblowing).

Training and shared values

When we are dealing with the paradigm of the future, it is impossible to face the challenges that this presents without a continuous training process. Updating existing professional skills, building new ones and, more generally, making available the instruments that make it possible to keep pace with the future and with change, are essential prerequisites for those who accept the challenge of Digital Transformation. Based on these convictions, in the course of the last three years Engineering provided specific training courses on business ethics to 520 people in the classroom, in addition to 3,670 people including managers, upper middle managers, middle managers and 6th and 7th level employees who instead completed an online course.

The training activities approved by the Parent Company's Supervisory Body in 2016 specifically dealt

with the company's Code of Ethics and the new elements introduced into the Organizational model pursuant to Legislative Decree 231/2001. In the second part of the year, the Supervisory Body took direct responsibility for the training and information activities carried out in the Company through meetings planned in accordance with the assessments made based on the activities carried out by the Body.

Quality: the new name of investments

For Engineering, quality is an absolute value that is lived out in our production processes as well as our internal organizational models. Indeed, the pursuit of high standards is the label by which we are recognized in the market, alongside respect for the activities of competitors and customer requirements. An area which involves all Group companies, governed by the Audit and Quality Department, which responds to the Board of Directors and reports directly to the CEO.

The Engineering Quality Management System is an organizational and procedural structure to support the personnel involved in the production process, and expresses the company policy in terms of quality and the focus on customer satisfaction. The document qualifying the entire process is the Project or Service Plan prepared when work begins by the Project Manager or the Service Manager.

The document contains all components required for proper Quality planning, integrated with Project/Service Management aspects.

The effective application of the Quality Management System and, more generally, the level of compliance with reference regulations and company procedures, are checked through audits, which numbered 279 in 2016, focusing on a variety of topics:

- orders completed for customers, which also in-

volves monitoring the status and progress of projects and/or services

- centers of production, i.e. the homogeneous organizational units that manage the orders completed for customers or for the other functions of the company
- service centers, i.e. the structures that deliver centralized services to customers and to all other corporate structures.
- "transversal" processes, i.e., processes structured by service type, with particular reference to the processes defined in the UNI CEI ISO 20000 standard.

The audit process is independent with respect to all other company functions. To guarantee this autonomy, the staff assigned to conduct auditing activities report hierarchically and functionally to the person responsible for the Audit and Quality Department, whose position in the organization is independent of the functions that are subject to verification.

From the analysis of data gathered each year during the audits, points for improvement and proposals are identified which are then illustrated and discussed at an annual meeting with corporate heads, from which elements and recommendations emerge for the plan of activities for the following year.

First objective: customer satisfaction

Customer satisfaction is the pillar on which Engineering has built its success and its reputation over time.

Measuring the level of satisfaction is therefore an essential practice to prevent losing direct contact with customers and sensitivity with respect to their needs.

To do this, the Company conducts monitoring through direct interviews with the customers themselves,

carried out by the Audit and Quality Department. The assessments obtained are examined and the results are reported to production, commercial and technical structures, in order to implement corrective or improvement actions.

The interview questionnaire, drawn up and containing closed-ended questions in order to guarantee the homogeneity of information collection, contains 57 questions referring to the following assessment factors:

- communications, commercial relations and offer
- operating staff
- solutions based on projects/products
- solutions based on Managed Operations services
- solutions based on ICT services other than Managed Operations
- specific solutions for customers that use Evasion Research and Tax Collection Services
- overall evaluation of the Company
- current activities and critical factors.

Each interviewee can express the importance of each topic in relation to the context examined through a weighting factor, but also assign a score whereby the degree of satisfaction is calculated.

In 2016, 122 customers were interviewed, with 91 direct interviews (conducted through meetings organized with customers) and 31 interviews conducted through an online questionnaire.

The choice of the sample of customers is based on to the criteria of representativeness of the various business divisions, taking into account their volume of business and any special situations encountered in the previous period. An important and strategic project, which found that approximately 94.3% of customer answers were within the area of satisfaction (94% in 2015).

Measuring effectiveness: management control

Monitoring of Department performance and the efficiency of all operational activity; measuring the degree of achievement of pre-established goals; promptly analyzing any deviations to understand the relative causes; identifying the actions needed to ensure the achievement of business objectives: these are the goals achieved by the management control system adopted by Engineering.

The system has been prepared by integrating the information of an accounting nature which feeds the consolidated financial statements with that of a non-accounting nature, intended for drafting the management Budget, so as to ensure the alignment at each closing, at the level of the net result, of the two accounts (general and analytical). In this manner, all the analyses and information that the system produces guarantee reliability and are constantly updated.

The companies of the Group were progressively incorporated into the system, allowing management to have a homogeneous and transparent disclosure on general industrial performance.

One of the strengths of the management control of Engineering is the speed with which the information that allows the management to intervene, if necessary, is made available, with adjustments in real time.

The second strength of the system is the flexibility with which management control allows reporting to be evolved or adjusted, without significant investment, depending on company needs and updates of the national and international legislation.

Management control has been structured operatively by integrating the SAP accounts system with the proprietary analytical accounts system SIAL (Work Progress Integrated System).

Reporting is produced and made available to the

management, with different aggregation levels depending on the hierarchical level, in 6 progressive closures during a tax year.

Currently the management control of Engineering allows for the fragmentation and monitoring of costs and revenues of about 25,000 orders aggregated in turn in more than 2,500 cost centers, ensuring the correctness of the data stream under both the operational and accounting profile. Orders and cost centers are under the direct responsibility of a manager, who ensures the quality and reliability of the data entered in the system.

In 2016, within the corporate systems the internal Business Intelligence project (MA.R.E. Management Reporting Engineering) was activated, which combines the information received from the various management systems within a single Datawarehouse, making it possible to further improve the capacity to process and analyze overall results.

Core business: securing data

G4-DMA G4-PR8

In the face of the global spread of increasingly concerning and well-organized attacks which threaten privacy and data security, the topic of information integrity and availability is becoming ever more strategic.

For a company like Engineering which makes data management one of its core businesses, the issue is on the agenda and is dealt with once again through recourse to sophisticated technologies and a centralized management system that guarantees the highest security levels.

Engineering holds and manages a great deal of information of various kinds at its Data Centers, a large volume of the data of the National Health System, the Central and Local Public Administrations and

customers of all the productive sectors of the Country. The integrated network of Data Centers includes value added Information Technology services, outsourcing services and innovative services based on the Cloud Computing model, while the overall scope of the services offered includes the management of more than 20,000 servers, desktop management services for 230,000 workstations, a network of 18,000 pieces of equipment, disk space of 10 million gigabytes, 3 different hybrid Cloud offerings, 2 million tickets per year (requests for service from users) and more than 1,200 Wide Area Network lines.

Thanks to the best infrastructure and technologies, the integrated network of 4 Data Centers ensures the highest standards of security, reliability and efficiency for more than 330 customers. All data centers are fiber-interconnected and thanks to the latest technologies they are able to guarantee Business Continuity solutions between Pont-Saint-Martin and Turin and also of the Tri Data Center – or the combination of Business Continuity and Disaster Recovery - with Vicenza or Milan. Completing the offer is a range of management and transformation services in the Cloud, System Engineering, Performance Management, Networking and 24-Hour Monitoring fields.

To confirm how much the topic of data security is deemed of primary importance, Engineering has an operating unit led by a Security Director who specifically deals with information/cyber security. In addition, the topic of data custody and protection is subject to specific personnel training activities.

With a view to promptly and adequately responding to any possible critical issue, all the business locations equipped with Data Centers which deliver outsourcing services to customers (Pont-Saint-Martin, Turin, Milan and Vicenza) have im-

The Vicenza Data Centre receives the TIER IV certification

In the first few months of 2017, the Vicenza Data Center was awarded the Uptime Institute's highest level of certification, moving up from TIER III to TIER IV level, both for the initial phase of design and for the final phase of implementation, on-site post-verification. TIER IV is the highest level of guarantee that a data center can offer, with an availability of 99.99%. The Data Center is completely redundant at the level of electrical circuits, cooling and networks. This architecture enables the detection and isolation of any damage to structure systems, while supporting and maintaining all IT loads and critical business systems of clients hosted in the structure active. These architectures permit both coping with serious technical incidents, but also performing ordinary and extraordinary maintenance activities, without interrupting the availability of the services provided and thus preserving the security of managed data.

plemented a data security management system, certified externally as prescribed by the ISO 27001:2013 international certification standard (Information security management systems). The ISO/IEC 27001 standard, from which Engineering has developed its own management system, is the only certifiable international standard subject to verification which defines the requirements for an information security management system.

In response to growing demand for cyber security, in recent years Engineering has strengthened its management system with automatic ethical hacking procedures (hacking techniques for defense purposes) so as to continuously monitor and protect its own and its customers' data access points.

Since February 2005 Engineering has also held the CMMI (Capability Maturity Model Integration) certification for the processes, procedures and internal controls of software production. Since October 2007, the level achieved corresponds to the Maturity 3 standard of the CMMI-SE/SW model v. 1.2, updated to version CMMI-DEV v. 1.3 in 2010.

The company Engineering D.HUB has the ISO

20000:2011 certification for the provision of ICT services in outsourcing mode.

In the initial months of 2017, the Vicenza Data Center qualified its services as "TIER IV" (see box), the highest level of service continuity (fault tolerant).

The Data Centers located in Pont-Saint-Martin and Turin respond to the Uptime TIER III standards (those in Milan are TIER II and Vicenza complies with TIER IV uptime standards), and contribute to forming one of the most advanced and reliable technological infrastructures in Italy for the delivery of Managed Operation, Business Continuity and Disaster Recovery services.

In recent years, no penalties have been received nor has litigation been established, nor has the Company received requests for compensation from the customers for whom Engineering manages data.

Suppliers: an essential link in the business chain

G4-LA14

Suppliers represent one of the essential factors contributing to the delivery of high-quality service. Their selection, as well as the relationship created over time, are a guarantee with regard to customers

and the maintenance of quality standards. By virtue of this, Engineering selects its suppliers through qualification procedures and subjects them to constant assessments. All of this takes place within the scope of a fair relationship governed by transparent contractual conditions.

The company's policy on purchases requires each supplier to register on the Engineering portal and to provide information of a technical and economic-financial nature relating to aspects mandatory by Italian law but still relevant to the context of Corporate Social Responsibility, in particular related to the issue of the proper management of the staff, such as:

- DURC - Single Document Certifying Payment of Contributions
- DUVRI - Single Document for the Evaluation of Interference Risks
- DURT - Single Document Certifying Payment of Contributions i.e. the certification of the fulfillment, on the part of the company, of legislative and contractual obligations vis-à-vis the Insurance Institutes INPS, INAIL and Cassa Edile
- INPS and INAIL position: contributory position of the company or the individual freelancer
- third party and contractor civil liability insurance policy: Civil Liability Insurance toward Third parties and Contractors.

Engineering also requires each business partner to read the Code of Ethics adopted and sign a specific clause in all contracts.

All suppliers interviewed had prepared a written policy of procedures, on-site audits and specific reporting to guarantee that they do not use conflict minerals from the Democratic Republic of the Congo and neighboring countries. The degree of supplier retention is very high, and the company is committed to relying on well-established companies in

the areas where the company offices are located, when possible.

The business of Engineering does not provide for any manufacturing process but only for the provision of IT consultancy services and services related to the management and storage of customer data at the 4 company Data Centers.

Purchases regard:

- instrumental goods (primarily basic hardware and software and middleware destined both for internal use and for resale or for providing outsourcing services for clients)
- the fleet of company cars (roughly 1,151)
- telecommunications (mobile and land-line)
- travel
- real estate management and maintenance
- professional IT services
- other consultancy.

In the second half of 2016, Engineering prepared and finalized a list of suppliers to be used for the purchase of hardware products (Servers, Clients and Networks) and basic software to make the procurement of such components easier, more simplified and more controlled. A specific authorization process was therefore defined to allow for the management of any requests (purchase requests) made to suppliers not included on the list.

The value added by external professional services

For some types of professional services, Engineering relies on external specialized personnel (with permanent contracts or temporary contracts, or under employee leasing agreements). The objective is to launch a collaboration between specialized external personnel and the Company's employees, a practice which has guaranteed excellent results, so much so that in 2016 the downstream resources for

intellectual services numbered roughly 2,900 people. Purchases of professional services are centralized in a function (DACI - IT Consulting Purchases Department) reporting directly to the Administration, Finance and Control General Department.

This is strategic decision enables the Company to:

- optimize the use of internal professional resources
- improve its bargaining power, achieving economies of scope
- ensure conditions for the treatment and application of homogeneous rules on the whole national territory
- progressively reduce the fragmentation of suppliers, concentrating - albeit relatively - the number of external actors in order to simplify administrative processes.

External personnel, just like internal personnel, is also committed to viewing and complying with the principles and values set forth in the Code of Ethics. The Company also verifies in detail that the contractual process adopted by its professional service or external personnel providers is aligned with Italian labor legislation.

The new horizons of innovation

ICT is not an intangible reality; to the contrary, it has a decisive impact on daily life: it impacts our style and quality of life and communication between individuals, and also orients public policy.

Engineering's innovation, research and development activities embrace various challenges linked to Cyber Security & Homeland Security Governance, Health, Infrastructure, Software, Energy, Industry 4.0 Mobility, Space, Cloud, Data and Analytics, Intelligent Transport Systems, Internet of Things (IoT), Smart Cities, Tourism and Culture.

Since its foundation, Engineering has collaborated with the most important scientific organizations

in the country and with top industrial businesses. It is a leader in the field of software research, coordinating numerous national and international projects through a network of scientific and university partners throughout Europe.

The first research laboratory was opened in 1987 and currently, in collaboration with companies, universities and national and international research centers, Engineering can rely on 250 researchers, roughly 70 ongoing national and European projects, 6 development labs and a significant investment plan which in 2016 amounted to about 30 million euros. Roughly half of these are supported by domestic, regional and European Union funding.

At European level, activities linked to the Horizon 2020 program continued and were strengthened and the areas of interest were expanded to Cyber Security and Industry 4.0. In this regard, it is important to highlight the European Commission's "Horizon 2020 Monitoring Report 2015" which describes the results of the 2015 CALL, and positions Engineering in 16th place amongst the "Top-50 PRC organizations" with a total of thirteen projects.

Within the FIWARE initiative, launched in 2016 along with ATOS, Telefónica and Orange, Engineering promoted the establishment of the "FIWARE Foundation", a non-profit association headquartered in Berlin. This initiative reinforces Engineering's commitment to promoting development and adopting the FIWARE platform as an enabling factor for the creation of a "single digital market" in Europe. Also during the year, it began using this platform in its commercial offer, launching a significant information campaign with a number of customers (particularly municipalities) in order to promote the potential of FIWARE as much as possible for the development of Smart Services.

It contributed to the creation of ECSO (European Cyber Security Organization), a not-for-profit organization established in Belgium in June 2016. ESCO aims to support all initiatives and projects that intend to develop, promote and encourage Cyber Security at European level and, based on a public-private partnership agreement entered into with the European Commission, it will make use of dedicated funding totaling more than 400 million euros.

Engineering also reinforced its participation in EIT-Digital, a European association committed to financially supporting projects meant to accelerate the transfer of innovative solutions to the market. Also in this case, the Company's efforts were rewarded with a substantial increase compared to the past.

At domestic level, research activities concentrated on the PON National Operational Programs launched by the Ministry of Economic Development (MISE) and several regional tenders. With respect to the regional tenders, it is worth mentioning the program contract in Puglia, for which a final project was submitted after receiving initial consent from the Region. The total value of this contract is 10 million euros and it is co-funded by the Region. In this area, Engineering proposed and recently

signed an agreement with the University and Polytechnic University of Bari to select the best talent to ask to join its staff. The project is clearly national in scope, but the first user will be the Puglia Region itself, where innovative processes and services will be developed for the Public Administration. Furthermore, in this area, collaboration will continue with the DHITECH district, with local businesses and with the University of Salento. Engineering participated in the MISE PON H2020 tender with a project that is currently in the assessment phase, and the MISE PON Large Projects tender with four projects. Some of the above-mentioned projects may be launched in 2017.

Lastly, a significant effort was made in participating in the first Pre-Commercial Procurements (PCP), a new method for acquiring innovative services available to public administrations. This instrument promises to accelerate the use of solutions typical of research and development in the market, thus creating robust synergies between business and research structures.

Also in 2016, initiatives to transfer research results to the market were launched, proposing solutions in which the innovation elements are a significant part of the offer, and involving customers in the experimentation in an increasingly stable manner.





Making Italy a **MORE MODERN COUNTRY**

G4-DMA G4-EC7 G4-EC8



DIGITAL PA, EFFICIENT PA



SMART CITIES AT THE
SERVICE OF CITIZENS



BUSINESSES ON THE PROVING
GROUND OF REVOLUTION 4.0



SECURE AND PROTECTED
IN THE DIGITAL WORLD



DIGITAL SOLUTIONS AT THE SERVICE
OF NATURAL RESOURCES



FOR AN ITALY 4.0

PUBLIC ADMINISTRATION, HEALTHCARE, ENTERPRISES, BANKS
AND INSURANCE COMPANIES, IT SECURITY, ENVIRONMENT:
THE SECTORS IN WHICH **ENGINEERING'S SYSTEMS**
ARE **AT THE SERVICE** OF OUR COUNTRY'S **PROCESS OF**
MODERNIZATION.
TO LOOK TO THE **FUTURE** AS IF IT WERE **PRESENT**.

DIGITAL PA, EFFICIENT PA

Innovation for “digital citizenship” and business productivity

The concept of the digitalization of the Public Administration and of “e-government” was born with the spread of Information Technology in the public sector. E-government, initially interpreted primarily as “simply” Office Automation, is now understood more broadly - and properly - as an instrument and process of digital administration of the country as a whole, first and foremost for the efficient and transparent interaction of the PA with citizens and businesses. As highlighted by a recent Bank of Italy study, e-government not only has a significant impact in terms of the quality of life of citizens by offering online services, but it also has a real and consistent capacity to jointly sustain the productivity of the public and private¹ sectors.

The snapshot of Italy provided by the United Nations in its “e-Government survey 2016” report shows that our country is behind other developed countries, and the “E-Government Development Index” (EGDI) composite indicator ranks it 22nd out of a total of 29 countries making up the relative analysis category².

Therefore, the digitalization of the Public Administration has been at the center of our country’s development policies for some time now, also considering the fact that, according to recent studies, improving the quality of e-government services would help Italy gain 0.5 percentage points in GDP³.

The most significant step in that direction took place with the launch of the 2014-2020 Digital Growth Strategy⁴ which identifies:

- the infrastructural actions meant to guarantee easier and more secure access to public services: Public Connectivity System (PCS), Public Digital Identity Service (PDIS), Digital Security for the Public Administration, Consolidation of Public Administration Data Centers and Cloud Computing
- the platforms which enable new services for citizens and businesses, represented by the

41%

the Italian provincial capitals that allow at least one online payment service on their portals⁵

29%

the Italian hospitals that have introduced the online ticket payment service⁶

39%

the Italian provincial capitals that have online personal data registry services⁷

18%

the Italian provincial capitals that have adopted digital citizen identification systems⁸

37%

the Italian provincial capitals that have made an Open Data portal available⁹

8 billion euros

the potential savings generated in public expenditure by increasing the efficiency of e-government services in Italy¹⁰

¹ V. Arpaia, Ferro, Giuzio, Ivaldi, Monacelli, *e-Government in Italy: current situation, issues and outlooks*. Bank of Italy, 2015.

² United Nations, *e-Government survey 2016*, 2016.

³ BEM Research, *How much does the e-gov. delay cost Italy*, 2016.

⁴ Assinform, *The digital in Italy 2016*, 2016.

⁵ EY, *Smart Italy. Smart Cities Index Report*, 2016.

⁶ *ibid.*

⁷ *ibid.*

⁸ *ibid.*

⁹ *ibid.*

¹⁰ BEM Research, *e-Government Report. How much does the e-gov. delay cost Italy?*, 2016.

National Register of the Resident Population, Open Data, Electronic Civil Action, Digital Agriculture and Tourism, Electronic Healthcare, Electronic payment systems of the Public Administration and e-billing

- three acceleration programs (Italia Log In Platform, Digital Competencies and Smart Cities & Communities), with a view to simplifying access to services by citizens and businesses, as well as expanding the offer.

In the healthcare industry, digitalization was implemented by the Regions through a series of strategic projects, such as the Electronic Health File, the electronic receipt or the Single Health Registers, conceived of to reach the National Health System's treatment quality and economic sustainability objectives¹¹.

Also, certain IT technologies in the course of development may contribute to this dual challenge which unites the majority of Western countries; of these Big Data with its numerous areas of application (diagnostics, epidemiology, pharmacology, etc.) or the Internet of Things (IoT) with wearable components to monitor patient vital signs.

ENGINEERING'S RESPONSE

For more than thirty years, Engineering has accompanied and supported the Italian Public Administration's transition through technological innovation processes to favor digitalization in every form (local government, healthcare, public finance, justice, social security).

Profound knowledge of its mechanisms and skills gained over the years enable the Company to contribute to the evolution of the main IT systems that

cover a key role for the functioning of our country and also to implement the Digital Agenda.

Dematerialization of procedures, digital identity, electronic payments, instruments to support decision-making: these are some of the topics that characterize the progressive evolution of these information systems, in line with the deep-rooted organizational and legislative innovations that accompany the Public Administration. On the organizational and methodological level, application cooperation amongst the various PA systems and participatory service design have taken on an increasingly important role. Particularly, the focus on communication and relationships with users (Citizen Relationship Management), the involvement of operators and citizens/users to identify needs and check usability starting from the very first design phases (User Centered Design) and strategic consulting on the digitalization of processes, organization and skills (Digital Transformation), concretely represent how the change under way in the design and development of digital innovation in the PA is interpreted.

MYPAY FOR ONLINE PAYMENTS IN VENETO

A portal capable of managing access to data by multiple entities at the same time and of providing citizens a completely free online payment brokerage service, especially a service that enables citizens to make payments of any type to PA entities by selecting from amongst a number of credit institutions.

This is myPay, the project born from the collaboration between Engineering and the Veneto Region.

¹¹ ibid.

within a process of adopting the new specifications issued by the Digital Italy Agency (DIA) on Electronic Payments to the Public Administration.

The portal, created with entirely Open Source technology, represents the first full implementation in Italy of the DIA specifications on all available payment models. An initiative which has been highly successful as today, in Veneto, myPay is the most used online channel for the payment of vehicle taxes, the main regional tax.

Today, the myPay software is distributed, maintained and further developed by a community of entities in "open source" mode on the SPAC (Open and Shared Participatory Development) platform made available by the Veneto Region. The first entities participating in this community (and which currently have a myPay installation within their information systems) are: the Puglia Region, the Campania Region, the Lombardy Region, the Metropolitan City of Rome and the Autonomous Province of Trento.

PARTICIPATORY DESIGN AT THE SERVICE OF CITIZENS: THE NEW VARESE PORTAL

Communicating its points of excellence, providing information on tourism, culture, the economy and even on training courses or universities. The Municipality of Varese's new Smart-Government portal, designed and developed by Engineering, does all of this by creating a single point of access to local public services, accessible from any web channel (desktop, tablets and smartphones).

Its activation represented a considerable evolution on the local administration's digital innovation path, because for the first time a service design has been created for public services, adopting user centered

design methodologies and involving all local players and stakeholders within a process of participatory design: universities, utilities, transport companies, the Italian Environmental Fund.

The prototype design also involved citizens in the validation and finalization of the project through co-design sessions and usability testing.

The portal, created on an Open Source platform, offers citizens a private, personalized "MyVarese" environment through which they can manage all services offered by the administration in full digital mode.

SUS: A SINGLE POINT OF ENTRY FOR ONLINE SERVICES

To improve the quality of the services it offers to citizens, professionals and businesses, the Autonomous Region of Sardinia used the technology and methodological support of Engineering to implement the SUS (single point of entry for services) project for the creation from scratch of a single web portal for all of the online services offered by the Region.

To fully satisfy the needs of users of the single point of entry for services, users and operators were involved from the very start of the project in validating the user experience and the organization of online services. The project will see the progressive digitalization of hundreds of administrative procedures, owing to the full involvement of all local institutions, including 11 local departments and 16 Directorate Generals.

The creation of the SUS has been a significant project innovation experience which introduces and systematically applies new approaches to the development of PA e-government systems, which are increasingly oriented towards organizational process design and native interaction with the administrative machine, with the primary aim of building a service for citizens and businesses alike.

To date, more than 130 procedures have been

THE VARESE PUBLIC ADMINISTRATION ALONGSIDE CITIZENS

by DAVIDE GALIMBERTI

Along with Engineering, the Municipality of Varese is developing a program that will enable us to provide increasingly modern, efficient and simplified services thanks to computerized solutions and digitalization. E-government is a fundamental component for productivity and development in the public sector, and public administrations must aim for the development of a digitalized management system which helps to achieve significant savings while also improving services for citizens.

In this sense, the Municipality of Varese has initiated a process of participation in various realms. One of these is the continuous updating of the website and connected services, the implementation of which

engaged citizens along with various local groups in designing new technological structures. I believe that this program will provide excellent results and will meet the need for speedy, simple and easy access to the useful information of any Municipality. In this sense, a digital PA is a way to make citizens feel engaged and involved. Public administrations should overcome obstacles linked first and foremost to internal structures with personnel training programs, because behind every digital tool there is always a person who must be ready to respond to the challenges we face today.

This is also why e-government is something that we all must aim for and work towards.

Davide Galimberti

Mayor of Varese

digitalized, while there are an estimated roughly 300,000 external users and more than 700 back-office users have been trained.

CROWDHEALTH: BIG DATA AT THE SERVICE OF HEALTHCARE POLICY

CrowdHEALTH is a European project for the creation of an ICT platform which will gather data and information from various sources of collective knowledge to support decision-making and for the (co-)creation of public health authority policies. The platform will be equipped with Big Data management tools for the acquisition, integration, model-

ling, analysis, extraction and interpretation of data and information.

The aim of CrowdHEALTH is to provide tools for the assessment of causal and risk stratification mechanisms in combination with forecasting and simulation tools for the development of specific multi-modal policies in terms of timescales (for example long/short-term), location properties (i.e., zone, regional, national, international), population segmentation (for example, patients suffering from a specific illness, night workers) and evolving risks (such as epidemics).

CrowdHEALTH will facilitate the assessment and optimization of healthcare policy development through simulations that will make it possible to develop forecasts concerning the impact of investments and activities.

DAE: AN APP FOR LIFE IN EMILIA-ROMAGNA

Saving human lives with technology. Rather, with an app. This is precisely what Engineering is doing in collaboration with the Emilia-Romagna Region through the creation of an app that allows for rapid, timely intervention in cases of sudden cardiac arrest.

In Italy, more than 50,000 people are victims of sudden cardiac arrest every year, but a timely intervention by people located nearby, who can carry out initial cardiopulmonary resuscitation procedures and use semiautomatic defibrillators, can be decisive for the patient's survival. The use of defibrillators by regular citizens trained on their use may indeed double or triple the likelihood of survival.

In this respect, the app created by Engineering has a range of functions:

- thanks to its interaction with the 118 emergency operating center, it makes it possible to alert trained lay volunteers available at the time of the emergency in the case of a patient's assumed cardiac arrest
- it can be used to survey and view the closest automated external defibrillators (AEDs) on a map; in addition, when one is selected, assisted navigation is launched to indicate how to reach it
- it enables the user to call emergency medical teams and sends the geographical coordinates of the user's location to the 118 operating center when the call is placed.

The app includes a section that allows all trained citizens to carry out defibrillation procedures and to register to indicate their willingness to be alerted when needed. Aside from this, through an intermittent sound, the application helps the volunteer to find the proper rhythm to carry out CPR.

At the moment, the project is in the trial phase in the Emilia-Romagna Region, and it is actively integrated in the three regional centers in the Association of Local Health Districts.

PROJECT BLU: IN BAGGIOVARA WITH THE DIGITAL HOSPITAL

Project BLU - Baggiovara Laboratorio Unificato ("Baggiovara Unified Laboratory") - created by Engineering for the Modena local health authority, was launched in 2006 with the aim of reorganizing laboratory diagnostics activities and creating an integrated network of provincial level services based on the use of the most modern IT technologies. The project brought to life an organization capable of guaranteeing 11 million exams per year and thus meeting the demand for services from the community and the provincial hospital network. The BLU IT system and its integrations with external systems make use of the most advanced standards of sector interoperability, allowing for fully automated management of clinical and administrative data relating to the entire analysis process, which ranges from the receipt of exam requests in electronic format to the tracking of individual events and materials until the production, distribution and storage of digitally signed reports.

BLU is a project undergoing continuous evolution from the organizational and technological perspective, and in 2016 the Pagoda - Openlab Governance Dashboard - project was launched to meet customer requirements concerning Business Intelligence, system control and data analysis matters within the sphere of Big Data for analysis laboratories. Pagoda is Engineering's web dashboard that gathers and integrates data generated by the activities of one or

more analysis laboratories, facilitating data exploration and its transformation into indispensable information for control and optimization activities.

SOLE CHART: A COMPUTERIZED RECORD FOR HEALTHCARE INFORMATION

In 2014, with the contribution of Engineering, the "Easy2MMG" individual medical record was introduced, which is a computerized record for all 3,500 general physicians in Emilia-Romagna that can be used to register patient clinical information in a structured manner.

The solution makes it possible to manage all out-patient activities of individual physicians as well as groups of associated physicians. Patient administrative and medical information is transmitted to the Electronic Health File and exchanged through the SOLE regional network (with the patient's consent) with local healthcare facilities.

The main functions of the application regard: the management of prescription flows, with automatic mechanisms introduced to check the proper completion and appropriateness of the prescription, the completion of the Patient Summary, medical certification management, vaccination management and integration with other regional healthcare projects (SOLE, Electronic Health File).

The application is web-based and therefore it is distributed in a centralized manner and can also be used in mobility on tablets and smartphones. The benefits deriving from the use of this system are linked to its new functions as well as its integration with the local medical community, i.e., health centers, hospitals and other specialists, so as to create a single regional network between physicians and facilities. The implementation of a single medical record at re-

gional level - to replace the more than 10 pre-existing records - also brings advantages in terms of reducing the management and coordination costs borne by the Region. As proof of this, current costs are roughly one-tenth of those recorded prior to implementation.

TECHNOLOGICAL INNOVATION IN THE INAIL INSPECTION/ SUPERVISORY SYSTEM

Every year, INAIL inspectors conduct more than 20,000 inspections to check for various types of breaches by companies.

With the contribution of Engineering, this inspection activity will become more effective due to technological innovation in all process phases, from pre to post inspection, benefitting worker safety as well as business activities.

With the advanced analysis instruments introduced, it will be possible to better check INAIL customers to effectively and extremely rapidly identify - in minutes, not months - the companies to be suggested as "candidates" for on-site inspections. The inspection will become even more effective owing to the adoption of a mobile app capable of providing dynamic and innovative working tools, such as: graphometric signature and certified email to eliminate hard copy documents, the possibility to add photos, videos and audio to the information gathered, thematic cartographic maps, the automatic acquisition of personal data through QR codes or Bar codes, and "Speech to Text" functions to acquire and transcribe in text format the statements of witnesses present during inspections.

The companies concerned by the inspections will also reap the benefits of these innovations: aside from reduced inspection times, they will receive documentation on the results through certified email, no longer through hard copy reports.

SMART CITIES AT THE SERVICE OF CITIZENS

Smart Cities and Smart Communities for a better quality of life

Smart Cities occupy a significant position in the panorama of European Union policies and are one of the tools for the realization of the EU 2020 strategy.

At the basis of the success of the concept of Smart Cities is the integration of all services offered, be they linked to mobility, energy, transport or health. An objective that can be reached only by means of a change in paradigm that overcomes the concept of "administrative barrier" and is not affected by the bureaucratic perimeter, but instead focuses on the needs and issues in the real lives of real people.

The goal is to exchange the current model, which is too focused on individual projects related to limited areas, with a model based on technologies that enable the different sectors to dialogue with each other.

30 billion dollars

the value of the global technological market of Smart Cities by 2020¹²

3 million

jobs created in the EU by 2018 thanks to planned investments in Smart Cities¹³

892 million euros

funds set aside by the Metro PON which envisages as a project driver the paradigm of Smart Cities for redesigning and modernizing urban services¹⁴

10 points in GDP

the annual value of a "smarter" country¹⁵

ENGINEERING'S RESPONSE

Engineering is the only Italian company that can offer a complete, integrated proposal of services, consultancy and software solutions that can realize development strategies for smart cities and smart communities.

Engineering's passion for creating this smart reality resulted in its launch of an IT solution development plan capable of transforming the cities of the future into digital platforms, where communication between a range of services and the convergence of data from different IT systems is guaranteed. A process which leads to one goal: offering an immediate response and direct access to everything people need, when they need it.

Underlying all of this is a cultural challenge, that of overcoming an old approach to the topic of Smart Cities, which looks at the topics regarding the various areas of public services as separate silos. A challenge which Engineering meets with the most cultural of responses: sharing.

This means sharing data, the real protagonists of change, through Open Source technologies, as has been done with Cityeneizer, the solution financed by the European agency EIT Digital and created by Engineering to enable smart city technologies. An experimental research project which has quickly (May 2017) brought to life an initial project with an extremely rapid time-to-market.

Cityeneizer is in the application phase in the Province of Trento, Antwerp, Copenhagen, Helsinki, Malaga and Rennes in the areas of healthcare, infrastructure and mobility.

¹² EY, *Smart Italy. Smart Cities Index Report*, 2016.

¹³ *ibid.*

¹⁴ *ibid.*

¹⁵ ABB, The European House-Ambrosetti, *Smart Cities in Italy: an opportunity in the spirit of the Renaissance for a new quality of life*, 2012.

Another successful Smart Cities experience is FIWARE, a European Open Source technology that Engineering contributed to creating and which it currently implements within top international organizations. The platform was exported and installed in two trial energy and Smart Mobility projects in the United States at the National Institute of Standards and Technology (NIST), the government agency that manages technologies, a global reference in standard-setting.

Engineering is also one of the founders of the FIWARE Foundation, with a leading role in the control and governance body, bearing witness to the Company's commitment to this matter.

A commitment which is reflected at international level in other contexts as well, such as in the Big Data Value Association, of which Engineering is a founding member (present on the Board of Directors for strategic management) and for which it leads the working group on Smart Cities.

The BDVA relies on more than 160 members distributed throughout Europe and represents the private counterparty to the European Commission in the implementation of the Big Data Value PPP (Private Public Partnership) program.

ANCONA PARKING ADVISOR: SOFTWARE FOR FINDING A PARKING SPOT

It is called "Ancona Parking Advisor" and it is a prototype capable of estimating the availability of parking spots in public areas. Developed by Engineering for the Municipality of Ancona and based on the FIWARE technology (the platform promoted by the European Commission for the development of open applications and standards

for the general public), the prototype consists of a platform that processes data generated by user interaction with external systems and which includes FIWARE components that interact with local devices such as parking meters that gather information from a range of sources (e.g., data on parking permits for residents, historical data on tickets). All of this information is processed by an algorithm that provides real-time estimates on the availability of parking spaces in specific parking areas.

The end user views information on available parking spots directly on a map provided on an app for mobile devices.

The estimate of available spaces is displayed graphically using various colors in the parking areas. Thus, motorists can save a good deal of time by driving to parking areas with the highest likelihood of free spaces, thereby avoiding extended searches, especially during rush hour.

The "Parking Advisor" prototype was presented during the Smart City Expo World Congress 2016 event held in Barcelona as a relevant example of the use of FIWARE technology within the area of Smart Mobility.

SIMPATICO: A NEW LANGUAGE FOR INTERACTING WITH THE PUBLIC ADMINISTRATION

SIMPATICO ("SIMplifying the interaction with Public Administration Through Information technology for Citizens and cOmpanies") is a project co-funded by the European Commission as part of the Horizon 2020 research program, which aims to improve online services for citizens, make them more usable and eliminate significant barriers

CHALLENGES IN WORKING TOWARD SMART AND SUSTAINABLE CITIES

by GIAN MARCO REVEL

“The Smart City is the place where members of a community can live well, with good health and safety, at every age, with reciprocal respect for the environment and for future generations. The city must be accessible and usable by everyone, with no distinction, through innovative services enabling the widespread availability of information”.

To obtain a real Smart City it is necessary to promote the concept of “sufficiency”, while boosting resource productivity and settling a bit. To do this, adequate technologies are required and, especially, a good deal of good sense on the part of citizens, who must always be engaged and aware.

The main challenges that a city needs to face in the transition to a “smart” city, or even more so

a “sustainable city”, are linked to the capacity to unite the environmental dimension with the economic and social dimension of sustainability. This implies approaches distributed across all arenas. In addition, today citizens expect accessible medical and administrative services, simplified life and procedures, cost reduction and respect for the environment.

Looking at the Italian context, it appears clear that a systematic and integrated approach is missing at central level. Indeed, several cities have achieved excellent results, but they have been episodic and uncoordinated. Although initially and formally launched by the Ministry of Education, University and Research (MIUR), today there is no strategy or integrated approach at national level to apply the experience gained system-wide.

For the future, the fundamental point is therefore to create the conditions for a real change of pace.

which currently limit their adoption. The aim is to simplify the language with which online services are delivered to citizens and to adapt it to specific user requirements. In Italy, the Municipality of Trento is the protagonist and public partner for testing this research project.

The project also aims to create the “Citizenpedia”, a new public digital resource inspired by the famous online encyclopedia Wikipedia, which intends to gather and spread the knowledge and experience of the entire community of users, administrations and professionals with respect to online services.

The SIMPATICO approach is based on a platform that can be distributed on existing Public Adminis-

tration systems, enabling the delivery of a customizable service without having to modify or replace internal systems.

SYNCHRONICITY: THE INTERNET OF THINGS APPLIED TO CITIES

SynchroniCity is a large-scale project co-funded by the European Commission within the Horizon 2020 framework research program, which aims to create a digital single market for services in Europe, launched with the involvement of 11 cities.

Engineering handled the development of the

From the sustainability perspective, urban renewal and mobility are the topics of greatest economic and environmental impact. These will require governance actions that can benefit significantly from modern technologies.

The other fundamental point is to deploy the necessary players and skills. In this sense, a possible scenario is that based on the Quadruple Helix model which puts together citizens, public institutions, universities and research centers and industry.

With respect to the simple market mechanism, which through its laws envisages equality between supply and demand and, only subsequently and possibly, the intervention of institutions for the regulation of economic exchange, in the economy of knowledge the relevant steps are the creation of wealth by the economy, the generation of organized innovation by science and technology, and

the governance of interactions between the two previous aspects by institutions with the knowledgeable involvement of citizens.

A project we developed with Engineering and the Municipality of Ancona through the use of FIWARE regards an app which, by surveying parking meter data, suggests to users where to go to park and provides the estimated average waiting time. Thanks to FIWARE, the open platform which the European Commission aims to have become a standard for IoT, it was possible to easily integrate the various layers. Soon, the project will enter the trial phase.

Gian Marco Revel

Professor in the Department of Industrial Engineering and Mathematical Sciences at the Polytechnic University of le Marche.

Vice Rector for European Research

platform that will host the technological solutions implemented by participating cities with the involvement of manufacturers of devices for the Internet of Things applied to cities, system integrators and service providers.

Indeed, Synchronicity will generate a reference architecture for the creation of a market of the Internet of Things (IoT) applied to today's city with an impact on the environment, with the relative interfaces, data models and a series of vertical applications in three different areas that will be tested out in pilot cities:

- traffic management, through the dynamic application of vehicle regulation based on the current state of noise and air pollution, or

emergency management by automatically reporting accidents and suggesting alternative routes

- multi-modal transport through the development of applications and services that can integrate various means of transport by suggesting, for example, the best means of transport and route, taking a range of factors into consideration, such as traffic, weather conditions and the presence of pedestrian/cycling areas
- Community Policy Suite, through the definition of a platform that makes it possible to promote and accelerate processes of defining and developing services for Smart Cities based on the application of the Internet of Things (IoT).

ZAP-E MAKES THE MAILMAN RUN FASTER

Now it is possible to speed up your mail delivery. What makes this possible is an IT system developed by Engineering for Poste Italiane through the Esri ArcGIS for Server platform, which exploits data analysis and geo-location technology.

By identifying the best sequence of all street numbers assigned to a letter carrier, the system outlines the best route and makes it available to the Postal Service, an innovation that was recognized with the ESRI "2017 Operational Efficiency" Award.

The ZAP-E (Zonizzazione Area Portalettere - Evoluzione - "Letter Carrier Area Zoning - Evolution") system is capable of reading, managing and exploiting integrations of geographical databases of the Italian territory 24/7 with proprietary data of the Poste Italiane organizational structure, a huge collection of data consisting of 16 million street numbers deriving from zoning activities (geographical identification of the areas covered by a mailman) based on which the Postal Service has divided municipal territories into uniform areas.

The ZAP-E system, which has been integrated with customer address systems (GEOPOST and RMS-E), applies routing algorithms, also integrating information on the road surface, shared with the competent local health authorities.

It became possible to plan deliveries using this model in January 2016 with the installation in production of ZAP-E. This possibility will continue until the end of 2017 when, according to current plans, all Poste Italiane offices concerned by the restructuring (roughly 9,000) will be upgraded to the new technology.

ALLERTA METEO: A NEW MULTIMEDIA PLATFORM FOR EMILIA-ROMAGNA

Engineering has developed an expert system dedicated to the full digitalization of environmental risk management and communication processes. All weather and hydro-geological risk and alert services, from weather forecasts to local evacuation plans, are managed within a single geo-localized platform available to local civil protection system players as well as mayors for the composition and sending of Allerta Meteo ("Weather Alert") messages to citizens in a range of formats (email, SMS, social media, multimedia).

The system offers self-service services to citizens as well, who can choose to personalize the alert notices (based on specific interests and real time location) and can access reliable information in real time on: weather forecasts, monitoring data, risk maps, documentation and information relating to the civil protection plans of individual local administrations.

BUSINESSES ON THE PROVING GROUND OF REVOLUTION 4.0

The world of industry is writing the new paradigms of technological development

Industry 4.0, the fourth industrial revolution, is only the most visible part of a digital transformation which has now extended to the entire business world. Indeed, the future will see increasingly automated production models with interconnected businesses as well as a different relationship with the workforce. According to the "The Future of the Jobs" research report presented at the World Economic Forum, work will be deeply influenced by technological as well as demographic factors, and indeed 90% of the work of the future will require digital competencies.

In this context, companies are called upon to change paradigms and approaches to adjust to the new reality of the present, to seek to anticipate future scenarios, to manage the significant spread of digital systems (Digital Disruption) and to exploit the ongoing transformation to their own advantage.

With mobile access to the internet and the growth in interconnections between people, economic digitalization is destined to accelerate, driven by Big Data analyses, the use of the Cloud and the Internet of Things (IoT), the application of which will make it possible to achieve the higher levels of efficiency, quality, productivity and timeliness required by the market.

The Industrial Internet of Things (IIoT) in industry and Industry 4.0 in the manufacturing sector represent a rapidly increasing technological trend, which applies the internet in a non-consumer context within which smart machines, devices and people are connected with each other.

50 billion

devices will be connected to the web by 2025¹⁶

90%

of future work will require digital skills¹⁷

27%

of companies have a digital work strategy¹⁸

from 2 to 4 million

expected demand for the next decade of "business translators" capable of converting "analytics" tools into solutions for companies¹⁹

ENGINEERING'S RESPONSE

Engineering is increasingly acting as a specialized partner for businesses, capable of accompanying customers in their business model transformations, providing them with all the tools necessary to deal with changes and new market challenges. This is why the Company has launched a profound internal transformation that aims for the transition from Information Technology to Digital Transformation. This organizational restructuring is meant to build a veritable advisory structure that works alongside other corporate structures, such as those for production and sales.

As a result, Engineering delivers not only IT support, but also consulting on how Information Tech-

¹⁶ Federmeccanica Survey, *Industry 4.0 in Italy*, 2016.

¹⁷ European Commission, *Why we need a digital single market*, 2015.

¹⁸ Gartner and IDC, *Exploring The Future Of Digital Transformation And Disruption*, 2016.

¹⁹ MGI: *The age of Analytics Full Report*, 2016.

nology can boost productivity and revenues, reduce operating costs, increase customer retention and even modify company business models.

This new approach includes, for example, the cooperation agreement with Comau, a leader in automotive sector automation. The objective of this partnership is to provide the market with a unique capacity that exploits the complementary nature of the respective skills and experience in Industrial Automation of Comau and in Information and Communication Technology of Engineering to improve the quality and cost effectiveness of automated production processes, by exploiting the most modern data collection and analysis technologies.

The response of Engineering also relies on participation in domestic and international initiatives. Indeed, in 2016 the Company participated as a founding member in the creation of DEVO Lab (Digital Enterprise Value and Organization), the research laboratory promoted by the SDA Bocconi school in collaboration with leading businesses in the ICT sector and other industrial sectors. DEVO Lab aims to spread knowledge and develop a greater focus on the topic of business digital transformation, with a particular emphasis on organizational and economic impacts.

A DIGITAL, BUT ALSO CULTURAL, TRANSFORMATION

by MASSIMO IPPOLITO

Data provided by the International Data Corporation (IDC) show that a digital transformation process is under way in companies, which will soon lead to the spread of smart factories. By 2022, in fact, 40% of operating processes will be able to auto-learn and therefore auto-repair.

A recent study conducted by the Polytechnic University of Milan's Industry 4.0 Observatory highlighted that in 2016 the market of Industry 4.0 projects - a definition which includes IT solutions and the enabling technological components on traditional productive assets and connected services - was worth roughly 1.7 billion euros, up 25% compare to the previous year.

This figure is destined to continue to grow: the analysis observes that several companies waited for the publication of the National Industry 4.0 Plan and the relative tax clarifications before deciding how much to invest. Recently, the UCIMU (Italian machine tools, robot and automation manufacturers' association) highlighted that the tax incentives, super-amortization and hyper-amortization, set forth in the Industry 4.0 Plan had a significant positive impact on growth in domestic demand for the machine tools necessary for upgrading manufacturing systems. According to the Polytechnic University of Milan survey, a quarter of the companies will benefit from Plan facilitations, investing more than one million euros.

However, there are still some difficulties in Digital Transformation processes, such as the capacity to make different solutions and systems dialogue with each other by developing hardware and software in-

BANKS AND INSURANCE COMPANIES: DIGITAL IS NOW

Banks and insurance companies will no longer be as we know them today and the scenario is destined to change more and more rapidly. In particular, with the advent of digitalization, they are preparing for a major disruption, which is entailing a business model overhaul, from the functioning of products and services to the user experience offered to all types of users: employees, customers and suppliers.

For years, Engineering has worked on a number of

projects for the main Italian banking and insurance sector players with a view to reducing their operating costs, improving customer retention and increasing revenues by promoting the change under way, while modernizing and increasing the flexibility of IT systems for the digital management of the millions of users active at any given moment on a range of different devices.

Engineering's current strategic evolution policies include solutions to enable banks to monetize their relationships while also regaining customer loyalty:

- the transfer from an Omni-channel approach to Digital Identity to return to Human Identity
- the Customer & User Experience

struments capable of enabling communication between traditional production systems and the new tools of Industry 4.0.

Another key requirement for Digital Transformation is the availability of an advanced connection to allow data and information to be managed in perfect mobility, making it available to people or machines where needed, both easily and in real-time. The digital transformation also requires a cultural transformation and the technical and management skills necessary to plan and manage increasingly innovative industrial automation solutions. To respond to continuously evolving market challenges, characterized by demand for increasingly cutting-edge techniques and skills, with a view to Industry 4.0 Comau and the ESCP Europe Business School created an Executive Master in "Manufacturing Automation & Digital Transformation". This is a training course dedicated to companies that intend to innovate their

production systems and everyone who wants to perfect their knowledge, technical and operational, so as to deal with the challenges of digitalization in the field of industrial automation.

The central role of training is also confirmed within the National Industry 4.0 Plan presented in September 2016 by the Ministry of Economic Development, which recognized the pivotal role played by centers of competence in making it possible to see and experience first-hand the solutions linked to the Digital Transformation while making 45 million euros in vouchers available for businesses, which can be spent at digital transformation structures, technological transfer centers and national Competence Centers.

Massimo Ippolito

Comau Innovation Manager

- boosting the efficiency of internal processes (Agility & Process Governance)
- Big Data analysis and Data Governance
- the application of robotics in work processes (in the near future).

The solutions proposed promote the transition towards digital banks, which will be increasingly characterized, amongst other things, by process dematerialization, the outsourcing of non core activities, increasing activity digitalization, a reduction in back-offices and more use of robotics.

Some distinctive elements of the work conducted in 2016 were: the migration of bank information systems (e.g., mergers between groups, ongoing restructuring in the world of Cooperative Credit Banks); dialogue with customers on new architectural and technological models; the development of “metadata containers” for the description of data and processes based on data governance, lineage and knowledge; the use of innovative technologies for the management of Big Data and the development of micro-service solutions.

In particular, in 2016 the main activities for customers regarded:

- the installation of new applications for the introduction of greater flexibility in company reorganization workflows, with impacts on authorization delegation and sub-delegation mechanisms which, inter alia, freed up qualified resources to be allocated to higher-value activities
- support for the creation of Big Data, with a view to structurally improving the management of all bank data, modifying report input, control, processing and generation rationales
- the implementation of a vendor consolidation process which, through internal and customer business process oversight, enables improved knowledge and management of expenses and the activation of new products on the basis of customer needs and financial profiles
- the architectural revision of the Life Policy portfolio management system with a view to services, so as to meet omni-channel requirements and make the system directly usable by agents in mobility
- the creation of a new Visage solution (Engineering’s Customer Knowledge Hub), which in the registry environment extends its operating domain to all types of customers: current, prospects, leads, suspects, suppliers and employees, and contains all of their characteristics (legal, socio-demographic, behavioral, up to and including contact history)
- the delivery of application solutions for installment and corporate loans
- the creation of a unified front-end for loan disbursement to retail customers
- the centralization of the finalization process for all forms of loans and the associated document management
- the digitalization of creditworthiness evaluation processes for loan disbursement purposes and the enhancement of the customer registry with structured information coming from internal and external databases.

ASSET PERFORMANCE MANAGEMENT:

TECHNOLOGY AT THE SERVICE OF THE RAILWAY NETWORK

Engineering has gained significant skills in the management of company infrastructure maintenance, not only in relation to IT systems and solu-

tions supporting execution activities, but also in terms of aspects for designing and planning them. Thanks to the path it has undertaken, the Italian Railway Network (RFI) has transitioned from reactive type maintenance management, based on corrective interventions when breakdowns occur, to network management based on planning “cyclical” preventive maintenance activities, so as to reduce breakdown risks.

However, while this approach is effective, it is not efficient if maintenance activities are planned without taking into account the actual state of the assets and their breakdown behavior history. An initial evolution with respect to the rigidity of cyclical maintenance was introduced through the Asset Performance Management project carried out by Engineering on Meridium technology, the top-level sector software solution for RFI.

Thanks to the introduction of this solution, RFI aims to abandon the concept of standard frequency in predictive maintenance activities by enhancing planning activities with information on the strain on assets (such as the passage of trains), geographical position, data on average time between breakdowns and other analysis techniques. This is enabling RFI to calibrate maintenance frequency on the basis of the specific needs of assets or families of assets, reducing excess maintenance activities and resulting in significant cost savings. The next step, which Engineering is already working on with RFI, consists of enhancing knowledge of assets based on information coming from the field, such as diagnostics systems, in line with the Industrial Internet of Things (IIoT) paradigm. This will make it possible to transition to an even more efficient Asset Management approach, referred to as predictive maintenance, in which by applying a mathematical analysis procedure on the progress of wear on the assets, it will be possible to

plan maintenance activities even before they show signs of wear.

GEOCALL WFM: THE TERRITORY IN AUGMENTED REALITY

Providing substance and life to an image, adding depth to something that is flat, but especially enhancing the world observed by the user with information: this is Augmented Reality, a series of technologies that add digital content to the physical world, by overlapping real-world objects with information such as text, images and interactive graphics; digital information is viewed by the user through tablets, smartphones or the more modern head-mounted displays.

In the mobile component of Geocall WFM (Workforce Management), Engineering has integrated a module dedicated to Augmented Reality, with the aim of redefining the operations of technicians and maintenance personnel in the field from a technological perspective.

Geocall WFM is an innovative, fully parametric Field Service Management software platform which encompasses all planning, scheduling, mobility and Geographic Information System (GIS) integration functions. The solution provides a set of functions capable of supporting the requirements of companies that need to manage teams and resources on the ground, coordinating and monitoring all of the required activities while optimizing work and guaranteeing compliance with established contractual service levels.

Geocall WFM is a suite in continuous evolution, in step with the most recent digital and mobile technologies, such as wearable devices and Augmented, Virtual and Holographic Reality. In fact, using their

devices, operators involved in the maintenance process can:

- manage and view multimedia content associated with objects
- view components, networks and systems that are hidden or underground
- automatically recognize and manipulate technical objects and assets
- interact with virtual objects through management or voice commands and share them with other operators
- receive information on the activities to be carried out
- manage activities through guided interactive procedures managed by workflows
- simulate the effects of the maneuvers carried out
- share audio and video with the back office in real time to receive guided support
- manage repositories of virtual objects.

Geocall WFM is available in cloud as well as on-premise mode to satisfy the requirements of customers that need to install it within private hardware.

FCA: 10 MOBILE APPLICATIONS TO SUPPORT SALES

In the automotive sector, one customer out of four claims to be unsatisfied due to the lack of personalization in the dealership purchase experience. Based on this need, FCA decided to transfer the main processes linked to car sales that take place in its showrooms to iOS and Android tablet devices as well.

With the support of Engineering, 10 mobile applications were created (available in all of the main European markets and translated into 20 languages) which have the goal of boosting the efficiency of car

sales teams and increasing satisfaction while, for example, speeding up the management of the estimate completion phase and making it possible to view the car configuration in real time. The applications are integrated within each individual sales process phase and exchange data with each other and with the salesperson's desktop workstation.

The same applications are also integrated with digital reporting systems (videoposters or digital signs) to project images demonstrating the vehicle selected on high-resolution screens, and they are installed on interactive kiosks which allow visitors to autonomously manage part of the vehicle configuration process.

CAP HOLDING: EFFICIENCY IN THE WATER SECTOR FOR THE CITY OF MILAN

With the support of Engineering in the technological upgrade process, CAP Holding, the integrated water service manager in the Metropolitan City of Milan utility district, implemented a Field Service Management solution based on the Geocall WFM (Workforce Management) software to boost efficiency in maintenance activities.

The innovative scheduling module made available by Geocall WFM achieves operational efficiency by planning all ordinary, extraordinary and appointment-based activities, and also improves the service offered to customers.

In addition, thanks to the use of Geocall WFM Mobile, CAP Holding field operators can manage all work final reporting processes directly from their mobile devices, with an application that is easy to use and is designed to work both on- and

off-line, guaranteeing that they can carry out their operations even without connectivity.

The CAP Group was awarded first prize at the Althesys Top Utility 2017 awards on the basis “of the excellent results obtained in all areas surveyed, particularly with reference to operating performance and customer relationships”.

SUPER: THE PLATFORM FOR CLEANING ABOARD TRAINS

Engineering developed a platform for Trenitalia for the management and handling of contracts with the external companies that carry out cleaning activities aboard trains and in plants.

The system, which is fully integrated within the Trenitalia production platform, makes it possible:

- to manage contractual documentation with respect for SLAs and the calculation of any penalties
- to manage external companies for administrative, accounting and operating purposes, with monitoring of contract expiries
- to plan the trains on which to intervene and the scheduling of cleaning activities for each individual team
- to send notices if any changes are made with respect to original plans
- to support inspection activities
- to conduct final reporting on the activities carried out, in addition to those planned
- to analyze and generate reports on cost trends.

With the new platform, Trenitalia operators can conduct spot checks to verify the quality of the cleaning service provided and on this basis manage further inspections.

In addition, thanks to the availability of complete

reporting on the average costs of actual activities, Trenitalia is capable of using this data as a reference basis for updating contractual documents for the subsequent year.

The solution developed enables Trenitalia to efficiently manage the activities carried out by external companies, allowing them to offer end customers high-quality service.

THE DIGITALIZATION OF TELCO STORES

Digital channels are playing an increasingly strategic role in customer relationship processes.

In most cases, the sales process begins outside the store through the collection of information online and continues inside the store only later on.

The consumer becomes informed, conducts research, compares prices and opinions rapidly and knowledgeably and in multichannel mode. Therefore, it is necessary to re-think sales process approaches by adjusting the role of traditional stores to make them more integrated within an omni-channel process.

The challenge is that of directing a transformation process which calls for greater integration between online and physical experiences, enables a personalized experience based on the target and makes new technologies available in stores. This transformation can be carried out by making online functions available in points of sale to improve the Store Experience, or by enabling a Full Digital process.

Engineering has developed an app for a leading Telco operator dedicated to point of sale operators, optimized for use on tablets and meant to stimulate greater interaction between the operator and

the potential customer. Thanks to this solution, the offers and promotions applicable in the specific context are displayed by navigating through an interactive catalogue which can be used to create and modify on-the-fly bundles meeting the specific needs of individual customers.

With the support of the point of sale operator, customers play an active role in putting the bundle together and can follow the evolution of the associated rate step by step. With a view to enabling a Full Digital sales process, Engineering's solutions make it possible to manage the purchasing process by making extensive use of self services displayed through the portal and other digital channels, with the possibility of using video communication functions to automate customer recognition. Customer credentials, i.e., the data and identity documents used to recognize customers, may therefore be acquired remotely, with evident benefits in terms of efficiency.

Analogously, the entire purchasing process can be made remote with the support of an operator in the most important phases, such as when drawing up and accepting the contract. It is therefore possible, as a replacement for the traditional hard copy contract, to formalize the acceptance of the agreement through a video recording, reproducing the same experience that the customer would have in a bricks and mortar store.

E-BILLING: THE FUTURE OF PUBLIC ADMINISTRATION BILLING IS ELECTRONIC

As noted by the Polytechnic University of Milan Observatory, the introduction of electronic invoicing in the PA could guarantee direct savings exceeding

1 billion euros per year. A veritable revolution in terms of timing and costs to which Engineering is making its own contribution.

The Company supported some important players in the utilities sector in adopting the 2008 finance act, which established that starting in 2015 invoicing with respect to State administrations should take place exclusively in electronic form throughout the life cycle: from generation to issue/receipt and even storage for 10 years in accordance with legal requirements.

The project is taking place within the context of public utilities, where the standards and "rules" of the Italian Revenue Agency, the Customs Agency and especially the Authority for Electricity, Gas and the Integrated Water Service converge. The term invoicing itself takes on specific characteristics and peculiarities in this sector so much so that it is more frequently referred to as "billing".

In this context, the project had two fundamental objectives:

- combining the electronic invoice "standard" (which was not originally born as the "electronic bill") with the specific features of the bill, which encounter difficulties in the standard controls included in the Italian Revenue Agency's IT system (Interchange System).
- maintaining the image of the company in its fullest sense, throughout the strategic process of managing relationships with end customers within the "standard" document envisaged by regulations.

In pursuing these two objectives, Engineering's extensive experience and in-depth market knowledge have made a fundamental contribution by means of a project based on significant configurability, which makes it possible for each company to choose which information to convey, at which lev-

el of detail, in which “section” to place it and with which other variables it should be associated, taking into account primarily the type of customer and offer broken down into two macro-guidelines: that of the Protected Market, where the Authority has a prevalent and partly binding regulatory role, and that of the Free Market, where the Authority has a second-tier role, leaving more space for the choices of each individual company, still aimed at transparency, but within a context of effective competition. The project concluded with the release and launch of production of the e-bill, and with the effective running at all customer companies of Engineering’s proprietary Net@Suite solution.

ADVANCED LOGISTICS AT THE SERVICE OF **ALTROMERCATO**

Founded in 1988, Altromercato is the main fair trade organization present in Italy and one of the leaders at international level, a point of reference in the promotion and implementation of ethical economic practices with a view to sustainable development.

Altromercato works with roughly 150 organizations made up of tens of thousands of artisans and farmers in 50 countries and guarantees the import from all over the world of products at fair prices, recognizing the real costs of production and enabling the dignified remuneration of labor.

In this sector, logistics becomes crucial, and it is complex logistics that is based almost on retail logic, close to that of large-scale retail.

To meet these needs, Engineering implemented the solution that helps to more efficiently manage the entire logistics cycle and makes tools available to

view all warehouse and delivery management processes with the utmost transparency, laying the foundations for cost savings and high service levels. In particular, MHT adapted the following areas to the reality of Altromercato:

- management of prices, discounts and sales promotions
- logistics warehouse management: use of mobile terminals, advanced picking logics, positioning of incoming goods, customer reservation management, availability calculations, advanced shipments and packaging
- calculation of fees
- management of sales contracts (pre-orders) and collection seasonality.



SECURE AND PROTECTED IN THE DIGITAL WORLD

Synergy and sharing for data safekeeping and protection

Cyberspace is the new place for meeting, interacting, dialoguing with the Public Administration and entering into commercial exchanges. In short, for living.

This is an achievement for freedom as well as an economic opportunity; however, it exposes us to a series of risks, first and foremost that of being subject to attacks by hackers.

In Italy, 94% of businesses protect their data from external attacks²⁰, yet despite this, according to Clusit there were more than 1,000 cyber incidents in 2016²¹.

To ensure greater protection of critical infrastructure and protect citizen well-being and security, it is necessary to improve citizen cyber security in the Public Administration as well as in the industrial system.

In addition, at a time when web intelligence tools are becoming increasingly precise, despite increased fears concerning privacy, many countries have started to make substantial investments in security intelligence actions to combat criminality and terrorism.

Organizations and law enforcement must increasingly deal with the spread of the "Crime as a service business model", i.e., the possibility for any party to acquire a cyberattack in the Deep Web without necessarily having the required knowledge and tools. In this broad space, perpetrators of criminal activity often leave traces that may be identified by

law enforcement with the support of tools that can connect multiple pieces of information.

72%

internet users in Europe concerned about requests for personal information online²²

9.8%

the increase in 2016 in the number of serious cyber crime attacks in Italy²³

97%

Italian businesses which claim to have a cyber security function that does not meet their needs²⁴

69%

Italian businesses which claim to have suffered a significant cyber incident²⁵

1,166%

the increase in attacks carried out with phishing and social engineering techniques in Italy in 2016²⁶

roughly 300 million euros

Italian market value of software for IT security²⁷

94%

Italian businesses that see the protection of data from external attacks as a priority²⁸

²⁰ Confindustria and Assinform, *The digital in Italy 2016. Markets, dynamics and policies.*

²¹ Clusit, *2017 Report on ICT Security in Italy.*

²² European Commission, *Why we need a digital single market*, 2015.

²³ Clusit, *2017 Report on ICT Security in Italy.*

²⁴ EY, *Global Information Security Survey, 2016.*

²⁵ Clusit, *2017 Report on ICT Security in Italy.*

²⁶ Clusit, *2017 Report on ICT Security in Italy.*

²⁷ IDC Italia, *The Italian IT security market.*

²⁸ Confindustria and Assinform, *The digital in Italy 2016. Markets, dynamics and policies.*

ENGINEERING'S RESPONSE

Starting in 2010, cyber security activities were consolidated and extended through Engineering's participation in a number of projects.

In particular, CYSPA (European CYberSecurity Protection Alliance) dealt with the issue of risk awareness with an innovative approach that helps organizations to gain awareness of existing cyber threats and possible solutions.

On the other hand, the ACDC (Advanced Cyber Defense Center) investigated the topic of controlled data sharing to share data relating to cyberattacks between organizations, which led to the creation of a portal for the community of users which integrates an access control instrument and the sharing of such data (the Data Access Manager, DAM). In addition, the Company's Research & Development laboratory coordinates the working group on cyber security of the EOS (European Organization for Security) and collaborates with Leonardo in defining the contractual Public Private Partnership (cPPP) for cyber security, launched by the European Commission in mid-2016²⁹.

Engineering's Security Intelligence (SECINT Lab) research unit studies technological solutions in order to discover, recognize and combat entities and groups of people intent on organizing propaganda, recruiting or radicalization activities or preparing terrorist and criminal attacks of various types. In parallel with preventive research activities, the lab-

oratory plays a key role in supporting Digital Forensics in order to create applications equipped with services for analysis and automated reasoning to support investigations.

DANTE: BIG DATA FOR THE SAFETY OF CITIZENS

DANTE (Detecting and ANalysing TErrorist-related on-line contents and financing activities) is a project co-funded by the European Union and coordinated by Engineering. The project is meant to support investigation activities to combat terrorist activities perpetrated online through the application of analytical solutions and data mining tools capable of locating, extracting and analyzing large quantities of heterogeneous data and multimedia/multi-lingual content linked to terrorist activities.

The analysis and monitoring activities focus their attention on the web resources used to identify phenomena such as fundraising, recruitment and training. These instruments will be improved and expanded for use by law enforcement to detect, analyze and monitor these potentially dangerous activities.

The solutions proposed will be integrated, tested and validated in three pilot projects under the direct responsibility of the European law enforcement agencies involved (Guardia Civil, Polícia Judiciária, Home Office, Carabinieri), based on their needs and experience and taking into account current practices, with the aim of achieving an effective and concrete improvement through the project's results.

²⁹ <https://ec.europa.eu/digital-single-market/node/80873>.

CYBER SECURITY, SAFE FROM ATTACKS

by LUIGI REBUFFI

Today, the most dangerous cyber threats are those which have the most impact on society, i.e., those which may generate problems in infrastructure and strategic services. For citizens and industry, the most dangerous threats are those which target personal information and intellectual property.

IT security therefore should not be considered a cost, but rather an investment for improved service quality and the protection of rights and assets.

To mitigate current and potential threats deriving from cyber crime, organizations are now called upon to invest in personnel education and training, the installation and/or updating of protection software and the exchange of data on threats with other sector entities or with the Public Administration. The awareness of decision makers that the threat will increase over time and that will not be possible to reduce the level of attention is also a crucial factor.

New technologies and digital solutions such as the "Internet of Things" (IoT), "Cloud Computing" and "Big Data" are changing cyber security and, while on one hand they will facilitate the life and well-being of society, on the other hand they will open up

new doors to threats. Therefore, it is necessary to establish security solutions that are sustainable over time to head off attacks that may not only cause interruptions in the functioning, for example, of IoT devices, but may also be part of large-scale service interruption attacks. Cloud Computing is revolutionizing data storage and exchange, but it also introduces the danger that such data may be used inappropriately.

In the area of Big Data, the most interesting topic for security is the study of analytics, which makes it possible to put large quantities of data in relation to each other, to learn usage methods through artificial intelligence instruments and to anticipate possible threats or better understand how threats have been perpetrated. The perception of risks linked to cyber crime at organizations in Italy, and also abroad, is still quite limited. However, with system interdependence, the digitalization of society and the widespread introduction of sensitive components such as the IoT, we will soon adopt advanced cyber security strategies across all sectors.

Luigi Rebuffi

Chief Executive Officer

European Organization for Security (EOS)

SURVANT: VIDEO-SURVEILLANCE AGAINST CRIME

SURVANT (SURveillance Video Archives iNvestigation assisTant) is an innovation project that supports investigators in researching unlawful and criminal activities by analyzing films contained in video-surveillance archives. The technologies adopted in the project aim to create a system capable of collecting videos from various types of multimedia archives and extracting the relevant events through algorithms, video analyses, inference techniques, machine learning and automated reasoning.

Starting with the very first design phases, the project also deals with ethical aspects linked to the proper management of the data gathered, identifying the sensitive data of the users involved in the videos analyzed, anonymizing them, if necessary, and preventing their unauthorized use. The main customers of the final result of this project are law enforcement, critical infrastructure operators and private security organizations.

DOGANA: SOCIAL ENGINEERING 2.0 AGAINST CYBERATTACKS

Engineering coordinates the DOGANA (aDvanced sOcial enGineering And vulNerability Assessment) project which is creating an integrated tool to evaluate the exposure of organizations to attacks conducted with Social Engineering 2.0 techniques, or a series of techniques developed to extort information from companies or public entities and make them more vulnerable to targeted IT attacks. The approach followed by the project

is based on the fact that when assessments on social vulnerabilities, Social Driven Vulnerabilities Assessments (SDVAs), are conducted regularly with the support of an effective reference framework, they help to develop winning risk mitigation strategies and as a result reduce risks deriving from modern attack techniques based on Social Engineering 2.0.

Two significant characteristics of the proposed framework are: the concept of training and awareness-raising meant to foster awareness and responsibility in the area of Social Engineering 2.0 as a focal point of risk mitigation activities; the design of a platform in line with European regulations (in terms of privacy for example), which will be handled by a partner and dealt with by a Work Package expressly dedicated to this matter.

The project is carried out by a consortium of 18 partners, from 11 countries, including universities, public and private research institutions, final testers of the system and technology suppliers.

The DOGANA platform will be tested and tried out by 4 partners (plus 2 that will support the users/testers) which operate in areas deemed critical with respect to the issue analyzed in the project: energy, finance, transport, services, authorities and public administrations.

HC@WORKS: ENCRYPTION FOR THE PROTECTION OF SENSITIVE INFORMATION

The project, launched in 2015, has the goal of demonstrating the applicability and sustainability of the Fully Homomorphic Encryption (FHE) technique, a new encryption technique for the protec-

tion of sensitive and private information. Through the development of three different pilot projects by three IT companies, including Engineering, in 2015 a reality prototype was applied to demonstrate the effectiveness of the FHE technique. Specifically, Engineering integrated FHE within the Security Intelligence OPENNESS.sec platform, demonstrating the possibility of securely and anonymously analyzing content extracted from open sources such as websites and social media.

In 2016, the project continued its work with the HC@WORKS project, with a view to seeking to overcome the gap between the prototypes developed in 2015 and potential end products capable of giving life to and supporting the industrial plan of a new start-up. The expected result was intended to formalize a commercial proposal based on the application of Fully Homomorphic Encryption for the adoption of this technique in the analysis in anonymous form of intercepted phone calls.



DIGITAL SOLUTIONS AT THE SERVICE OF NATURAL RESOURCES

Smart applications for sustainable development

Environment and energy, two sectors linked to the exploitation of natural resources and today increasingly linked to the technologies made available by the digital revolution.

ICT plays a pivotal role in the development of Smart Grids, smart applications for electricity transmission and distribution networks, which enable the delivery of reliable services and guarantee a permanent balance between energy generation and demand through the integration within the energy system of advanced systems and solutions also meant to resolve the issue of the volatility of energy generated by renewable sources. Through Big Data analyses, data streams from electricity power stations may be exploited to safely manage energy distribution networks. This is also true for checking for water leaks, which has become increasingly more important considering the scarcity of water as a basic resource.

between 34% and 38%

the share of energy generated by renewable sources (Italy)

26.5%

Italian businesses that invested in green products and technologies between 2010 and 2016³⁰

6.3 million

MWh of energy saved with Smart Energy

3.1 billion

cubic meters leaked from the municipal potable water distribution networks³¹

37.4%

volume of water injected into the network which does not reach end users³²

ENGINEERING'S RESPONSE

ICT represents the glue between supply and demand within the Energy & Utilities market. Due to significant problems linked to climate change and water scarcity, businesses are continuously seeking alternative and efficient methods for generating renewable energy and reducing emissions as much as possible.

For this sector, innovation is strategic and Engineering has been active for many years conducting a range of European-level projects to design and create innovative solutions supporting the integration of growing quantities of unprogrammable energy coming from renewable sources, which exploit its skills in the areas of Smart Grids, Micro Grids and energy storage solutions. The Company has also gained experience in the area of water network efficiency.

ELSA: ENERGY STORAGE SOLUTIONS

The ELSA project is developing a solution that integrates low-cost energy storage systems based on the use of second life batteries³³, supporting the Storage as a Service paradigm to optimize local energy management (addressing building and district managers) and to improve advanced network operations (addressing Distribution System Operators - DSO, i.e., the operating managers of electricity or gas distribution system maintenance and development in a specific area). Through this

³⁰ Greentaly, 2016 Report.

³¹ ISTAT 2014 Report.

³² ibid.

³³ Batteries recycled to create storage stations to store the electricity originating from renewable sources.

integration, it is possible to boost the flexibility of the energy distribution networks, allowing for the creation of Smart Grid solutions such as local balancing between supply and demand, the resolution of bottle-neck problems, the reduction of consumption peaks and the integration of renewable sources.

During the project, data models were studied and developed capable of guaranteeing interoperability between buildings, districts and DSOs and innovative business models enabled by the new energy storage as a service paradigm.

STORE&GO: INNOVATIVE ENERGY STORAGE TECHNOLOGIES

STORE&GO is a project funded as part of the Horizon 2020 Framework Program, Large scale energy storage, which aims to apply three innovative concepts of the new future energy storage technology, Power-to-Gas³⁴, in three plants located in Germany, Switzerland and Italy, facilitating the process of its integration within flexible systems for energy procurement and supply, with a large percentage deriving from renewable sources.

Power-to-Gas technology has the advantage of using the huge natural gas infrastructure at European level and may count on the continuous and growing spread of gas as a primary/secondary energy vector, which today is at risk for geopolitical reasons. STORE&GO therefore aims to demonstrate that Power-to-Gas processes can fill the gap between renewable energies and energy pro-

urement security, so as to overcome technical, economic, social and legal obstacles.

Engineering is responsible for the necessary adaptation and evolution of the INGRID pilot plant to favor its integration with the system for capturing carbon dioxide present in the atmosphere and with the methanation reactor.

To this end, it will specifically adapt the monitoring and control system for the proposed plant in order to deliver innovative optimization processes in which the storage hub will be meant to balance out energy production and demand requirements for the network manager.

GREENERNET: NEW ENERGY FROM RENEWABLE SOURCES

The GREENERNET project aims to develop a highly innovative organic redox flow battery integrated within an optimized Micro Grid infrastructure operated by a smart Energy Management System. The redox flow battery is a promising technology for the storage of energy from renewable sources and in medium- and large-scale grid applications, but it has its limits due to its high price, low energy density and the scarce stability of currently available electrolytic solutions.

The project is therefore meant to improve and create a 1 kilowatt prototype which uses a new organic material (anthraquinone disulfonate, AQDS) to develop an innovative low-cost 10 to 40 kilowatts per hour energy storage system (less than 150 euros per kilowatt/hour).

³⁴ Technology based on the conversion of excess electricity - generated by wind or solar plants - into water and methane.

INFORMATION TECHNOLOGIES AND PROTECTING THE ENVIRONMENT

by MASSIMO CRESTA

There is a very close relationship between the development of information technologies and environmental protection. Indeed, environmental protection will be increasingly guaranteed by the use of highly sophisticated control and regulation instruments based on IT networks and advanced telecommunications. Solutions which share useful information for the sustainable consumption of natural resources. This is why increasingly user friendly and widespread man/machine interfaces will be necessary across all sectors, including traditionally very specialized areas.

The consumer will play a central role in the management of natural resources. Also in the production of goods and services, through the IoT (Internet of Things) and considerable digitalization in industrial processes, the Industry 4.0 revolution will entail a reduction in environmental impact, owing precisely to information technologies.

Green products and processes are no longer a passing trend or simply fashionable. Today they are, and they will be even more so in the future, a fundamental business component in terms of competitiveness for businesses and for the development of new professions.

Green technologies represent an opportunity that should be taken advantage of, because "sustainable processes" require less use of natural resources, reduce costs, limit waste and use less polluting

products. The concept of sustainability cannot be seen only economically in a single phase, but it must be implemented in all business processes, from raw material procurement to the use and disposal of end-of-life products, with a view to evaluating the consumption of natural resources used overall.

Looking at what is taking place in our country, Italy is one of the leaders in Europe and in the world in an essential sector for the protection of the environment, that of the production of energy from renewable sources. In this area, the production of unprogrammable, or better fluctuating (which is generated only when there is wind or sun), energy brings up considerably critical issues for the security of the electric grid due to the problem of balancing between the energy generated and consumed.

One solution to this problem is the development of smart energy meters which provide users with real time information on consumption and on prices, so as to promote the greatest possible consumption of green energy generated by solar and wind facilities. This process cannot be carried out without the use of advanced IT instruments.

Other sectors which see Italy on the front lines in Europe are electric mobility, separated waste collection in cities, and control for air and water quality. And it is easy to understand that in all of these sectors, new information technologies are the enabling infrastructure for sustainable process management.

Massimo Cresta

ASM Terni Technical Service Manager

This type of battery exploits the electro-chemical characteristics of small organic molecules (carbon-based) that are easy to find in nature and are low-cost, “quinones”, which are similar to the molecules that store energy in plants and animals. The prototype developed will be integrated within a Smart Grid context for distributed energy applications, with a significant improvement compared to the existing technology.

Engineering will design and develop an innovative energy management system to optimize flows within the Smart Grid over a specific time horizon and in the form of a multi-vector energy system. Its development will be inspired by the electricity management and balancing platform (Energy Management System) developed by Engineering within the INGRID FP7 project co-funded by the European Union. The system will be personalized and expanded so as to adapt to specific requirements, conceptualizing and developing various models for the Micro Grid context and new strategic objectives within the residential and SME environments.

PUGLIA AQUEDUCT: AN INTEGRATED PLATFORM FOR LOCATING LEAKS

The search for leaks in pressure pipes is one of the most important problems in the management of water resources. With a view to providing a response to this problem, which concerns the aqueduct in Puglia as well, a Consortium was founded consisting of Engineering Ingegneria Informatica, Apphia and Idragest in order to design an integrated platform that makes it possible to

monitor and precisely identify leaks and support Puglia aqueduct operators in data analysis decision-making phases.

The system designed consists of:

- sensors that acquire the numbers to be monitored (pressure, water flow rate and acoustic vibrations)
- devices for the transmission of data from sensors to the control center
- advanced simulation, analysis and cross-correlation software to support decision-making.

The innovative aspects of the system are linked to the use of Fiber Bragg Grating (FBG) sensors³⁵, capable of simultaneously measuring the flow rate, pressure and acoustic vibrations of water. These are non-invasive measurement systems which do not require electric power, with advantages linked to immunity to electromagnetic interference, safety, resistance to oxidation/erosion and long-distance transmission capacity. In addition, smart analysis systems will be used in an integrated manner on the data generated by the aqueduct.

³⁵ A Fiber Bragg Grating (FBG) is a periodic modulation of the refractive index of the fiber core.



The image features a large, solid yellow rectangle that occupies the central and right portions of the frame. To the left of this rectangle, there is a vertical strip of white space containing several overlapping, colorful geometric shapes in shades of green, blue, red, yellow, and black. The text 'HUMAN capital' is positioned in the upper-left area of the yellow rectangle. The word 'HUMAN' is in a black, uppercase, sans-serif font, while 'capital' is in a bold, black, lowercase, sans-serif font. A small, horizontal, multi-colored bar is located directly beneath the word 'capital', mirroring the color palette of the shapes on the left.

HUMAN **capital**



• HIGHLIGHTS 2016

- 8,842 • Employees
- 731 • Employees abroad
- +866 • Employees hired in Italy
- +375 • Employees hired abroad
- +200 • Recent graduates hired
- 59% • College graduates
- 95% • Apprenticeship contracts transformed into permanent contracts
- 14,078 • Days/person of training provided to employees

THE PROMISES OF **TECHNOLOGY**,
THE ADVANTAGES DERIVING FROM **DIGITALIZATION PROCESSES**,
FOR BUSINESSES AND PUBLIC ADMINISTRATIONS
ALIKE, ARE FRAGILE ACHIEVEMENTS WITHOUT **THE**
CONTRIBUTION OF THE PEOPLE WHO GIVE **PASSION**, **VISION**
AND GUIDANCE TO THE **DISCOVERIES OF MODERNITY**.

OUR PEOPLE: INTERPRETERS OF THE FUTURE

G4-10 G4-LA10

What Engineering provides to technological development is first and foremost its wealth of skills, experience and quality consisting of the men and women within its organization.

The search for excellence is a complex and ambitious journey that can be completed only with a close-knit team of talented individuals who work together towards a shared objective.

The talent of Engineering is its 8,842 employees, an increase with respect to 8,136 in 2016, in addition to roughly 2,900 advisors for external IT services, distributed across the Italian territory and in the offices in Europe (Belgium, Germany, Republic of Serbia and Spain) and beyond (Argentina, Brazil and United States). Engineering's personnel has grown by 6% in Italy and by more than 50% abroad, reaching 731 also thanks to the acquisition of 196 new resources in Germany and the growth recorded by the Group's largest company abroad, Engineering do Brasil, which today relies on a staff of 483 people.

Women represent roughly 30% of the total, a significant proportion considering that most of the workforce is composed of technical graduates and software engineers, historically male professions. Personnel retention is good and outgoing turnover came to 8.9%³⁶, a substantially natural value and aligned with previous years.

A talent magnet

Engineering is bucking the trend of brain drain that sadly characterizes the Italian situation, by aiming to continuously seek out the very best that the job market has to offer.

An approach demonstrated by the fact that in 2016 the Company conducted a good 2,800 job interviews and viewed roughly 8,000 resumes, hiring 866 new people in Italy.

If these, 200 were recent graduates, confirming Engineering's recognition of the importance of young people and the contribution they can make to production processes in terms of fresh, new ideas. To do this, the company maintains relationships with the academic world, participating, inter alia, in job fairs to meet with young people (recent graduates) organized by a number of universities.

In addition, Engineering guarantees its support for specific dedicated projects such as "IG4U", the business game organized in 2016 by seven Universities (Polytechnic University of Bari, University of Calabria, University of Palermo, University of Salerno, University of Catania, "Federico II" University of Naples and "Tor Vergata" University of Rome), with a view to identifying and supporting new talent in Southern Italy.

The "TR35 2016 Young Innovators Prize" initiative also worked in this direction: this is a competition established by the Italian edition of the MIT Technology Review, the MIT journal for innovation, with the objective of selecting young innovators from the world of academic and corporate research.

The event, organized in collaboration with BBS - Bologna Business School, provided the opportunity to recognize the 10 best innovators in Italy broken down into three reference categories: Advanced Technology and Energy, Information Technology and Biomedical and Biotechnology. Engineering, selected due to its well-established sensitivity in listening to project proposals and offering growth process support, participated as a "Nursing Company" for the Information Technology category.

The Company also actively interfaces with the top Italian institutions: during the 2016 corporate kick-off a memorandum of understanding was signed between the Ministry of Labor and Social Policy and

³⁶ Figure as at December 31, 2016.



Engineering which called for the activation of a 6-month extra-curricular training internship with flexible locations for 100 young people enrolled in the “Youth Guarantee” program who aim to be hired with a professional placement apprenticeship contract.

The attraction of new talent within the Company also involves the use of internal leverage.

In 2016, Engineering confirmed the “Internal resume submission campaign” initiative, for the submission by all employees to the Company of the resumes of recent graduates they know (roughly 1,350 resumes received), which also provides prizes (bicycles or e-books) or 250 euro gift certificates for each successful submission.

Based on this initiative, 39 people were hired.

Attention: seeking IT professionals

Digital development requires professionals with specific skills, because those on the market today are not enough. This is the reality which marks the industrial sector today and sets up a significant challenge for all players. Indeed, currently one-third of workers active in the ICT arena have insufficient digital skills, a gap which, in 2020, will transform into a market deficit of 750,000 professionals³⁷.

To ward off this risk, the European Union launched the “Digital Skills and Jobs Coalition” in 2016, a partnership which brings together all parties concerned and the Member States to share best practices and reduce the digital skills gap in Europe.

Engineering participated in the coalition with the EDISON (Education for Data Intensive Science to Open New science frontiers) and “Program the Future” projects.

EDISON, of which Engineering is a founding member, is a project funded by the European Union which

aims to support and accelerate the process for the creation of the new profession of Data Scientist, an expert capable of extracting significant value from the data collected and managing the entire data lifecycle, including supporting the electronic infrastructure of scientific data.

On the other hand, Program the Future is one of the sixteen finalist projects for the European Digital Skills Award 2016, an award which aims to recognize projects that encourage people to develop digital skills for work, education and life in general.

Engineering has supported initiatives for the development of new ICT professions domestically as well. It contributed to developing content for and launching the second-level Master’s program in Data Science for the 2016/2017 academic year at the University of Perugia. It also contributed to the creation at the University of Calabria of the first master’s specialization course in Italy in the “Management and storage of digital documents”, for a role not yet adequately covered in the Italian training landscape.

Personal success is the Company’s success

G4-LA10

Boosting the retention of internal resources, enhancing their talent: this is Engineering’s objective, which it pursues not only by offering its workers a high-performance environment, but also through a remuneration policy which features a variable component linked to individual performance, as well as a performance bonus that recognizes individuals based on the Company’s overall results.

Engineering has committed to precisely defining the professional profiles assigned to each employee to build a homogenous and transparent career de-

³⁷ Digital competence observatory 2016.

velopment process with each staff member. This process was launched with the awareness that the professional development of the individual proceeds in parallel with the success of the Company. From this perspective, it was a strong proponent of the establishment of the MeM (Master in Engineering Management), a master's program for talent, i.e., for persons identified as figures with high potential, in which the Company chooses to invest in a targeted manner, in the context of the continuous growth of the skills of human resources.

The close correlation between professional profiles and their evolution through the tools offered by training is also supported by the company's IT system for requesting training modules, which filters access based on professional requirements consistent with the features of the course itself. The evaluation process started in 2006 has progressively expanded and now covers about 75% of the staff.

The values we believe in

Solidarity, security and the rewarding of merit are the basic ingredients for corporate cohesion. This is Engineering's philosophy, which is pursued by means of transparent and proper conduct in all worker relationships.

Underlying all of this is the desire to reward merit, a vital principle practiced in the management of human resources to guarantee the growth of the Company. Multi-annual hiring and orientation programs are defined for the integration of workers belonging to protected categories.

Close to our people

Being close to our employees means sharing with them the path towards the future that the Company experiences every day through its business. To do this, the company's strategy has focused on the local and capillary presence of the Personnel and Organization Department with a physical presence

in all the main offices: five in the north (Pont-Saint-Martin, Turin, Milan, Brescia, Padua) and five in the Center-South (Florence, Ancona, Rome, Naples, Palermo).

Even where it is not present territorially with an office, the Personnel Department ensures at least a weekly presence, which allows for a direct relationship with employees at all Italian locations.

An approach which privileges presence and physical vicinity is however tempered by the need to guarantee the required elasticity in those cases in which frequent interaction with customers, which are often far away from each other, or project characteristics, make it necessary to deploy new flexible forms of work, such as telecommuting (understood as the possibility of working for entire days from home) and smartworking (i.e., the possibility to alternate work from home and work at the office during the same shift).

In 2016, the experimentation of these new working methods involved 15 people with physical disabilities or with particularly inconvenient shifts.

The level of dialogue and listening between people belonging to different hierarchical levels is high, as is that between new recruits and the rest of the Company, which is also facilitated by an "open door" policy that has provided for the elimination of office doors.

To support this philosophy, Engineering organizes specific events where the management meets and converses with participants. In 2016, it also commissioned a survey on the degree of satisfaction of people who had worked with the Company for just a few years. To do this, a questionnaire was distributed to all apprentices who obtained permanent contracts starting from 2011, so as to analyze the various dimensions of career paths, such as the level of involvement in the activities carried out, the effectiveness of training opportunities, the degree of satisfaction of expectations, the level of compliance with

the role outlined and possibilities for growth. 76% of those who received the questionnaire responded and in general, there was a good average level of satisfaction.

Safe at work

G4-LA6

Reducing to a minimum the possibility of accidents in carrying out duties in the office and at the four Engineering Data Centers is an important objective. To meet it, the Company has adopted a series of measures:

- updating of types of risks and dangers for health and safety that can be traced to employees' activities
- correct management, updating and communication of internal policies and procedures drawn up and approved by the general management, published in the company intranet and sent to all collaborators for the correct carrying out of working activities in terms of accident prevention
- the provision of specific training activity in the classroom and in the field for the prevention of

risks in the workplace (in 2016, health and safety training hours increased by 40% with respect to 2015)

- the execution of internal, periodical verifications on the correct implementation of procedures.

To protect the health of its employees, Engineering established the Accident Observatory, which is responsible for carrying out all the appropriate tests for the detection of any failures in the safety management system in the area of programming, training, insufficient operating instructions, weaknesses in checks in working procedures, and inappropriate or unsafe tools, machinery or equipment.

The data gathered by these analyses confirm that the number of accidents that took place in 2016 is aligned with the results of recent years. The most frequent accidents (80% of cases) take place while driving on the road, either during commutes or when travelling to customer offices. To minimize the risk of accidents while travelling, the Company has published a dedicated guide with specific operating instructions and also has provided safe driving courses since 2009.

ACCIDENTS BY TYPE³⁸

	2014	2015	2016
Women	31	27	28
Men	53	54	53
Total number of accidents	84	81	81

ACCIDENT RATES³⁹

	2014	2015	2016
Frequency index	6.83	6.06	6.89
Severity index	0.12	0.18	0.16

³⁸ Around 80% of accidents are while travelling and regard personnel commuting to work or traveling to customer offices. The scope refers to Italian employees.

³⁹ INAIL frequency index: ratio between the number of accidents and a measure of the duration of risk exposure, both homogeneously delimited in time and space (territory, establishment, department, work area, etc.). Formula = total No. of accidents x 1,000,000/ No. of hours worked.
INAIL severity index: relationship between a measure of the debilitating consequences of accidents and a measure of the duration of risk exposure, both homogeneously delimited in time and space (territory, establishment, department, work area, etc.). Formula = [days of absence (excluding the day of the accident) + days of permanent disability x convention / No. of hours worked] x 1,000.

Promoting engagement and participation

Engineering promotes many sports and cultural events for its employees and collaborators.

These are significant opportunities for teambuilding, making groups more cohesive outside of traditional work activities and providing additional motivation to deal with complex challenges.

Experiences shared during free time are also an essential part of the business for Engineering, just as important as everything else. This is why it has activated initiatives like SkiChallENGe, the company ski tournament in which employees, relatives and friends are invited to participate.

On the cultural and recreational front, for ten years the Company has supported the Culture Project, an initiative aimed at all of Engineering's employees who have personal passions linked to literature, music, theater and painting. In recent years the project has supported the preparation of exhibitions and theater performances, as well as the publication of roughly 20 volumes of prose and poetry, donated to the authors.

New informational initiatives include the distribution to all employees of the press review (via email and video) regarding the company as well as special themes, with news regarding the world of technology extrapolated from the global media. The news is distributed on a daily basis via email and broadcast on the monitors in the reception areas of Engineering offices.

The INSIDE blog

The "INSIDE" company blog was created in 2016 with a view to creating a place for exchange and belonging. Presenting projects, case studies, events and company initiatives with a continuous focus on innovation topics, the blog was established as a tool for sharing and increasing the awareness of company life while enabling the exchange of opinions,

details and comments on the published articles.

INSIDE is written by a group of colleagues from the various Departments, but any employee can participate by flagging content of interest to the Company.

Let's build 2017

This year, the customary Christmas internal communication project asked our employees' children and grandchildren to create collages representing their favorite month of the year. The initiative encountered unexpected success: Engineering received a good 1,250 collages (750 responses in 2016). All of them were published online (www.eng.it/calendario2017), and some were included on the 2017 calendar that Engineering distributes more than 10,000 copies of to employees, customers and partners during the holidays.

Christmas for the children

In 2016, roughly 500 children of employees at the two Rome offices participated in a Christmas initiative which brought them to the theater, along with their parents, to see a unique show: the film "Harry Potter and the Philosopher's Stone" with the soundtrack played live by an orchestra of 80 musicians.

Support for education

For Engineering, education is a fundamental value, not only inside the Company, but externally as well. Such an important value is to be shared with the entire community of employees.

Based on this robust philosophy, Engineering works tirelessly for the social and cultural development of its employees and their families, by setting aside specific resources to support and incentivize second-level scholastic education and university instruction for the most deserving, based on principles of solidarity in light of the household's income situation.

Scholarships

Engineering has established 75 scholarships for employees' children through a specific program in the 2015/2016 scholastic/academic year:

- 25 scholarships with a value of 500 euros each for obtaining a high school diploma
- 25 scholarships with a value of 1,500 euros each for obtaining a three-year university degree
- 20 scholarships with a value of 2,000 euros each for obtaining a master's degree
- 5 scholarships with a value of 3,000 euros each for obtaining a master's degree in Information Technology or another scientific subject with an innovative thesis topic useful for developing the Company's activities.

Textbooks

In accordance with the criteria adopted for the granting of family benefits, the Company provides a contribution for the purchase of school books adopted by upper middle schools run or legally recognized by the state, provided the employee's child obtains an average grade of at least 7/10 or equivalent.

Training to stay ahead of the innovation curve

G4-DMA

Innovation is rushing forward, but Engineering's professionals are staying ahead of the curve. Indeed, staying ahead of rapid ICT development processes is the secret to the Company's success. An objective reached through a process of continuous training, considered a strategic factor to the point of founding an internal training school. To support this important structure and fund the numerous educational interventions proposed, every year Engineering invests more than 8 million euros in human capital.

"Enrico Della Valle" IT & Management School

G4-LA9

One of the Company's most exclusive assets is the "Enrico Della Valle" IT & Management School, inaugurated in 2000 in Ferentino, close to Rome, in order to meet internal demand for management and technical training, but also to exploit the experience and know-how gained in carrying out hundreds of projects throughout more than 30 years in the business. The School is located in a building surrounded by greenery with 16 computerized methodological classrooms, one Great Hall that can hold up to 140 people, a specialized library and reading rooms.

Training by the numbers

200 lecturers, 40% of whom are internal specialists with several years of training experience

5,812 learners trained during the year

20,007 days/person of training in one year

363 courses in the catalog

16 classrooms at the School in Ferentino (FR) and in the main company offices

50 clients that are among the leading national and international companies

801 professional certifications provided in 2016.

The School, recognized as one of the most prestigious IT training institutions at national level, is dedicated to the employees of Engineering and enables every individual to access a specific training program designed on the basis of their responsibilities within the Company, reference market characteristics and the objectives of the organization. Over the years, these courses have been combined with further courses targeted both at the development of managerial and entrepreneurial skills and at the acquisition of intangible skills (so-called soft skills) which are connected to the practice of daily work. Training opportunities are laid out in a catalog sent

to all employees, which represents an important support tool to guarantee the organization of activities. Thanks to this tool, managers are supported in orienting and defining the professional growth process of their employees. The catalog is also always updated and enhanced based on the work carried out within the Company as well as market requirements.

How to train at the School

Knowledge (technical and specialized skills), know-how (practical skills) and knowing how to be (behavioral skills): these are three major skills considered strategic within the great Engineering family.

And this is why the training opportunities provided by the School are broken down precisely into these three main areas:

- **Technologies** - courses dedicated to learning processes for the programming, analysis and design of hardware and software systems (for example, designing and implementing websites, mobile applications, complex Cloud systems, Business Intelligence and Big Data solutions)
- **Methodologies** - specific courses relating to learning methodologies and capacities linked to functional areas (e.g., Project Management, which represents 10%, Software Measurement, Demand Management, Service Management)
- **Management** - initiatives intended to favor the behavioral and managerial development of resources through the acquisition of transversal soft skills within a growth process that engages both the individual and the organization. The areas of analysis range from job analysis to experience and knowledge management, and planning training and advisory activities.

In addition, there are courses intended for specific professional categories such as apprentices, managers and project managers, which guarantee an ad

hoc training offering for these employee groups.

Aside from traditional training, the School is also a Testing Center accredited to provide valid certification exams that recognize the skills of Engineering employees for all technologies and methodologies present in the IT market.

In relation to these activities, the School awards an average of 1,000 professional certifications per year.

Using its experience accrued for Engineering and for clients whilst devising training aimed at obtaining the technical certifications, the catalog of courses presents several education solutions aimed at preparing for the certification exam on the main software technologies and environments that are currently on the market.

Among the recognized certifications, since 2006 the School has also provided courses for obtaining the Project Management Professional (PMP®) certification, which is now considered a fundamental point of reference for the internal staff entrusted with the management of projects, from the planning phase to conclusion.

During training activities, the Company analyzes and measures the level of satisfaction of the employees participating in the courses. At the end of every course, the participants are asked to answer a questionnaire of roughly 20 questions with topics ranging from the matters dealt within the course, to the instructor's skills, to the place where the course took place.

A second measurement instrument is instead aimed at all technical course participants and, using questionnaires, evaluates how much the course actually taught them and helped to improve their skills.

Lastly, a third level of verification takes place

through spot questionnaires or interviews.

In 2016, Engineering designed and implemented the learning management system ("FORENG"), an information system connected to the company's other IT systems which makes all information linked to company training (training catalog, information sheets on individual courses, course calendar) available in real time and in mobility, simplifying and increasing the effectiveness of employee planning and selection of training activities.

Internal training, a School for everyone

The internal training paths organized by Engineering demonstrate the importance that the Company places on the development of human resources and their professional growth.

This statement is confirmed by the numbers: in 2016, 3,426 employees participated in internal training activities, involving a total of 4,739 participants (824 more than in 2015)

Last year numerous courses were designed ad hoc and verticalized based on the specific training needs of Group employees.

- The introduction of new WBT (Web Base Training) multimedia courses created by the School's team and verticalized based on the Company's needs; the first modules introduced regard Project Management topics and, at the end of 2016, they were provided to roughly 200 employees.
- The company manager training projects for language training, through individual English, French and Portuguese language courses (in "full immersion" mode in some of the major European cities), as well as the strengthening of fundamental skills relating to the management of human resources, cost centers and the analysis and interpretation of new scenarios in the IT world.
- The educational activities for the purpose of obtaining professional certifications for Engineering personnel on the main technologies and methodologies in the IT world. Through these training actions, more than 800 employees successfully passed the exams in 2016, obtaining prestigious certifications such as PMP, ITIL, Prince2, Microsoft, Oracle, SAP, Cisco, VMware, RedHat and others; this result was also possible thanks to the accreditation of the Ferentino School as an official Testing Center and the continuous refinement of specific intensive courses to prepare for exams.
- The launch of a new series of monthly seminars at the IT & Management School dedicated to the impacts of the Digital Transformation and IT Innovation in the business models of companies, named "Innovation Tuesdays". Entrusted to sector experts and exceptional instructors, the series dealt with concepts such as the Sharing Economy, Industry 4.0, Social CRM and others, starting from an analysis of real cases of success and the main epic fails, outlining the impact that innovation has had on the surrounding social and cultural scenario as well as the new opportunities and business models it is able to generate.
- The completion of the company Master's program MeM: Master Engineering in Management, which, with excellent educational content, met the goal of enhancing the profile of 53 highly specialized young managers who are expected to take on increasing responsibilities within the Company over the medium term. The Master's program involved the participation of prestigious university instructors and testimonials from the world of Italian industry and journalism as part of 11 residential training modules lasting for three days each, focusing on topics relating to the management of human resources, the development of individ-

ual capacities and relevant information about the international and company economy.

- The Company orientation program (“induction program”) for the benefit of the many young people hired in 2015/2017, structured into dedicated residential training courses with a view to illustrating the history, values and foundational principles of the “Engineering culture”, as well as the development of communication and teamwork skills.
- External training activities, which saw the participation of a total of 334 employees in 303 training courses and conferences in Italy and Europe in the areas of methodology, technology and project management.

PARTICIPANTS BY COURSE TYPE

	2015	2016
Total Courses	3,849	4,739
Technological	1,437	1,281
Project Management	649	453
Methodological	984	1,255
Individual development	382	672
Non-catalog initiatives (MeM, apprenticeships, etc.)	397	1,078
Person days/training internal learners	12,452	14,078

PARTICIPANTS BY PROFESSIONAL LEVEL

	2015	2016
Employees	30.50%	39.90%
Middle management	36.50%	49.00%
Managers	29.00%	50.90%

% of total by professional level

Training for outside participants

Engineering training leaves the Company and arrives in the market, favoring the circularity of information and skills while working alongside public and private organizations in all ICT sector areas.

Indeed, since 2009 the training opportunities organized by Engineering have also been made available externally, through in-depth courses on aspects linked to Project Management, technological platforms, IT Service Management (ITIL courses) and software measurement techniques, and support with respect to Change Management and the development of management and soft-end skills.

This has resulted in a broad training offering that is structured on the basis of market trends and needs and where roughly 40% of the instructors are internal employees of the Company.

Educational opportunities are organized based on differentiated training paths structured in relation to level of access, roles and objectives to be achieved, analysis of the reference market, and the areas of specialization of the customers receiving training.

The School is capable of responding to diverse customer needs through the design of training activities in traditional mode, i.e., at the Ferentino loca-

NO. OF EXTERNAL PARTICIPANTS

	2015	2016
Total	1,667	2,386

DAYS OF TRAINING PROVIDED TO EXTERNAL PARTICIPANTS

	2015	2016
Total	5,713	5,929

tion, or at the customers' premises or remotely and mixed (blended learning), thanks to the use of innovative interactive and multimedia channels which enable educational projects based on e-learning, edutainment and mobile training techniques through smartphones and tablets. These modes of delivery offer advanced knowledge management environments with the lowest economic and environmental impact, since they reduce to a minimum the emissions of CO₂ resulting from the movement of trainers and trainees. They also allow for extending the range of action of the training intervention and are particularly suitable for the creation of groups.

The numbers also bear witness to the success of this choice, and indeed at the end of 2016 roughly 50 external customers relied on the professional skills of the School, for a total of 2,386 participants and 5,929 hours of training.

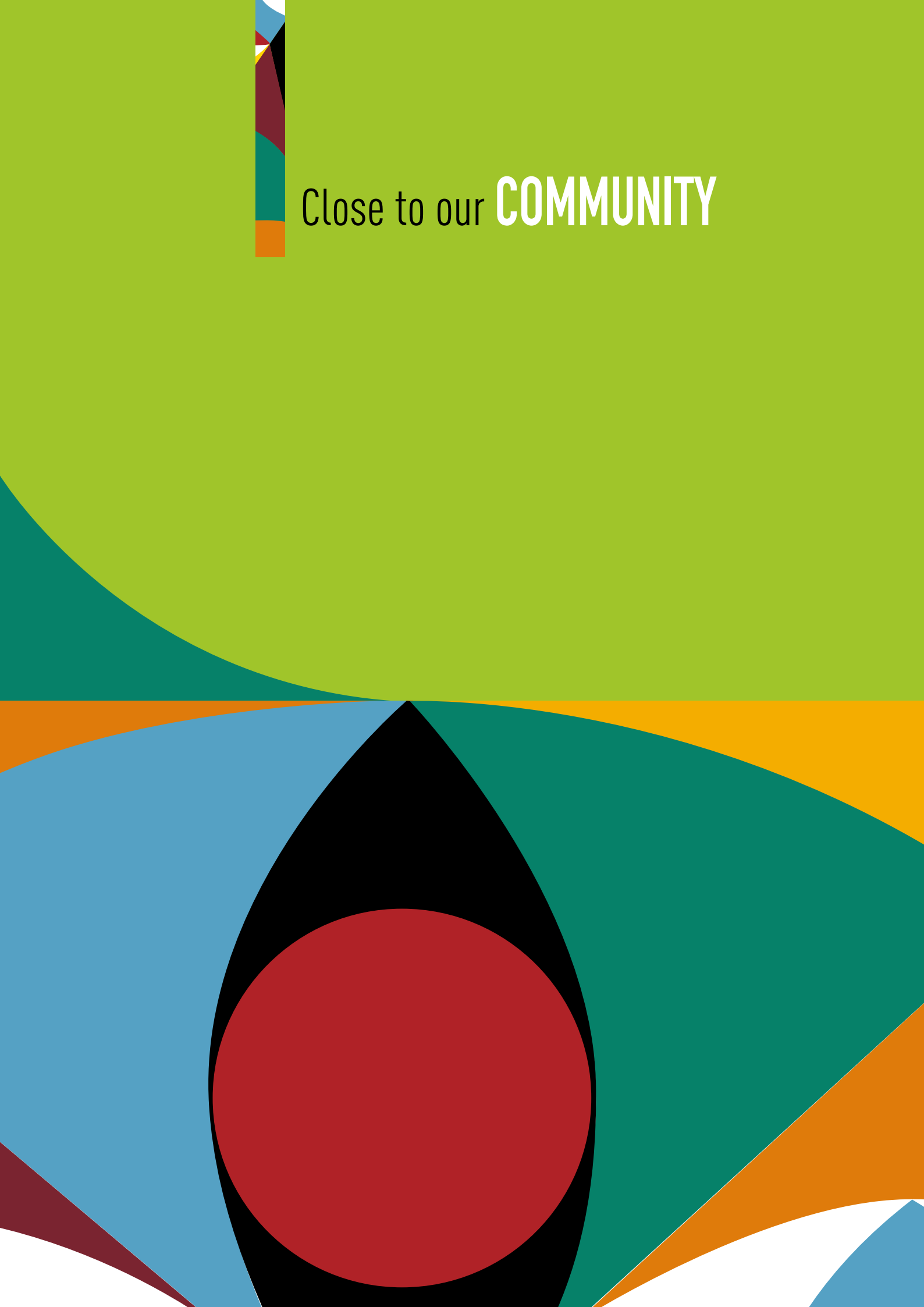
One of the major projects was that carried out in collaboration with ARSIAL, the Regional Agency of Lazio for Development and Innovation in Agriculture, in which more than 200 people participated for a duration of more than six months. The training initiative involved managers, middle managers and employees at the Agency within a path of Change Management intended to provide team building, team coaching, models of conduct and vision building tools.

Another significant project, which continued in 2017, regarded Poste Italiane and provided specific IT Service Management training to more than 300 people. In particular, the course presented guidelines on how to deliver, manage and control the quality of IT services and on how to adapt and integrate the necessary and adequate human and structural resources to support IT.





Close to our **COMMUNITY**



CAPACITY TO LISTEN AND INTERPRET
THE **NEEDS** OF INDIVIDUALS AND THE **COMMUNITY**
AND **SUPPORT** INITIATIVES AND PROJECTS
FOR THE **COUNTRY'S CULTURAL AND SOCIAL** GROWTH.



INITIATIVES AND PROJECTS FOR THE GENERAL PUBLIC

Engineering, which has always been close to its community, is committed to supporting initiatives that have a positive impact on the general public.

Indeed, the Company supports a range of academic/scientific, artistic, cultural and social projects that are local and national in scope, by providing people, expertise and technological skills when necessary and also collaborating in projects to increase the country's computer literacy.

MAXXI - National Museum of XXI Century Arts

The objective of the three-year partnership between Engineering and MAXXI - National Museum of XXI Century Arts in Rome is to carry out and technologically support museum projects and back contemporary creativity in all of its forms: art, architecture, dance and photography. Experimenting, designing and innovating are the key words of this collaboration, which has already seen the implementation of two projects: JACK and VIRTUAL MAXXI.

JACK Contemporary Arts TV is the first international web television channel dedicated to contemporary art and its protagonists. When the project was launched, it had already developed links between 14 international centers of excellence for experimentation and production in 7 different countries.

VIRTUAL MAXXI is a virtual reality exhibition of the great masters of Architecture on permanent display at the museum, for which Engineering handled the creation of the app used by visitors and the digitalization of the architectural models featured in the exhibit.

“Engineering’s Art Project - Writing on Wall” competition Art at the Vicenza office

Created as a competition of ideas to redesign the walls of the Vicenza office and involve students from

the Verona Academy of Fine Arts, “Engineering’s Art Project: Writing on Wall” was transformed into a permanent exhibit featuring exquisite works and unexpected participation.

The competition saw the participation of more than 50 students who created works using a variety of techniques dealing with the topic of the Cloud in all of its different facets: data, space, philosophy.

The project closed with the reproduction of the winning works on the office walls. During the inauguration ceremony, the walls were signed by the artists: Steve Ingham, Hoti Xhimi, Rabeah Mashinchi, Giacomo Segantini, Ganna Manakova, Stefano Todeschini, Riccardo Camino, Thomas Caprini and Monica Piccoli.

The Doge’s Palace in Venice in 3D

Engineering sponsored the conference entitled “Sensorial paths: the Doge’s Palace in Venice in 3D”. The event is intended to promote regional fab-labs (small-scale workshops offering personalized digital fabrication services) which, through digital technologies, provide solutions with a high social impact.

On this specific occasion, the goal was to promote the use of digital technologies to support the blind. The digital laboratory, created thanks to regional financing as part of the “Sensorial paths” project, involved the creation of a three-dimensional model of the Doge’s Palace which, once printed in 3D, will allow for its exploration by the blind. The initiative’s sponsors also include the Civic Museums of Venice, the Italian Union of the Blind in Venice and the Veneto Region.

The Jubilees in the history of Rome

During the Jubilee of Mercy, the “Antiquorum habet” exhibit was presented at Palazzo Giustiniani in Rome. Engineering contributed to designing the exhibit website, created to offer a guide to visitors as well as an expansion of the exhibit itself, with images and descriptions that did not fit in the exhibition due to space

constraints. Indeed, it is possible to view 1,400 images taken from more than 600 works on the website, along with the pertinent descriptions. This “multimedia catalog” may be consulted in Italian and English from the five computer stations located in the exhibit rooms.

Codemotion Roma 2016

Engineering supported the sixth edition of “Codemotion Roma”, the largest technical conference of the year for software developers, with a network of 40,000 developers and speakers from all over the world. The top experts in the field met at the Department of Engineering at Roma Tre University, where there were more than 100 planned events in which over 2,000 people participated.

The talks covered relevant topics such as security, front-end/back-end, mobile, Internet of Things (IoT), devops, Big Data, Cloud and Start-ups.

Workshops were conducted, spaces were made available to young developers, maker areas were provided and there was a large showcase for offering and seeking tech jobs.

Engineering was present during the days of the conference to meet with students, recent graduates and experienced professionals and to raise awareness with respect to the Company’s skills. It also accepted applications for the profiles of greatest interest.

Let’s get ready for our future starting with the schools of today

The Digital Transformation brings with it both benefits and complexities: one of these is represented by the skills required to enable future citizens to “understand” and “speak” digital languages. Engineering is working on the front lines in schools to make its own contribution to the acquisition of digital skills by new generations.

Through its volunteers, Engineering has participated in the activities of educational institutions in many

Italian cities on a range of projects:

- for the Week of Science and the Night of Researchers, several students from Rome and Frascati developed a videogame set in space using Scratch, a visual programming environment developed by MIT in Boston
- 32 Roman high school students participated in a work-study initiative and in turn played a pivotal role themselves at events held with other elementary and middle schools to introduce coding to another 250 students
- in an event in suburban Padua, many children and young people were introduced to parallel programming through un-plugged games
- several unified schools were supported to enable roughly 1,000 students to do one hour of coding
- in certain Roman schools, Engineering volunteers contributed to upgrading IT labs by reinstalling open source software and reconfiguring the network.

Engineering for Telethon

One more year with Telethon. In 2016, Engineering confirmed its sponsorship of the fifth edition of the “8x20 BNL Relay Race for Telethon”, with three teams of marathon runners who participated in the race held on December 18 in Piazza di Siena, at Villa Borghese.

Since 1990, the Telethon Foundation has secured resources to fund the best scientific research projects on muscular dystrophy and other genetic diseases.

Forum Terra Italia: let’s protect our planet

Engineering was one of the sponsors of the fourth edition of Forum Terra Italia. The conference program, promoted by Earth Day Italy and focusing on sustainable development matters, investigated the topic of “Education to Safeguard the Planet” and featured the participation of Minister for the Environment Gian Luca Galletti.

During the event, the Reporter for the Earth 2016 prize was awarded to journalists and photographers who have worked with distinction on environmental topics.

Ingenium Magazine

From a hard copy publication to a web magazine, 2016 marked the return of Ingenium, the Engineering company magazine founded 30 years ago which, until 2000, acted as an informational and cultural point of reference on the most innovative technological subjects.

The new magazine, founded in collaboration with Tech Economy, provides a space for discussion and debate on innovation and digital transformation matters: an information portal to help readers understand ongoing changes in our economy and society. One of its objectives is to support organizational growth and evolution processes with a view to the central role of data and information as instruments for activating digital transformation.

It was founded with the awareness that to promote innovation, it is necessary to develop culture, and due to the possibility of drawing upon the considerable amount of concrete experience Engineering has gained in this area.

Ingenium makes reference to concrete experience and actual projects, which are the real resource for telling the story of innovation through the voice of those who practice it every day, in companies and institutions alike. The magazine deals with the topic of Digital Transformation by illustrating how phenomena like Big Data, Social Media, the Internet of Things, Industry 4.0 and the Sharing Economy are based on the capacity of companies to interpret and read the ever increasing amounts of data available to them. And this is a cultural, even more than technological, theme.

ON WOMEN, SPECIAL PROJECTS AND SECOND CHANCES

by SONIA MONTEGIOVE

Engineering supports Socially Made in Italy breathing new life into communication materials and so much more: Concetta Lattanzio and Caterina Micolano tell the story of the initiative in Ingenium, the magazine of Engineering and Tech Economy.

www.ingenium-magazine.it

11 top artisanal laboratories in 11 different Italian penitentiaries, 60 female detainees and 10 male detainees employed, a social cooperative, Alice, which celebrates 25 years of supporting the reintegration of detainees within society, recidivism which declines to 10% when people in prison are put on a path towards honest work. These are the data that briefly describe a reality and a social project. The "Who we are."

The "How we are," instead is not only about data, but also about stories. Such as the story that we have decided to tell to speak of women, of new blossoming, of second chances, which are not second hand.

"Every year," notes Concetta Lattanzio, "we participate in dozens and dozens of events, seminars, stands and trade fairs and every time, along with our talks, we present communication materials that tell our story: roll-ups, banners, panels, almost always in PVC, which display our image, our slogans, the number of employees, the offices, the Group companies, the countries in which we work. These are materials that often end up in warehouses or, as we have demonstrated with our collaboration with Socially Made in Italy, can be given a second chance."

Indeed, thanks to the work of female detainees at the Venice prison, Engineering's PVC items are transformed

into beautiful bags and eco-friendly products, which were presented during the most recent company Kick-Off. “We recovered, measured, cleaned, packaged and sent everything to the Venice prison,” Concetta continues. “And all of this has a meaning which goes well beyond the mere desire to re-use materials for conservation purposes. Especially because the proceeds from the sale of these repurposed items will be invested to finance training courses for young female detainees, who thus will be able to develop professional skills and build a future for themselves.”

“Nothing socially rehabilitates adults more than work:” this is how Caterina Micolano, who has worked with prisoners for more than 22 years, introduces this project. “It practically does more than a life sentence,” she jokes. “Dignity and social roles come from work, and this is why we believe it is fundamental to be able to help people to re-build their careers through social entrepreneurship, which aims for competitiveness. If Alice has such a long history, this is precisely because it has always aimed to manufacture items by employing people in difficulty, without basing its business model more on emotion than on the guarantee of quality. The products that we create in prison are sold because they are well made and are competitive in the marketplace.”

So, no philanthropy here, just turnover. No feminism in the involvement of women, but just one necessity: that of lending more of a helping hand to imprisoned people living in poor conditions.

In Italy, female detainees represent less than 5% of the total detainee population (there are roughly 2,140 female detainees) and are housed in five women’s prisons (Trani, Pozzuoli, Rome Rebibbia, Empoli and Venice-Giudecca) and 52 units for women. The very low percentage of women in prison decreases the “visibility” of the context in which they are detained: they are forced to experience a reality made and designed in terms of structure, rules,

relationships and living conditions by and for men. “Women not only live in worse conditions,” Caterina continues, “but they also have many fewer training and recreational opportunities than their male counterparts. And this is why our first laboratories were designed to give them an opportunity.”

Tailoring services, labs that create accessories in PVC, leather and hides under the “malefatte” brand, a cosmetics laboratory, an organic garden, a silk-screen printing system for fair and ethical trade t-shirts, collaborations with expert artisans and large brands, a production system (Sigillo) certified by the Ministry of Justice which attests to compliance with sector union contracts. So much has gone into setting up the social cooperative by investing in people, in their potential.

“Thanks to the support of promoters of Made in Italy and high fashion, who believed in our project,” Caterina continues, “we have been able to significantly upgrade skills, which has resulted in the transformation of reconstructed products into real fashion statements.”

Excellent workmanship done with scraps generated by the fashion industry, which would just go on to pollute our environment if they were discarded.

Concetta concludes, “their products tell the story of commitment, ethics and environmental consciousness: every one of their products is special because it brings with it the story of the hands that created it, made of complicated pasts, a present marked by determination and expectations of a brighter future.” Second chances. Second lives. Often better than the first ones.

Concetta Lattanzio

Communications Director at Engineering

Caterina Micolano

Project Manager of the Alice Cooperative

GREEN is the color of the future





ENVIRONMENTAL AND SOCIAL VALUES ARE THE PILLARS
OF THOSE WHO DO BUSINESS IN THE ERA OF **SUSTAINABILITY**
TO **PROTECT** THE COMMUNITY AND PEOPLE AND **DESIGN A**
NEW WAY OF LIVING TOGETHER.

ENVIRONMENTAL IMPACTS OF THE BUSINESS

Engineering is not a manufacturing company, so its impact on the environment is associated with its 4 Data Centers and its roughly 50 company offices present in Italy and worldwide, which have an environmental footprint similar to that of urban users, mainly involving waste, power and water.

Nonetheless, the Company has implemented an environmental management system which has been awarded certification according to the international standard ISO 14001, and in 2015 it also added the subsidiaries Municipia, Engineering D.HUB and Engiweb Security located in Naples, Palermo and Rome.

The main environmental impacts that can be traced to the Engineering Data Centers (Pont-Saint-Martin, Turin, Milan and Vicenza) are composed of electronic waste production and electricity consumption.

The main energy consumption in a Data Center comes from computer equipment, ranging from cooling systems to ventilation systems and electrical distribution. The Data Centers also manage the information technology infrastructure on which the roughly 50 Italian offices rely for their remote activities.

One last element to be considered in calculating environmental impact is that deriving from atmospheric emissions resulting from the travel of personnel and the water used for cooling at the Pont-Saint-Martin Data Center.

Pont-Saint-Martin: the points of excellence of the Green Data Center

The Data Center at Pont-Saint-Martin, in Valle d'Aosta, was created in 1998, employs about 350 resources and houses the main service and governance hub of Engineering's IT activities, with the management of more than 7,000 physical and virtual systems.

This is an example of a state of the art plant in Italy in terms of environmental sustainability. In 2011, a

geothermic system inside the plant was inaugurated, which supports the cooling systems on which the Company commissioned an executive expansion project undertaken in 2016.

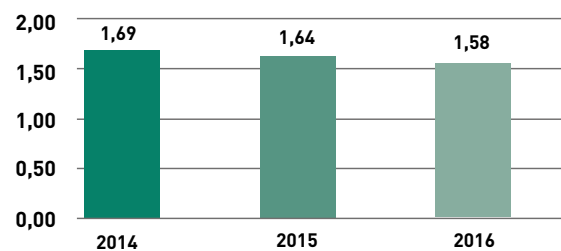
The geothermal plant provides for the use of low-temperature water, taken from two wells specially built at 40 meters' depth at a temperature of 13 degrees, which is then cooled to about 7 degrees. The plant sends water to the Data Center cooling systems, with effects on energy saving, quantified at a 12% reduction, i.e. 1.3 GWh since 2013.

WATER

	2015	2016
Withdrawals of water from the ground*(millions of m ³)	1.19	1.17
Discharges of industrial wastewater from cooling (millions of m ³)	1.19	1.17

* The water collected is only for cooling the Pont-Saint-Martin Data Center and is not subjected to any industrial process other than the change in temperature; the increase in the flow rate has no significant impacts on the environment. The return temperature of the water in the Lys river complies with the regulations stipulated in the disciplinary rules of the concession of the Region of Valle d'Aosta.

PUE OF THE GROUP'S DATA CENTERS*



* The Group's average PUE for 2016 was calculated excluding the data centers in Rome, which as of 2016 is entirely owned by the customer ADR, and in Assago, which was sub-leased to the company Infracom with the full management of engineering activities; since 2016, Engineering has managed only two rooms under co-lease plus a TLC room whose energy consumption is reported in the table, but for which the consumption of absolute continuity and air conditioning systems (ICT consumption) on which PUE is based cannot be estimated.



The building has a control room, bunkers and several utilities: electricity, geothermics, refrigeration plants, management and control system of plants (fire, safety, electrical, technological) and fire extinguishing plant for technological systems. With reference to the enlargement project, Engineering has recently been awarded a concession to increase the collection and return of ground water.

In 2016, the Pont-Saint-Martin Data Center reached a PUE (Power Usage Effectiveness, the measure of energy sustainability) of 1.53. According to the standard definition by the international body

The Green Grid, this parameter indicates the ratio between the overall electrical consumption of a Data Center (air-conditioning, ventilation) and the consumption of the IT equipment alone.

To have an efficient level of consumption, the PUE of a Data Center must be below 3.

A value of 2 represents a high level of efficiency, while values around 1.5 are considered to be excellent.

Personnel in movement G4-EN15

In 2016, Engineering's personnel travelled more than 39 million kilometers throughout Italy⁴⁰.

This significant figure confirms the Company's philosophy of constantly remaining in close contact with its roughly 1,000 customers. This movement was enabled by the fleet consisting of more than 1,000 vehicles on long-term lease.

In 2016, the car fleet grew by roughly 40 units, but the total kilometers agreed by contract in favor of the entire company fleet was lower than the total kilometers set for the previous year.

GROUP DATA CENTER ENERGY CONSUMPTION*

Data Center Year	Pont-Saint-Martin			Turin		
	2014	2015	2016	2014	2015	2016
Electrical energy consumption Gigawatt/hour	12.50	11.90	11.55	2.10	2.00	1.95
Electricity consumption GigaJoules	44,800	42,840	41,600	7,700	7,200	6,990
Power Usage Effectiveness (PUE)	1.53	1.53	1.53	1.80	1.80	1.80

Data Center Year	Vicenza			Assago		
	2014	2015	2016	2014	2015	2016
Electrical energy consumption Gigawatt/hour	3.47	2.82	3.08	10.60	3.29	2.03
Electricity consumption GigaJoules	12,500	10,141	11,088	38,000	11,832	7,308
Power Usage Effectiveness (PUE)	1.60	1.60	1.61	1.90	1.90	n.a

* In 2016 the Assago Data Center was sub-leased to the company Infracom which manages all engineering activities; since 2016, Engineering has managed only two rooms under co-lease plus a TLC room whose energy consumption is reported in the table, but for which the consumption of absolute continuity and air conditioning plants (ICT consumption) on which PUE is based cannot be estimated. The Rome Data Center is managed under an outsourcing agreement by Engineering, but it is owned by the customer ADR which is responsible for energy consumption. The Padua Data Center was decommissioned in 2016, but in the first part of the year it consumed roughly 1,620 GJ which is also included in the table of total energy consumption.

⁴⁰ Kilometers travelled estimated based on average annual mileage bands provided by the rental company.

CORPORATE FLEET DATA (ITALY) (diesel/electric - gas/electric) and two electric vehicles

	2013	2014	2015	2016
Km travelled	37,320,000	38,890,000	39,435,000	38,826,500
Diesel consumption (Ton)*	1,898	1,947	1,926	2,017
Diesel consumption (GJ)	82,253	84,354	83,032	86,452
CO ₂ (Ton)**	5,912	6,064	5,999	6,063[20]
gr CO ₂ /Km	158.4	155.9	152.1	156.2

* Data calculated by using fuel costs per year divided by the average consumer price of diesel (2013-2016) provided by the Ministry of Economic Development.

** Diesel emission factor 3.006 tCO₂/t fuel. Source: ISPRA - Italian National Institute for Environmental Protection and Research, database of average emission factors of road transport in Italy.

DATA ON ENERGY CONSUMPTION AND CO₂ EMISSIONS OF THE OFFICES * G4-EN16

	2014	2015	2016
Electricity consumption (kWh)	6,698,939	7,376,845	8,398,321
Electricity consumption (gWh)	6.699	7.377	8.398
Electricity consumption (GJ)	24,116	26,557	30,233
CO ₂ emissions (t)**	2,726	3,002	2,645

* The data calculated precisely from this year does not include all the sites, just the main offices in Italy. Reported kWh value does not include the few "temporary offices" where all-inclusive services are offered (including electric energy).

** 2016 data conversion factor: 315 grams CO₂/kWh Source: Terna 2014 International Comparisons.

DATA CENTER ELECTRIC ENERGY

	2013	2014	2015	2016
Electricity consumption (KWh)	34,000,000	31,370,000	22,200,000	18,610,000
Electricity consumption (gWh)	34	31.37	22.2	18.61
Electricity consumption (GJ)	122,400	112,800	79,905	66,986
CO ₂ emissions (t)*	13,838	12,768	9,035	5,862

* 2016 data conversion factor: 315 gr CO₂/kWh (Source: Terna 2014 "International Comparisons: CO₂ atmospheric emission factors").

TOTAL CO₂ EMISSIONS AND ENERGY (ITALY) G4-EN16

	2014	2015	2016
Total energy consumption (GJ)	221,270	189,494	183,671
CO ₂ emissions (t) [Scope 1]*	6,064	5,999	6,063
CO ₂ emissions (t) [Scope 2]	15,494	12,050	8,508
Total CO ₂ emissions	21,558	18,049	14,571

* Consumption and CO₂ emissions of the company car fleet.

Its management entails automobile usage broken down into three categories: employees, middle managers and officers/managers and general managers.

The company's policy on staff movements places special emphasis on fuel consumption and emission limits. Indeed, Engineering's objective is to reduce the average fuel consumption threshold, resulting in a decline in CO₂ emissions as well.

Since early 2013, a new hiring policy was approved, which foresees an obligation for the first band of cars (for middle management and employees) to limit consumption to below 4.2 liters of fuel per 100 kilometers on the combined cycle. The second level (upper middle management and executive managers) have a limit fixed at 4.6 liters per 100 kilometers.

Electronic waste management G4-EN23

The matter of collecting and disposing of electronic waste regards in particular the Data Centers and the replacement of the systems inside them. In 2016, the components replaced amounted to 39.82 tons.

To reduce their impact on the environment to a minimum, all electronic waste produced is firstly analyzed at the two storage centers in Rome and

Pont-Saint-Martin and then transferred to specialized and certified firms for the proper recovery of materials. The sustainability of electronic waste at the Data Centers is guaranteed by the fact that it is for the most part reused in other industrial sectors.

Aside from Data Center waste, another category of electronic waste is represented by used company office computers. To best optimize their management, Engineering has implemented a virtuous system in the Italian offices that on the one hand makes it possible to contain the costs of purchasing new PCs and on the other hand has a more limited impact on the environment with a lower average standard production of electronic waste related to PC replacement.

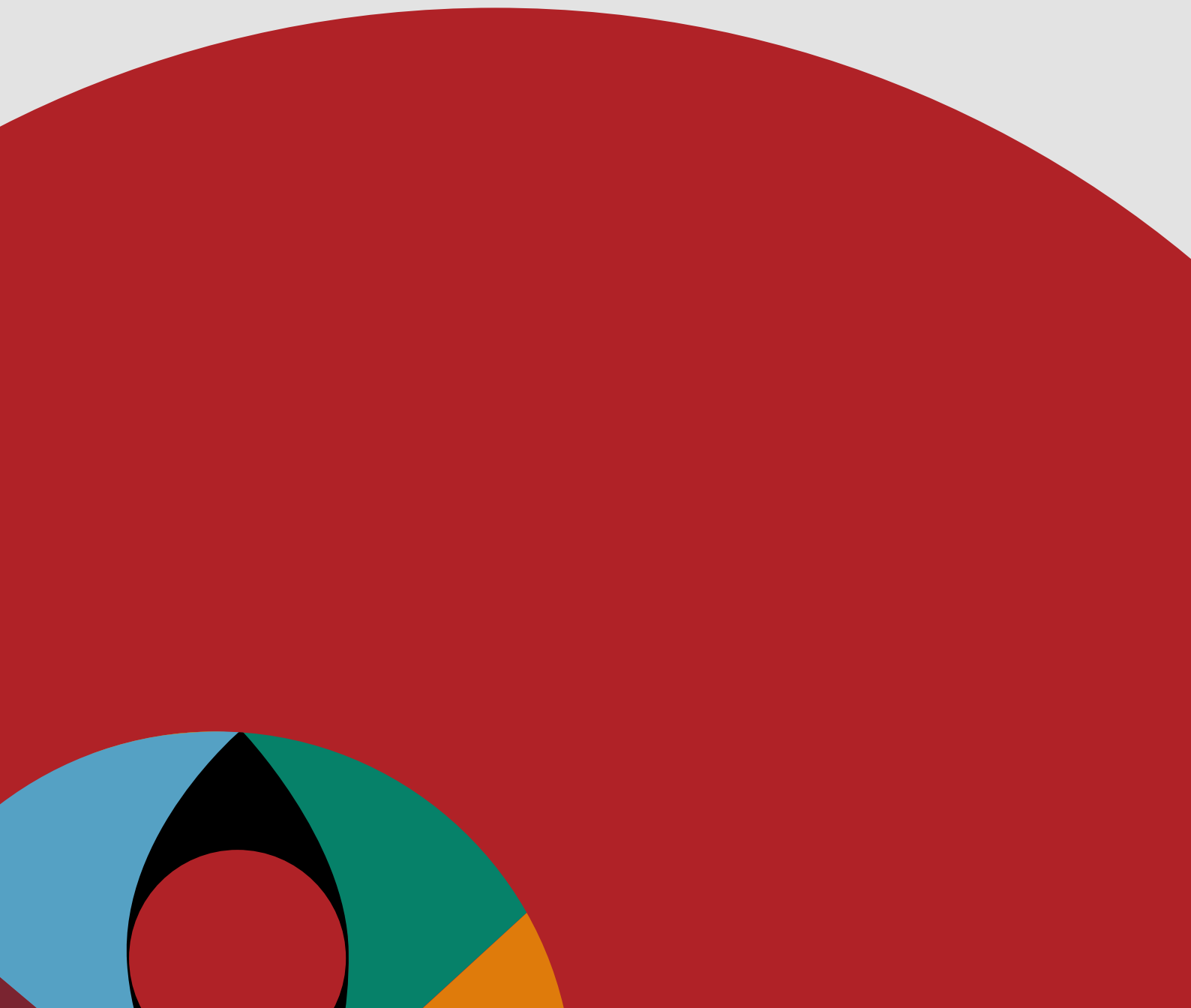
For many years, thanks also to the acquisition of specific skills and by reason of the high number of PCs in use at the Company in Italy, Engineering's Technological Infrastructure Services (SIT) office has created a dense and efficient network for the purpose of restoring damaged computers by simply substituting components, just as might happen within a mechanical workshop. This is an example of how an approach to sustainability can, in most cases, also generate a containment or a reduction of business costs.

ELECTRONIC WASTE

	2014	2015	2016
Tons produced	32.54	37.38	39.82
<i>of which:</i>			
Transferred to specialized and certified companies for correct disposal	32.54	37.38	39.82



APPENDIX







METHODOLOGICAL NOTE

G4-3 G4-5 G4-14 G4-17 G4-18 G4-22 G4-23 G4-28 G4-29 G4-30 G4-31

Engineering's fourth corporate social responsibility report has been written in compliance with the core option of the "G4 Sustainability reporting guidelines" published by Global Reporting Initiative (GRI).

On p. 94, there is a correlation table between the material topics, the GRI indicators and the contents of the document. In accordance with the provisions of the G4 guidelines, the process of drafting the report provided for the identification of the most significant aspects to report in accordance with the "materiality principle".

This approach is also reflected in the structure of the report, the core of which: "Making Italy a more modern country", "Human Capital" and "Green is the color of the future" includes the main Corporate Social Responsibility challenges related to the ICT sector. Engineering's corporate social responsibility report refers to data, projects completed and services pro-

vided by the organization in 2016 and reports the main impacts deriving from the Engineering projects, with a particular focus on Italy, where the Company carries out most of its operations and gathers most of its revenue.

The report also contains information about foreign subsidiaries in terms of mission, activities and staff composition, while the environmental data only refers to Italy. The economic-financial data presented in this Corporate Social Responsibility Report are the same as those published in the 2016 consolidated financial statements, the audit of which was carried out by Deloitte according to the principles and criteria recommended by CONSOB.

For additional information, it is possible to write to the email address: csr@eng.it

MATERIALITY ANALYSIS

G4-18

Accepting the solicitations from the G4 guidelines, which foresee a focus on reporting of material topics, in 2016 Engineering completed an update of the materiality analysis to identify the most important topics. The report's G4 content and indicators have therefore been prepared based on the results which emerged by connecting the list of material themes with the GRI-G4 guideline indicators.

The process of analysis

The materiality analysis started from the discovery of the issues generally recognized as important because they have been reported by a framework recognized at international level, the GRI-G4 guidelines, generally considered to be representative of the perspective external to the Company as identified in the context of multi-stakeholder discussions and debates at international level.

We then went on to assess the sustainability issues treated within business documents such as policies, internal procedures, the Code of Ethics and the previous Corporate Social Responsibility Reports.

The second phase for the identification of material topics has aimed at identifying the aspects of sustainability more closely related to the business of Engineering and relevant to the field of Information

Technology and the reference scenario. With this objective, the following were analyzed:

- the GRI (Global Reporting Initiative) document "Sustainability Topics for Sectors: What do stakeholders want to know?" as regards the "Software as a Service" sector
- the SASB (Sustainability Accounting Standards Board) Materiality Map as regards the "Technology and Communications" sector and, in particular, the "Software as a Service" sub-sector
- the report of the GeSI (Global e-sustainability Initiative) "#SMARTer2030, ICT Solutions for 21st Century Challenges"
- the 2016 Yearbook of RobecoSAM, as regards the "IT Services & Internet Software as a Services" sector.

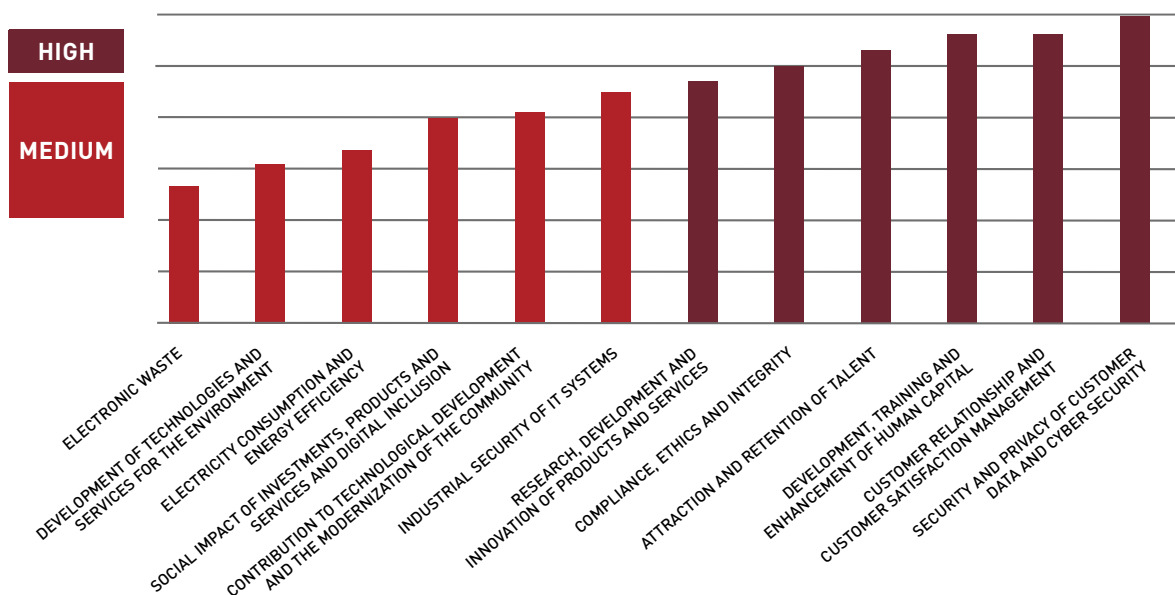
The list of topics that emerged in the course of the preliminary analysis was discussed, analyzed and weighed during dedicated interviews which involved all the Company's first lines (executive positions) based on an approach that allowed the top management to evaluate each Corporate Social Responsibility issue from an internal perspective (in relation to the Company) and an external perspective (in relation to stakeholders).

RESULTS OF THE MATERIALITY ANALYSIS

G4-19

Material topics	Priority
Security and privacy of customer data and cyber security	High
Customer relationship and customer satisfaction management	High
Development, training and enhancement of human capital	High
Attraction and retention of talent	High
Compliance, ethics and integrity	High
Research, development and innovation of products and services	High
Industrial security of IT systems	High
Contribution to technological development and the modernization of the community	Medium
Social impact of investments, products and services and digital inclusion	Medium
Energy consumption and energy efficiency	Medium
Development of technologies and services for the environment	Medium
Electronic waste	Medium

PRIORITY DETECTED IN THE FACTORS OF MATERIALITY



Why these topics are important for Engineering

Security and privacy of customer data and cyber security: Engineering stores and manages a great deal of information of various kinds at its Data Centers, a large volume of the data of the National Health System, the Central and Local Public Administrations and customers of all the productive sectors of the Country. Data security and privacy is therefore of primary importance. In addition, Engineering is actively engaged in planning and providing, externally, cyber security services.

Customer relationship and customer satisfaction management: Engineering's activities, included within a wide-ranging offer of business integration, application and infrastructural outsourcing and strategic consulting services, are characterized to a significant extent by the fact that they need to adapt to the businesses and requirements of its customers (more than 1,000) with which it is therefore necessary to maintain a constant relationship and a satisfaction survey system that can measure the effectiveness and quality of the company's work and strategy.

Development, training and enhancement of human capital: competition in advanced sectors such as that in which the Company works every day means that people are the primary resource for Engineering; therefore, the development and enhancement of human capital is one of its priorities within a context of continuous evolution which requires a particular focus on updating and developing skills and the creation of new professional figures (such as Data Scientists) through significant investments in training.

Attraction and retention of talent: the sector in which Engineering carries on business is characterized by

limited availability in the market of resources with specialized IT skills; in this respect, it is important for Engineering to implement effective policies for attracting the best talent from the job market, also in partnership with universities; likewise, internal career development paths are designed to boost the loyalty of and retain the best resources within the Company.

Compliance, ethics and integrity: considering the high number of players, often public and institutional, with which it interacts, and given the sensitivity of many of its projects and the information processed, Engineering is on the front lines in preventing and combating unlawful behaviors, in adopting and promoting ethical business conduct and in guaranteeing the utmost compliance with laws and regulations.

Research, development and innovation of products and services: research and development activities and innovation represent a critical factor for success in the market.

Industrial security of IT systems: ensuring the reliability of IT systems and infrastructure is a primary objective for Engineering, which operates in the market as a system integrator and designer of cutting-edge technological platforms.

Contribution to technological development and the modernization of the community: Engineering is the top Italian company in the IT sector and is therefore by its very nature devoted to covering a leadership role in contributing to the technological and digital development of the community in which it operates, making available its skills and experience for the benefit of the country's modernization.

Social impact of investments, products and services and digital inclusion: Information Technology is having an increasing impact in terms of im-

provement of quality of life and social well-being, and therefore represents a possible response to citizens by customers, in particular in the Public Administration and Healthcare sectors.

Energy consumption and energy efficiency: the main environmental impacts associated with Engineering include the electricity consumption necessary to maintain the Company's four Data Centers, which also manage the information technology infrastructure on which the roughly 50 company offices rely for their remote activities.

Development of technologies and services for the environment: many IT solutions are suitable for providing solutions to problems and reducing environmental impacts, and in the future they will be in increasing demand by customers from many sectors.

Electronic waste: Engineering's business does not produce large quantities of waste. The most significant item in this context is represented by electronic waste products from the management of the Data Centers and is due to the replacement of plant components; another significant item consists of the computers used in the offices.

OUR STAKEHOLDERS

G4-16 G4-24 G4-25 G4-26

The table shows the major categories of Engineering stakeholders and the forms of involvement, the frequency and types of activities whereby the Company communicates and

interacts on the basis of an approach that considers the legitimacy of the relationship, closeness, power to influence and impacts related to its activities.

Main categories of stakeholders	Engineering Map	Interaction modes, listening and involvement
Employees	8,842 employees located in 50 offices in Italy and overseas in Belgium, the Republic of Serbia, Germany, Brazil, Argentina and the USA	<ul style="list-style-type: none"> • Internal communication tools (newsletters, intranet, mailings, blogs, monitors) • Internal and external events dedicated to employees • Constant presence of the Personnel and Organization Department at branch offices • "Ingenium" corporate magazine
Clients	Roughly 1,000 national and international clients in the sectors: <ul style="list-style-type: none"> • Local and Central Public Administration (Municipalities, Regions, Ministries) • Healthcare (Hospitals, LHAs) • Finance (large banking and insurance groups) • Telecommunications (all the major Italian players) • Energy (energy producers and distributors) • Industry • European and international institutions 	<ul style="list-style-type: none"> • Periodic satisfaction surveys • Continuous relations with our staff of consultants • "Ingenium" company magazine
Suppliers	Suppliers concentrated in the sectors: <ul style="list-style-type: none"> • instrumental goods (in particular hardware and software) • management and maintenance of real estate owned by Engineering 	<ul style="list-style-type: none"> • Day-to-day relations with the Purchase Department and company functions involved in the activities carried out • Dialogue with the main associations representing the suppliers • Portal for suppliers on the internet website PAGE (Engineering Group Purchase Portal) page.eng.it

Main categories of stakeholders	Engineering Map	Interaction modes, listening and involvement
Sector and category Associations	National associations of the computer, software, ICT industries	Periodic meetings, preparation and sharing of best practices, participation in work within the technical and representation commissions
Financial institutions	National and international banks and credit institutions that fund the Group's main investments	Meetings with top company management
Non-profit world	<ul style="list-style-type: none"> • Associations for the promotion of the environment • Cooperatives/Non-profit organizations 	Sponsorships, donations, sale of goods or services, projects in partnership, training and internships
Trade unions	Metalworkers' trade unions	<ul style="list-style-type: none"> • Collective and territorial contracts • Meetings with company trade union representatives
Universities and Research Institutes	National and European university and research institutes	<ul style="list-style-type: none"> • Development of projects in partnerships, economic support for research, training and support for product research and development • Company testimonials at schools
Media	<ul style="list-style-type: none"> • Newspapers, magazines, national radio and TV • Sector magazines • Newspapers and local radio and TV stations • Online publications 	<ul style="list-style-type: none"> • Contacts on the occasion of the launch of important projects, publication of company documents, interviews, events • "Ingenium" company magazine
Project partners	<ul style="list-style-type: none"> • Small and large Italian and European companies (e.g., energy sector, healthcare) • European hospitals 	<ul style="list-style-type: none"> • Coordination within projects funded by public European and national bodies • Development of projects in partnerships

PERSONNEL DATA

G4-10 G4-LA1 G4-LA11

Amount of employed/subordinate staff by contract type and gender at 12/31	2014			2015			2016		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
Permanent	5,025	2,247	7,272	5,588	2,465	8,053	6,050	2,631	8,681
Fixed-term	82	36	118	58	25	83	99	62	161
TOTAL	5,107	2,283	7,390	5,646	2,490	8,136	6,149	2,693	8,842

Total workforce (expressed as average staff AWU) by nature of employment relationship and gender	2014			2015			2016		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
EMPLOYEES	4,891.55	2,117.5	7,009.05	5,188.83	2,214.9	7,403.73	5,748.45	2,417.28	8,165.73
CONSULTANTS	/	/	3,200	/	/	3,100	/	/	2,900

Total amount of workforce expressed as average staff/AWU by geographical area and gender (including employees and other non-employment contract types)	2014			2015			2016		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
Northern Italy	2,535.15	1,199.68	3,734.83	2,166.74	1,022.23	3,188.97	2,416.30	1,131.01	3,547.31
Central Italy	1,322.40	595.04	1,917.44	1,972.31	888.33	2,860.64	2,144.10	926.63	3,070.74
Southern Italy and Islands	741.92	229.57	971.49	689.61	194.19	883.80	753.39	219.43	972.82
Brazil	267.76	80.80	348.56	329.30	98.66	427.96	332.62	92.05	424.67
Belgium	15.82	10.66	26.48	13	8.50	21.50	7.91	6.67	14.58
Serbia	4.50	1.75	6.25	9.97	1.32	11.29	14.55	6.32	20.87
Argentina	3	0	3	7.90	1	8.90	12.91	2.00	14.91
USA	0	0	0	0	0	0	0.17	0.17	0.34
Germany	1	0	1	0	0	0	66.50	32.99	99.49
Norway	0	0	0	0	0.67	0.67	0	0	0
Other	0	0	0	0	0	0	0	0	0
GROUP TOTAL	4,891.55	2,117.50	7,009.05	5,188.83	2,214.90	7,403.73	5,748.45	2,417.28	8,165.73

Amount of staff of the Group by professional category and gender at 12/31	2014			2015			2016		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
Executives	284	40	324	284	43	327	304	42	346
Middle managers	1,234	392	1,626	1,275	401	1,676	1,323	406	1,729
Employees	3,589	1,851	5,440	4,087	2,046	6,133	4,522	2,245	6,767
Manual workers				0	0	0	0	0	0
TOTAL	5,107	2,283	7,390	5,646	2,490	8,136	6,149	2,693	8,842

Breakdown of employed staff by age group and gender at 12/31	2014			2015			2016		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
ITALY									
Age < 30 years	287	112	399	373	197	570	433	235	668
Age 30 - 50 years	3,761	1,831	5,592	4,017	1,855	5,872	4,117	1,914	6,031
Age > 50 years	700	233	933	863	309	1,172	1,036	361	1,397
INTERNATIONAL									
Age < 30 years	109	32	141	116	52	168	212	43	255
Age 30 - 50 years	221	68	289	240	69	309	323	134	457
Age > 50 years	29	7	36	37	8	45	28	6	34

Amount of protected category staff at 12/31 by contract type	MEN 2014	WOMEN 2014	TOTAL 2014	MEN 2015	WOMEN 2015	TOTAL 2015	MEN 2016	WOMEN 2016	TOTAL 2016
ITALY	194	122	316	212	129	341	236	139	375
INTERNATIONAL	0	0	0	0	0	0	0	0	0
Amount of permanent staff by professional category and gender at 12/31	MEN 2014	WOMEN 2014	TOTAL 2014	MEN 2015	WOMEN 2015	TOTAL 2015	MEN 2016	WOMEN 2016	TOTAL 2016
Executives	279	40	319	281	43	324	300	42	342
Middle managers	1,230	391	1,621	1,268	401	1,669	1,318	406	1,724
Employees	3,516	1,816	5,332	4,039	2,021	6,060	4,432	2,183	6,615
Manual workers	0	0	0	0	0	0	0	0	0
TOTAL	5,025	2,247	7,272	5,588	2,465	8,053	6,050	2,631	8,681
Amount of permanent staff by employment type at 12/31	MEN 2014	WOMEN 2014	TOTAL 2014	MEN 2015	WOMEN 2015	TOTAL 2015	MEN 2016	WOMEN 2016	TOTAL 2016
Full Time	1,847	5,006	6,853	5,552	2,063	7,615	6,012	2,152	8,164
Part Time	400	19	419	36	402	438	38	479	517
Recruitment of new employees by age group, gender and geographical area at 12/31	MEN 2014	WOMEN 2014	TOTAL 2014	MEN 2015	WOMEN 2015	TOTAL 2015	MEN 2016	WOMEN 2016	TOTAL 2016
ITALY									
Age < 30 years	117	44	161	238	136	374	223	109	332
Age 30 - 50 years	209	74	283	507	153	660	839	226	1,065
Age > 50 years	27	8	35	69	12	81	218	42	260
TOTAL	353	126	479	814	301	1,115	1,280	377	1,657
INTERNATIONAL									
Age < 30 years	/	/	/	/	/	/	/	/	/
Age 30 - 50 years	/	/	/	/	/	/	/	/	/
Age > 50 years	/	/	/	/	/	/	/	/	/
TOTAL	/	/	120	/	/	91	/	/	317
Employees leaving by age group, gender and geographical area at 12/31	MEN 2014	WOMEN 2014	TOTAL 2014	MEN 2015	WOMEN 2015	TOTAL 2015	MEN 2016	WOMEN 2016	TOTAL 2016
ITALY									
Age < 30 years	40	13	53	47	17	64	82	26	108
Age 30 - 50 years	215	100	315	221	98	319	661	159	820
Age > 50 years	57	17	74	49	10	59	225	44	269
TOTAL	312	130	442	317	125	442	968	229	1,197
INTERNATIONAL									
Age < 30 years	/	/	/	/	/	/	/	/	/
Age 30 - 50 years	/	/	/	/	/	/	/	/	/
Age > 50 years	/	/	/	/	/	/	/	/	/
TOTAL	/	/	120	/	/	91	/	/	317
Strikes and industrial disputes	2014			2015			2016		
Hours lost due to strikes, pickets and sector industrial disputes	/			/			/		
Hours lost due to strikes, pickets and national industrial disputes	/			/			/		
Hours lost due to strikes, pickets and industrial disputes against the company	/			2,412			387		
Hours of strike over total hours worked	/			0.0215%			0.0030%		
Rate of trade unionism of employees	/			11.81%			10.80%		
	/			/			10.31%		

GRI CONTENT INDEX - CORE OPTION



Content Index
Engineering



GENERAL STANDARD DISCLOSURES

Strategy of the organization

G4-1	Letter to stakeholders Page 8	Declaration of the highest authority of the decision-making process (for example, CEO, Chairman or equivalent position) on the importance of sustainability for the organization and its strategy.
GA-2		Description of the main impacts, risks and opportunities

Profile of the organization

G4-3	Methodological note Page 88	Name of organization
G4-4	Group Profile Page 12	Main brands, products and/or services
G4-5	Methodological note Page 88	Location where the organization's headquarters are based
G4-6	Group Profile Page 12	Number of countries where the organization operates, name of the countries where the organization carries out most of its business or that are particularly important for the topics of sustainability referred to in the report
G4-7	Code of Ethics: the pillars of our business Page 20	Ownership structure and legal form
G4-8	An Italian company, an international mission Page 10	Markets served (including geographical analysis, sectors served, type of consumers/beneficiaries)
G4-9	An Italian company, an international mission Page 10	Size of the organization, including: number of employees; number of activities; net turnover (for private organizations) or net revenues (for public organizations); total capitalization divided into bonds/debts and shares (for private organizations); amount of products or services provided
G4-10	Personnel data Page 95	<p>a) Shows the total number of employees by type of contract (fixed/permanent) and by sex</p> <p>b) Shows the total number of permanent workers by employment type (part-time/full-time) and sex</p> <p>c) Shows the number of workers by type of employment relationship (employee/non-employee) and sex</p> <p>d) Shows the total labor force by nation and sex</p> <p>e) Indicates whether a substantial part of the activities of the organization are performed by workers who are legally recognized as self-employed persons, or people who are not employees or supervisors, including employees and contractors supervised by contractors/subcontractors</p>
	Our people: interpreters of the future Page 64	

Profile of the organization

	Our people: interpreters of the future Page 64	f) Indicates any significant variation in the number of employees (such as seasonal variations in employment in the tourism or agricultural sector)
G4-11	100% of employees in Italy (therefore more than 95% of the total workforce) is covered by the National Collective Labor Contract - CCNL. With regard to overseas subsidiaries, there is no collective labor contract in Belgium, but instead there is a Commission Paritaire, that for our Company is number 218; with regard to Engineering Do Brasil, there is only one type of contract in Brazil and Engineering adheres to the current laws in force	Indicates the percentage of total employees covered by collective contract agreements
G4-12	An Italian company, an international mission Page 10	Describe the supply chain of the organization. Describe the main elements of the supply chain in relation to the primary activities of the organization, products and services
G4-13	An Italian company, an international mission Page 10	Significant changes in the dimensions, structure or ownership setup that have occurred in the reporting period. Changes in location, or changes in activities, including opening, closing or expansion Changes in the structure of the share capital and other operations of capital formation, maintenance and change of activity (for private organizations) Changes in localization of suppliers, of structure of the supply chain, or in relationships with suppliers, including their selection and termination
G4-14	Methodological note Page 88	Explanation of the possible modes of application of the precautionary principle or approach
G4-15	Code of Ethics: the pillars of our business Page 20	Subscription or adoption of codes of conduct, principles, and charters developed by external institutions/associations related to economic, social and environmental performance
G4-16	Our stakeholders Page 93	Participation in national and international trade associations in which the organization: holds a position at government bodies; participates in projects and committees; provides substantial funding beyond the normal membership fee; considers participation as strategic

Identification of the material aspects and scope

G4-17	Methodological note Page 88	List all the companies included in the consolidated financial statements of the organization or equivalent documents. Report whether any entity included in the consolidated financial statements or equivalent document of the organization is not covered by the Report
G4-18	Methodological note Page 88 Materiality analysis Page 89	Explanation of the process for defining the contents of the report and how the organization has implemented the relevant reporting principles
G4-19	Results of the materiality analysis Page 90	List all material aspects identified in the process of defining the content of the report
G4-20	Material topics and connection with the indicators of the GRI-G4 guidelines Page 101	For each material aspect, report the scope within the organization
G4-21	Material topics and connection with the indicators of the GRI-G4 guidelines Page 101	For each material aspect, report the scope outside the organization
G4-22	Methodological note Page 88	Explanations of the effects of any change of information entered in previous reports (re-statement) and reasons for such changes (for example: mergers/acquisitions, change in computation period, nature of the business, measurement methods)
G4-23	Methodological note Page 88	Significant changes in measurement objective, scope or methods used in the report, compared to the previous reporting period

Stakeholder engagement

G4 - 24	Our stakeholders Page 93	List of stakeholder groups with which the organization is involved
G4 - 25	Our stakeholders Page 93	Principles for identifying and selecting the main stakeholders with whom to start up involvement
G4 - 26	Our stakeholders Page 93	Approach to the stakeholder engagement activity, specifying the frequency by type of activity developed and by each group of stakeholders
G4 - 27	No reports have been received other than in the context of industrial relations	Indicates the stakeholder groups that have raised key issues and reports.

Report parameters

G4-28	Methodological note Page 88	Reporting period of information provided (for example tax year, calendar year)
G4-29	Methodological note Page 88	Date of publication of the most recent corporate social responsibility report
G4-30	Methodological note Page 88	Reporting interval (annual, two-yearly...)
G4-31	Methodological note Page 88	Useful contacts and addresses for requesting information about the sustainability report and its contents
G4-32	Material topics and connection with the indicators of the GRI-G4 guidelines Page 101	Explanatory table of the contents of the report
G4-33	This report has not been subject to external review Governance	Indicates the policy of the organization and current practices for the purpose of obtaining the external assurance report

Governance

G4-34	An Italian company, an international mission Page 10	Indicate the structure of governance of the organization, including the Board of Directors and top management
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Ethics and integrity

G4-56	Code of Ethics: the pillars of our business Page 20	Describes the values of the organization, the principles, standards and rules of conduct, such as codes of conduct, codes of ethics
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MATERIAL TOPICS AND CONNECTION WITH THE INDICATORS OF THE GRI-G4 GUIDELINES

G4-20 G4-21 G4-32

This connecting table indicates the correspondence between the topics emerging from the materiality analysis (including the scope), the indicators needed in compliance with the Core option of the “G4 Sustainability reporting guidelines” and the contents of the corporate social responsibility report.

SPECIFIC STANDARD DISCLOSURES

DMA and indicators GRI	Page	Omissions	Description of the indicator	Relevant aspects for Engineering	Scope	
					Internal Relevance	External Relevance
CATEGORY: Economic						
MATERIAL ASPECT: Economic performance						
G4-DMA	Another year of successes Page 18					
G4-EC1	Generating value for the country Page 19		Economic value generated directly and distributed, including revenues, operational costs, employee remuneration, donations and other investments in the community, non-distributed profit, payments to backers and to the Public Administration	CONTRIBUTION TO TECHNOLOGICAL DEVELOPMENT AND THE MODERNIZATION OF THE COMMUNITY	Engineering	Clients
MATERIAL ASPECT: Indirect economic impacts						
G4-DMA	Making Italy a more modern country Page 30			CONTRIBUTION TO TECHNOLOGICAL DEVELOPMENT AND THE MODERNIZATION OF THE COMMUNITY		
G4-EC7	Making Italy a more modern country Page 30		Impacts of investment in infrastructure and services supported		Engineering	Clients Community
G4-EC8	Making Italy a more modern country Page 30		Description of the main indirect economic impacts			
CATEGORY: Social						
SUB-CATEGORY: Labor practices and decent work						
MATERIAL ASPECT: Personnel training and development						
G4-DMA	Training to stay ahead of the innovation curve Page 69					
G4-LA9	The “Enrico Della Valle” IT & Management School Page 69		Average hours of training per year for each employee, divided by sex	DEVELOPMENT, TRAINING AND ENHANCEMENT OF HUMAN CAPITAL	Engineering	Clients

CATEGORY: Social**SUB-CATEGORY: Labor practices and decent work****MATERIAL ASPECT: Personnel training and development**

G4-LA10	Personal success is the company's success Page 65 Training to stay ahead of the innovation curve Page 69	Programs for skills management and lifelong learning that support the continued employability of employees	DEVELOPMENT, TRAINING AND ENHANCEMENT OF HUMAN CAPITAL	Engineering	Clients
G4-LA11	Personnel data Page 95	Percentage of employees receiving regular performance and career development reviews	DEVELOPMENT, TRAINING AND ENHANCEMENT OF HUMAN CAPITAL		

SUB-CATEGORY: Society**MATERIAL ASPECT: Anti-Corruption**

G4-DMA	Code of Ethics: the pillars of our business Page 20		COMPLIANCE, ETHICS AND INTEGRITY	Engineering	Clients
G4-S03	Code of Ethics: the pillars of our business Page 20	Percentage of workers receiving training on the organization's anti-corruption policies and procedures			
G4-S04	Code of Ethics: the pillars of our business Page 20	Communication and training on anti-corruption policies and procedures			

MATERIAL ASPECT: Legal compliance

G4-DMA	Code of Ethics: the pillars of our business Page 20				
G4-S08	In the last three years there were no penalties or definitive criminal convictions or plea bargains that imposed an obligation on the part of Engineering to "do/not do" (e.g., bans) due to non-compliance with laws or regulations	Monetary value of the main penalties due to non-compliance with laws or regulations	COMPLIANCE, ETHICS AND INTEGRITY	Engineering	Clients

Other specific non-material indicators

G4-LA1	Personnel data Page 95	Total number of new recruits and turnover by age group, gender and geographical area
G4-LA4	The minimum notice period regarding corporate restructuring/reorganization is determined based on the law of the countries in which the Group operates and based on what is set forth in the sector national agreement and the level I and II union agreements	Minimum period of notice in the event of corporate restructuring/reorganization for offices and (if included) collective agreements
G4-LA6	Safe at work Page 67	Rate of accidents in the workplace, illness, lost working days, absence and total number of deaths, divided by geographic area
G4-LA14	Suppliers: an essential link in the business chain Page 25	Percentage of new partner suppliers analyzed in terms of labor practices and actions undertaken
G4-EN3	Total CO ₂ emissions and energy (Italy) Page 84	Energy consumption within the organization
G4-EN16	Total CO ₂ emissions and energy (Italy) Page 84	Total indirect emissions of greenhouse gases (GHG)
G4-EN15	Personnel in movement Page 83	Total direct emissions of greenhouse gases (GHG)
G4-EN23	Electronic waste management Page 85	Total weight of waste by type and by methods of disposal
G4-EN29	In the last three years, there have been no environmental incidents or leakages of hazardous substances at the Group's offices and Data Centers that could compromise human health, the soil, vegetation or surface and ground water. In 2016 there were no disputes, fines or penalties due to non-compliance with environmental laws and regulations.	Monetary value of the main monetary and non-monetary penalties due to non-compliance with environmental laws or regulations

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