





CORPORATE SOCIAL RESPONSIBILITY REPORT 2015

A matter of head

Betting on intellect. Even when we are dealing with images.

*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 Domenico De Masi

The layout of this third Corporate Social Responsibility Report prepared by Engineering makes it easy to see that, even before committing to cultural and social initiatives in favor of the community, this universe of companies intentionally works on the technological modernization of the country through the activities associated with its *raison d'être*. Every day, the 8,136 Engineering employees provide us with an original response to the need to create smart cities, produce augmented reality to support the trades, accelerate the performance of businesses and the Public Administration with Cloud Computing, accelerate the progress of the Digital Agenda, create new services for citizens through Open Data, promote the country's competitiveness by triggering the Big Data revolution, provide support to the manufacturing sector through the Internet of Things, and protect the territory and the environment through the solutions offered by the Geographic Information System.

Engineering is able to provide all of these responses to the vital needs of the country because - as this Corporate Social Responsibility Report demonstrates - it can count on a motivated team, which attracts young talent, aims for permanent training and considers ethics to be a key aspect of its operations.

The reading of this Report generates sociological reflection on three critical aspects: the relationship between technology and creativity; the motivated team; sustainability.

Post-industrial technology

What level of education do machines have? A hammer or a screwdriver may be compared to a rough, malleable and hardworking illiterate person.

French sociologist Alain Touraine called them "type A machines": simple extensions of our hands, capable of extremely slow progress over the course of history. When some intelligent peasant, our very distant forefather, understood that a handle could be added to the sickle, his productivity instantly increased tenfold. It is as if that tool had completed elementary school.

As the centuries passed, machines learned to take on the majority of the labor previously carried out by man: in the form of pulleys, they learned how to lift enormous weights; in the form of lathes and mills, they learned how to produce steel masterpieces.

It is as if they had completed middle school. Touraine called them "type B machines".

Two more centuries passed and machines learned how to exploit the energy of others: as they had seen men do with dogs and horses, they did with steam, electricity and oil. At this point, their services were now equivalent to those of a respectable high school graduate. Touraine would call them "type C machines".

But their desire to understand and to do did not stop there. Indeed, it is precisely from that point that they made a great leap, the triumphal step of no longer imitating man, but competing with him. Thus, radio and telephone surpassed the limits of human hearing; television overcame the limits of sight; the car and the airplane conquered the limits of legs. Using increasingly strong and well-educated machines, man felt stronger and more educated in turn. Delegating his executive duties to machines, he had more and more time to instruct

other machines and make them capable of completing intelligent tasks.

At this point, there were machines that began to build other machines as if they were engineers; machines that designed as if they were architects; machines that could play as if they were orchestras. The esoteric machines of the eighteenth century, transformed into extremely powerful computers, earned bachelor's and master's degrees, replacing human beings in all executive duties: be they physical or intellectual. And some, not content with this, dared to even undermine the human by inventing fractals and spouting poems.

And now we come to today: the machine is no longer below us like a malleable slave, but before us like a threatening competitor. Much faster and stronger than we are, it replaces us at work, provoking unemployment, and it takes up our free time by imposing its games upon us.

According to Moore's law, the power of a microprocessor doubles every 18 months. This means that a chip is currently roughly 70 billion times more powerful than a chip in the 1970s, and that in 2030 it will be hundreds of billions of times superior to the current ones. The twenty-first century will be marked by genetic engineering, whereby we will vanquish many illnesses, by artificial intelligence with which we will replace a good deal of intellectual work, by nanotechnology with which objects will enter into relations amongst themselves and with us, by 3D printers we will use to create many objects in our homes. Thanks to affective informatics, robots will have empathy.

However, man retains his supremacy because, although the machine has now earned a bachelor's degree and many master's degrees, it is still not able to autonomously generate new thoughts. It knows how to execute, but not how to invent. Today, with hand-held devices, we carry all of the

music, films, books, art and culture in the world in our pockets.

However, we still have the problem of how to transfer this immense wealth from our pocket to our brain. And this is the task undertaken by Engineering: to bring it from the desk to the brain for hundreds of companies, households and offices in Italy and all over the world. To achieve this objective, it must mobilize the creativity of its 8,136 employees each and every day.

Creativity

But what is creativity? Creativity is an almost magical synthesis of fantasy and practicality. To obtain it, we must combine our unconscious and our conscious capacity, our rational sphere made of knowledge and abilities and our emotional sphere made of feelings, sentiment, opinions and attitudes.

We say that Michelangelo was a creative genius not because he imagined the dome in Saint Peter's Cathedral, but because, after designing it, he convinced the Pope to give him money, he organized more than eight hundred workers and for twenty years, he worked himself into the ground for his vision of completing the dome.

Every one of us is gifted primarily with imagination or primarily with practicality. Only geniuses like Michelangelo have both qualities at an equally high level. As a result, they are extremely rare and they almost seem like monsters to us.

After humanity entrusted its progress to the creativity of geniuses, which are rare by definition, it did not make much progress. Then, with the advent of industrial society, it learned to make do without them: "The real accomplishment of modern science and technology", wrote K. Galbraith, "consists in taking ordinary men, informing them narrowly and deeply and then, through appropriate organization, arranging to have their knowledge combined with that of other specialized but equally ordinary men. This dispenses with the need for genius".

While industrial society organized thousands of workers on assembly lines to produce nuts and bolts and automobiles, the current post-industrial society has taken the additional step of creating teams of intellectual workers who generate ideas, "collective genius", creative teams, obtained by putting together very imaginative people with very practical people, and having them direct things as charismatic leaders, capable of engendering enthusiasm and providing a vision to the efforts made by individual group members.

Creative groups are able to give the best of themselves when they have fun in their work and when they develop a sort of supportive competition rather than destructive rivalry. Naturally, a creative group is nourished by extremely different cultural stimuli, is willing to listen to different points of view and loves to interact with important people.

In summary, businesses cannot survive without the power of machines, but they also cannot progress without the creativity of men. For teams to be capable of generating ideas, they need to consist of people with their heads in the clouds as well as those with their feet on the ground. They need to be led by skilled, charismatic leaders. They need to operate within an atmosphere of trust and enthusiasm. And, especially, they need to be free from bureaucratic obstacles, which discourage the production of ideas and fuel mediocrity.

If Engineering is able to demonstrate its creativity with data in hand in this Corporate Social Responsibility Report, it is because it knew how to bring into being that collective creativity born from the synergistic synthesis of fantasy and practicality well directed towards a shared and sustainable objective.

Two interpretations of sustainability

But what is sustainability? It is the effort of contrasting the consumerist model of industrial so-

ciety with a new model that abandons 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. In this undertaking, which is taking root in many areas worldwide, I would like to recall two schools of thought: in France, that which explores the need for balanced degrowth; in Italy, that which lays claim to the supremacy of slowness over speed, of quality over quantity, of the local over the global.

Both of these "schools" begin from the assumption that the joint result of productionism and consumerism generates disorientation and disseminates a sensation of crisis. We have a nuclear arsenal capable of destroying fifty planets. One-fifth of humanity consumes four-fifths of global wealth. We throw away half of the products stored in our refrigerators. Part of the planet suffers from hunger and the other part from obesity. To obtain animal protein, it is necessary to transform twelve vegetable proteins. Around three tons of oil are needed to produce one ton of fertilizers; 400 liters of water to produce one kilo of grains; 4,000 liters of water to produce one kilo of meat. In the First World, health-care costs are surpassing food costs. As Pierre Rabhi reminds us in his Manifesto for the earth and for man, "while uncultivated lands are found everywhere, a permanent carousel of ships, airplanes, cargo vehicles, trains and trucks transport and deliver food from everywhere in the world".

Beginning from these shared premises, from the shared conviction that the consumerist model imposed and accepted as a theological dogma has now reached the end of the line, each of these two schools has embarked upon its own path, proposing

a different reading of the problems before us and a different way of resolving them.

I focus on these two schools because Engineering, by concretely committing to the complex sector of sustainability, is required to acknowledge them as well. Obviously, the sustainability to which these two schools refer regards first and foremost the ecology of the planet, but this is certainly not separate from the social sustainability addressed in this Report, which aims for balance and social well-being to the extent to which this can be generated by the proper use of it.

Modern subsistence

The French "school", led by academics such as Serge Latouche, Ivan Illich, André Gorz, Nicholas Georgescu-Roegen, Jacques Grinevald and Paul Ariès, adopts a political and planetary view starting from the assumption that we need to radically change our lifestyles if we want to prevent the current system from collapsing into the catastrophic result which it itself has preordained. According to this movement, it is pure madness to act as if the planet's resources were infinite and economic waste could continue indefinitely. Kenneth Boulding once said, without mincing words, that "he who believes that infinite growth is possible in a finite world is either crazy or an economist".

Serge Latouche also noted that "the society of globalized mass consumption has reached a dead end. The basis - indeed the essence - of this society is limitless growth, while physical, geological and biological data prevent it from continuing down this road, due to the finite nature of the planet... By now the problem is no longer that of avoiding catastrophe, but rather of limiting it, and especially asking ourselves how to manage it". Therefore, we are no longer dealing with slowing growth, with making it sustainable, as if the limit had not already been largely surpassed. We are dealing with taking an

immediate step back, to reduce the damage of a catastrophe that has now become inevitable, provoked by "an economic system based on the belief that growth is normal and necessary, and can last forever".

Also according to the French school, behind this reality, which leads directly to an irreversible crisis that is not only ecological, not only economic and financial, but social and cultural as well, the shrewdness of the consumerist movement found a new source of profits in an economy tinged green, which pursues not pure and simple development, but rather sustainable development, as it began being called towards the end of the 1980s at the urging of Henry Kissinger.

But, according to degrowth proponents, any development, being that it is still development, entails additional consumption of limited resources and therefore continues along a path that is in any event incorrect, in that it is irreversibly destructive.

Moving in this direction until now, one-sixth of the world's population has managed to grow. But, as Latouche wrote, today its growth "is a profitable affair only provided that it bears the weight and the price to nature, future generations and consumer health".

Ivan Illich provides a nice metaphor to help us understand how to get out of this dead end. The snail which constructs its shell by patiently adding increasingly wider coils, one after the other, instinctively realizes at a certain point that, if it added just one wider coil, the shell would become so heavy that it would not have the physical strength required to carry it. So the snail reverses path and begins to construct increasingly thinner coils.

Therefore, to reverse path, an increasingly numerous group of sociologists, economists and philosophers has mobilized all over the world and a growing group of militants struggle for a modern

subsistence. In this new approach to life, it is necessary to abandon the industrial myths of speed, of ruthless competition and of consumption as an end in and of itself and, according to Latouche, we need to recover "the time do our duties as citizens, the pleasure of free, artistic or artisanal production, the sensation of newfound time, play, contemplation, meditation, conversation, or simple *joie de vivre*".

And Cornelis Castoriadis adds the love of the truth, a sense of justice, responsibility, respect for democracy, the valuing of differences, the duty of solidarity and the use of our intelligence. In brief, the enchantment of life.

Sustainable development

While we have France to thank for starting the discussion around the issue of growth and degrowth, it is Italy that revitalized the concept of "slow" and triggered the proliferation of a myriad of movements: slow food, slow city, slow money and dozens of other slows.

Compared to the degrowth movement, which rejects the concept of sustainability and the current economic model in its entirety, slow movements are less alarmist, less contrary to the market economy and more targeted towards individual aspects like food or the land. They deal more with quality of life and, unlike degrowth thinkers, they do not reject the concept of sustainable development. They defend the right to pleasure, diversity and being together. They are contrary to consumerism, standardization and acceleration. They are convinced that we can develop a new societal model by improving upon the current one and appreciating frugality. For slow movements, "slow living and thinking means adjusting your lifestyle to natural rhythms, being sensitive to the seasons, recovering your awareness of distances, developing knowledge of products and of the environment we inhabit".

The first and most important of the slow movements was that founded by Carlo Petrini who, due to his vision of an alternative social model, taught at the University of Pollenzo, is placed in the company of Paulo Freire, José Antonio Abreu and the other important engineers of new vital worlds.

Petrini writes: "We have to learn to open our minds to the "not-exact" and the "not-fully-explained," to the good and the beautiful—concepts that cannot always be universally codified. Maybe we need to think a little more systemically, casting anxiety and uncertainty aside. For anxiety and uncertainty are fruits, more than anything else, of a development model that seeks to control and pigeonhole what cannot be controlled and pigeonholed. It's not paradoxes that we have to fear, but a lack of commitment in overriding them". Petrini privileges the method of coherence, understood as being clear about the fact that you don't wish to jeopardize the health of the planet. Coherence "means giving communities the opportunity to eat freely what their members choose to grow. It is a guarantee that food is and will remain the best form of peace diplomacy available to us today, as well as the greatest source of pleasure and happiness. There are a million and perhaps even more ways of achieving all this".

While we consume - Petrini suggests - we overlook the paradoxical and self-damaging side of unrestrained and polluting consumption. But, due to the heterogony of ends, the current economic crisis which the entire capitalist world complains of and manifests could paradoxically end up being an advantage if, instead of being seen as an economic disaster, it sounded like an alarm bell to make us gain awareness of structural degrowth, to end our addiction to the drug of consumerism and the myth of speed.

Perhaps precisely due to the current crisis - which

is not a crisis because it is not temporary - the necessary reduction in consumption will stimulate the spread of a new culture oriented towards further reducing consumption, but by choice. In such a scenario, waste will lose its appeal and will even seem ridiculous. The purchase of IT materials will be the only part of household consumption that will continue to grow, also because it will provide savings in entertainment as well as in newspaper purchases. We will consume more organic products, more "comfort food" made at home, more slow food. Our full closets will dissuade us from once again flooding them with unnecessary clothing. We will stop systematically throwing away half of the food in our refrigerators. To compensate, we will read more books, attend more concerts and participate in more discussions, we will make love more. We will love our homes more, we will cultivate better friendships, we will more carefully choose our travel destinations and we will prepare ourselves better to understand them.

Impact on daily life

By reading this Sustainability Report, we find expressions that line up perfectly with the increasingly widespread need for balance, serenity and fairly distributed well-being. And these positive ends are pursued through new technologies meant to improve the quality of work and life. Let's look at a few examples.

As can be read in the Report, Engineering's Code of Ethics "is meant especially to be 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 company employees to respect our general principles and values and prevent the risk of unethical behavior".

The company's quality management system represents a veritable "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 company dedicates particular attention to data security, understood as the "safeguarding of the privacy, integrity and availability of information". While the spread of smartphones, tablets and the internet has driven the digitalization of lifestyles, there is still a pathological delay in urban structures and in the services they provide. As the integration of Internet of Things, Cloud and Big Data technologies, along with policies on Open Data, could create the conditions for a rapid transformation of cities into Smart Cities, Engineering is committed in this sense to the crucial sectors of modernization such as mobility, energy, health, transport and the integration of the systems of the main service providers in order to improve the lives of citizens by moving beyond the "administrative barrier" concept.

Due to its very nature, Engineering manages data, the raw material of post-industrial businesses. Therefore, the company is committed to technologically facilitating all positive digital innovations, in which the centrality and knowledge of data, along with information technologies capable of making different systems interact, revolutionize the conceptual paradigm of the provision of services, making it simpler and more immediate, efficient and accessible for citizens. These services also contribute to the growth and modernization of a market capable of attracting start-ups and small businesses, to develop new services for citizens and commercial activities in urban areas.

The modernization of the Public Administration, the supply of the information technologies placed at the center of a network of social inclusion for more disadvantaged citizens, the conceptualization

of "factories of the future" thanks to the experience in System & Business Integration services, the daily support provided to manufacturing companies to develop their models and processes through IT solutions (Industry 4.0), the Industrial Internet of Things to distribute artificial intelligence in a "streamlined" manner within production hubs, represent just as many contributions of Engineering to the progress of communities, always with respect for the values of solidarity, security and merit, understood as fundamental ingredients for company cohesion.

"Honesty, reliability, transparency and the promotion of capabilities and professionalism are the central values and conditions for the achievement of Engineering's objectives", reads the Corporate

Social Responsibility Report, in which the company also commits to stimulating the spread of knowledge about Information Technology amongst youth, supporting activities linked to robotics instruction by contributing to the creation of a Robotic Lab and connecting young people, art and creativity with the world of entrepreneurship and with technology through the "Engineering Art Project".

Reading this Corporate Social Responsibility Report, it is easy to see how much Engineering is aware of the fact that "ICT has a significant impact on daily life: it impacts our style and quality of life and communication between individuals, and also orients public policy". And this would already be enough to make it an excellent example of a company endowed with a solid civil conscience.



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Letter to the stakeholders

G4-1 G4-2

We are very pleased to present our third Corporate Social Responsibility Report, with a view to transparency regarding the material topics for the sustainability of the Engineering Group and of the Information Technology sector.

The objective is to update our stakeholders annually on the development of our performance and our results in both economic and social and environmental terms.

The document illustrates and recognizes the value of the many initiatives undertaken in recent years, based on a new format that highlights the most significant sustainability topics for the company and for stakeholders.

It also addresses the main challenges for our country's modernization associated with our business.

To cite just a few, Engineering is on the front line for the development of the smart cities of the future, the application of the Internet of Things and Augmented Reality, the study and management of Big Data and, more generally, support for the implementation of the Digital Agenda in Italy. These challenges have been encapsulated within just as many reference scenarios, commented on by sector opinion leaders.

Engineering's contribution to employment in Italy made 2015 a memorable year. Clearly moving against the trend of Italian macroeconomic data, we hired

more than 1,000 people, of whom 300 were under 30 years old. At the end of the year, we had a total of 8,136 employees and engaged an average of 3,100 resources downstream for intellectual services.

The investment in human capital is a strategic factor for a company.

The instrument and the place through which knowledge gained in operational practice is implemented, is Engineering's IT & Management School "Enrico Della Valle", inaugurated in June 2000.

Thanks to the competence of our people, in recent years we have contributed to the great processes of transformation and computerization of Italian Central and Local Public Administration, of healthcare and of hundreds of industrial companies, major banks and insurance companies and large companies in the telecommunications, energy and media sectors.

We have helped companies to be competitive in the global economy and we have accompanied their evolution with the use of advanced technologies and strategies in the Information & Communication Technology (ICT) sector.

We will continue to work with passion in keeping with the values and principles expressed in our Code of Ethics, developing highly impactful solutions and services.

We will also remain aware of Engineering's respon-

sibility to contribute, through innovation, research and financial investment, to our country's social and economic growth, to the quality of life of residents and to meeting the challenges of sustainability for future generations.



Michele Cinaglia

Chairman

A handwritten signature in black ink that reads "Michele Cinaglia".

Therefore, we hope you enjoy reading our 2015 Corporate Social Responsibility Report, with the certainty that it will help you to fully comprehend the reality in which we carry on business, the results we have achieved and our future strategies.



Paolo Pandozy

Chief Executive Officer

A handwritten signature in black ink that reads "Paolo Pandozy".



HIGHLIGHTS 2015

1st IT operator in Italy

8,136 employees

3,100 resources for intellectual services

877.5 millions of Euros

in revenues, with an ICT market share Italy totalling 9%

40 offices

Italy / Belgium / Serbia
USA / Brazil / Argentina

THE GROUP PROFILE

G4-4 G4-6 G4-8 G4-9 G4-12 G4-13 G4-34

Global technological leadership.

Italian heart.

1,000 customers

3,360 people

received information about the Code of Ethics from 2008 to 2015

20 Countries served

1.53 PUE

(Power Usage Effectiveness) of the Data Center in Pont-Saint-Martin (AO)

30 millions of Euros

in investments in Research and Innovation

The Engineering Group is **the Italian leader** in the Information Technology sector, with 8,136 employees working in 40 offices in Italy, Belgium, the Republic of Serbia, Brazil and Argentina as well as a representative office in the USA.

The Company produces about 10% of turnover overseas and manages IT initiatives in more than 20 countries with projects for the Public Administration and for the Industry, Telecommunications and Finance sectors.

A leading player in the outsourcing and Cloud Computing market, the Engineering Group works through an integrated network of 5 Data Centers¹ located in Pont-Saint-Martin (AO), Turin, Milan, Vicenza and Rome.

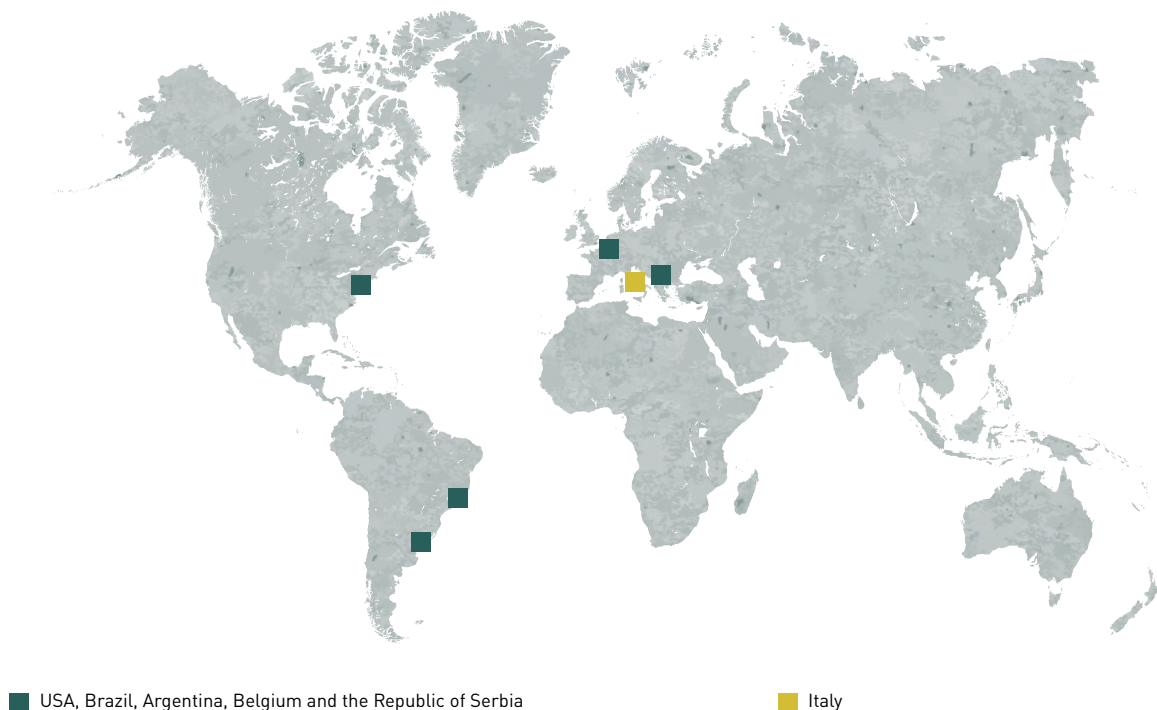
Its system of services and infrastructure guaran-

tees the highest technological, quality and security standards.

The Engineering market consists of more than 1,000 medium-sized and large customers, both private (Banks, Insurance, Industry, Services and Telecommunications) and public (Health, Local and Central Government, Defense and International Bodies), as well as SMEs and small municipalities to which the Group directs dedicated offer lines. This takes place in the areas of tax collection, the management of municipal revenues and ERP-CRM (Enterprise Resource Planning - Customer Relationship Management).

The Group represents a reference model in the panorama of IT research with roughly 70 national and international projects carried out in collabora-

PRESENCE IN THE WORLD



¹ In 2015, most systems and equipment of the Padua Data Center were transferred to the Vicenza Data Center. The consolidation process was completed in 2016 and the Padua Data Center is no longer part of the Group's active assets.

tion with a network of scientific partners and universities throughout Europe.

The Group has invested 30 million Euros in Research and Innovation and is active in the development of Cloud and Big Data solutions and in the initiatives of the Open Source community.

The Group operates in Italy in the IT services and software development area with a market share of about 9% and a leading position in several vertical sectors, thanks to a wide portfolio of proprietary solutions, from banking compliance (ELISE), to billing and CRM in the field of utilities (NET@Suite); integrated diagnostic and administration solutions in Healthcare (AREAS®), workforce management (Geocall), mobile platforms for the Telco area and systems for the management of Public Administration revenues.

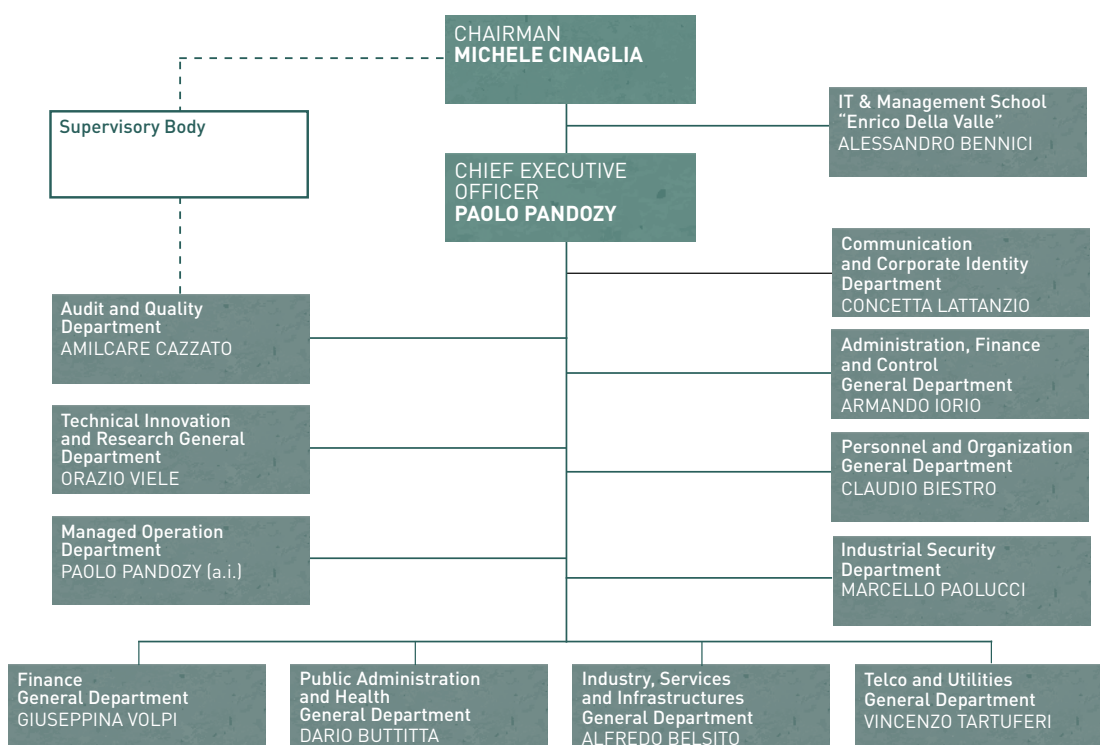
The Parent Company

The Parent Company, Engineering Ingegneria Informatica S.p.A., has been a publicly traded company since December 2000 in the FTSE Italy STAR segment of the Italian Stock Exchange². Its capitalization is 825 million Euros³ and it exercises coordination and managerial policy-making activities for another 16 companies, of which 14 are operating, one is in liquidation (Sicilia e-Servizi Venture S.c.r.l.) and one is not operating (Engineering Luxembourg S.à.r.l.).

The Parent company's organization model is structured as follows:

- the staff departments offer their services to most of the Group's companies, in order to guarantee ef-

ORGANIZATION CHART AS AT JUNE 1, 2016



² In the initial months of 2016, the NB Renaissance and Apax VIII funds acquired 44.3% of the share capital of Engineering. This transaction resulted in the launch of a mandatory tender offer by the two funds, which was completed with full acceptance by the ordinary shareholders of Engineering and its delisting from the Stock Exchange on July 8, 2016.

³ Value as at June 1, 2016.

- efficiency and homogeneity in rules and procedures
- four General Departments oversee the vertical markets (Public Administration and Healthcare, Industry, Services and Infrastructures, Finance, Telco and Utilities)
 - 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 Managed Operation Department provides infrastructure services to all customers of the Engineering Group, 300 entities and companies; it operates with an integrated network of 5 Data Centers and an asset of specialized skills focused on hardware, OS/DB and middleware, apps
 - the Training General Department, reporting directly to the Chairman, provides professional courses, which are destined 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

Engineering.mo: a partner for application and infrastructural outsourcing services, offers state-of-the-art technological standards and a thorough knowledge of business processes in the various market sectors.

Engineering Tributi: specialized in solutions for the local Public Administration and reference partner to local bodies for the management of tax revenue activities.

Nexen: focused on managerial consultancy and the conception, planning and realization of organizational 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.

Engineering Excellence Center: specialized in innovative solutions in the ERP environment with a focus on new SAP solutions for logistics, sustainability and accounting.

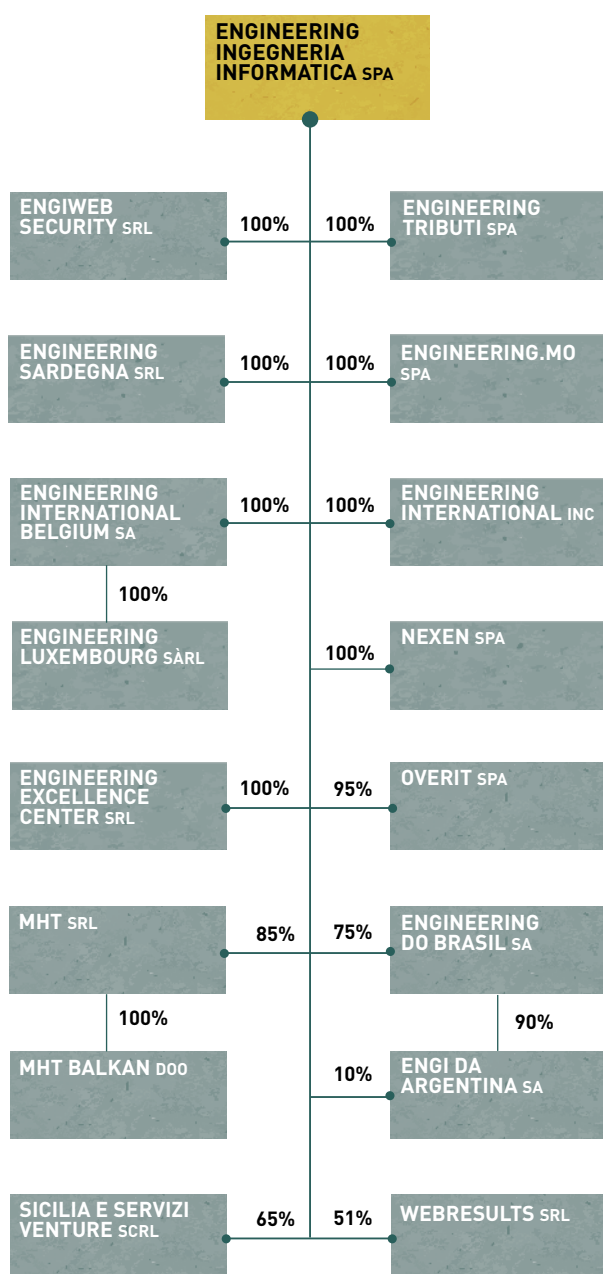
EngiwebSecurity: an integral part of the Engineering Software Lab organizational structure, it consists of a network of laboratories located throughout the country responsible for software design and development within system integration projects. The laboratory of Engiweb Security provides specialized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

WebResults: acquired in 2015, this is a certified partner of Microsoft, Salesforce.com and Marketo for the design and implementation of CRM (sales, marketing, services and social) and Cloud solutions.

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: with offices in São Paulo, Curitiba, Belo Horizonte, Recife, Rio de Janeiro and Buenos Aires with **Engi da Argentina**, created to support internationalization in markets with high growth

CONSOLIDATION AREA AS AT DECEMBER 31, 2015⁴

potential and development in innovative areas.

Engineering International: based in the USA in Wilmington (Delaware) and New York, it operates via a Center of Competence for Open Source matters, for clients and operators who use the Business Intelligence suite SpagoBI.

Laboratories and Centers of Competence

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 through the Centers of Competence.

The **Business Intelligence and DataWarehouse Center of Competence** is composed of a team of specialists of different technologies that 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, SpagoBI Labs and the Big Data Center of Competence.

The **Big Data 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

⁴ • The company Sicilia e-Servizi Venture S.c.r.l. has been placed in liquidation.
 • On January 28, 2015, Engineering Ingegneria Informatica S.p.A. acquired control through a 51% stake in the share capital of the company WebResults S.r.l. with registered office in Treviolo (BG). The parties also agreed to transfer to Engineering Ingegneria Informatica S.p.A. the remaining 49% in phases by December 31, 2017.
 • On December 1, 2015, Engineering Ingegneria Informatica SpA acquired a business unit from Fast Innovation S.r.l. dedicated to the luxury and fashion markets and focused on multi-channel Clienteling solutions for retail sales.
 • The company Engineering Excellence Center S.r.l. was liquidated in March 2016.

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 consultancy, software selection, BPR, change management)
- realization of first implementation projects, upgrade & EhP, roll-out, merge & spin-off, evolution of existing solutions
- on-going project management.

The experience, gained in over 180 projects of full ERP implementation, allows the Competence Center to work with various product sectors, from industry to telecommunications and the energy & utilities world, from Public Administration to the world of finance, banks and insurance.

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 Centred 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, benchmarks, information architecture, wireframe, visual design, prototyping, development guidelines. Each activity is reviewed and monitored through the involvement of end users, with specific moments of attention to topics of accessibility and security.

The **GIS Center of Competence** (Geographic Information System) of OverIT 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.

The **Mobile Center of Competence**: for over 20 years OverIT has dealt with solutions in the context of mobility. With its highly specialized staff, the Center of Competence concentrates and makes available its experience 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 a number of 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 Intelligence is the SpagoBI suite, developed and managed by SpagoBI Labs. SpagoBI makes available a broad range of analytical tools to cover all typical Business Intelligence needs and offers solutions in the most innovative areas: georeferenced analyses, Self-service BI, ad-hoc reporting, Big Data, dashboards, in-memory interactive platforms, BI in real-time and in mobility, use of Open Data. The

suite is available as free/Open Source software, in a single industrial level version designed to adapt to a wide range of users, according to the "pure Open source" model that does not impose any lock-ins to the users.

In constant growth: the 2015 economic and financial results

G4-DMA

The Engineering Group closed the year 2015 with growth in total revenues compared to 2014, with:

- net revenues up 4.1% reaching 850.9 million euros
- net profit of 45.5 million euros (+9%), compared with 41.8 million in 2014
- a net financial position amounting to 152.9 million Euros, exceeding the 121.4 million Euros recorded in the same period of 2014, confirming the good cash generation resulting from the improvement in working capital management.

These results were achieved within a macroeconomic context characterized by IT service expenditure down by roughly 1% in the Italian market and a severe economic and political crisis in Brazil (another significant area of Group presence).

SUMMARY OF ECONOMIC RESULTS IN THE THREE-YEAR PERIOD 2013-2015

(amounts in millions of Euros)

Description	2015	2014	2013
TOTAL REVENUES	877.5	853	822.8
Net Revenues	850.9	817.3	800.1
EBITDA	105.5	109.9	100.8
% on net revenues	12.4	13.4	12.6
EBIT	55.3	77.1*	53
% on net revenues	6.5	9.4	6.6
Net Profit	45.5	41.8*	53.0**
% on net revenues	5.4	5.1	6.6
Net Equity	442	416.2*	394.1
Net financial assets	152.9	121.4	39

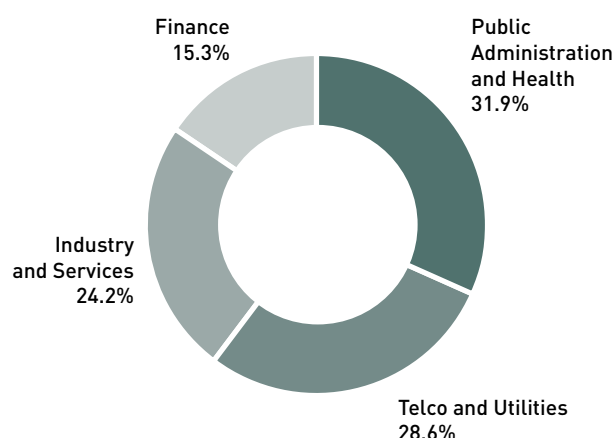
^(*) Data restated in application of IFRS 3 - Business combinations following the definitive allocation of the fair value of the assets/liabilities acquired of MHT S.r.l.

^(**) Includes 33.2 million Euros of non-recurring income arising from badwill.

The composition of net revenues for the last year by sector, as shown in the graph, confirms the prevalence of the Public Administration in 2015. The growth trend continues in the Industry and Services market, which represents more than 24% of Group revenues.

THE MARKETS

Percentage composition of net revenues as at December 31, 2015



Value generated for the Country

G4-EC1

The economic value that the Engineering Group generates makes an important contribution to the wealth of the country, of its employees and of its business partners, not just its shareholders. On December 31, 2015 the direct economic value generated by the Group exceeded 900 million Euros, 89.6% of which was distributed.

In particular, the share given to the State is 3.6%, with an absolute amount of approximately 32 million Euros per annum.

Efficient and reliable Corporate Governance

G4-7

In the course of 2015, the Corporate Governance system in place within Engineering Ingegneria Informatica and in its corporate Group continued to remain in line with the principles and application criteria set forth in the new edition of the Self-Governance Code for Italian listed companies promoted by Borsa Italiana and published in December 2011,

DIRECT ECONOMIC VALUE IN 2013-2015

(amounts in thousands of Euros)

Description	2015		2014		2013	
	Absolute V.	%	Absolute V.	%	Absolute V.	%
DIRECT ECONOMIC VALUE GENERATED*	901,803	100.00	858,120	100.00	825,614	100.00
DIRECT ECONOMIC VALUE DISTRIBUTED	807,542	89.55	804,712	93.78	7,083	92.79
Suppliers (operating costs)	331,343	36.75	312,992	36.47	310,576	37.62
Employees	433,082	48.02	420,862	49.04	403,477	48.87
Lenders	10,359	1.15	4,569	0.53	8,572	1.04
Shareholders and members	0	0	20,000	2.33	8,000	0.97
State	32,097	3.56	45,692	5.32	35,087	4.25
Community	0	0.07	597	0.07	370	0.04
DIRECT ECONOMIC VALUE RETAINED	94,261	10.45	53,408	6.22	59,532	7.21

* Total revenues plus financial income.

as amended and supplemented until January 2016.

The same Corporate Governance system also complies with the recommendations issued by Consob on the matter and, more generally, international best practices. The annual Report on Corporate Governance, which describes the rules and behaviors adopted by the Company and by the Group to ensure the efficient and transparent functioning of the governance bodies and the internal control systems, may be viewed on the company website (www.eng.it) in the Investor Relations section.

The Group's Corporate Governance system, as well as the definition of the corporate bodies and offices, is based on the utmost balance between needs for flexibility and promptness in decisions, the search for the clearest transparency in relations between the different centers of responsibility and external bodies, clear identification of roles and consequent responsibilities.

The Parent Company adopts a monistic system, therefore establishing that the Management and Risk Control Committee - set up within the Board of Directors - consists of only independent directors, and makes public all documentation relating to the annual report on Governance, the Code of Ethics, the organizational model, regulations, protocols and prospectuses in the Investor Relations section of the company website. It is consolidated practice that the other committees recommended by the self-governance code consist only of independent directors. This bears witness to the Group's intention to manage its activities so as to provide the best system of guarantees for stakeholders.

Integrity and responsibility: Code of Ethics and Models 231 and 262 G4-DMA G4-7 G4-14 G4-15 G4-56 G4-S03 G4-S04

The awareness of the social implications that accompany the activities and the importance of a transparent and cooperative approach with the

stakeholders but also of a good reputation (internal and external), have led Engineering to adopt a Group Code of Ethics since 2004.

The Code of Ethics is one of the instruments of corporate social responsibility for the promotion of good behavioral practices. 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.

The Code of Ethics is meant especially to be 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.

It is thus binding for employees, managers, directors and members of the Management Control and Risk Control Committee, 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 prin-

ciple 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 drafting of the separate and consolidated financial statements, as well as for the issue 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 and Group'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).

Management control

Over the years, the Engineering management control system has evolved constantly, and now allows for the monitoring of Department performance and the efficiency of all operational activity, to measure each time the books are closed the degree of achievement of the goals set in the budget, to promptly analyze any deviations to understand the relative causes, and lastly to identify actions needed to ensure the achievement of business objectives.

The system adopted by Engineering 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

Continuous ethics training at every level of the organization

Between 2008 and 2015, Engineering delivered specific training courses on ethics in business conduct (Code of Ethics and Model 231) to 322 people in the classroom.

Since 2011, there has been an active on-line course attended by a total of 3,038 persons to date, in Executive, Managerial, Super-Managerial and 7th and 6th level positions.

From 2008 to 2015 about 3,360 people have received information on the existence of the Model

231 and the Code of Ethics, its content and the relative corporate controls to protect against risks.

The Parent Company's Supervisory Body recently evaluated the opportunity to resume classroom training sessions, beginning with the top management, to provide an update on new elements introduced within the Organizational Model pursuant to Legislative Decree 231/2001 and to sum up the company's perception of risk situations.

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 the management to have a homogeneous and transparent disclosure on the industrial performance of the entire Group.

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.

A proprietary software program has been created for the integration within a single datawarehouse of information coming from the different management systems. This will allow for the further improvement in 2016 of the capacity for processing and analyzing the Group's results.

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 monitoring and the fragmentation of costs and revenues of about 20,000 orders aggregated in turn in more than 2,000 cost centers, ensuring the correctness of the data stream both under 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.

Superior process quality

The Engineering Group invests significantly in quality, which affects all Group companies, organizationally governed by the Audit and Quality Department, which on the basis of the Self-Governance Code reports to the Board of Directors, and reports directly to the CEO.

The importance of the investment in Group Quality is proven by an expenditure of about 1.9 million Euros per annum which is in constant growth.

The Audit and Quality Department currently has 19 full-time employees, and in 2015 contributed over 3,917 working days.

The Engineering Quality Management System is structured on the basis of the following guiding principles:

- customer orientation, in the sense of a constant attention to the satisfaction of their requirements
- continuous improvement for "progressive" objectives, achieved by adopting new initiatives and setting new objectives
- centrality of the process, on which the efforts of improvement focus since this strongly influences the quality of the result and can be controlled during the whole cycle
- involvement of the entire corporate structure, which cooperates to achieve their preset objectives.

The Engineering Quality Management System represents 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, which is 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 actual application of the Quality Management System and, more generally, of business procedures, is controlled by the Audit and Quality Department through a series of scheduled audits by the same Department, which have a dual purpose:

- to ascertain whether the Quality Management System is correctly and effectively applied in different areas or business activities
- to constantly evaluate the level of updating of the System to the business and the level of compliance with the standards of reference.

The impartiality of the audit process is ensured by the fact that staff assigned to the conduct of 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.

In 2015, 270 audits were carried out (245 last year) on:

- orders completed for customers, which also involves 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 Group
- service centers, i.e. the structures that deliver centralized services to customers and to all other corporate structures.

From the analysis of the data collected in the course of each year during audits, the Audit and Quality Department can identify ideas for improvement to be proposed. The proposals are illustrated and discussed at an annual meeting with corporate heads, from which elements and signs emerge for

the plan of activities for the following year.

Customer satisfaction is monitored continuously through direct interviews with the customers themselves, carried out by the Audit and Quality Department. The assessments obtained are examined, highlighting the results 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 48 questions referring to the following assessment factors:

- communications, commercial relations and offer
- operating staff
- solutions based on projects/products
- solutions based on ICT services other than Managed Operations
- solutions based on Managed Operation services
- overall evaluation of the Company
- current activities and critical factors.

For each topic, the interviewee can state both the importance in relation to the examined context (weighting factor) and the "score" (degree of satisfaction). In 2015, 106 customers were interviewed, with 69 direct interviews (conducted through meetings organized with customers) and 37 interviews conducted through an online questionnaire. In 2014, 92 interviews were conducted.

The choice of the sample of customers is based on to the criteria of representativeness of the various business divisions, taking into account the volume of business they completed and any special situations encountered in the previous period. Approximately 94% of customer answers are within the area of satisfaction. The results of the customer satisfaction survey have already been disclosed to the Company's entire commercial structure, beginning with the CEO.

Data storage and protection

G4-DMA G4-PR8

Data Security means safeguarding the privacy, integrity, and availability of information.

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 is for this reason of primary importance.

All the business locations equipped with Data Centers which deliver outsourcing services to customers (Pont-Saint-Martin, Turin, Milan, Vicenza and Rome) have implemented 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.

Engineering has implemented a management system for appropriate and proportionate security controls to protect information and give confidence to customers.

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, subsequently updated to version CMMI-DEV v. 1.3 in 2010.

The acquisition of T-Systems Italia has brought with it ISO 20000:2011 certification for the provision of ICT services in outsourcing, which will be

extended to the entire scope of the activities provided by the Group.

The Data Centers acquired, located in Milan, Vicenza and Rome, respond to the Uptime TIER II standards and together with the Engineering Data Centers that were already active (Pont-Saint-Martin and Turin, all TIER III), they 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 production factor

G4-LA14

In compliance with free market conditions, Engineering commits to the fair treatment of its suppliers and transparency in contractual conditions, also in terms of payment conditions.

The Group suppliers are selected via a qualification procedure and are continuously evaluated.

The company's policy on purchases requires each supplier to register on the Engineering portal and, also in the course of assignment of the contract, to provide information of a technical and economic-financial nature relating to aspects mandatory by law in Italy 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
- Employer's Liability and Third Party Liability Insurance Policy: Civil Liability Insurance toward Third parties and Contractors (R.T.C. [Third Party Liability]/R.C.O. [Employer's Liability]).

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

In 2015, the Purchases Department requested information from the main hardware suppliers on how they are organized to manage the issue of conflict minerals.

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 Engineering 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 5 Group Data Centers.

Group 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 1,100 cars)
- telecommunications (mobile and land-line)
- travel

- real estate management and maintenance
- professional IT services
- other consultancy.

Purchases of 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) who, from time to time, work on a range of projects with the Company's employees.

In 2015, the subcontracted resources for intellectual services amounted to roughly 3,100 people on average per year.

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.

All external personnel is committed to viewing and complying with the principles and values set forth in the Group's 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.

New challenges, constant research

Innovating means being in step with the times, sensing the needs and trends of the market, and constantly looking for the added value that allows

for differentiating oneself from market competitors. ICT has a decisive impact on everyday life: it affects styles and quality of life and communication between individuals, and steers public policies.

This inherent vocation to innovate is part of the DNA of the Company, one of the few in the IT industry to have its own Research and Development structure.

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 2015 amounted to about 30 million Euros. Around half of this comes from European Union funding obtained by Engineering within the context of the FP7 and Horizon 2020 programs and from national and regional funding granted by the Italian Ministry of Education, University and Research under various research programs.

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.

At European level, activities related to the Future Internet program, and more specifically the FI-WARE initiative (which the European Commission intends to use as the standard platform for the Internet of Things) have continued and been strengthened with the provision of a technological infrastructure dedicated to the FI-Lab initiative,

housed in the company Data Centers.

Engineering's innovation, research and development activities embrace a range of challenges linked to Governance, Health, Security, Infrastructure, Software, Energy, Mobility, Space, Cloud, Big Data, Internet of Things (IoT), Smart City, Tourism and Culture.

The research activities relating to the vertical market areas regard healthcare, cultural heritage, energy, security (cyber security and solutions for combating cyber attacks or phenomena with a high social impact such as cyber bullying), logistics and transversally, Smart City, and connect to e-government projects.

The importance attributed to research, production and innovation activities has led in recent years to the formulation of a structurally dedicated budget (parallel to the general budget) that marks a change in inner perspective aimed at establishing a closer collaboration between innovation activities and the production process.

In 2015, the Pre-Commercial Procurement tool was also consolidated and in 2016 it should be applied on Italian Digital Agenda topics, subject to particular interest by the Company.

During the year, initiatives to transfer research results to the market have been strengthened, proposing solutions in which the innovation elements are a significant part of the offer, increasingly involving customers in the experimentation. At the same time, Engineering's activities continued within the technological districts in Campania, Puglia, Calabria and Sicily.



SATISFYING CURRENT NEEDS, **ANTICIPATING TRENDS.**
READING THE MARKET, LISTENING TO **COMMUNITIES.**
PRODUCING WEALTH, GENERATING **SHARED VALUE**
FOR **THE COMPANY** AND FOR **THE COUNTRY.**

ENGINEERING

For the Country's modernization

G4-DMA G4-EC7 G4-EC8



SMARTER CITIES



OPEN DATA



AUGMENTED REALITY



BIG DATA



CLOUD COMPUTING



INTERNET OF THINGS



DIGITAL AGENDA



GIS (GEOGRAPHIC INFORMATION SYSTEM)

TECHNOLOGICAL SOLUTIONS HAVE THE GREAT POTENTIAL TO IMPROVE QUALITY OF LIFE AND CHANGE PEOPLE'S HABITS AND LIFESTYLES, WHILE ALSO SUPPORTING COMPANIES AND THE PUBLIC ADMINISTRATION IN THE DEVELOPMENT OF BUSINESS AND SOCIAL AND WELFARE POLICIES.

REDESIGNING THE RELATIONSHIP OF RESIDENTS WITH THE CITY, INTEGRATING SOLUTIONS AND SERVICES

The smart cities of the future:

Smarter Cities

The expansive spread of smartphones, tablets and the Internet (used regularly by 63%⁵ of the population) has driven the digitalization of lifestyles, but in Italian cities the methods for providing services mostly remain the same as those in place 15 or 20 years ago.

As a result, Italian cities cannot yet be defined as Smart Cities, or better yet Smarter Cities (easier cities), and Italians do not even seem to be aware of this concept (4 citizens out of 5 do not know what a Smart City is).

The integration of Internet of Things, Cloud and Big Data technologies, along with policies on Open Data, could create the conditions for a new period of strong transformation of cities into Smart Cities.

Smart Cities, the direct descendants of the "ideal city" of the Renaissance, represent an occasion to once again place the enhancement of the urban landscape at the center of the Country's agenda. Even more so at a time in which opportunities are in short supply. In this sense, the significant fragmentation of smart initiatives undertaken within the Country does not appear to be functional⁶.

One of the problems in the current approach to the topic of Smart Cities is that topics regarding modernization, such as mobility, energy, transport and health, are considered separately.

The key to the success of the simple cities of the future is found instead in the integration of the systems of all service providers (or at least the main

ones offered in cities) in order to facilitate people's lives. This is why we need a change in paradigm, to surpass the concept of "administrative barrier" and to take action in the real world, which is not affected by the bureaucratic perimeter, but by needs and issues in the real lives of real people.

Indeed, the services provided to residents are not all managed by the Municipalities. Consider, for example, the services provided by transport and gas, water and energy supply companies, which are currently not integrated and do not dialogue with those provided by the Municipalities.

The challenge of easy cities, as one can imagine, is not so much technological as it is social, cultural and, partly, regulatory.

An example of how different services may be integrated and generate value can be seen in how easy it now is for people to organize a trip. The worlds of air transport and hotels, car rental, payments - although they have completely different business models - have become integrated and are able to provide a complete service to resolve a concrete and real need with just a few clicks: the planning and purchase of a trip.

This is currently not the case in many other areas of life, work and education, in which residents need to log in and interface with impermeable silos, each different from the other and with their own rules and governance systems, to which they need to constantly adapt.

The goal is to exchange the current model, which

⁵ Internet use by citizens - 2015 (ISTAT - Department of Social and Environmental Statistics).

⁶ Smart Cities in Italy: an opportunity in the spirit of the Renaissance for a new quality of life (ABB and European House Ambrosetti 2012).

is too focused on individual projects related to limited areas, with a model based on technologies that enable the different silos to dialogue, centering perspective and vision not so much on administrative barriers, but on data.

Data is the protagonist of the cities of the future.⁷

These data are at the very center, and move at an extraordinarily rapid pace. They are the protagonist in various success stories regarding the smart delivery of services to residents: some examples are the largest taxi company in the world, which has no taxis (Uber), the largest telecommunications company by traffic volume, which has no infrastructure (WhatsApp), the largest retailer in the world, which has no warehouses (Alibaba) and the largest provider of accommodation and hospitality, which does not own even one room of its own (Airbnb).

These are some of the digital innovations in which the centrality and awareness of data, along with information technologies capable of making different systems interact, completely change the paradigm in terms of the approach to the provision of a service that becomes increasingly simple and easy to use for the public.

One of the areas that will be fundamental to the future governance of cities will also regard the virtualization of IT resources through Cloud Computing, with the acquisition by local players of IT services rather than infrastructure.

Another decisive aspect for digital development and the modernization of the cities of the future will

be the development of the Internet of Things (IoT). Indeed, Italian and European cities already have thousands of sensors from the most disparate families that currently produce enormous volumes of data, which are however not used to their full potential to activate other services or improve current ones.

Consider, for example, the sensors present on buses, stoplights, video surveillance systems and dozens of other infrastructures that record data in real time every day, which could have countless potential uses, both for those who manage cities and for those companies or start-ups that want to use these data to create new services for residents.

ENGINEERING'S RESPONSE

Engineering works with its customers in all domains of our Country's cities: Public Administration, healthcare, energy, finance, telecommunications and media infrastructure.

One of the challenges the Company is facing is to support its customers to make public services simpler and more immediate and efficient, transforming the cities of the future with digital platforms that allow for the development of innovative services. These services will also contribute to the growth and modernization of the Country, creating a market capable of attracting start-ups and small businesses, which can develop new services for citizens and commercial activities in urban areas.

To win this challenge, Engineering participates in

⁷ Smart City Exhibition 2015 opening conference: Data Driven Decision, Knowing, deciding and governing in the city of data.

a range of national and European research projects for the development of IT solutions capable of enabling communication between different services, creating convergence amongst and connecting data from different types of IT systems and sensors, to offer an immediate overview of and direct access to everything people need, when they need it.

The research areas to which Engineering is committed are aligned with the priorities of EU policies, such as the digital single market, an enabler that will provide European citizens with access to services and to the digital economy, thereby facilitating their daily lives.

COMMENT by Renato Galliano

Smart Cities are not only a synonym of technology, and smart cities are not created only with the introduction of new, more or less advanced IT tools. The challenge of the easy cities of the future is just as much social and cultural as it is technological. In addition, the concept of Smart Cities is not a paradigm applicable in the same manner to the cities of London and Milan, not to speak of smaller Municipalities. From our perspective, solutions for Smart Cities must be arranged and adjusted based on the specificities, criticalities, needs and potential of each local reality. Therefore, even assessment indicators must take this into account. Indeed, those that currently appear in the main studies are unable to account for many particular aspects that characterize different cities.

FIWARE

HEART OF INNOVATION FOR THE CITIES OF THE FUTURE

Engineering is part of the FIWARE initiative, an open platform that will contribute towards developing applications for smart cities.

This is a completely open public-private initiative, in which the software, technical specifications, standards and documentation are developed in Open Source format.

Today, along with the European Commission, it consists of more than 40 organizations and also

In Italy, one obstacle to the construction of Smart Cities is surely represented by the fragmentation of initiatives and responsibilities, as well as the structure of the Public Administration, whose systems and procedures are still "not modern enough" and are arranged into silos and well-defined, non-integrated segments which have not yet evolved in step with the technological progress made in recent decades.

We also observe a certain difficulty on the part of the Public Administration to create demand for services linked to Smart Cities consistent with the market supply, which is much more advanced than what is required by the Public Administration. The mismatch and at times the informational asymmetry between supply and demand appear to be common features in the Italian landscape. In addition, the Smart Cities services market tends to overlap the product/device and the service/solution, placing too much attention on the former aspect.

extends to other geographical areas at global level that share the same vision and ambition.

FIWARE technologies are made available free of charge to anyone in the world who wants to experiment with them through FIWARE Lab, a virtual laboratory that relies on a network of 18 Data Centers in Europe and Latin America. More than 1,000 companies are currently using FIWARE through FIWARE Lab to build their business solutions (Map. fiware.org).

In 2015, Engineering, ATOS, Orange and Telefónica combined their objectives of developing and promoting different solutions based on the FIWARE

platform, in particular in the areas of Smart Cities, Industry 4.0 and Smart Agrifood.

FIWARE solutions for Smart Cities will be implemented in regional contexts that demonstrate openness and sensitivity to IT innovations, with the aim of building operational pilot projects that are replicable on a large scale.

Open Data and information generated by sensors located in cities will be studied with the aim of connecting them to activate new services or to facilitate and simplify services that are currently more complicated and less accessible.

The long-term vision of FIWARE is to contribute to the more efficient management of services for

Lastly, the traditional financial system demonstrates limited capacity to give credit to projects for Smart Cities (with the exception of the energy sector, with the reference model of ESCOs), which still almost exclusively survive thanks to public, primarily national and European, funding.

Aside from getting beyond the already noted limits to the "silo" approach, based on isolated segments, we believe that two conditions must be met to develop the easy cities of the future:

- the development of all links in the chain of services for Smart Cities
- the affirmation of a culture of innovation and modernization at the social level.

Indeed, if a multinational company invents a home automation system, it is necessary for the entire connected chain to be able to transmit this solution, i.e., for a vendor to exist that is capable of explaining it, an architect who is able to integrate the system and a company that is able to monitor it, and a business that can maintain it.

The second point regards the culture and knowledge of those who need to provide smart services and those who need to use them!

The social system, which includes the Public Administration, residents and the production sector, must be able to understand and absorb innovation, understood as the capacity to use technological systems as well as the awareness of the resulting benefits and improvements.

The creation of circuits that allow for innovations linked to Smart Cities to reach residents is therefore absolutely one of the challenges and frontiers on which the Public Administration will need to work in the coming years.

Renato Galliano is the General Director of Labor Policy, Economic Development and Higher Education of the Municipality of Milan

residents by making open standards for the smart cities of the future available to the general public. Through its infrastructures, Engineering has also built its own commercial offer (fiware.eng.it) to put business initiatives based on FIWARE into practice.
www.fiware.org

FESTIVAL

A PLATFORM FOR EXPERIMENTATION WITH THE INTERNET OF THINGS FOR THE CITIES OF THE FUTURE

FESTIVAL (Federated interoperable Smart ICT services development and testing platform) is the EU-Japan collaboration project which aims to develop a vision of the Internet of Things through use cases with an experimentation model in smart cities. The objective of the FESTIVAL project is to provide experimentation platforms for the Internet of Things, stimulating interaction between objects and end users to test different ICT services in European and Japanese society in a range of domains, such as cities, buildings, public services and shopping.

The FESTIVAL experimental solutions will connect the cyber-world with the physical world, from large-scale implementations to small platforms in the laboratory environment and dedicated physical spaces simulating real-life settings.

In implementing the tests, FESTIVAL will use existing software and hardware available in Europe and Japan as much as possible in order to leverage the experience gained over years of research carried out in these two areas on the Internet of Things in real-life simulations.

As a shared infrastructure that features various testbeds for effective communication and collaboration amongst stakeholders, FESTIVAL will represent a significant step beyond the current state of the art of technologies.
www.festival-project.eu

ClouT

THE CLOUD OF THINGS TO SUPPORT SMART CITIES

Engineering participates in ClouT (Cloud of Things), a research project in 4 pilot cities: Santander, Genoa, Fujisawa and Mitak, funded by the European Union and by the Japanese National Institute of ICT, which aims to exploit Cloud Computing to create a connection between the Internet of Things and the Internet of People.

The objective of the project is to create a platform for communication and collaboration between people and objects, to make cities smarter by helping them to meet emerging challenges.

The project has led to the launch of a range of tests in the field, which enable residents and tourists to naturally interact with the city and its services.

ClouT reduces costs and the time required to develop and set up new applications through new public-private partnerships inspired by Cloud models, which support win-win strategies for all the stakeholders involved.

Last but not least, one important goal for the ClouT project is to combine forces and create long-lasting synergy for initiatives in Smart Cities mode between Europe and Japan.

In Genoa, Italy, for example, the "I won't risk it" service was created, which in 2015 became the

most popular and downloaded mobile application in the Municipality of Genoa, with more than 4,000 downloads.

This application is meant to inform citizens about best practices, environmental risks and emergency situations using the Internet of Things, such as environmental data provided by weather sensors, hydrometers and webcams.

clout-project.eu

A REAL CASE STUDY FOR THE CREATION OF SMART CITIES: THE NEW PORTAL OF THE MUNICIPALITY OF MILAN

The new Municipality of Milan websites created by Engineering and Hagakure represent a national and international benchmark for Smart Government for Smart Cities.

The new service, implemented during Expo 2015, features personalized services, facilitated research, immediate responses and the creation of a more direct connection between residents and local government. This privileged relationship gives rise to a single system articulated into three portals: Institutional, Tourism and Infomobility, which represents the immediately visible part of the new face of Smart Cities Milan, in which new technologies are a means, not an end to improve and simplify the lives of citizens and of the production system and to facilitate the relationship with the Public Administration.

Among the major new features, there are services customizable by citizens through the section myMilano, which allows registered users to create their own custom homepage by selecting the ser-

vices they are most interested in from a catalogue. On the same page, residents will receive news pertinent to them, such as impending deadlines, appointments at offices and contacts, to create a direct link with the local government.

The CRM system for identity and user profile management is at the heart of innovation because it allows for the management of all contact channels and digital relationships between the user and the Public Administration in just one way and just one place: mail, physical offices, social, web form and Call Center 020202.

The personalization and profiling of on-line services, available with just one access PIN, represents the start of the Citizen File, through the new "house of the citizen and of the digital enterprise", which implements what is provided for in the Italian and European Digital Agenda.

The content and the services of the new portals adapt to the navigation tool chosen by the user (desktop PC, smartphones and tablets, phablets and also smart TVs), are available in 6 different languages and are accessible through a powerful search engine that, from the homepage, can function as the privileged access tool to the digital resources of interest. They are also available on the calendar interface, they can be synchronized with one's own organizer, and may be added to the list of favorites of the custom area and shared on all the social networks. This content can also be viewed on a digital map, becoming points of interest (POI) navigable by proximity, on a temporal scale and by tags.

The "calculate route" services exploit reports in real-time of the Infomobility portal (muoversi.milano.it), a project that brings together all information and "live and real time" reports on the state of the entire mobility system of the metropolitan city

(traffic, accidents, road maintenance).

With this project, all the services related to mobility in the City of Milan converge into a single information system that gives the user the state of all public transport services and all the useful information for the planning of private transport.

With the renewed Tourism Portal, an interactive map will enable residents of Milan and tourists

alike to visit the artistic treasures and more attractive parts of Milan and find suggestions and information about the city's widespread cultural heritage.

70 itineraries guide the visitor to discover the city and its vast schedule of events, which can be accessed via the calendar function.

(turismo.milano.it)



TAKING CONTROL TO INCREASE EFFECTIVENESS AND SAFETY AT WORK

Augmented Reality to support the trades

Tablets, smart glasses, special mirrors, interactive magazines and pictures that come to life. It is called Augmented Reality, and it is a technology that takes advantage of displays on mobile and wearable devices to add information to what we see.

Until now, Augmented Reality has been used primarily in the medical field, for recreation and for marketing activities. The development of new application solutions now allows it to be used for companies' core activities, improving service levels while significantly reducing intervention timing and costs. The use of this technology is destined to change the way we work, especially in the world of maintenance and support services. Thanks to Augmented Reality and a tablet, the most expert personnel will always be on hand at machines and plants wherever they are installed, with the possibility of viewing and best managing the risks linked to safety in the workplace.

The application horizons are almost infinite: the initial applications are already part of the working life of some professionals and generate advantages in terms of occupational safety, speed and accuracy.

and reduce the complexity of activities being carried out. Thanks to the integration of the most recent mobile, visualization and 3D graphics and georeferencing (GIS) technologies, Engineering's solutions provide specific, effective support for technicians and maintenance experts when carrying out their tasks, adding information (generated artificially) to the reality observed via the device at their disposal.

OverIT is the Engineering Group company specialized in the design and creation of innovative Augmented Reality applications dedicated to the sector of field services, such as technical maintenance and support for plants and infrastructure, sales, assistance and customer relations.

Using tablets or smart glasses, Augmented Reality provides workers with a whole series of information that would not be available otherwise in a simple and immediate manner, and in real time, guaranteeing greater occupational safety and improving the quality and effectiveness of activities.

Wearable devices in turn support Augmented Reality solutions as they are a powerful tool for sending workers information in real time. For example, smart watches can be used in the area of occupational health and safety as personal protection equipment (PPE) for more at-risk jobs, as they are able to reveal the health status of workers and technicians by monitoring their heartbeat, and send alerts if any irregularities are detected.

ENGINEERING'S RESPONSE

Engineering offers innovative solutions that augment the perception of operating environments

COMMENT

by Gloria Gazzano

"Augmented Reality" refers to a series of technologies that enrich the physical world (which is where the term comes from) with digital content, by overlapping real-world objects with information such as text, images and interactive graphics; digital information is viewed by the user through special screens or, more recently, through *tablets* or *smartphones*.

This enables us to identify two methods for exploiting digital content: through wearable devices, which therefore leave our hands free, or through hand-held devices.

SNAM has introduced Augmented Reality solutions for its technicians and maintenance personnel, within an important program of digitalizing *operating* processes carried out in mobility. These solutions are an integral part of and are also enabled by latest generation mobile devices (*iPads*).

To date, we have distributed more than 4,000 devices within the Group and installed *apps* that provide an underground view of the network, so that near a gas or methane pipeline, it is possible to view all *assets* constituting the plant network in 3D, improving the possibility of consulting all information on the network.

For our maintenance staff, these solutions represent a great leap in quality in terms of the punctual and targeted availability of information they need to perform to the best of their abilities. Thanks to our adoption of *apps*, we have therefore given a "digital identity" to maintenance personnel and digitalized a component of work that has

traditionally been carried out with no technological support.

Our suite of apps supporting *Workforce Management* boosts the efficiency of the workforce since it provides the possibility of consulting documents in mobility and collaborating in *real time*, increases safety by guiding technicians in carrying out their activities in compliance with regulations, informs technicians about the status of the network and, if excavations are required, alerts them as to the presence of other networks (electrical or water) which could cause interference, creating safety problems or other inconveniences.

For business applications, we believe that the further development of hands-free, wearable devices will represent a leap in quality, by providing technicians or maintenance personnel with real-time, profiled and useful information based on the situation at hand, which can be used while carrying out their activities.

In terms of content, in the short term we would like to make available user manuals, operating instructions and topographical information about the plant (*layout*, sizes, dimensions of structures) to increasingly facilitate the work of our technicians. We are closely monitoring developments in this sector to evaluate their adoption as soon as they have become mature enough to be used reliably and safely.

Gloria Gazzano is the CIO (Chief Information Officer) of SNAM

CARTESIO

SECURITY AND REMOTE CONTROL FOR SNAM

Engineering has developed a project for the Utilities sector that uses Augmented Reality to support local maintenance and control activities carried out by SNAM's maintenance technicians in the buffer zones of underground gas lines.

The application, integrated with WFM Mobile (a device used to access information on the Cloud) and with company georeferencing (GIS) services, enables:

- the combined use of GPS, compass and accelerometer to overlap the real with the virtual
- the presentation and consultation of information about the assets (location, technical sheets, plant layouts)
- the dynamic and parametric adjustment of viewable content

- localization and orientation for the identification of plants located in impassable areas
- support in checking lines to verify the presence of interference in the gas pipeline buffer zone.

With the use of Augmented Reality technologies, SNAM technicians are now capable of overlaying what we see with the naked eye with additional, virtual information viewed on the screen of a tablet or through a digital camera. This allows them to carry out operations remotely or from a distance, and therefore with greater safety.

The technicians who monitor underground gas lines for inspection purposes are capable of viewing pipes virtually, overlain over the real visual field. This also allows maintenance workers to save time, because they no longer need to take measurements, make calculations or manually leaf through technical specifications, as in the past. This solution can be used to load a significant amount of technical and layout data, which are then transformed into virtual, 3D information.



CREATING A VIRTUAL ENVIRONMENT, PROVIDING REAL SERVICES

The Public Administration and companies accelerate with Cloud Computing

Cloud Computing is a **technological evolution** that has substantially changed the IT market business model, as it replaces the classic format for the use of IT services in which the user purchases a package, installs it on his or her computer and uses it, with a format in which solutions are shared based on a pay per use model. In this manner, as in the case of supplying electricity, businesses and residents do not need to worry about purchasing a license.

Cloud Computing represents a revolution in the IT world and a drive for modernization, as it provides small businesses and start-ups with access to infrastructures, services and information technologies (which until a few years ago had very high infrastructural costs) with a consumption or subscription based model, doing away with the need to purchase hardware and software.

In Italy, it is estimated that the Cloud market has grown by 25%, and in 2015 it is expected to reach a value of 1.51 billion Euros. Investments dedicated to Cloud Enabling Infrastructure (updating of infrastructural and application assets already present within the company), which are up by 21% compared to 2014, and the public Cloud component, up 35%⁸, are the leading contributors to these figures.

Cloud Computing promises to generate great advantages in terms of efficiency and savings for companies, which have gradually started to abandon their old servers and purchased software.

While until just a few years ago launching a service on the web meant first and foremost investing in hardware and low-level services like storage, processing and infrastructure management, today it is possible to acquire all of this in the form of services.

The value added of a web service lies in the business logic with which the data are aggregated, processed and delivered to end users.

Cloud Computing is based on the concept of virtualization and the dynamic and scalable management of IT services, which combines software applications and infrastructure with a flexible model of delivery, use, computational capacity (both hardware and software) and storage, offering information technologies in a convenient and elastic manner. With the Cloud, a company or Public Administration can decide to transition from company productivity instruments with a perpetual license (such as Microsoft Office) to services that can be rented.

One of the greatest advantages lies in being able to request the use of the services needed at the exact time they are needed, for the time required and with the power necessary for a specific activity.

In this manner, the Public Administration, companies and organizations can reduce investments in IT infrastructure and optimize the use of internal resources, resolving periodic or unforeseen computation peaks with the use of Cloud services.

⁸ *Cloud & ICT as a Service Observatory*, (School of Management at the Polytechnic University of Milan) 2015 research report.

COMMENT by Stefano Mainetti

Until 2013, the phenomenon of Cloud Computing had a generally limited growth rate in Italy compared with other areas, such as the US and the rest of the European Union, due to the limited spread of broadband and the fear of losing control over IT infrastructure, applications and data, along with the perception of safety issues.

On the other hand, since 2013 growth rates have consistently reached double digits in Italy: today, Italy is the eighth country in the world by number of users of Cloud solutions (according to the recent "BSA Global Cloud Computing Scorecard" research report).

One of the main challenges is certainly the importance of understanding the value of the Cloud for organizations, beginning with the possibility of enabling Office Automation and Unified Communication and Collaboration solutions, solutions for Human Resources and Customer Relationship Management, and even applications to support the core business, such as ERP systems.

By leveraging the paradigms of virtualization and consolidation, in relation to applications as well as infrastructure, private businesses and the Public Administration can aim for opportunities for innovation ranging from the simple reduction of costs for the management of infrastructure, services

and company resources, to improved management of back-up and disaster recovery solutions, reaching a higher level of safety and reliability of systems as well as of the data they manage.

The possible benefits can also take the form of the implementation of collaborative solutions and shared services, and even the creation of marketplaces, within which customers and users are highly engaged and co-generate possibilities for innovation.

These transformations impact not only the technological perspective of the company, but they also introduce radical re-engineering processes throughout the entire organization.

By adopting Cloud solutions in an effective and targeted manner, private businesses and public administrations can take advantage of innovations in the state of the art through easily accessible applications that are scalable and typically purchased on a pay-per-use basis. Access to entire agile and liquid infrastructures, with highly modular components, provides businesses with the possibility of obtaining resources that are otherwise difficult to acquire without considerable investment and continuous updates.

Stefano Mainetti is the Co-Scientific Director of the Cloud & ICT as a Service Observatory at the School of Management of the Polytechnic University of Milan

A business that makes extensive use of IT services is therefore no longer required to acquire licenses to use advanced payroll software, but rather it will only incur costs when necessary, i.e., after the 15th of the month.

A Cloud application is also available to everyone who is connected to the network. As it is executed on an external Data Center, there are no problems of "portability", and it may be set to multi-tenancy mode, enabling an application to be used by multiple customers at the same time, saving resources for everyone. Even small local governments and SMEs now have the possibility to deliver cutting-edge services to residents and the market, in exactly the same manner as the governments of the largest cities or the most advanced companies. The "cloud" revolution promises to have a positive macroeconomic impact on growth and competition in all sectors, by decisively contributing to an increase in productivity⁹. The spread of the Cloud model also has a positive impact on the environment, as it is based on the outsourcing of IT services, which is leading to a reduction in company servers and therefore in energy consumption and electronic waste.

ENGINEERING'S RESPONSE

Engineering has also invested significantly to change its offer to customers, transitioning from the sale of a product to its delivery on a pay-per-use basis. Therefore, it no longer provides licenses, but rather services through the transformation of the architecture of its products, on which it is possible to install the specific elements re-

quired by different types of customers in a range of sectors.

Engineering was one of the first providers in Italy to offer SAP certified Cloud services.

The services that Engineering provides in the areas of SaaS (Software as a Service), IaaS (Infrastructure as a Service) and, more recently, PaaS (Platform as a Service) make it possible to develop, test, implement and manage company applications.

The use of Engineering's Cloud solutions helps to achieve significant savings, both economic and in implementation, as well as a high degree of efficiency and flexibility.

In 2014, Engineering rolled out a Cloud Computing initiative: the Managed Operation Innovation Lab, an incubator that hosts the Group's most innovative projects to then transform them into large-scale market solutions for its customers, which during the year are asked a number of times for feedback on the relative developments.

Beginning in 2015, Engineering created the Cloud Services Department and began providing Cloud services through the Microsoft Azure platform. For the first time in Italy, it used in its Data Centers the same technology that is present in those of Microsoft, also implementing its own Microsoft Azure portal and a specific portal for services dedicated to the Public Administration on Open Tech technology. In 2016, the two portals will be combined into a single one, through which customers can select their preferred Cloud services and technology.

With the Engineering portals used in "self-service" mode, customers can define and launch advertising campaigns or create development environments in just a few hours by renting the IT resources needed at the time, with the possibility

⁹ 2012 Report of the political culture foundation ResPublica and Astrid, the foundation for Analysis, Studies and Research on the reform of Democratic Institutions and on the innovation of public administrations.

to expand data processing power, storage and network access parameters at any time.

An important aspect for Engineering customers is the opportunity of being able to rely on Cloud services provided by two Italian Data Centers, located in Pont-Saint-Martin and Vicenza, which feature reciprocal disaster recovery and are compliant with European privacy and data security regulations, currently the strictest in the world.

CLIPS

PROVIDING PUBLIC SERVICES WITH CLOUD COMPUTING

Engineering participates in and coordinates the CLIPS (Cloud Approach for Innovation in Public Services) research project, being tested in five European cities, with the aim of promoting the development of public services based on Cloud Comput-

ing within a context that surpasses national borders and leverages cooperation to conceptualize and develop new services and overcome the problems that have so far limited the adoption of this technological solution by public administrations.

One of the first results of the project was the launch of the on-line registration service for municipal early childhood schools in the city of Lecce.

Thanks to CLIPS, the very role of the public administrations has transformed so that, in addition to providing the service, they also facilitate it and guarantee its quality.

The definition and implementation of new public services follows an approach based on visual composition through a web application that makes it possible to dynamically include information or content from multiple sources, as a result enabling the sharing of experiences and the results achieved in a single municipality, which therefore become re-usable assets.

www.clips-project.eu



ENTERING THE FUTURE, IMPROVING SERVICES FOR RESIDENTS

Digital Agenda:

where are we now?

e-Government is the process of computerizing and digitalizing the Public Administration which, thanks to the use of information and communication technologies (ICT), makes it possible to handle documentation and manage procedures with digital systems that optimize the work of entities and offer users (residents and businesses) new, faster services.

Based on a survey conducted by ISTAT in 2012¹⁰, direct contact through offices still represents the main manner of interaction with the Public Administration (64%), followed by telephone (18%). The use of on-line tools (Internet, email and certified email) comes to less than 20%, while this value exceeds 35% for young people under 30 years old and those with a higher level of education.

As in other European countries, in Italy e-Government services are more available and of higher quality at the central level than at the local level.

Progress has been made for the Italian Digital Agenda, but a decisive leap in quality is still missing in terms of implementation. This is also one of the main indications that emerges from the research conducted by the 2015 Digital Agenda Observatory of the Polytechnic University of Milan's School of Management.

This research highlights that since 2012 only half of the implementing provisions set forth in the program's Law Decrees have been rendered operative.

The implementation of the Digital Agenda means:

- the growth and development of the country through the use of digital technologies
- restructuring the organization of the Public Administration through process digitalization
- defining priorities and improving the digital literacy of residents and businesses
- engaging residents and businesses in the innovation process.

Digitalization is an essential occasion for transformation to pursue the great objectives of growth, employment and quality of life in our country.

ENGINEERING'S RESPONSE

For over thirty years Engineering has flanked and supported the Public Administration in its path of modernization that passes through both organizational and technological renewal.

Thorough knowledge of the workings of the "public machine" and functional competence together with the Group's technological innovation capacity contribute to the evolution of the main information systems that regulate the country's life, such as those for public finance, healthcare and justice.

Engineering has contributed to funding the European FIWARE project (presented in the Smart Cities chapter) from the financial perspective as well as by developing its components with other

¹⁰ Istat: The use of e-Government by consumers and businesses, 2013.

European partners. FIWARE is especially a unifying standard, which provides the "building blocks" of the European Digital Agenda. Companies use these "building blocks" to create solutions that can be connected or used independently. For example, an object built for a city is interoperable at European level and, especially, can be integrated with other objects that used the same platform. All of this is perfectly consistent with the European digital single market, another EU priority that aims for an independent and uniform Europe in terms of information technology, to allow everyone to use the same components. There are many possible applications of this platform: from the In-

ternet of Things to healthcare, from transport to social media. The task of Engineering, along with other important European partners, is now that of breathing life into this platform, while also offering technical support to its users.

The Company is a sponsor of the Digital Agenda Observatory at the Polytechnic University of Milan, which supports and develops dialogue between the world of digital innovation and that of politics, the government and the public administration. The purpose of the Observatory is to offer decision makers interpretative models, tools based on solid empirical evidence and spaces for

COMMENT by Alfonso Fuggetta

In Italy, there is still much to do to make up for the serious delay accumulated in the last decade, and there are still risks deriving from simplifying or sector-related temptations.

What we need is an improvement in the quality of local government processes and the elimination of the many useless steps required of residents and businesses arising from antiquated and sector-focused procedures, in order to place the best skills and professionalism at the very center and leverage high-quality ICT services.

The challenge is to again render innovation processes unitary and systematic to improve the country's competitiveness, both with strong and authoritative governance and by promoting the

empowerment of local government personnel to create more mature public demand that positively stimulates and fuels the ICT market.

There is no doubt that the mobile revolution requires a re-conceptualization of procedures for accessing (useful) services and, indeed, an overall redefinition that takes into account the evolution of technologies and lifestyles.

It is certain that in Italy some extremely significant methodological and operational steps are being consolidated over time, including the definition of a strategic vision and a reference model for public administration e-Government systems.

Alfonso Fuggetta is CEO and Scientific Director of CEFRIEL (Center of excellence for innovation, research and training in the Information & Communication Technology sector)

dialogue to take advantage of the opportunities offered by digital innovation in relation to several major topics that impact the country's competitiveness (efficiency of the public administration, the fight against tax evasion and support for development).

Engineering is one of the main partners of the Assinter Italia project: "Digital Healthcare Made in Italy", an agreement signed in Rome on May 7, 2015 by several public ICT companies of the Regions and Autonomous Provinces and the largest Italian ICT companies, proposing a joint action to transfer resident assistance and care services online.

The aim is to accompany public healthcare in the era of digital transformation, as is taking place for all sectors of industry and services, the road chosen today by the most advanced public and private welfare systems.

DIGITAL MEDICAL PRESCRIPTIONS IN VENETO WITH SPAGIC

Carried out with the technological contribution of Engineering, the project for digitalizing the Health Service's "red prescription" in the Veneto Region won the 2014 eGov award in the "Internal efficiency and simplification" category.

Since the system was activated on September 1, 2014, 72 million prescriptions have already been managed digitally throughout their lifecycle from the physician to the pharmacist, to the specialized outpatient unit and appointment scheduling.

When fully operational, prescription digitalization in the Veneto Region will result in annual savings of roughly 3 million Euros, without considering the

considerable increase in service quality and expense monitoring.

The project, specifically the Regional Reception System, was created by Engineering on the Spagic platform and every day manages more than 800,000 transactions with average response times of 0.2 seconds, compared to the objective of 8 seconds.

Spagic is a flexible, highly configurable software platform for the development of expandable solutions with the aim of optimizing, monitoring and integrating company processes and supporting the use of web services to guarantee interoperability amongst the various systems.

The platform is managed by a dedicated team from the Open Source Center of Competence, part of Engineering's Research and Innovation Department. The goal of digitalizing prescriptions is to make the entire lifecycle of medical prescriptions fully electronic throughout all phases: prescription, appointment scheduling, receipt of diagnostic/treatment procedures, acquisition of medications.

In addition, the prescription digitalization process is part of a broader Regional Healthcare File project which, based on the sharing of patient clinical and administrative data amongst regional-level operators, promotes and supports the re-development of social/healthcare processes, allowing residents to make use of more effective, efficient and economically sustainable services.

The development of this Electronic Healthcare project is strategic to favor control over clinical/support processes in terms of healthcare spending, appropriateness, prevention, planning and organization. These results are also achieved by making information available when a prescription is written and services are provided, generating signifi-

cant advantages in terms of organization and decision-making processes.

The informational architecture developed can be used to pull up all prescriptions written by physicians, either affiliated with or employees of the 21 Social/Healthcare Facilities in the Veneto Region and the 2 Hospitals, within a single Regional Reception Service. This service centrally manages all of the confirmation and transformation activities required to send information to the Ministry of Economy and Finance, resulting in evident operational economies.

The IT component implemented through the Spagic platform deals precisely with the acquisition of all prescriptions, their verification and their preparation in the exchange format, which is then sent to the central system.

The system is operative 24 hours a day, 7 days a week and already manages more than 60 million prescriptions per year. The daily reporting needed to properly track the prescriptions sent and to verify the quality of the data provided is now available to the Social/Healthcare Facilities, while at regional level the infrastructure provides monitoring tools (Spagic Console) that can be used to verify whether the platform is properly functioning.

The use of Spagic has made it possible to integrate the services in a modular manner, with savings in terms of time and realization costs compared to a traditional development project. It also made it possible to govern the distribution of the different realization activities and the integration of the relative results amongst the various suppliers involved in the development project.

Appealing projections are also available regarding the economic advantages for the Region: Arsenà. IT has calculated that, thanks to the electronic pharmaceutical prescription, the Regional Health

System will save roughly 3 million Euros every year, taking into account costs it will no longer need to incur (relating to the cost/opportunity of health-care personnel, prescriptions and paper prescription management services).

THE CITIZEN AND BUSINESS FILE FOR PEOPLE WITH DISABILITIES IN THE MUNICIPALITY OF BOLOGNA

This is a project for the inclusion of people with disabilities in school, work and society through the use of ICT, carried out by the Municipality of Bologna with the support of Engineering, the Emilia-Romagna Regional Administration and the Asphi Onlus foundation.

The objective is to create a single profiled and personalized point of access for residents and businesses to services, electronic documents and certifying databases.

The on-line services space is inspired by the concept of Smart City Hubs and aims to expand the user experience to meet public service demands in a single digital location.

The Citizen and Business File is the solution that aggregates the electronic services provided by a range of vertical legacy applications, certifying databases, document repositories/management systems and relationship management systems (appointments, scheduling, reporting, communications).

The solution required the adoption of process change policies so that it could be integrated with the initiatives of the local Digital Agenda.

IT IS consistent with the acceleration objectives of the Italia Login project set forth in the "Digital Growth Strategy" document issued by the Digital Italy Agency in November 2014.

To date, roughly 18,000 companies and more than 7,000 users have registered, the majority with "strong credentials" and in person verification, who can take advantage of all services on-line. The proposal in place within the Emilia-Romagna Region is the extension of the solution to all regional provincial capitals.

SMART SST

THE MOBILE VERSION OF THE TUSCAN REGIONAL ADMINISTRATION'S HEALTH FILE

Engineering contributed to the development of Smart SST, an application that offers residents access to the on-line services of the Tuscan health system through mobile devices (Android and iOS). With just a few clicks, it is possible to access and consult:

- reports about laboratory and radiology exams
- electronic pharmaceutical prescriptions
- illness exemptions
- exemption certifications based on income or economic range to calculate tickets
- personal data
- useful numbers of the Health Service or Healthcare Facilities
- the financial position self-certification process for joint contributions to healthcare spending
- the patient record.

To take advantage of all of the app's functions, it is possible to activate, directly from the Tuscan Regional Administration's website (www.regione.toscana.it/-/smart-sst), the Electronic Health Card and the Electronic Health File to consult medical reports.

The Regional Administration has also released the ToscanaID app to guarantee secure access to information with complete respect for privacy.

WELIVE

CITIZENS DEVELOPING SERVICES FOR THE PUBLIC GOOD

WeLive is a European research project meant to improve the possibility for residents to use services with the support of new technologies.

Engineering is monitoring the development of the trial project in the Municipality of Trento, which is participating alongside Bilbao, Novi Sad and the Helsinki region.

The project is based on the active participation of residents in the process of building a local government that becomes increasingly sensitive to the needs of the community through a range of instruments and occasions for listening and dialogue.

Therefore, the objective of WeLive is to transform the current approach of e-Government by facilitating a more open model for the study, production and delivery of public services through collaboration between the Public Administration, residents and entrepreneurs, and aiming to overcome the existing gap in public services between innovation and adoption.

The project aims to build a technological platform capable of making available services relating to Open Innovation, Open Data and Open Services.

The platform is a space for the interaction and participation of residents in the development of policies regarding the local government.

www.welive.eu

E-INCLUSION NETWORK

INFORMATION TECHNOLOGY AT THE SERVICE OF OUR MOST DISADVANTAGED CITIZENS

"An embrace that helps" is the slogan that presented the e-Inclusion Network, the new network of services and technologies designed to support residents and provide help, support services and necessary tools, especially to those who are most disadvantaged.

Social inclusion and services intended for the weakest members of our population are the key values of the e-Inclusion Network, which has a central IT infrastructure and dedicated equipment distributed across 5 Sicilian Municipalities in Social/Healthcare District 39: Bagheria, Altavilla Milicia, Ficarazzi, Casteldaccia and Santa Flavia.

By using hardware and software technologies, Engineering has created a network of social/healthcare services for the elderly, the chronically ill and the disabled, as well as women/mothers in difficulty, immigrants, former prisoners and disadvantaged families, which provides for the evolution and integration of local support processes by providing simplified access and the possibility for remote interaction.

Engineering has created a portal available to users, consisting of: an open section that describes the project and the services provided, in which the necessary documents and forms are available; an interactive area in which everyone can register to request the various services.

The portal represents a meeting place between residents and social/healthcare workers, and can be used to request a range of services:

- reservation of medical and healthcare facilities
- transport requests for the elderly and the disabled
- request for citizen services provided by the Municipalities, Support Service Centers and pharmacies, with the resulting tracking of cases online
- reservation of computerized classrooms equipped for the disabled.

The project also encompasses two "physical components", in that it involves the use of electro-medical devices and home automation solutions.

Physicians can use the medical devices given to patients to remotely monitor a range of parameters, such as blood pressure, temperature and EKG. The home automation component enables the remote control of the safety and status of domestic or collective environments through smoke/gas/CO₂ detectors, as well as humidity/temperature or blackout sensors.

The project has also resulted in the activation of a permanent observatory for youth poverty, with the goal of connecting schools, training institutes, sports and cultural and recreational associations so they can promote initiatives and opportunities for young people.

The e-Inclusion Network was funded with the European Union's 2007-2013 European Regional Development Fund, in relation to Axis VI "Urban and Sustainable Development".

www.einclusion.it

ENABLING ACCESS TO DATA AND INFORMATION, BY INTEGRATING KNOWLEDGE AND SERVICES

Open Data: an opportunity for the creation of new citizen services

The data made available by the Public Administration in recent years constitute an enormous wealth of information. Data are the new precious metal of our times, and the public administrations and companies that store them constitute huge reserves. The mines of Open Data are the applications that make up the information systems and the miners are the operating processes that execute them and

guarantee the quality and quantity of the material to be brought to the surface.

By integrating their own data with data coming from associated bodies or similar, public bodies can coordinate different processes among themselves and have an overall and simplified view of the interactions between the different administra-

COMMENT by Paolo Traverso

In Italy, the topic of Open Data has not been well interpreted by the Public Administration.

It is necessary to overcome the "Open Data = transparency" label: the data are difficult to understand for the majority of people and, therefore, they create "opaqueness" rather than transparency.

A good transparency project should therefore begin with an explanation associated with the data, appropriate supporting documentation and an effective and usable presentation of the numbers constituting the information.

In this manner, anyone can receive the tools to verify what is communicated by the data and Open Data become a means (=enabler), not an end.

Many data that are able to create value have not yet been opened, although many studies present impressive figures on the economic value that

Open Data can create if at least three fundamental conditions are satisfied:

- prompt data updating
- data distribution through interoperable and open services (for example, webservice)
- rich data documentation.

It is therefore necessary to work on the sustainability of data management life cycles, although at the moment we can only imagine the real opportunities linked to the opening of data.

As FBK, we are working for the development of new businesses and new products and services that exploit the great volume of regional open data through the OpenData200 project. This project was born based on a collaboration launched with New York's GovLab coordinated by Beth Novack (advisor to President of the United States Barack Obama on the topic of Open Government).

Roughly three years ago, GovLab launched a research project (OpenData500) based on interviews with 500 companies, a study that FBK now leads in Italy by investigating 200. The situation in Italy is

tions and reduce the times for carrying out some activities as well as improve the services provided.

In Italy, much of the Open Data published by local governments has been gathered within the national portal (dati.gov.it) organized based on topics, genres, reference territory and the local governments that released them. The current challenge consists of promoting their use by companies interested in creating new services for residents or creating new businesses. Indeed, raw data do not only have an intrinsic value: their value lies especially in the possibility of putting them together,

cross-referencing them and processing them to glean additional information from them and understand new needs.

Consider, for example, an insurance company that uses the open data of workplace accidents which are currently available by geographical area, type and severity, to formulate new services based on their analysis in light of statistics taken from other sources.

The European Commission estimates that the potential value of public sector information of the Member States will total 1.7 billion Euros between

much different from the US, as there are very few central institutions that are distributing data in a uniform manner.

The initial results of our research show a blossoming market (in part already active in the past) in the world of geospatial technologies (in which data are crucial), in marketing analysis (in which Open Data are at the basis of the infrastructure) and in the area of mobility. Further, there are many interesting cases of companies that collect data to calculate the level of accountability of other companies. The situation in Italy is not much different from others in Europe. The various studies that compare countries, such as the Open Data Barometer or the Open Data Global Index, place us just below the major countries, but in any event in the cluster of emerging countries.

However, we are still far from reaching the level achieved in the UK. What we need to improve is the opening up of data with a view to three key words: reuse, growth and sustainability.

Reuse is the possibility of being able to replicate and expand on a large scale the beautiful ideas

born on the basis of open data in a narrow area, for example in a small Municipality.

Growth must always be the driver whereby this takes place and sustainability must provide the guarantee that these data are always available. Data are a crucial factor to solve day-to-day problems and to create new public services. Our imagination can lead us to conceive of hundreds of integrations between different services, but the future will continue to surprise us.

However, the future should be built starting from the spread of the culture of data amongst people who have the skills to draw value from them.

Therefore, in my view, as a country we need to work on these two axes to create value through data and create the conditions for new scenarios that we imagine now and that will never cease to amaze us tomorrow.

Paolo Traverso is Director of the Center for Information Technology - IRST (FBK-ICT)

2016 and 2020, with the size of the Open Data market expected to grow by 36.9%, with a value of 75.7 billion Euros in 2020¹¹.

There are numerous sectors in which Open Data promise to create added value for the general public in the future, and these involve the use of geographical, environmental, demographic, transport, health, education and energy production and consumption data.

The importance of open data is a central theme in the agenda of the European Union, which founded the accelerator FINODEX (Future INternet Open Data EXpansion) to use public funds to support companies for the development of products and services based on Open Data.

ENGINEERING'S RESPONSE

In recent years, Engineering supported the Public Administration to publish standardized Open Data based on a shared international language (rdf, lod level) available in text format, in spreadsheet format and open data standard. Today, these data can be obtained, analyzed, cross-referenced and used freely by businesses and organizations to create new services for residents, other businesses and institutions.

Engineering has defined and applied a proprietary framework to implement structured data search, selection and publication programs based on a toolkit of specific software solutions: open data veins & mines, veins exploration, mines assessment and open data measurement.

OPEN DATA FOR THE COMMUNITY: THE AUTONOMOUS PROVINCE OF BOLZANO'S GEOBI.INFO PORTAL

Where is it best to buy a new home? In which district is it best to open a new hotel? Where should I focus my business advertising? These are just some of the questions that can be answered by exploiting the immense wealth of information that public organizations and companies provide to residents in the form of Open Data. The GeoBI.info project aims to facilitate not only the collection and sharing of these data, but also their interconnection and visualization through interactive thematic maps, in order to extrapolate their real informational potential.

The project, born at the initiative of the Autonomous Province of Bolzano, was supported financially by the European Regional Development Fund (ERDF) and technically by Techno Innovation Park South Tyrol (TIS). With the support and consulting of Engineering's SpagoBI Labs, the project resulted in the creation of a public portal for the use of georeferenced Open Data.

Thanks to GeoBI.info, users can access the data made available by a range of certifying bodies such as the Provincial Administration, the Provincial Statistics Office (ASTAT) or other system users, enter new data, connect them and generate, with just a few steps, interactive thematic maps that show how the indicators selected to analyze a

¹¹ Creating Value through Open Data: Study on the Impact of Re-use of Public Data Resources (European Union, 2015)

particular theme are distributed over a given area. The possibility for the end user to create complex views starting from raw data, using Business Intelligence Self-service instruments directly integrated within the system, is one of the two elements characterizing this project.

Indeed, the strength of the GeoBI.info portal is that it is a tool that is easy to use, which makes it possible to knock down barriers to user access and the spread of Open Data, as it offers a component to process and view data that can be used by the broader public.

The second distinguishing feature is the possibility to view data by placing it directly in relation to the area of interest through interactive thematic maps. Thanks to this type of analysis, which combines statistical data and spatial information within a single view, generally referred to as location in-

telligence, it is possible to view, almost in the blink of an eye, patterns, trends or critical issues with an immediacy and effectiveness that cannot be obtained with traditional analysis systems, such as reports and graphs.

From the technological perspective, GeoBI.info is completely based on open standards and Open Source components. In particular, the Business Intelligence suite created and supported by Engineering was built around SpagoBI.

All of the innovative functions implemented for the project were included in the standard version of the suite, and therefore they can be freely used by all users of SpagoBI and everyone who may want to use their own version of the GeoBI.info portal on-premises in the future, possibly extending the system based on their own needs.

maps.geobi.info



MANAGING AND ANALYZING DATA AT GLOBAL LEVEL, GENERATING TARGETED SOLUTIONS

The **Big Data** revolution as an opportunity to promote competitiveness

To win the challenges of the global market, it is no longer sufficient for companies and organizations to manage their businesses only with the structured information traditionally present within the company, which are organized on the basis of pre-defined, easily manipulable databases.

There is a good deal of potential in Big Data anal-

ysis, particularly in the use of destructured data (social, audio, video, images, email), if we consider that currently organizations in Italy use internal data 84% of the time, and only 16% of the time do they use external sources like the web and social media¹².

There are many opportunities in this area, given the increasing volume of information generated

COMMENT by Francesco Vaccarino

In Italy, the topic of Big Data is only in its infancy and large, and at times even medium-sized, companies are adjusting to this new paradigm that promises great opportunities for the creation of highly verticalized companies based on specific problems, in the form of start-ups and possibly in the form of spin-offs from companies or temporary consortia amongst various companies.

Aside from providing access to tools to build customer loyalty and customize offers, Big Data are the key to increasing the appeal of the Internet of

Things (IOT). The connection of devices and the possibility of collecting data at a spatial-temporal granularity without historical precedent will provide advantages only if we are able to extract useful information, in which useful can mean "actionable", or capable of supporting us in decision-making processes.

In this sense, while on one hand we will surely have great opportunities in terms of advanced automation and the so-called "factory 4.0", on the other the truth is that we are still in the early stages and there are not yet standard business models for handling this in a profitable manner. Therefore, what we can never avoid is being ready, creative and reactive.

In general, large companies obtain better results

¹² *Big Data Analytics & Business Intelligence* Observatory (2015 research): *Business Intelligence* and use of public data as a factor of competitiveness.

by the web and by social media (social & web analytics) and the spread of an increasing number of mobile devices, on which applications can be used for interaction with smart devices. In addition, an increasing amount of data can be obtained from sensors, RFID (radio frequency identification), GPS, QR Codes, digital signage and barcodes installed at shops and stores, which integrate intelligence in objects: shop windows, mannequins, shelves, products or packaging, displays and cash registers.

Big Data Analytics & Business Intelligence sys-

tems can play an important role in improving competitiveness by optimizing decision-making processes and the organization of production and sales and becoming a tool for the evolution of companies and organizations across all sectors.

According to the European Union, decisions based on knowledge obtained from Big Data can generate a 5-6% boost in the productivity and competitiveness of companies, can increase GDP by an additional 1.9% per year and over the next five years will increase employment, for a total of roughly 69,000 people¹³.

from Big Data because they have a broader conception of what can go under the name of Big Data and they use a higher number of data types and sources for a broader range of objectives and a more extensive assortment of functions. However, considering the low cost of the technology distributed and of IOT, even the small and medium-sized enterprises making up the Italian economic fabric can receive an excellent boost from these innovations if they begin to think of themselves as agents within global networks, similar to the Uber/Airbnb model.

Big Data challenges are linked to overcoming the chronic lack of connectivity in our country, which has a strong negative North-South gradient, and difficulty in obtaining talent in the field of Big Data

- Data Science since, to date, only a handful of universities offer undergraduate programs in these areas. In addition to acquiring talent, companies will also need to begin to structure themselves at the organizational level with the creation of departments, if not entire spin-off companies, dedicated to Data Analytics.

Francesco Vaccarino is Professor and Researcher in the Department of Mathematical Sciences at the Polytechnic University of Turin and Senior Researcher at the ISI - Institute for Scientific Interchange Foundation

¹³ Resolution of the European Parliament on "Towards a thriving data-driven economy" (2015/2612(RSP)).

ENGINEERING'S RESPONSE

Engineering has always been a pioneer in supporting its customers in the development of solutions and platforms oriented towards the management of large volumes of data, also thanks to the resources made available by its Pont-Saint-Martin Data Center.

Today, the Group offers its planning and development capabilities to support customers in facing the process of embracing Big Data, thanks to its profound knowledge of stream processing, text and data analysis and mining technologies, semantic analysis techniques and the use of ontologies.

Its holistic approach is capable of dealing with all of the main dimensions of Big Data:

- **Volume**, with reference to the quantity of large volumes of data that can be managed to take decisions based on complete analyses
- **Speed**, with reference to the immediacy with which the data can be processed to take near-real time decisions
- **Variety and Variability**, which regard the complexity of managing the range of data forms, content and meanings, also depending on context.

As one of the founders of the Big Data Value Association promoted by the European Union, Engineering has created a specific internal Center of Competence on Big Data which, amongst its various activities, works as a technological observatory and cultivates a broad network of project-based and collaborative relationships with research, university and Open Source communities and vendors active in this field of application. Engineering is already ready to face the Big Data revolution and has hired new professionals for

this purpose, such as Data Analysts, Data Scientists and Research Scientists.

In this regard, it participates in the European project EDISON - Education for Data Intensive Science to Open New science frontiers (see chapter "Our human capital") and collaborates with Italian universities and business schools that have developed undergraduate and master's degree programs in Data Science ("La Sapienza" University of Rome, Polytechnic University of Turin, Bologna Business School).

BA2KNOW

VIRTUAL COLLABORATION FOR REAL INNOVATION

Engineering is a promoter of the BA2Know research project, the objective of which is to create a virtual laboratory for the rapid development of complex Business Analytics solutions, based on the analysis of Big Data.

Today, the web and its social aspects (Web 2.0), Cloud Computing and the Internet of the Future, the large amount of data available (Big Data) and semantic analysis (Semantic Web or Web 3.0) capabilities are fundamental elements of evolution in the Business Intelligence and Analytics services market.

In response to these new trends, the BA2Know project is meant to create an advanced, collaborative environment in which anyone who is interested in innovation in the field of Business Analytics services can participate, such as:

- researchers in companies that provide service innovation-enabling solutions
- researchers from research bodies and universities who contribute with multi-disciplinary topics regarding Service Innovation

- companies that want or need to innovate in the Business Analytics services field.

The virtual laboratory is designed to support the community of users in the creation of collective knowledge around topics of service innovation, thanks to the use of the collaboration tools made available. It will also have a suite of advanced technologies (that can be used as services) for the rapid development of complex Business Analytics solutions.

Lastly, the project also involves validating the tools created through trials in the field of health (bioinformatics and pharmacogenomics), smart networks for energy distribution, logistics and transport, particularly with reference to traffic monitoring in cities and emergency management.

ba2know.eng.it

SICRAS

TAX EVASION, LOCAL TAX COLLECTION AND WELFARE POLICIES

SICRAS (Integrated System of Semantic Knowledge and Representation) is the project co-funded by the Autonomous Province of Trento and carried out by Engineering Tributi with the contribution of the University of Trento, to give innovative and increasingly precise answers to the Public Administration on the topic of local taxation.

Indeed, collecting and analyzing Big Data information allows us to obtain an articulated and scalable base of semantic knowledge on everything that is relevant to the "knowledge management" process in a given territory to support tax management and

ordinary and forcible collection and the fight against the evasion of local and national taxes, by connecting different, complex sources of information.

The initiative was developed by building a large base of knowledge that collects information and data (structured, destructured, alphanumerical and geographical) from the main area databases (roughly 20) available to the Public Administration at central and local level, aggregated with information from other external databases, such as the PRA and the Chambers of Commerce, and also researched online by accessing social media and review portals.

The implementation of Big Data was carried out with:

- semantic techniques and technologies to provide a unified conceptual integration framework and to implement analysis and reasoning automations based on the knowledge provided by data sources
- geospatial technologies to exploit the notion of territory (land, buildings, property units) to enable new data observation and extraction methods.

For example, information from the Residents Registry Office databases (in which the two entities, subject and object, are represented by the resident or nuclear family and the place of residence) is connected to other data from the Italian Revenue Agency concerning the home's owner, energy consumption, any rental agreements entered into, declared income and more.

These connections between sources of dissimilar information provide specific data on the assets and properties owned/used and, therefore, on the taxes due.

This project also enabled the construction of the "Citizen/Taxpayer File", the pages of which contain all information and documents relating to the tax

relationship between the Local Institution and the resident, aggregated and classified based on the "subject" (resident, household, business) and "object" (assets owned or used) entities.

The Big Data solution created by Engineering Tributi therefore supports administrations in verifying taxpayer ability and propensity to pay taxes, as well as examining how much of the tax receivables are actually payable and can be placed in the budget, making it possible to evaluate:

- the resident's propensity to pay local taxes spontaneously or forcibly
- the real means the resident has available to pay amounts due to the Public Administration
- offsetting for lenders to the Public Administration.

The solution implemented by Engineering identifies the most efficient and effective collection measures, helps to save resources and costs linked

to the recovery of evaded taxes and collection activities and lays the foundations to transition from general actions to a targeted approach, especially with respect to particular cases.

The Big Data solution, initially developed in the tax realm, has been further implemented with social information, connecting the data of the subject with data regarding the household, optional public services, social services and type of resident population. More generally, this makes it possible to develop social and welfare policies consistent with the local context as well as identify the needs, even those that are unknown, of the population, which is useful for planning initiatives to meet them, such as the need for services targeted at the elderly, who often live alone, or the short-term need for additional spots in municipal daycares.

www.sicras-project.org



CREATING NEW INTERACTIONS, GENERATING PRODUCTIVITY AND EFFICIENCY

The Internet of Things in support of the manufacturing sector

What can be connected to the Internet? Theoretically, everything. To be connected, an object needs just two characteristics: an IP address that allows it to be uniquely identified on the network, and the capacity to exchange data through the network with no need for human intervention.

The Internet of Things is the set of equipment and electronic devices equipped with software (other than computers) and connected to the Internet, which makes it possible to exchange data with other connected objects. Just for example: cars, air conditioning systems, domestic appliances, lamps, video cameras, traffic signals and any other device. The Internet of Things represents a revolution because it enables objects to directly dialogue with each other, with a significant impact on everyday life, in particular if we consider the number of objects that will soon be communicating.

In Italy, there were 8 million objects interconnected through the cellular phone network by the end of 2014¹⁴.

The Internet of Things has an extremely high impact on the economy; consider that in Italy, additional investments in this sector would lead to an increase in productivity by 2030 estimated at 197 billion dollars, with an increase of 1.1% in GDP¹⁵. The IIoT (Industrial Internet of Things) in industry and Industry 4.0 in the manufacturing sector represent a rapidly increasing technological trend, which

applies the Internet of Things in a non-consumer context within which smart machines, devices and people are connected with each other. This interconnection makes it possible to make more precise decisions that exploit advanced broad and analytical databases, which will entail serious changes in many production sectors and new forms of business.

In the coming years, machines with integrated sensors that can connect to the Internet will become increasingly common, from refrigerators to irrigation systems, from surveillance mechanisms to biomedical equipment, from industrial to energy monitoring; there is no field in which the Internet of Things cannot be applied at the industrial level. Cars, for example, can autonomously interact with each other to prevent accidents and collisions or also to talk to stoplights and traffic control systems to avoid traffic and prevent the formation of bottlenecks.

The new model based on pervasive connectivity will be capable of exploiting the availability of information in real time throughout the production company to optimize the value chain from suppliers to production facilities, to the distribution channel.

The advantages of these interconnections can therefore be seen both in factory management (reduction in energy costs, increase in production efficiency) and in the products themselves, which will increasingly incorporate more intelligence and will be able to communicate with the consumer.

¹⁴ *Internet of Things Observatory*, Polytechnic University of Milan: Italian market analysis "IIoT: Innovation that creates Value", April 2015.

¹⁵ *Winning with the Industrial Internet of Things* (2015 research)

COMMENT

by Francesco Bandinelli

The Internet of Things represents one of the main drivers of the digital revolution, one of its most evident manifestations, even for non-specialists, which is requiring strategic changes in businesses.

In particular, with the Industrial Internet of Things (IIoT), industrial production will experience increasing personalization in products as well as services for customers, an evolution that technology will favor in the near future: we note in that regard the expectation that many billions of objects will be interconnected worldwide in the next 5 years.

The main elements of change will therefore be linked to the re-engineering of the Supply Chain, as industrial production will increasingly need to combine production quantity with customization.

Although there are many problems to resolve along the production chain, the advantages for the company are evident, in particular the possibility to personalize products in the design phase and invent new after-sale Customer Care services, which will increase customer satisfaction and therefore

could allow for greater market penetration by companies that promptly exploit its value.

New technologies applied to the industrial product and to public services will boost quality of life in an increasingly transversal manner: from the world of transport and its interconnections to benefits for health, the generation of opportunities for free time and, more generally, the use of immediately available information based on quality and usefulness.

In this scenario, despite the difficulties the Italian industrial system has faced in recent years, it has the advantage of a traditional culture of product innovation that has enabled us to reach levels of excellence worldwide: it is therefore possible and desirable that our production system will know how to draw a renewed drive for growth from this revolution.

Francesco Bandinelli is General Manager of Autostrade Tech

ENGINEERING'S RESPONSE

Engineering is at the forefront in the area of "Factories of the future" thanks to its experience in System & Business Integration services gained along with its more than 450 customers in the Industry sector.

The Group works alongside manufacturing companies in different sectors on a daily basis for the development of models and processes to make industrial production more efficient through IT solutions within the context of what in Europe is defined as Industry 4.0, which envisages an improvement and advancement in production as well as in business models.

The Industrial Internet of Things is one of the enabling factors for innovation in final products and the processes implemented to create them, thanks to devices that distribute intelligence in a "streamlined" form within production hubs, enabling decision-making and rapid "machine to machine" type adaptive actions, which were not possible in previous control configurations that featured concentrated and hierarchical intelligence.

FITMAN

INTEGRATION AND EXPERIMENTATION OF THE TECHNOLOGIES OF THE FUTURE

This project promotes the collaboration, integration and experimentation of Future Internet technologies in the field of smart, digital and virtual factories. Engineering is one of the promoters of the research product launched in 2013, which in 2015 had 28 partners from 9 European countries.

FITMAN aims to define a reference architecture for the development of solutions based on the FIWARE Core Platform (the catalogue of Open Source software components promoted by the European Future Internet Public-Private Partnership initiative), accompanied by a broad set of pilot use cases promoted and managed by 10 manufacturing industries. The project offers three different platforms specifically focusing on smart, digital and virtual factories: Smart Factory, Digital Factory and Virtual Factory Platform. Each one consists of an integrated combination of components, in part coming from the FIWARE Core Platform (FIWARE Generic Enablers) and in part developed within the project itself (FITMAN Specific Enablers). The three platforms, which are differently integrated within the various pilot environments, are currently in use in multiple project trials.

Engineering is working on the Smart Factory Platform: a platform for production optimization (in terms of costs, energy efficiency, production reliability, plant use) through process control and management. This objective is reached by collecting a massive volume of information directly from production systems (Industrial Internet of Things), which is processed rapidly on-line (Big Data Processing).

www.fitman-fi.eu

THE INTERNET OF THINGS

ENTERS THE FACTORY: THE CASE OF WHIRLPOOL

Engineering is supporting Whirlpool in the FITMAN project for manufacturing industries funded by the European Union.

Lower automation costs and increasingly smart devices resulting from the use of the Industrial

Internet of Things (IIoT) promise to transform the factory into a huge generator of data.

With the trial at the Naples factory, Whirlpool aims to utilize the considerable volume of data generated by connected objects, which are often not fully exploited, to generate relevant information about the functioning of the factories and promptly communicate with managers and supervisors in a veritable real-time approach.

Using sensors, wireless connections and Big Data type analyses, the project aims to transform the current production development and re-engineering model into one that is increasingly digital and connected.

The pieces of machinery used in production processes indeed become components in a network of connected objects and devices, which generate data that can be loaded into Cloud environments

and analyzed to identify correlations, obtain predictive information and send targeted information to the mobile devices (tablets, smartphones) of factory workers and managers.

The possibility of informing managers significantly earlier than in the past, with a great wealth of information on plant status (defects, process derivations), will make it possible to improve the overall quality of factory management. In particular, machinery that is out of control can be managed and repaired before it breaks down and defective products can be repaired or possibly disposed of before they reach the consumer.

The pilot project takes advantage of a Cloud Computing infrastructure: the software components are installed in the Engineering Data Centers in Vicenza. For reasons of security, factory systems are connected to the Cloud through a proxy.



ORGANIZING INFORMATION AND ANALYSES TO PROTECT THE ENVIRONMENT

GIS (Geographic Information System) solutions to protect the local communities and the environment

The safeguarding and optimizing of environmental assets are increasingly involving the integration and diffusion of environmental information to various levels of the Public Administration and many types of private parties.

Any environmental analysis process that aims to be adopted at political, social and economic level must be supported by useful data and information and developed while taking into account the territorial nature of the relative data.

The Geographic Information System (GIS) is the

overall set of hardware and software components used to acquire, process, analyze, warehouse and present the data referring to a particular area in graphic and alphanumeric form. GIS is a computer-based tool that makes it possible to conduct spatial analyses through the digital representation of a geographical area, combined with a series of other information through which it is possible to acquire, process and update data that spatially refer to the earth's surface.

Over time, the use of geographic information and its representation on the territory using maps has

COMMENT by Nicoletta Sannio

GIS solutions allow for a level of analysis (from the classic overlay mapping to advanced geoprocessing) that is indispensable for the evaluation of human pressure on environmentally significant elements. An integrated overview at regional level makes it possible to provide the proper support to environmental governance policies.

However, GIS technology is useful if it becomes the shared base of knowledge of all players which, for various reasons, make governance decisions. Therefore, it becomes a priority to promote shared, centralized and high-quality GIS web bas-

es in the place of sets of information managed autonomously, which are often not shared.

GIS solutions should also increasingly tend towards the web, increase on-line geoprocessing and decrease the dependence of these characteristics on proprietary programs. Without a doubt, it is fundamental to increase the level of collective awareness of the importance of the use of this tool, within the Public Administration as well as professional associations.

Nicoletta Sannio is Head of the EIS (Environmental Information System) Department of the Autonomous Region of Sardinia

shown itself to be an irreplaceable tool to understand, describe, check and view various aspects referring to the environment and the territory, connecting the former with the latter to bring to light phenomena that would have remained hidden in a static rather than dynamic-geographic form of representation.

In the last decade, the interest aroused by Geographic Information Systems and the success achieved by GIS technologies have heavily incentivized the development of new fields of application, followed by the refinement of new hardware and software technologies to satisfy the most varied requirements from the world of scientific research and that of regional planning and environmental protection.

ENGINEERING'S RESPONSE

From its first territorial logistics project carried out in 1995, Engineering has continued to study and design GIS solutions via Overit, the Group's reference company in research and experiments of cutting-edge software solutions for geo-location and optimization of activities in the territory.

The OverIT Center of Competence is today one of the most advanced in Italy and thanks to continuous research and development of innovative solutions, can design, realize and maintain mapping solutions for several realms using leading market technologies, including Open Source.

Uniting decades of experience in the design of mapping solutions with the possibilities offered by the best technology in the market, the OverIT professionals are able to design architectures and solutions that provide valid support to companies and public institutions for the evaluation and re-

view of local programs and initiatives and for the monitoring of actions to be undertaken, in particular to meet environmental improvement objectives.

SIRA

REGIONAL ENVIRONMENTAL INFORMATION SYSTEM FOR THE SARDINIAN REGIONAL ADMINISTRATION

The SIRA project was born from the need of the Sardinian Regional Administration and all institutions responsible for environmental Governance to have a complete set of information available encompassing a range of environmental themes. The administrative procedures of this sector and all correlated data are very fragmented across different departments and public offices and, therefore, a single portal to which all environmental data can be conveyed in a systematic and integrated manner laid solid foundations for balanced, effective and proper decision-making policies.

Sardinia's Regional Environmental Information System (SIRA) created by Engineering extends knowledge and accessibility to information in the environmental field, allowing to fully welcome relations between all the "items" in the same geographical context, thus offering more complete knowledge of the environment and pressures that are exercised on it.

Within SIRA, items of environmental interest are organized into different thematic areas (air, water, waste, physical agents) and can be consulted/browsed using specific tools and based on the associated metadata. The system therefore offers an overview of the environmental items and compe-

tences of the various bodies involved, a necessary condition for efficient governance of the "Environment System".

Thanks to this project, the Sardinian Regional Administration achieved the objective of finally seeing combined within a single system all environmental knowledge that was previously fragmented across multiple systems.

This has resulted in significant time savings, as

well as an increase in efficiency and effectiveness in all procedures that require a preliminary investigation phase relating to environmental matrices. The creation of a single centralized management system also rendered the data created and managed by the Region more secure and reliable, increasing cost effectiveness in terms of system maintenance.

siranet.sardegnaambiente.it





THE DEVELOPMENT OF **PEOPLE'S POTENTIAL**,
WITH ADEQUATE **CAREER PATHS** AND **TRAINING COURSES**,
CREATING THE **BEST CONDITIONS**
TO **ATTRACT YOUNG TALENT**
AND **CONSOLIDATE** THE COMPANY'S **GROWTH**.



OUR HUMAN CAPITAL



HIGHLIGHTS 2015

8,136

Engineering Group Employees

+73

Employees hired abroad

485

Employees abroad

95%

Apprenticeship contracts transformed into permanent contracts

+300

Young people under 30 years old hired

59%

College graduates

+673

Employees hired in Italy

12,452

Days/person of training provided to employees

A motivated and winning team

G4-10 | G4-LA10

Our people are our most important resource to develop innovative solutions and services in a continuously evolving market. Our community is one of highly specialized professionals (59% are college graduates) who work to achieve a shared objective of growth and innovation. The Engineering workforce consists of 8,136 employees and an average of roughly 3,100 IT consultants distributed throughout the country and in the European offices (Belgium, Republic of Serbia) as well as the non-European offices (Brazil, Argentina and USA), where personnel rose by 15%, amounting to a total of 485 resources (against 412 in the previous year). This increase was seen especially in Engineering do Brasil (444 resources against 387) and MHT Balkan (20 resources compared to 7).

Employee turnover, which the Company has monitored since 2015 through a specific analysis of the reasons for which people leave the Company, was stable at 7.2%¹⁶.

The percentage of women in the Company is equal to 31%, a significant proportion considering that most of the workforce is composed of technical graduates and software engineers, historically male professions, as also confirmed by recent new graduate trends.

Increasing impact on employment and the attraction of young talent

In 2015, Engineering launched a recruitment campaign during which it hired nearly 1,300 people, which boosted Group personnel by 746 resources (of which 673 in Italy), net of departures. This extraordinary increase in personnel was due to the growth policy to support competitiveness in the

various business segments, the introduction of "increasing protections" in Italy and the tax break on new permanent hires established in the Jobs Act. These policies drove the Company to propose employment relationships to some IT consultants who previously worked as sub-contractors. The Group proved the value it places on its workforce by investing in young employee stabilization plans, involving the transformation of 95% of apprenticeship contracts into permanent contracts in 2015.

To support the complex selection process, in 2015 all employees were involved in the "Internal resume submission campaign" initiative (which will also be carried out in 2016), for the submission to the Company of the resumes of recent graduates they know, to receive prizes (bicycles or e-books) or 250 euro gift certificates for each successful submission.

The Company's numerous hires confirm its desire to invest in the most innovative IT sectors, demonstrating that, despite the negative statistics of recent years, the Italian job market recognizes and rewards the best professionals.

Having its own talented, internal personnel is a priority for Engineering to maintain and improve its market positioning, a strategic goal that the Company pursues throughout the country through a number of collaborations with universities and business schools, at which special days are organized for interviewing young graduates and students who are about to graduate, and special dedicated projects are carried out.

One of these is IG4you, a series of business games organized by the Engineering Departments of Lecce, Salerno, Cosenza and Palermo. Once the profiles of interest are identified, candidates are

¹⁶ Figure as at December 31, 2015

Partnership with the Balkan Lab talent laboratory

Engineering and MHT participated in the Balkan Lab project at the University of Belgrade's Department of Electronic Engineering. Founded in 2013, the Balkan Lab is a veritable IT talent laboratory where Serbian IT Engineering students and doctorate candidates can learn about the state of the art of Big Data and Business Intelligence in Open Source environments and projects for the implementation of Microsoft Dynamics ERP and Microsoft CRM solutions. A

Center of Competence located in the MHT offices in Belgrade, where young IT talent can create and share new ideas and collaborate in the creation of innovative projects to support the Digital Transformation. The program offers selected young people the possibility of undertaking an international training internship in the Centers of Competence present in Serbia and Italy, with appealing outlooks for being hired within leading companies in the ICT market.

evaluated with the support of techniques and instruments meant to identify the skills required of the role in question and understand development potential already at this early stage.

Engineering a key player in the new IT sector professions

Engineering is one of 7 partners participating in the European EDISON (Education for Data Intensive Science to Open New science frontiers) project, which is meant to support and accelerate the process of creating 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.

This project, which boasts the participation of companies, research centers and universities, aims to develop a sustainability and business model to guarantee a boost in Data Science professionals, either with college degrees or trained at professional centers in Italy and in Europe, while also supporting the professional commu-

nity, to allow for adequate education and training or a formal certification for autodidact Data Scientists, developed thanks to innovative research projects, who want to build a new career.

Thorough professional training in Data Science requires access to theoretical knowledge of real infrastructure of scientific data and broad data sets to acquire practical experience and develop a "data-centric" way of thinking.

EDISON leverages the assets and activities of the EGI.eu European Community to create infrastructure supporting education and training in the area of Data Science; example data series and virtual laboratories will enable students or interns to work with real data, infrastructure and tools.

EDISON facilitates and promotes education and training in Data Science at the most important "champion" universities, involving them in the development and implementation of the curriculum model and in the creation of a cooperative education and training infrastructure.

www.edison-project.eu

Career paths for the success of individuals and the Group

G4-LA10

Engineering has built a human resources management model with the objective of attracting the best employees, retaining internal resources and leveraging and enhancing their talent.

Enhancing professionalism and competence means ensuring the capacity for the innovation and development of products and services offered on the market and, of course, value creation.

This approach can be seen in Engineering's remuneration policy, which enhances many employees' remuneration with a variable component linked to individual performance, and in the establishment of a performance bonus that recognizes individuals based on the overall results of the Group.

The Company has committed to precisely defining the professional profiles assigned to each employee to build a homogenous and transparent career development process with each staff member. This process was launched with the conviction that the professional development of the individual proceeds in parallel with the success of the Group.

Based on profile development needs, the Company defines the training of employees and collaborators, with the intent to identify, through discussion, clear and motivating growth objectives. The path for the evaluation of employees implemented annually by the Company aims to define, for the subsequent year, objectives for performance as well as growth in skills and the development of the professional profile starting from the individual professional characteristics. 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.

Engineering 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 by the various departments as figures with high potential, in which the Group chooses to invest in a targeted manner, in the context of the continuous growth of the skills of human resources. A resume management tool was made operational in 2015, which is capable, thanks to a complex architectural system, of crosschecking information on individual people, regarding skills but also experiences and references in specific projects. The tool therefore makes it possible to enrich the mapping of competencies and the full appreciation, at global enterprise level, of the contribution made by each individual.

Multi-annual employment programs are defined for the integration of workers belonging to protected categories. Placement quality receives much attention from Engineering and employee participation in working groups and in educational processes that will enhance and lead to highly successful paths for integration are top priorities.

Ethics, a key aspect of operations

The Company promotes the values of solidarity, security and the rewarding of merit as the basic ingredients for corporate cohesion. Ensuring well-being and equal rights among people means strengthening the bonds between the members of the Group, promoting transparency and fairness in employment relationships and consolidating the foundations of stability of the business itself. Honesty, reliability, transparency and the promotion of capacities and professionalism are essential val-

ues and conditions for achieving the company objectives. For Engineering, rewarding merit is not only a good idea, but it is a vital principle practiced by the Group in the management of human resources to guarantee the growth of the Company. Engineering manages employee relationships following an approach of closeness, even physical, which transmits presence and support by the Company to its employees and collaborators.

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 of the Group: 5 in the north (Pont-Saint-Martin, Turin, Milan, Brescia, Padua) and 5 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 of its representatives with employees at all Italian locations.

The personnel management system is transversal and, within the limits imposed by the laws of the countries in which it operates, replicated in all of the domestic and international offices of the Group, which is gradually changing in the wake of the internationalization process.

In 2015 alone, the staff outside Italy grew by more than 15%, reaching 485 resources.

More generally, the level of dialogue and listening between people belonging to different hierarchical levels is high; and that among new recruits and the rest of the Company is strongly facilitated, also thanks to an "open door" policy that has provided for the elimination of office doors, and specific events including the "fireside chats" of the MeM Master, where the management meets and converses with participants.

Informality, consistent with the focus on the fundamentality and the concreteness of the results, can also be seen in the general climate of cooperation and respect among people.

A responsible reorganization process

Within the framework of strong personnel growth, the Company has responsibly handled a process of restructuring the subsidiary company Engineering.mo, which initiated a mobility procedure for 63 people (compared to a total of 206 on staff) in January 2015, as the union agreements (inherited from the previous owner, which required the maintenance of employment levels) became ineffective at the end of 2014.

Without any unilateral dismissals, the Company was able to manage the excess staff due to:

- the need to optimize staff structures, especial-

ly for functions overlapping with those of the Parent Company

- the need to outsource tasks with lower value added
- the need to adapt staff to the expected revenue volumes for 2015, reduced due to the conclusion of some important orders.

Engineering offered everyone involved in the mobility procedure the possibility to participate in training courses on Share Point, SAP HCM and FI/CO, and some were transferred to other sectors of the Company or other Group Companies.

The safety of our people

G4-LA6

Engineering considers the health and safety of its staff in all countries where it operates to be of vital importance. This is why management systems, investments and professional training are considered essential, in order to minimize the possibility of accidents inside the Group's offices and at the *Data Centers*. The activities carried out regularly by the Company are:

- constant updating 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 top management, published in the company intranet and sent to all collaborators for the correct carrying out of working activities in terms of accident prevention
- specific training activity in the classroom and in the field for the prevention of risks in the workplace
- internal, periodical verifications on the correct implementation of procedures.

ACCIDENTS BY TYPE

	2012	2013	2014	2015
Women	n.a.	n.a.	31	27
Men	n.a.	n.a.	53	54
Total number of accidents	99	73	84	81

ACCIDENT RATES

	2012	2013	2014	2015
Frequency index ¹⁷	7.97	5.09	6.83	5.72
Severity index ¹⁸	0.11	0.07	0.12	0.16

HEALTH AND SAFETY TRAINING

	2012	2013	2014	2015
Executives	162	368	520	598
Middle management	594	1,347	1,907	2,749
Employees	1,944	4,409	6,242	8,605
Total Italy	2,700	6,124	8,669	11,952
of which:				
Men	2,029	4,392	7,104	8,248
Women	671	1,732	1,565	3,704

¹⁷ **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.

¹⁸ **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.

Engineering has established the Accident Observatory within the Administrative Personnel Department to activate and render operational a flow of news to quickly receive information and analyze all incidents that occur in the Company.

The Observatory also carries out all the appropriate tests for the detection of any failure of 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.

In 2015, as in previous years, there were no fatal employee accidents at work.

Given the nature of Engineering's business, the most frequent accidents 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 provided specific safe driving courses since 2009.

We promote engagement and participation

Through its Communication and Corporate Image Department, Engineering promotes the involvement and participation of its employees in cultural and sporting events through a series of initiatives such as the SkiChALLENGe, the corporate ski tournament in which the participants are employees of the Group and their family and friends.

The Company has worked for ten years on the Culture Project, an initiative aimed at all the Group's employees who have personal passions linked to literature, music, theatre and painting. In recent years it 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.

Support for culture also comprises publication activity that Engineering dedicates to the diffusion of EngZine, a video press review with news regarding the world of technology, extrapolated from worldwide media. The video-newsletter is distributed on a daily basis to all employees via email and broadcast on the monitors in the reception areas of Engineering offices.

Let's color 2016

In certain moments of the year, initiatives are organized in all the branches for families, with particular attention paid to children.

For the usual, family-oriented Christmas project, in December the children and grandchildren of Engineering employees were asked to submit a drawing of any month of the new year, perhaps that of their birthday or another favorite month. All 750 drawings submitted were published on-line (www.eng.it/calendario2016), and some were included in the 2016 Engineering calendar distributed to employees, customers and partners.

The 750 children who participated in the initiative received a gift from the "company" Santa Claus.

Scholarships for employees' children

The Engineering Group promotes education and commitment to higher and university education for the children of its employees.

The company will provide 75 scholarships based on scores linked to merit and income requirements, for a total amount of 105,000 Euros beginning from the 2015/2016 academic/school year.

Sustainable mobility for new recruits

Engineering has launched a new company employee awareness-raising campaign regarding the environmental theme of sustainable mobility by giving a folding bicycle to all young new recruits.

Continuous training as a strategic factor for development

G4-DMA

In a scenario such as that of the ICT sector, in which knowledge and skills have become strategic factors of production for companies, training and continuous updating of skills are essential. Training is such a priority issue within the Engineering Group that it has led to the establishment of a dedicated department. With this strong conviction, the Group also invests more than 7 million Euros per year in training and the development of its people's professional skills.

The IT & Management School "Enrico Della Valle"

G4-LA9

The IT & Management School of Engineering was born to respond to the internal demand for managerial and technical training. The IT & Management School, named after Enrico Della Valle, one of its founders, was inaugurated in 2000 in Ferentino, near Rome, 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.

Over the years, a diverse and constantly updated educational program has been developed within the School, based on a didactic methodology that can be adapted to the specific training needs of the staff over time: mainly managers and Information Technology specialists.

The quality of the training intervention offered by the School is assured from the initial planning stage of the educational process. Starting from the study of general features of the market in which the resource works or will work, passing through the analysis of his or her current or fu-

ture responsibilities, until the identification of objectives arising from his or her present or future classification, each training path is designed to be tailored to the specific needs of the party involved in the learning path and the objectives of the organization to which he or she belongs. This takes place through a preliminary analysis of the core business drivers regarding Talent Management. The training paths, thus customized, cast solid foundations for the development of effective personnel growth plans within specific and organizational business contexts.

The training offerings of the School are rich and heterogeneous, in terms of content as well as method. The objectives of the courses delivered go from the certification of technological and specialized expertise to the acquisition of integrated technical and behavioral skills. Underlying the methodological presuppositions of the School lies the idea that the term "learning" means the internalizing of theoretical knowledge and practical skills, but also attitudes: three elements necessary to train specialists who fit operationally within projects and who can be more effective in their own business context, in the role for which they were trained.

In line with this articulated vision of learning, the courses based on content of a technical and specialized nature have been gradually 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 intimately connected to the practice of daily work at whatever level or profile and capable of strongly influencing the standards of performance. In this scenario, a good example is the success every year of training courses in the areas of Effective Communication, Leadership and Employee Management and Emotional Intelligence.

With over 290 courses in the catalog, 200 certified trainers, 18,165 days/person including internal education and training for customers, 40 paths of professional certification, a Scientific Committee consisting of academics and managers of IT professions who contribute to instructional organization and participate in training events, the Engineering Training School can now be fully recognized as one of the most important training schools in Information Technology at national level, providing one of the most comprehensive educational offerings. The Group constantly invests in the IT & Management School to broaden its educational projects and structure.

Knowledge, know how, knowing how to be

The definition of professional profiles within Engineering is broken down over three levels of skills: knowledge (technical and specialized skills), know-how (practical skills, application of technical-specialist know-how) and knowing how to be (behavioral skills). The robust training provided by the School, developed with the collaboration of internal and external trainers and refined year after year, is broken down into three main areas:

- Technology: programming, analysis and design of hardware and software systems
- Methodology: capacity relating to the functional area (e.g. Service and Project Management)
- Behavioral and Managerial Development: transversal skills (soft skills).

The training activity represents the instrument through which these skills are strengthened and integrated with the final goal of aligning the performance of professional employees and collaborators with the quality, technical, methodological and process standards required by the Italian and international markets. Special importance is given, in this perspective, to the skill certification policies regarding Group employees.

One of the standards at the highest international level which is particularly widespread and appreciated within the Company is the Project Management Professional (PMP®) methodological certification, which has now become a fundamental point of reference for the internal staff entrusted with the management of projects, from the planning phase to conclusion. The PMP certification is issued by the Project Management Institute (PMI), founded in 1969, and is currently present in 104 countries with 272 accredited representation offices and locations. In recent years, the Engineering Group has promoted the diffusion of the PMP certification among its employees through targeted training campaigns, achieving considerable results.

The commitment to Project Management is also confirmed by the recognition received from the same PMI (also following intensive certification activities promoted within the Company) which, since 2007, has included the Engineering School in the list of facilities (R.E.P. – Registered Education Partner) authorized to issue credits for the maintenance of PMP certification.

Aware that the professional specialist certification of staff guarantees customers qualitative standards that are always aligned with developments in the reference technological context, Engineering's School prepares and constantly updates its courses aimed at obtaining the most prestigious international certifications in the world of Information Technology, with particular reference to software design and development, database implementation and administration activities.

The School is also accredited as a Testing Center by the main international certification bodies and, every year, it organizes preparation courses for the most popular certifications such as Oracle, Microsoft, Red Hat, VMware, SAP and many others.

In this context, through the dedicated training provided by the School, 746 Group employees successfully passed the exams in 2015 to obtain prestigious certifications such as PMP and ITIL, Prince2, Microsoft, Oracle, SAP, Cisco, VMware, Red Hat and others.

Specific initiatives for training and professional development

In 2015, numerous courses were designed ad hoc and verticalized based on the specific training needs of Group employees. Some of the many initiatives include:

- the launch of the company Master MeM: Master Engineering in Management, which, with excellent educational content, aims to enhance the profile of 54 highly specialized young managers who are expected to take on increasing responsibilities within the Group over the medium term. The Master's program can count on the participation of prestigious university professors and testimonials from the world of Italian industry and journalism. The project is broken down into 11 residential training modules lasting for three days each, focusing on topics relating to the management of human resources, the development of individual capacities, and the international and company economy
- language training projects to support the Group internationalization process, which involved 18 managers in individual English, French and Portuguese full immersion courses in some major European capitals, and in intensive day-long sessions at the workplace, which also rely on the use of resources from the Fondirigenti inter-professional fund
- the program for the placement within the Company of the more than 200 young people hired in 2015 which, in dedicated residential training courses, illustrated the history, values and foundational principles of the corporate culture,

and developed communication and teamwork skills

- external training activities, which saw the participation of a total of 327 employees in 255 training courses and conferences in Italy and Europe in the areas of methodology, technology and project management.

Lastly, the retraining activities carried out for people involved in the reorganization process for the CIGS temporary lay-off plan of Engineering, mo were particularly notable. In this regard, five training courses were organized with a total duration of 40 training days each, dedicated to Microsoft, SAP and Cisco technologies. These activities were preceded by an individual skill assessment based on the international e-CF standard, meant to place each participant within the program most suited to his or her professional characteristics. Overall, 1,040 days/person of training were provided during the five training courses organized.

The numbers of internal training

In 2015, in house training activities involved 2,602 people. Considering the people who took more than one course, course participation reached 3,849 (377 more than in 2014).

We do IT – We teach IT: training services for customers

Since 2009, Engineering's commitment has also become external: since then, managerial and specialist training is no longer just "from the inside for the inside" but is available on the market using multi-channel delivery of training proposals tailored to meet the professional updating needs and the evolution of the business of any clients who are interested in the growth of IT and managerial skills. The IT & Management School "Enrico Della Valle" has opened its catalog and expertise to the market, and this has become an opportunity for the

PARTICIPANTS BY GENDER

	No. of employees as at 12.31.2015	No. of employees trained	% employees trained compared to total by gender
Men	5,646	1,910	34%
Women	2,490	692	28%
Total	8,136	2,602	32%

PARTICIPANTS BY PROFESSIONAL LEVEL

	% employees trained compared to total by professional level
Employees	30.5%
Middle management	36.5%
Executives	29%

PARTICIPANTS BY COURSE TYPE

	Total participations 2015	Total participations 2014	Change %
Total Courses	3,849	3,472	+10.9%
Technological	1,437	1,124	+27.8%
Project Management	649	617	+5%
Methodological	984	1,181	-16.7%
Individual development	382	351	+8.8%
Non-catalog initiatives (MeM, apprenticeships, etc.)	397	189	+99.5%

Engineering Group to share its range of experience gained over the years in training. The School assists public and private organizations in all areas of training in the ICT sector, delivering insights on issues related to methodologies, project management, technology, products and managerial and soft skills, and offering support in the area of change management and assistance in access to funding for the training.

The educational offer is organized following the traditional principle of differentiated, structured educational paths in relation to: the level of access, roles and objectives to be achieved, analysis

of the reference market, areas of specialization of the customers receiving training.

This yields a strengthened training proposal, firmly anchored to the trends and needs of the market and the demands of individual business processes, and effectively diversified in the delivery channels. The classroom is the center of gravity of the training intervention and the sharing of experiences. The School structure can nevertheless respond to diverse customer needs through the design of training activities in traditional mode at the customers' premises or the structuring of distance training courses (e-learning) and blended

training courses. These make total or partial use of the most innovative interactive and multimedia channels made available by technology for the exchange of off-site knowledge and of innovative technological platforms for e-learning, edutainment and remote cooperative learning. 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 allow for extending the range of action of the training intervention and are particularly suitable for the creation of groups (eg: initial training for junior profiles or for re-training of senior staff members). The flexibility of the method, the ad hoc definition of the educational strategy, the wide availability of courses in the catalog and the diversification of the delivery channels allow the Engineering School to offer client-oriented training solutions, profiled on the basis of the evidence that emerged during the preliminary analysis of the educational requirements.

Among the successful case histories in 2015, we mention the training project carried out every two years and developed for INAIL, which will

see participation numbers exceeding 1,400, for roughly 160 course editions activated. The incipit of this project was an analysis of training requirements emerging following an assessment of professional skills, carried out through the e-CF framework. The framework, recognized at European level, identifies the methodological and technological skills that professionals working in the area of IT should have. The resulting training courses therefore ranged from Project Management to Service Design, from IS Governance to contract management, from electronic data security to Quality Assurance, to cite just a few of the most significant areas. All courses provided by the School for the INAIL project are perfectly compliant with the e-CF framework and therefore guaranteed full coverage of training requirements and the development of professional skills, an objective analyzed during the assessment phase.

An additional new element in 2015 was the awarding of the third renewal of the two-year IT, Soft Skills and Project Management training contract for the BNL-BNP Paribas Group, which over the years has trained more than 3,500 participants based on a course catalog designed especially for the bank.

SCHOOL FIGURES

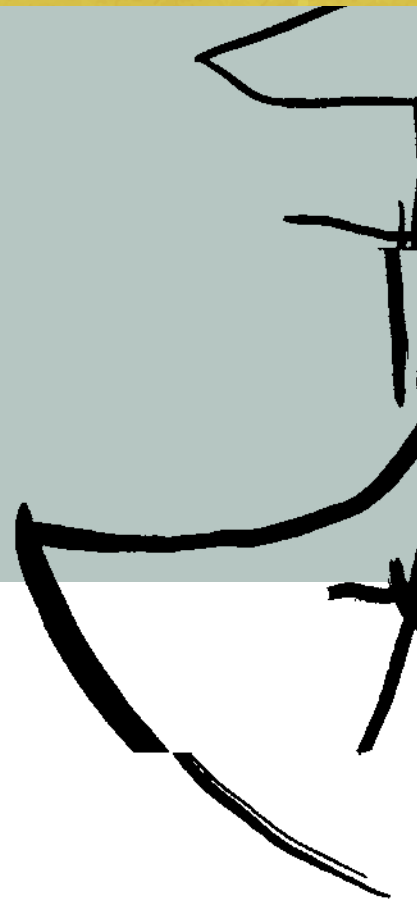
	2012	2013	2014	2015
Lecturers with several years of training experience	160	170	200	200
Total participants	6,250	6,550	4,932	5,516
Internal participants	4,166	4,367	3,472	3,849
External participants	2,084	2,183	1,460	1,667
Total person/training days	19,200	20,200	16,950	18,165
Person/training days internal learners	14,127	13,437	11,700	12,452
Person/training days external learners	5,073	6,763	5,250	5,713
Methodology and computerized classrooms	15	16	16	16
Certifications attained by internal learners	688	788	757	746





**LISTENING TO THE COMMUNITY AND IDENTIFYING NEEDS,
SUPPORTING PROJECTS AND INITIATIVES FOR
CULTURAL AND SOCIAL GROWTH.**

INITIATIVES IN FAVOR OF THE COMMUNITY



Consistently with the desire to contribute to the community in which it operates, with the support of the Communication and Corporate Image Department, in 2015 Engineering confirmed its support for initiatives in the academic-scientific, music, art and culture contexts through sponsorships and donations.

At coding school with the NAO robot

Engineering has renewed its commitment to stimulating the spread of awareness of Information Technology amongst the youngest members of society by supporting, for the second year, the activities related to the teaching of robotics at the Liceo Scientifico "Enrico Fermi" in Padua, a school at the forefront in coding, and contributing to the creation of a Robotic Lab within the school, a sort of "knowledge gym" where students will be able to collaboratively expand their knowledge on these issues.

The support for the project was given concrete expression through a sponsorship for the purchase of a NAO, the famous programmable humanoid robot.

The Liceo "Enrico Fermi" develops targeted educational courses to encourage students to learn a culture of widespread innovation through social and civic education.

The students are extremely interested in robotics, so much so that the school has successfully participated since 2011 in a range of international competitions and in 2015 it won the Italian NAO Challenge by programming the movements of a humanoid robot.

The Liceo "Enrico Fermi" students are also involved in the Baby Goldrake research project in collaboration with the University and with the hospital facilities in Padua for the introduction of pediatric robotics in the Hospital.

The Baby Goldrake project is meant to boost stu-

dents' awareness, motivate them and train them in the use of humanoid robotics through programming within scenarios in which the capacities of NAO are optimized.

Engineering Art Project: Writing on Wall

Engineering Art Project is a project that unites young people, art and creativity with the world of entrepreneurship and technology.

In detail, with Writing on Wall, Engineering and the Verona Academy of Fine Arts promoted a competition of ideas aimed at students to "redesign" the walls at the Vicenza office.

The competition was meant to create a link between art and Information Technology by leveraging the creativity of the Academy of Fine Arts students, with their perception of the themes characterizing an Information Technology company, such as innovation, technology and service.

More than 50 students participated in the competition individually and in groups, using any technique (painting, drawing, bas-relief, digital) to create drafts interpreting the theme of Cloud Computing, one of Engineering's most innovative technological solutions.

All projects presented were assessed by a mixed commission (made up of representatives from the Academy as well as Engineering) that recognized the best works in three different Cloud realms: what (the data), where (the space) and how (the philosophy). The three winning works (by Steve Ingham, Hoti Xhimi and Rabeah Mashinchi) and 4 selected works were printed on the walls of the Engineering office in Vicenza, which is also home to one of its five Data Centers.

Digital evolution in schools with Program the Future

Engineering is one of the founders of the project "Program the Future", sponsored by the Ministry

of Education, University and Research (MIUR), in collaboration with CINI (National Inter-University IT Consortium), for the structural introduction of computational thinking in Italian schools. "Program the Future" was launched for the school year 2014/2015; its objective is to promote the adoption in schools of a series of simple, fun and easily accessible tools to train students on the basic concepts necessary to address the digital evolution.

In Italy, Engineering and other partner companies will assist CINI and MIUR in the global and structural introduction in schools of the basic concepts of information technology through games and easy-to-use tools.

Program the Future promotes training in computational thinking, a skill required to solve problems in any discipline or sector. It helps to develop the ability to break a problem down into simpler problems, recognize relationships between the problem at hand and those that have already been solved, concentrate in every phase only on the most important aspects, identify and plan the steps necessary to solve them, and clearly and precisely coordinate the work of others.

The second year of the project (see programmait-futuro.it/notizie/avvio-secondo-anno) provided excellent results compared to the first edition: 3,289 schools, 9,146 teachers, 29,446 classes, 601,575 students. The number of schools nearly doubled, while the number of teachers almost quadrupled. There was also growth in appreciation expressed on social networks: while users interested in the project almost doubled on Facebook and Twitter, on YouTube there was a significant leap forward, with over 6 times more interested users.

This initiative comes at a delicate moment for Italian schools and for the future of the next generations.

In the future, an appropriate education in computational thinking inserted as a pervasive element in education in the various Italian school systems will be essential to ensuring that the new generations of citizens grow up with the awareness that the digital element can be considered a "friend" and support tool for professional and private life.

An essential aspect for the success of the project is the provision on the part of partner companies of technology experts to support teachers in the planning and provision of introductory events and training.

Engineering was part of this network in 2015 as well: it financed the project as a "benefactor" and contributed to educational activities with the support of 15 employee volunteers, who dedicated 134 hours of work to the project.

HackToscana: workshop of ideas and solutions for sustainable and aware mobility

Engineering sponsored HackToscana, the travelling project on sustainable and aware mobility promoted by the Tuscan Regional Administration with the University of Siena, the FS Group and the Sistema Toscana Foundation.

A 24-hour marathon of work during which 110 young developers and designers from all over Italy, divided into 22 teams, developed innovative solutions to meet the Region's needs in the area of mobility.

The participants worked non-stop on one of the three themes suggested by the companies sponsoring the initiative:

- "school/work", proposing innovative solutions to improve daily commutes
- "free time", to incentivize the use of public transportation for non-habitual travel

- "tourism", to promote more informed and sustainable tourism.

The event was held on the Florence-Arezzo train, and then continued to CampusLAB in Arezzo, a University of Siena space that welcomed the young people until the morning of the next day. Once they returned to Florence, the participants met in Sala Reale where they presented their projects and prizes were handed out for the best ones, as evaluated by three juries each consisting of representatives from the Tuscan Regional Administration, partner companies and sponsor companies.

The "tourism" prize promoted by Engineering went to the "DynaMove" team for a project that integrates public and private transportation with the goal of making it easier and faster to reach destinations that are not easy to get to using local public transportation alone. Engineering's special mention went to the "Toscana Segreta" team for public mobility in the cities of art.

Spicy solidarity - A hot pepper for autism

At its two offices in Rome, Engineering hosted the "A breach in the wall" association, which promoted the event "Spicy solidarity - A hot pepper for autism" to raise the awareness of as many people as possible regarding the topic of autism and to raise funds to support the treatment of children suffering from this disorder.

In 2015, the association's volunteers raised funds and delivered 18,000 hot pepper plants and a brochure that uses comic strips to illustrate the most common signs of autism in children.

The "A breach in the wall" Association works in partnership with the Bambino Gesù pediatric hospital and every year cares for more than 100 children between 18 months and 12 years old. It pro-

vides behavior therapy (ABA-VB, Applied Behavior Analysis - Verbal Behavior), which is adopted in all advanced countries and is deemed efficient by national and international healthcare institutions (including the Italian Institute of Health) and the main scientific companies of many countries, including our own.

Lombarda Musa - The Milan of Poets

As part of the OltreEXPO events, with the support of the Lombard Regional Administration, Engineering sponsored Lombarda Musa, a series of meetings dedicated to poetry, which showcased texts drawn from the works of Camillo Boito, Arrigo Boito, Carlo Dossi, Alessandro Manzoni, Alda Merini, Giovanni Testori, Giovanni Raboni, Luciana Frezza, Alberico Sala, Roberto Rebora, Vittorio Sereni and Antonia Pozzi.

The readings by Silvio Raffo, which always took place in different locations, revealed to the general public the Milan dear to the most famous personalities of the literary world in the nineteenth and twentieth centuries, in a journey through neighborhoods, streets, gardens and homes, to rediscover Milan's roads and places in a new and sublime way through the verses and words of those who brought eminence to the city.

World environment day

Engineering supported Earth Day Italy during the 46th United Nations Earth Day. The Association planted 13 young holm oaks to complete the improvements (launched in 2004 by the Municipality of Rome's Department of Environmental Protection) in the first section of the historical street through the Villa Borghese park.

Eng4Run for Telethon

Engineering was a sponsor of Telethon and participated with three teams of employee runners in

the race held in Rome on December 20 in Piazza di Siena, Villa Borghese.

BNL's partnership with Telethon is one of the most important fundraising projects in Europe to finance the best scientific research projects on muscular dystrophy and other genetic illnesses.

Eng4Work

On March 23, 2016, during the company convention

a memorandum of understanding was signed by the Ministry of Labor and Social Policy and Engineering. As announced by Minister Giuliano Poletti, who took part in the event, the agreement will lead to the activation of a 6-month extra-curricular training internship with flexible locations for 100 young people enrolled in the "Eng4Work" Youth Guarantee program who aim to be hired with a professional placement apprenticeship contract.





**CONTRIBUTING TO ENVIRONMENTAL PROTECTION,
WITH SPECIFIC CONDUCT AND PROJECTS,
IDENTIFYING THE MOST EFFECTIVE MANAGEMENT
ACTIONS AND INDICATORS.**



THE ENVIRONMENT



Environmental impacts of the business

The Engineering business does not involve any manufacturing process and the impacts on the environment of the Group's roughly 30 offices in terms of waste, light and water are similar to those of urban users.

However, the Company has also 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 Engineering Tributi, Engineering.mo and Engiweb Security headquartered in Naples, Palermo and Rome.

The main environmental impacts that can be traced to the Engineering Group are composed of electronic waste production and the electricity consumption required to maintain the Group's 5 Data Centers (Pont-Saint-Martin, Turin, Milan, Padua, Vicenza, Rome).

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 Group's 30 Italian offices rely for their remote activities. An additional environmental impact comes from atmospheric emissions generated by the travel of personnel.

2015 energy audit

During the year, Engineering conducted an energy audit on the Group's 5 offices in Italy, as set forth in Legislative Decree of July 4, 2014, no. 102 in implementation of Directive 2012/27/EU on energy efficiency for large companies with more than 500 employees by December 5, 2015 and subsequently every 4 years. During the audit, several improvement proposals were submitted to achieve greater efficiency in office lighting systems, which will be evaluated in the coming months.

The Pont-Saint-Martin 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 the Engineering Group's IT activities, with the management of more than 7,000 physical and virtual systems.

The Pont-Saint-Martin Data Center is one example of a state of the art system in Italy in terms of environmental sustainability, thanks to the geothermic system that supports the cooling systems inaugurated in 2011 and on which the Company commissioned an executive expansion project which will be undertaken in 2016.

The geothermal plant provides for the use of low-temperature water, taken at a temperature of 13 degrees from two wells specially built at 40 meters' depth, 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.

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.

WATER

2015

Withdrawals of water from the ground (millions of m ³)	1.193
Discharges of industrial wastewater from cooling (millions of m ³)	1.193

Taking into account that the water collected is not subjected to any industrial process other than the change in temperature, the increase in the flow rate has no significant impact 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. This enlargement of the geothermal plant will make it possible to avoid the use of refrigerator units, with consequent further energy savings.

In 2015, the Pont-Saint-Martin Data Center reached a PUE of 1.53. PUE (Power Usage Effectiveness) is

the measure of energy sustainability. Experts define "Green Data Center" as those plants that reach levels of energy efficiency with PUE lower than 1.6. 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 of around 1.5 are considered to be excellent. In 2016, Engineering expects to reach a PUE of lower than 1.4.

DATA CENTER ENERGY CONSUMPTION*

Data Center	Pont-Saint-Martin				Turin				Padua				
	Year	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015
Electricity consumption Gigawatts/hour		10	10.9	12.5	11.9	2.4	2.3	2.1	2	1.7	1.6	1.5	1.04
Electricity consumption GigaJoules		36,000	39,100	44,800	42,840	8,600	8,400	7,700	7,200	5,900	5,800	5,500	3,742
Power Usage Effectiveness (PUE)		1.54	1.53	1.53	1.53	1.81	1.8	1.8	1.8	1.97	1.96	1.96	1.96

Data Center	Vicenza				Rome				Milan				
	Year	2012	2013	2014	2015	2012	2013	2014	2015	2012	2013	2014	2015
Electricity consumption Gigawatts/hour		4	3.8	3.47	2.82	1.8	1.6	1.2	1.15	14.1	13.8	10.6	3.29
Electricity consumption GigaJoules		14,340	13,800	12,500	10,141	6,453	5,900	4,300	4,150	50,547	49,700	38,000	11,832
Power Usage Effectiveness (PUE)		1.84	1.61	1.6	1.6	1.91	1.74	1.74	1.74	2.09	1.99	1.9	1.9

* In 2015, the electricity consumption of the Data Centers declined significantly (roughly -30%), in part thanks to actions taken to boost efficiency (like virtualization and improvements in the PUE of all plants) and in part thanks to the streamlining of the CED 1 room at the Vicenza Data Center, meant to house the systems and equipment which in 2015 were transferred from the Padua Data Center and in 2016 will be fully consolidated at the Vicenza Data Center. Consumption has also declined due to the departure of a major customer hosted until mid-2015 at the Milan Data Center and to a lesser extent as a result of the closure of certain contracts at the Vicenza Data Center.

Sustainable modes of mobility for personnel

G4-EN15

Again in 2015, Engineering's personnel made numerous trips to the offices of its more than 1,000 customers located throughout Italy, travelling more than 39 million kilometers.

The company's policy on staff movements places special emphasis on fuel consumption and emission limits.

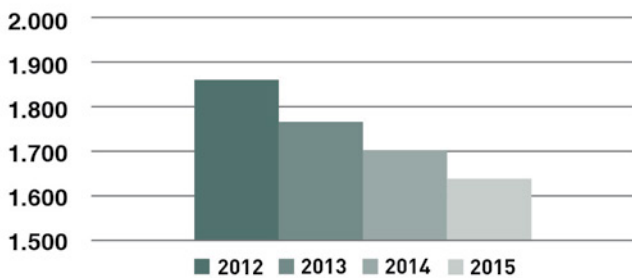
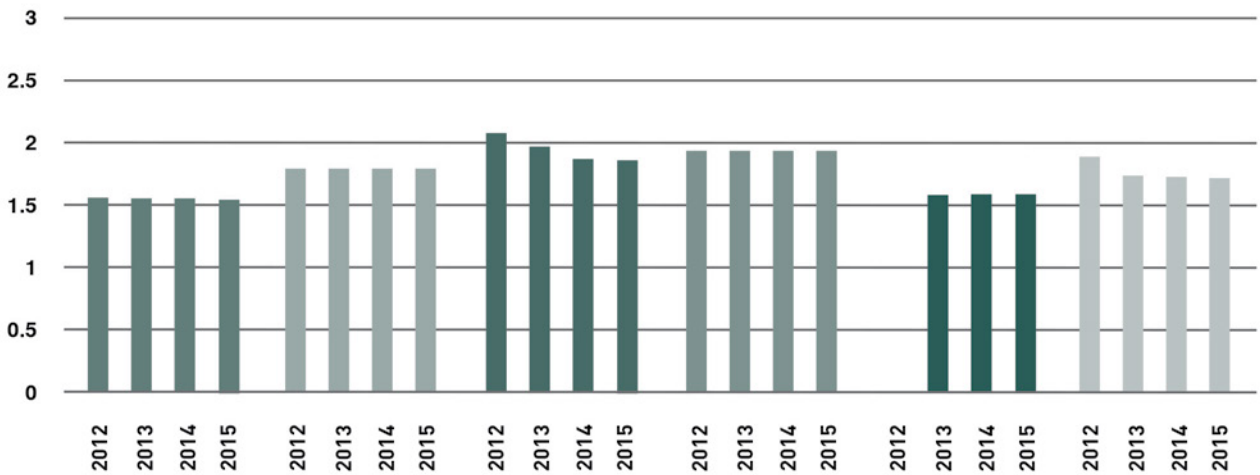
Since early 2013, a new hiring policy was approved, which foresees an obligation for the first band of

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.

The replacement of cars in the course of time has determined a progressive efficiency improvement (gr CO₂/Km) of the fleet, proven by the energy efficiency and emissions data related to the kilometers travelled, reported in the data table of the company fleet.

PUE TREND BY DATA CENTER



*PUE weighted average compared to electricity consumption GW/h

CORPORATE FLEET DATA (ITALY)

	2012	2013	2014	2015
Mileage ¹⁹	35,730,000	37,320,000	38,890,000	39,435,000
Diesel consumption (Ton) ²⁰	1,862	1,898	1,947	1,926
Diesel consumption (GJ)	80,680	82,253	84,354	83,032
CO ₂ (Ton) ²¹	5,800	5,912	6,064	5,999
gr CO ₂ /Km	162.3	158.4	155.9	152.1

¹⁹ Mileage estimated based on average annual mileage bands provided by the rental company.

²⁰ Data calculated by using fuel costs per year divided by the average price of diesel (2012-2015) provided by the Ministry of Economic Development.

²¹ Diesel emission factor 3,115 t CO₂/t fuel. Source: Ministry of the Environment "Table of standard national parameters"

DATA ON ENERGY CONSUMPTION AND CO₂ EMISSIONS ²²

G4-EN3

	2014	2015
Electricity consumption (kWh)	6,698,939	7,376,845
Electricity consumption (gWh)	6.699	7.377
Electricity consumption (GJ)	24,116	26,557
CO ₂ emissions (t) ²³	2,726	3,002

²² 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).

²³ Conversion factor: 407gr CO₂ x kWh (Source: Terna 2012 "International comparison: CO₂ atmospheric emission factors").

DATA CENTER ELECTRIC ENERGY

	2012	2013	2014	2015
Electricity consumption (kWh)	34,000,000	34,000,000	31,370,000	22,200,000
Electricity consumption (gWh)	34	34	31.37	22.2
Electricity consumption (GJ)	122,400	122,400	112,800	79,905
CO ₂ emissions (t) ²⁴	13,838	13,838	12,768	9,035

²⁴ Conversion factor: 407gr CO₂ x kWh (Source: Terna 2012 "International comparison: CO₂ atmospheric emission factors").

TOTAL CO₂ EMISSIONS AND ENERGY (ITALY)

G4-EN16

	2014	2015
Total energy consumption (GJ)	221,270	189,494
CO ₂ emissions (t) [Scope 1] ²⁵	6,064	5,999
CO ₂ emissions (t) [Scope 2]	15,494	12,037
Total CO ₂ emissions	21,558	18,036

²⁵ Consumption and CO₂ emissions of the company car fleet.

Electronic waste collection and disposal

G4-EN23

The most significant item in this context is represented by electronic waste products from the management of the Group's Data Centers and is due to the replacement of plant components, which in 2015 was equal to about 37.38 tons.

100% of electronic waste produced is firstly analyzed at the two storage centers of the Group in Rome and Pont-Saint-Martin and then transferred to specialized and certified firms for the proper recovery (code R13) of materials (code 160214). Data Center electronic waste is "sustainable" because it is for the most part reused in other industrial sectors.

A second type of electronic waste generated at the Group offices is represented by PCs.

In this context, 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

	2012	2013	2014	2015
Tons produced	24.03	50.35	32.54	37.38
of which:				
Transferred to specialized and certified companies for correct disposal	24.03	50.35	32.54	37.38





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 third 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. 112, 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 new 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: "The Country's Modernization", "Our Human Capital" and "The Environment" includes the main Corporate Social Responsibility challenges related to the ICT sector. Engineering's Corporate Social Respon-

sibility Report refers to data, projects completed and services provided by the organization in 2015 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 Consolidated and Separate Financial Statements for the year 2015, the audit of which was carried out by Deloitte according to the principles and criteria recommended by CONSOB.

For information: csr@eng.it

Materiality analysis

G4-18

Accepting the solicitations from the new G4 guidelines, which foresee a focus on reporting of material topics, in 2015 Engineering completed the materiality analysis to identify the most important topics.

The Report's G4 content and indicators have therefore been prepared based on the results of the 2015 materiality analysis by connecting the list of themes identified as material with the GRI-G4 guideline indicators (see paragraph: Material topics and connection with the indicators of the GRI-G4 guidelines).

The process of analysis

The materiality analysis started from the discovery of the issues generally recognized as important because they have been reported by frameworks recognized at international level, such as the ISO 26000 guidelines and the GRI-G4 standard, 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 first Corporate Social Responsibility Report.

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 corporate social responsibility reports of the main companies in the ICT sector at international level and the main news found in national media
- the main documents developed by associations for the promotion of CSR in the Information Technology sector: EICC (Electronic Industry Citizenship Coalition), GeSi (Global e-Sustainability Initiative)
- the documents drawn up by the leading sustainability rating agencies and associations for the promotion of socially responsible investments.

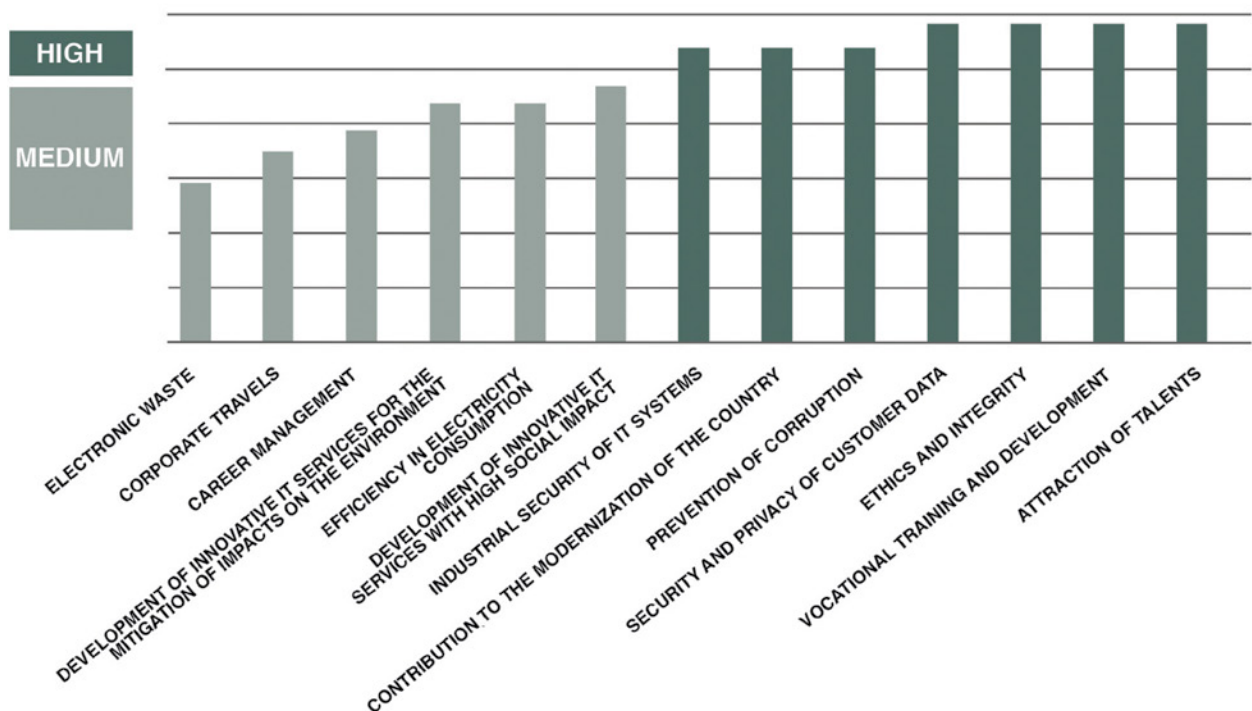
The list of topics that emerged in the course of the preliminary analysis were discussed, analyzed and weighed during dedicated focus groups which involved all the Group's first lines (executive positions) based on a risk self-assessment approach that allowed the company's top management to evaluate each Corporate Social Responsibility issue based on two "weighted" variables: potential impact on business and on reputation.

THE RESULTS OF THE MATERIALITY ANALYSIS

G4-19

Material Topics	Priority
Attraction of talent	High
Vocational training and development	High
Ethics and integrity	High
Security and privacy of customer data	High
Prevention of Corruption	High
Contribution to the modernization of the Country	High
Industrial security of IT systems	High
Development of innovative IT services with a high social impact	Medium
Efficiency in electricity consumption	Medium
Development of innovative IT services for the mitigation of impacts on the environment	Medium
Career management	Medium
Corporate travel	Medium
Electronic waste	Medium

PRIORITY DETECTED IN THE FACTORS OF MATERIALITY



Our stakeholders

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

The table shows the major categories of Engineering stakeholders and the main 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 the activities of the Group.

Main categories of stakeholders	Engineering Map	Interaction, listening and involvement modes
Employees	8,136 employees located in 30 branches in Italy and overseas in Belgium, the Republic of Serbia, Brazil, Argentina and the USA	<ul style="list-style-type: none"> • Internal communication tools (newsletters, intranet, mailings) • Internal and external events dedicated to employees • Constant presence of the Personnel and Organization Department at branch offices
Clients	<p>More than 1,000 national and international clients in the sectors:</p> <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
Suppliers	<p>More than 1,000 suppliers concentrated in the sectors:</p> <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, listening and involvement modes
Sector and category Associations	National associations of the computer, software, ICT industries	Periodic meetings, preparation and sharing of good 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 	Contacts on the occasion of the launch of important projects, publication of company documents, interviews, events
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	2012			2013			2014			2015		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
Permanent	4,593	2,155	6,748	4,955	2,232	7,187	5,025	2,247	7,272	5,588	2,465	8,053
Fixed-term	55	41	96	56	40	96	82	36	118	58	25	83
TOTAL	4,648	2,196	6,844	5,011	2,272	7,283	5,107	2,283	7,390	5,646	2,490	8,136

Total workforce (expressed as average staff AWU) by nature of employment relationship and gender	2012			2013			2014			2015		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
EMPLOYEES	4,361.29	2,020.56	6,381.85	4,838.13	2,104.06	6,942.19	4,891.55	2,117.5	7,009.05	5,188.83	2,214.9	7,403.73
CONSULTANTS	/	/	/	/	/	3,500	/	/	3,200	.	.	.

Total amount of workforce expressed as average staff/AWU by geographical area and gender (including employees and other non-employment contract types)	2012			2013			2014			2015		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
Northern Italy	1,783.90	903.17	2,687.07	2,052.95	956.4	3,009.35	2,535.15	1,199.68	3,734.83	2,166.74	1,022.23	3,188.97
Central Italy	1,766.72	861.67	2,628.39	1,760.06	822.98	2,583.04	1,322.4	595.04	1,917.44	1,972.31	888.33	2,860.64
Southern Italy and Islands	721.60	208	929.60	818.01	252.57	1,070.58	741.92	229.57	971.49	689.61	194.19	883.8
Brazil	72.66	40.57	113.23	190.44	63.45	253.89	267.76	80.8	348.56	329.3	98.66	427.96
Belgium	12.41	7.15	19.56	13.67	8.66	22.33	15.82	10.66	26.48	13	8.5	21.5
Serbia	0.00	0	0	0	0	0	4.5	1.75	6.25	9.97	1.32	11.29
Argentina	4.00	0	4	2	0	2	3	0	3	7.9	1	8.9
USA	0.00	0	0	1	0	1	0	0	0	0	0	0
Germany	0.00	0	0	0	0	0	1	0	1	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0
GROUP TOTAL	4,361.29	2,020.56	6,381.85	4,838.13	2,104.06	6,942.19	4,891.55	2,117.5	7,009.05	5,188.83	2,214.9	7,403.73

Amount of employed staff of the Group by professional category and gender at 12/31	2012			2013			2014			2015		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
Executives	269	40	309	285	42	327	284	40	324	284	43	327
Middle managers	1,030	335	1,365	1,188	381	1,569	1,234	392	1,626	1,275	401	1,676
Employees	3,349	1,821	5,170	3,536	1,848	5,384	3,589	1,851	5,440	4,087	2,046	6,133
Manual workers	0	0	0	2	1	3				0	0	0
TOTAL	4,648	2,196	6,844	5,011	2,272	7,283	5,107	2,283	7,390	5,646	2,490	8,136

Breakdown of employed staff by age group, gender and geographical area at 12/31												
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ITALY

Age < 30 years	379	184	563	294	131	425	287	112	399	373	197	570
Age 30 - 50 years	3,674	1,795	5,469	3,850	1,863	5,713	3,761	1,831	5,592	4,017	1,855	5,872
Age > 50 years	441	151	592	585	187	772	700	233	933	863	309	1,172

ABROAD

Age < 30 years	37	22	59	79	28	107	109	32	141	116	52	168
Age 30 - 50 years	107	42	149	187	58	245	221	68	289	240	69	309
Age > 50 years	10	2	12	16	5	21	29	7	36	37	8	45

Amount of staff belonging in protected categories at 12/31	MEN 2012	WOMEN 2012	TOTAL 2012	MEN 2013	WOMEN 2013	TOTAL 2013	MEN 2014	WOMEN 2014	TOTAL 2014	MEN 2015	WOMEN 2015	TOTAL 2015
ITALY	165	108	273	194	132	326	194	122	316	212	129	341
ABROAD	/	/	/	/	/	/	0	0	0	0	0	0

Amount of permanent staff by professional category and gender at 12/31	MEN 2012	WOMEN 2012	TOTAL 2012	MEN 2013	WOMEN 2013	TOTAL 2013	MEN 2014	WOMEN 2014	TOTAL 2014	MEN 2015	WOMEN 2015	TOTAL 2015
Executives	267	40	307	281	42	323	279	40	319	281	43	324
Middle managers	1,030	335	1,365	1,185	380	1,565	1,230	391	1,621	1,268	401	1,669
Employees	3,296	1,780	5,076	3,487	1,809	5,296	3,516	1,816	5,332	4,039	2,021	6,060
Manual workers	0	0	0	2	1	3	0	0	0	0	0	0
TOTAL	4,593	2,155	6,748	4,955	2,232	7,187	5,025	2,247	7,272	5,588	2,465	8,053

Amount of permanent staff by employment category at 12/31	MEN 2012	WOMEN 2012	TOTAL 2012	MEN 2013	WOMEN 2013	TOTAL 2013	MEN 2014	WOMEN 2014	TOTAL 2014	MEN 2015	WOMEN 2015	TOTAL 2015
Full Time	1,781	4,584	6,365	1,852	4,936	6,788	1,847	5,006	6,853	5,552	2,063	7,615
Part Time	374	9	383	380	19	399	400	19	419	36	402	438

Recruitment of new employees by age group, gender and geographical area at 12/31	MEN 2012	WOMEN 2012	TOTAL 2012	MEN 2013	WOMEN 2013	TOTAL 2013	MEN 2014	WOMEN 2014	TOTAL 2014	MEN 2015	WOMEN 2015	TOTAL 2015
ITALY												
Age < 30 years	/	/	/	66	30	96	117	44	161	238	136	374
Age 30 - 50 years	/	/	/	360	150	510	209	74	283	507	153	660
Age > 50 years	/	/	/	79	12	91	27	8	35	69	12	81
TOTAL	/	/	593	505	192	697	353	126	479	814	301	1,115

ABROAD												
Age < 30 years	/	/	/	/	/	/	/	/	/	/	/	/
Age 30 - 50 years	/	/	/	/	/	/	/	/	/	/	/	/
Age > 50 years	/	/	/	/	/	/	/	/	/	/	/	/
TOTAL	/	/	134	/	/	247	/	/	176	/	/	164

Employees leaving by age group, gender and geographical area at 12/31	MEN 2012	WOMEN 2012	TOTAL 2012	MEN 2013	WOMEN 2013	TOTAL 2013	MEN 2014	WOMEN 2014	TOTAL 2014	MEN 2015	WOMEN 2015	TOTAL 2015
ITALY												
Age < 30 years	/	/	/	30	15	45	40	13	53	47	17	64
Age 30 - 50 years	/	/	/	201	115	316	215	100	315	221	98	319
Age > 50 years	/	/	/	27	8	35	57	17	74	49	10	59
TOTAL	/	/	296	258	138	396	312	130	442	317	125	442
ABROAD												
Age < 30 years	/	/	/	/	/	/	/	/	/	/	/	/
Age 30 - 50 years	/	/	/	/	/	/	/	/	/	/	/	/
Age > 50 years	/	/	/	/	/	/	/	/	/	/	/	/
TOTAL	/	/	29	/	/	108	/	/	120	/	/	91

Strikes and industrial disputes	2012	2013	2014	2015
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	10,203	10,331	2,412	387
Hours of strike over total hours worked [%]	0.0958	0.0931	0.0215	0.003
Rate of trade unionism of employees [%]	11.40	13.25	11.81	10.80



Content Index
Engineering

June 2016
Service

GRI Content Index - Core Option

GENERAL STANDARD DISCLOSURES

General Standard Disclosures	Page	Description of the indicator
Strategy and Analysis		
G4-1	Letter to the stakeholders Page 14	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.
G4-2		Description of the main impacts, risks and opportunities
Profile of the organization		
G4-3	Methodological note Page 100	Name of organization
G4-4	The Group profile Page 16	Main brands, products and/or services
G4-5	Methodological note Page 100	Location where the organization's headquarters are based
G4-6	The Group profile Page 16	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	Efficient and reliable Corporate Governance Page 24	Ownership structure and legal form
G4-8	The Group profile Page 16	Markets served (including geographical analysis, sectors served, type of consumers/beneficiaries)
G4-9	The Group profile Page 16	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 105	<p>a) Shows the total number of employees by type of contract (fixed/permanent) and by gender</p> <p>b) Shows the total number of permanent workers by employment type (part-time/full-time) and gender</p> <p>c) Shows the number of workers by type of employment relationship (employee/non-employee) and gender</p> <p>d) Shows the total labor force by nation and gender</p>

G4-10	A motivated and winning team Page 72	f) 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 e) 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) are 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	The Group profile Page 16	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	The Group profile Page 16	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 100	Explanation of the possible modes of application of the precautionary principle or approach
G4-15	Integrity and responsibility: Code of Ethics and Models 231 and 262 Page 25	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 103	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 100	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 100 Materiality analysis Page 101	Explanation of the process for defining the contents of the financial statements and how the organization has implemented the relevant reporting principles
G4-19	The results of the materiality analysis Page 102	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 112	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 112	For each material aspect, report the scope outside the organization
G4-22	Methodological note Page 100	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 100	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 103	List of stakeholder groups with which the organization is involved
G4-25	Our stakeholders Page 103	Principles for identifying and selecting the main stakeholders with whom to undertake engagement activities
G4-26	Our stakeholders Page 103	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 100	Reporting period of information provided (for example tax year, calendar year)
G4-29	Methodological note Page 100	Date of publication of the most recent corporate social responsibility report

Report parameters

G4-30	Methodological note Page 100	Reporting interval (annual, two-yearly...)
G4-31	Methodological note Page 100	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 112	Explanatory table of the contents of the report
G4-33	This financial statement has not been subject to external review	Indicates the policy of the organization and current practices for the purpose of obtaining the external assurance report

Governance

G4-34	The Group profile Page 16	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	Integrity and responsibility: Code of Ethics and Models 231 and 262 Page 25	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	In constant growth: the 2015 economic and financial results Page 23					
G4-EC1	Value generated for the country Page 24		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 THE MODERNIZATION OF THE COUNTRY	Engineering	Clients
MATERIAL ASPECT: Indirect economic impacts						
G4-DMA	Engineering for the Country's modernization Page 33					
G4-EC7	Engineering for the Country's modernization Page 33		Impacts of investment in infrastructure and services supported		Engineering	
G4-EC8	Engineering for the Country's modernization Page 33		Description of the main indirect economic impacts		Engineering	Clients Community

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

G4-DMA	Continuous training as a strategic factor for development Page 78				
G4-LA9	The IT & Management School "Enrico Della Valle" Page 78	Average hours of training per year for each employee, divided by gender	PROFESSIONAL TRAINING AND DEVELOPMENT	Engineering	Clients
G4-LA10	A motivated and winning team Page 72	Programs for skills management and lifelong learning that support the continued employability of employees			
	Career paths for the success of individuals and the Group Page 74				
G4-LA11	Personnel data Page 105	Percentage of employees receiving regular performance and career development reviews	CAREER MANAGEMENT		

SUB-CATEGORY: Company
MATERIAL ASPECT: Anti-Corruption

G4-DMA	Integrity and responsibility: Code of Ethics and Models 231 and 262 Page 25				
G4-S03	Integrity and responsibility: Code of Ethics and Models 231 and 262 Page 25	Percentage of workers receiving training on the organization's anti-corruption policies and procedures		Engineering	Clients
G4-S04	Integrity and responsibility: Code of Ethics and Models 231 and 262 Page 25	Communication and training on anti-corruption policies and procedures			

MATERIAL ASPECT: Legal compliance

G4-DMA	Integrity and responsibility: Code of Ethics and Models 231 and 262 Page 25				
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MATERIAL ASPECT: Legal compliance

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	ETHICS AND INTEGRITY	Engineering	Clients
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SUB-CATEGORY: Product responsibility**MATERIAL ASPECT: Customer privacy**

G4-DMA	Data storage and protection Page 29	Percentage of employees who regularly receive performance and career development reviews	CAREER MANAGEMENT		
G4-PR8	Data storage and protection Page 29	Number of documented complaints regarding breaches of privacy and loss of consumer data		Engineering	

OTHER SPECIFIC NON-MATERIAL INDICATORS

G4-LA1	Personnel data Page 105	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	The safety of our people Page 76	Rate of accidents in the workplace, illness, lost working days, absence and total number of deaths, divided by geographical area
G4-LA14	Suppliers: an essential production factor Page 29	Percentage of new partner suppliers analyzed in terms of labor practices and actions undertaken
G4-EN3	Data on energy consumption and CO ₂ emissions Page 95	Energy consumption within the organization
G4-EN16	Total CO ₂ emissions and energy (Italy) Page 95	Total indirect emissions of greenhouse gases (GHG)
G4-EN15	Sustainable modes of mobility for personnel Page 94	Total direct emissions of greenhouse gases (GHG)
G4-EN23	Electronic waste collection and disposal Page 96	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 2015 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

Methodological support

EY - Climate Change & Sustainability Services

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Steve Ingham

Winner of the

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