DIGITAL ECOSYSTEMS & COMPOSABLE SOLUTIONS

WHERE YOUR BUSINESS MEETS INNOVATION

ENGINEERING

WHAT ARE WE DISCUSSING?

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in Edward Abbiati

With over 24 years' experience in the IT Industry, Edward has worked in Consulting, Advisory, Sales and Management roles for various IT Multinational firms in the UK, Australia and Europe.
Edward has the strategic mission of strengthening and developing the Group's value proposition and portfolio, and since 2021 is also in charge of managing Engineering Group's communication, together with his team.

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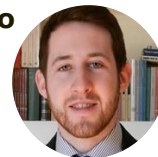
Alessandro works on enhancing the Group's portfolio by developing content and closely working with all market units. He developed an innovative Portal to enable agile access for all client facing professionals to all of marketing's resources (Presentations, Webinars, White Papers, etc.). Previously worked in consulting after completing Innovation & Business studies.

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Emiliano has over 20 years of experience in journalism and communication. He worked for the Editorial Group l'Espresso. For Engineering he managed several communication projects and web portals. He is currently producing specialized content.

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With over 25 years of experience in Innovation and Digital Transformation fields (including Research and Management Consulting positions) Massimo currently leads an internal team of over 200 innovators, used to spread innovation, to gather needs from all levels of the organization and to bring innovation activities to the market. Massimo is also a University and EMBA Professor, a public speaker and is an international selected expert for Innovation Management at ISO level.

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Marco has worked on several related aspects such as public sector new delivery models, Open Service Innovation techniques and models, Distributed network for personal data management, IoT for Public Service improvements, Open Data tools. He is PMP certified and is specialized in Group and Team Management and coaching.

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With over 35 years of experience in the IT sector, Pietro is Director of Engineering Enterprise Solutions, the Competence Center of SAP, Microsoft and Oracle. He makes available its knowledge and expertise in the topics of business and commercial management and organization, negotiation, relations in negotiations complex, local and international partnerships.

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1 RETHINK YOUR WORLD.
MAKE IT HAPPEN

The time has come for all of us to reinvent our world and push the boundaries of our businesses. We are facing huge challenges that will require us to be strong, agile, creative, co-operative and visionary.
Digital ecosystems, matching business and technology, will enable new and better ways of working and living. Thanks to our experience of continuously researching the frontiers of technology while continuously supporting business needs across all markets, we enable and accelerate your growth path to make your business even more brilliant.

Maximo Ibarra
CEO & General Manager Engineering

We stand at the dawn of a new era. Technology and Business are coming together, now more than ever, to transform, at every level, the way we live and work. New Social and Business needs (and models!) are emerging and being increasingly met by the opportunities brought on by new advanced technologies. The Covid-19 pandemic changed the face of the world as we know it, forever. It sped up all sorts of transformative trends and brought on such sudden and violent changes that looking backwards has become pointless.

> As we look forward, we need to think differently and build differently.

Digital Transformation is gaining speed and momentum, thanks to the widespread availability of new technologies and the insurgence of a new global value: Data. We must use the lessons we learnt during these tough times to transform, enhance and improve the way we live and work. The Pandemic forced all organisations to rethink their business models and to seek to expand beyond their traditional perimeter to increase their scope. These are also tricky times, coming out of a hard-hitting global crisis, resources are limited. Existing assets need to be stretched and only when necessary are going to be replaced. On the other hand, new assets are needed to be able to compete and build in this new digital world.

New market dynamics are leading to new types of relationships. Now we must meet the needs of multiple stakeholders in a very specific manner, not of groups of customers. Digital ecosystems help us to reshape business around these needs, while composable solutions will drive us towards a new way to solve old problems.

> Building new Digital Ecosystems, composing solutions, from existing technologies and assets and advanced technologies and designing them around the core business needs, as quickly as possible, to extract maximum value both in times of time to market and innovation of how we work is crucial to the success and growth of your business.

In this paper we aim to explain our vision of what digital ecosystems look like and how codesigned, composable solutions are going to reshape the business world. We also aim to show how our Group can act as a partner, a facilitator, an orchestrator and an accelerator in assisting you throughout the process of creating new value-based relationships and services and ultimately redesigning and redefining your ecosystem. Our future will need creativity, knowledge, and vision. We have all three in supply.

WHEN **BUSINESS MEETS TECHNOLOGY**, **EVOLUTION, INNOVATION,** AND **TRANSFORMATION** HAPPEN

2 TRENDS: CO-DESIGNING THE FUTURE

**CONNECTION BRINGS AGILITY
AGILITY GENERATES EFFICIENCY
EFFICIENCY ENABLES INNOVATION
INNOVATION NOURISHES BUSINESS.**

Facing today's radical changes with so little room to make mistakes will be a huge test for society and businesses. But change is an imperative and not an option. It is inevitable. New ways of working, living and thinking are a legacy of the pandemic but this trend goes hand in hand with the insurgence of new core values, such as Openness, Inclusivity, Sustainability, Ethics. These core values, these attributes are increasingly shaping the way decisions are made, from board rooms down to our family tables. They are also increasingly considered attributes of Data and Technology. How will our cities look like? How will services be structured? How will prevention transform healthcare? How will we work and collaborate? How will our Digital Infrastructures look like? How will these new digital solutions be able to interact and be composed? How can data and technologies help boost the economy of the future? How can we make access to innovation, data and technology open and ethically sustainable to all.

There is a need for Agility and Innovation linked to the fast times and the few resources we are using. In this scenario one is faced with the task of having to balance out how we can best use what is already in place and what needs to be created. Many of the existing legacy systems are in dire need of an overhaul. Digital ecosystems are about extracting maximum value from data. Data which is often unused or unusable.

> **Composable solutions and the world of Digital ecosystems seem to be the best if not maybe the only answer to our current needs.**

What this approach implies is that a lot of traditional systems will not need to be rebuilt but simply connected to the ecosystems. We must act fast and smart: It's more about composing than building from scratch. It's more about blurring market boundaries than sticking to our usual hunting grounds. It's less about big product launches to the masses and more about tailoring solutions to specific users. It's about agility, interoperability, security.

This can be done by co designing tailor made solutions that leverage existing data and systems combining it with advanced technologies and platforms. The data that fuels these ecosystems will come from multiple sources and the revolution is in how we compose technologies data and knowledge to extract maximum business value. From scattered Data sources to Data Visualization dashboards, sometimes we are just an API away from a revolution. The mixing and matching of advanced technologies will enable all technologies and all data to be used as we solve current issues.

Composability is a close relative to integration and Digital Ecosystems: all of these rely on a **deep knowledge of the stakeholders and their business needs to fully deliver value**.

This is why it is so important to look towards the future, with creativity but also knowledge of all the building blocks available: Technology, Business Processes, Integration capabilities, agile and cooperative ways to build and co-design solutions with all stakeholders.

It is no longer the time to produce a finished product. Instead, it is necessary to push beyond our vision and create digital ecosystems that expand beyond the organisation in silos and that make data available to all users who want to use it, creating unexpected interactions.

Fabio Veronese
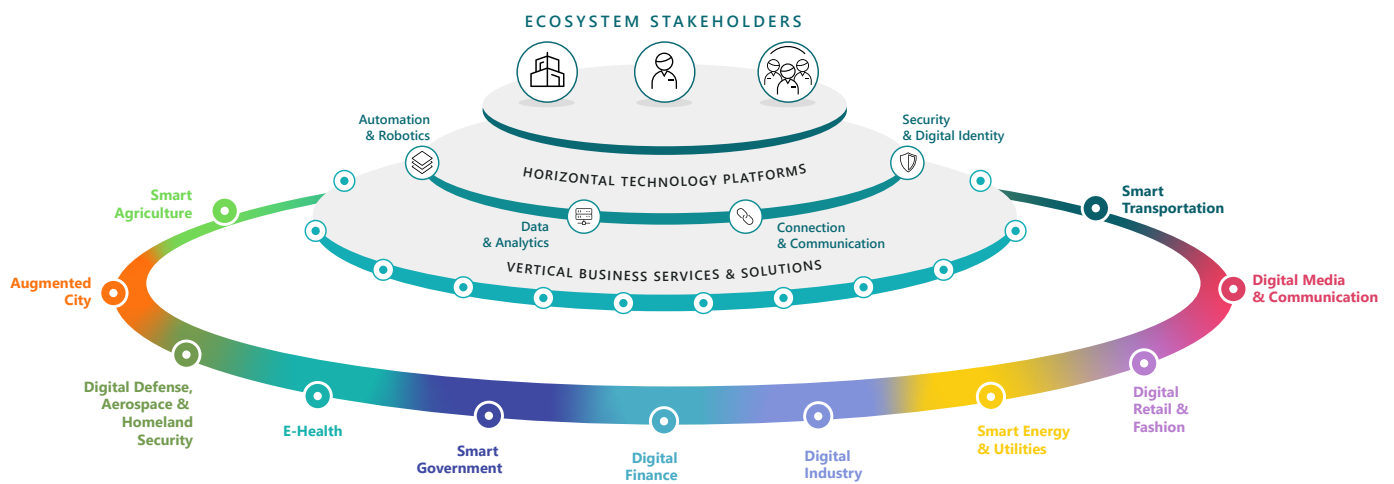Head of Infrastructure & Networks Digital Hub, ENEL

3 DIGITAL ECOSYSTEMS: NEW NETWORK OF THE VALUE

TRUE COMPETITIVE POTENTIAL IS BORN WHERE PLATFORMS AND HORIZONTAL TECHNOLOGIES MEET BUSINESS VERTICAL SERVICES.

A DIGITAL ECOSYSTEM
IS AN **OPEN, DISTRIBUTED**
AND **ADAPTIVE SYSTEM**
USED BY MULTIPLE STAKEHOLDERS,
THAT SHARE COMMON
INTERESTS AND NEEDS,
TO DELIVER DIGITAL VALUE,
THROUGH **DIGITAL SERVICES**
BY LEVERAGING TECHNOLOGY PLATFORMS
AND CAPABILITIES COMBINED WITH VERTICAL
BUSINESS AND **KNOWLEDGE PLATFORMS.**

Business ecosystems are nothing new. The web of relationships and partnerships any given organisation and business has is as old as their business is. With the advent of the Digital Economy, fuelled by advanced technologies, digital ecosystems are ready to take centre stage. Every business is in the process of digitalizing its core business processes and relationships and seeking new ways to build solutions.

Every business is seeking to expand beyond its traditional perimeter and industry specific Silos are slowly becoming permeable. Lessons learned in one field can prove priceless when applied to a new industry. The speed with which value can be gained from existing data is rapidly increasing.

ECOSYSTEM STAKEHOLDERS

HORIZONTAL TECHNOLOGY PLATFORMS

VERTICAL BUSINESS SERVICES & SOLUTIONS

Automation & Robotics

Security & Digital Identity

Data & Analytics

Connection & Communication

Smart Agriculture

Smart Transportation

Augmented City

Digital Media & Communication

Digital Defense, Aerospace & Homeland Security

E-Health

Smart Government

Digital Finance

Digital Industry

Smart Energy & Utilities

Digital Retail & Fashion

Digital Ecosystems:

- – are built on Digital Platforms of horizontal technology platforms and vertical business services, as well as on a set of common standards and norms of interaction

- – meet common interests of various stakeholders who all participate in the ecosystem in different ways and for different reasons

- – enable the digital interaction of these stakeholders producing digital value that in turn can be capitalized as a service or a solution.

The Technologies that all Ecosystems rely on are the same across the board and include both traditional as well as advanced technologies (both emerging and digital enabling technologies)
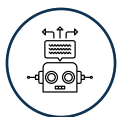
Automation & Robotics

To automate your processes and operations, you need: **Intelligent Automation (RPA), Industrial IoT Platforms**

Data & Analytics

To enhance the power of your data, you need: **AI & Advanced Analytics, Business Intelligence Platforms, Data Visualization, Machine Learning Platforms, Digital Twin, CRM and ERP business applications**

Connection & Communication

To collect, integrate and augment your information, you need: **Cloud, Cloud Management Platforms, IoT, AR / MR / VR, Social Media Platforms, Open Data, Digital Experience Platforms, Marketing Platforms**

Security & Safety

To secure your business, you need: **Cybersecurity, Endpoint Protection Platforms, Blockchain**

> **IN ALL OF THESE AREAS WE INVEST IN DEDICATED COMPETENCE CENTERS AND SPECIALIZED COMPANIES.**

Digital Ecosystems enable stakeholders to compose solutions, accessing multiple technologies, knowledge streams, provided by multiple business partners. Leveraging data, experience and platforms across all domains to rapidly provide solutions. The need to create common and interoperable tools and infrastructures is increasingly important, from a global perspective (Gaia-X) to a local perspective (City as a Platform These common technological guidelines are increasingly resembling the underlying core values of our society: Open, Interoperable, and ethically scrutinized.

4 COMPOSABLE SOLUTIONS TO ACCELERATE YOUR BUSINESS

CONNECT THE CAPABILITIES
TO CREATE QUICK ANSWERS
TAILORED TO DIFFERENT PROBLEMS.
MULTI COMPETENCE
IS THE NEW COMPETENCE.

SOLUTIONS THAT **RAPIDLY COMBINE
DIGITAL ASSETS**,
COMING FROM **MULTIPLE SOURCES**,
TO DELIVER A TAILOR MADE,
HIGHLY ADAPTIVE **DIGITAL SERVICE
TO RELEVANT** STAKEHOLDERS NEEDS
THAT ARE **CONTINUOUSLY EVOLVING**.

**COMPOSABLE SOLUTIONS
MAKE SENSE IF THEY DELIVER
AGILITY AND INNOVATION**.

As great and advanced technology is, it is and always remain but a tool. Ultimately people will use these tools if it enables them to solve specific business issues. The faster, the better. Whereas once upon time there was a time to recognize an issue, analyse the problem, design a solution, test drive it to limited users, refine it and release it to the masses, a process that could take typically months if not years, today we witness solutions being composed in the matter of days, for specific needs and stakeholders, by creatively mixing and matching knowledge and tech platforms across all industries.

This new way of building solutions does pose a huge question: is the age of products as we know them coming to an end? Do Products have a future? Or is the future for Agile, co-designed solutions. Composable solutions are tailormade to the users needs and deeply linked to the business issue it is addressing. They deliver:

Agility
by mixing and matching pre existing capabilities from both traditional and advanced technologies adaptability

Adaptability
being rapidly built around specific needs, as the needs change these solutions can be continuously evolved

Ease of Integration
providing capabilities that can manage multi source data, aggregate it at a platform level and deliver different value to different users according to how you work with the datai

Similarly to products giving way to composable solutions will industry/market Silos have any more reason to exist now that every business is in the process of digitalizing its work processes and relationships. We believe that digital ecosystems will ultimately enhance all market and tech know how enabling all stakeholders to gain maximum value from a broader approach to working and living. We are assisting digital services being created very rapidly, composing traditional and frontier technologies, leveraging data and technology platforms to deliver, tailor made solutions.
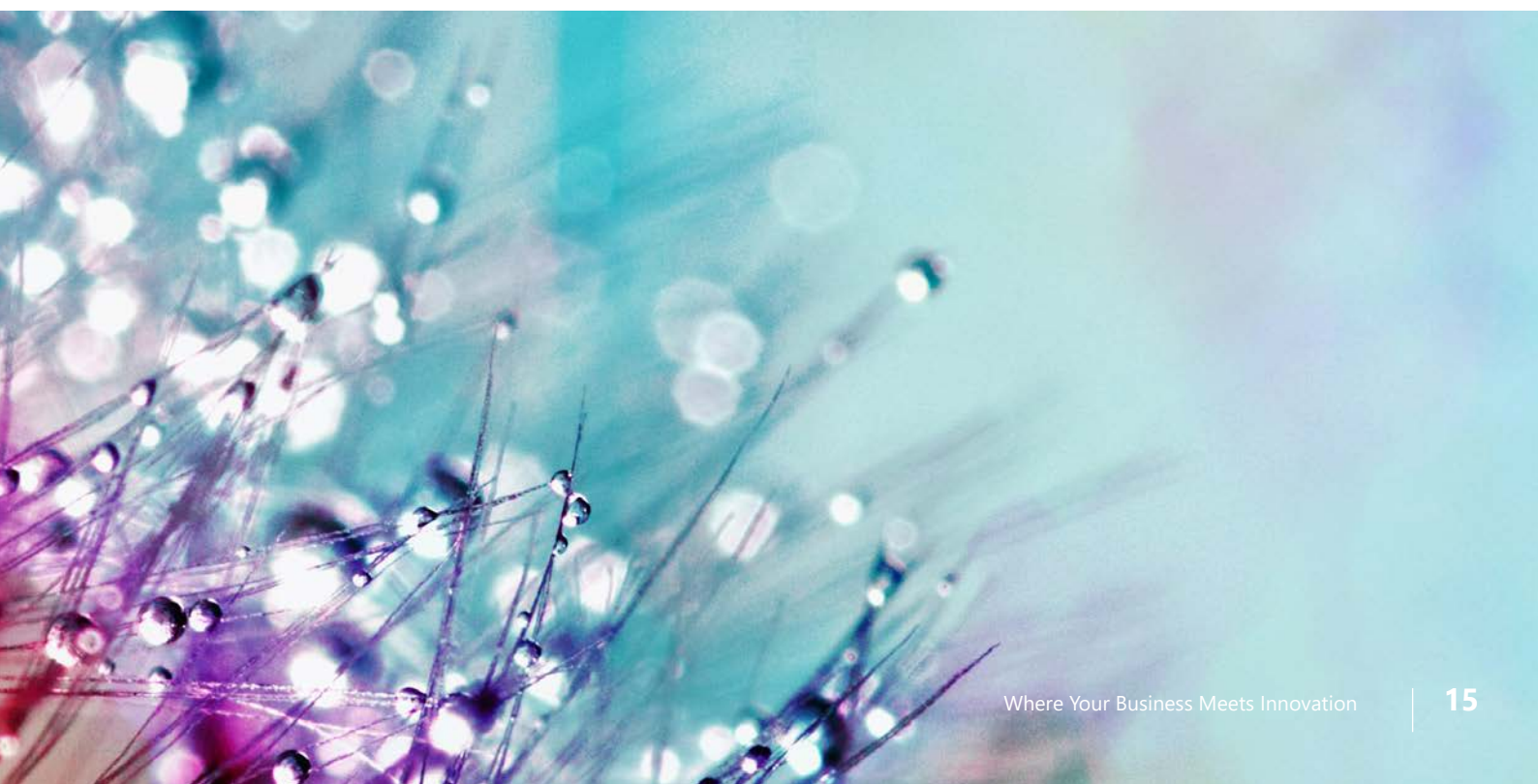
5 INNOVATION TODAY

Digital Ecosystems are built on horizontal technology platforms and leverage deep vertical knowledge to compose digital services and solutions. These services and solutions follow the data coming from numerous and scattered data sources. Connecting this data to technology platforms and building services and solutions that provide value from this data is at the heart of the new Digital Ecosystem economy.

No single player can meet all needs and so ecosystems will not only blend traditional and advanced enabling technologies, but also integrate multiple players, technologies and solutions to provide tailored made, timely solutions to meet specific needs for the time the need exists.

At Engineering we work on all major industries from government to manufacturing, from energy to finance.

We design, implement and manage so many of the core processes at the heart of these organizations that our knowledge of the business is second to none. We also continuously explore and test all technologies to support these processes. Here are a few examples of digital ecosystems, in crucial domains of modern life, where our skills and solutions could be deployed immediately.

Of course, digital ecosystems are by nature, multi stakeholder, multi technology and multi provider… these are maps to help you imagine yours and we have the skills and tools to help you compose your own.

EXAMPLES OF NEW GENERATION DIGITAL ECOSYSTEMS AND COMPOSABLE SOLUTIONS.

DIGITAL CITIZENSHIP

This example of Digital Citizenship is built around three stakeholders and their mutual rights and responsibilities: the single Citizen, the government institutions and communities. Covering all aspects of citizenship from welfare and employment to healthcare and security and more. During the pandemic we supported the implementation of two composable solutions in few weeks, using the cross-sectional value of the data. In the region of Veneto, with DE4Bios we used our Ecosystem Platform Digital Enabler to create a solution that would help to control the spread of the virus in the region and to monitor vaccination progress. In the Asl of Foggia, in Puglia, we worked together with the institute's doctors to adapt and remodel a project designed to offer remote assistance to people suffering from chronic conditions. In this case, we created a solution that allowed for innovative remote monitoring of patients suffering from Covid-19.

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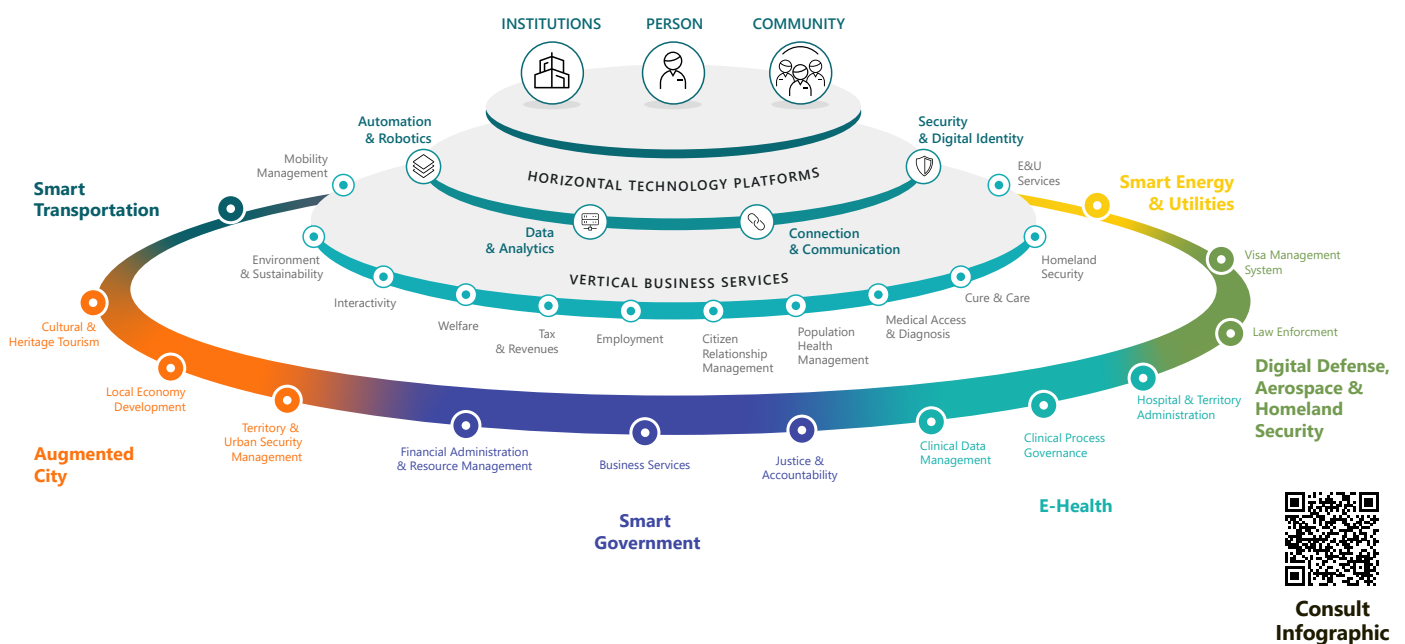
> Digital Transformation in Healthcare, Public Administration and Welfare must be complete, specialistic and able to integrate with the other digital ecosystems that operate in the community. It will be possible in this way to expand the value of the data, which will guide the actions and strategies increasingly focused on the citizen.

Dario Buttitta
General Director Public Administration & Healthcare, Engineering

> It is necessary to offer a citizen experience that enables the person to be aware of the attention paid to their daily needs. This is implemented by increasing the quality of public services thanks to the use of digital technologies and efficient management processes. A satisfied citizen trusts institutions and contributes to the improvement of the quality of life of towns and cities through their virtuous behaviour.

Stefano De Capitani
President of Municipia, Engineering Group

MOBILITY

Of the many challenges we are facing, Mobility, is possibly one of the most challenging and recognizable. Congestion, Pollution, Infrastructures, new and old means of travelling, all come together with a huge need to be streamlined to improve all aspects of what mobility means.

Our Smart Mobility ecosystem is built around three main stakeholders: the person who needs to move, the vehicle he will use to move and the infrastructures on which he will move.

This ecosystem covers all aspects of mobility from city access, parking, payment through to actual management of the mobility independently from the type of vehicle (private or public transport) used, including the management of infrastructures and the related energy grid. It is ready to accommodate the expected shift from private mobility (your own car) to an integrated, traveller centric, mobility as a service platform to leverage all available options. With Predictive maintenance looking after vehicles and infrastructures alike.


**Consult
Infographic**
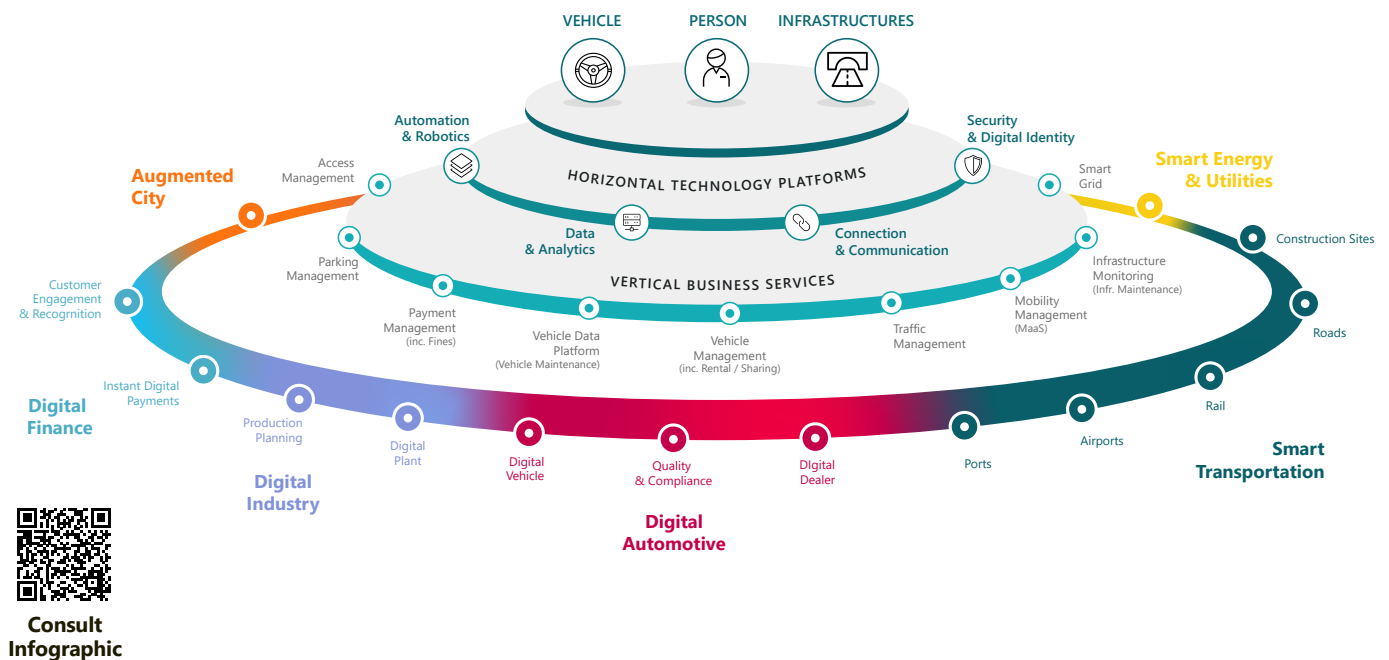
> The use of new technologies is dramatically changing the way we move in towns and cities.
> In Engineering we support the opportunities that place citizens at the heart of an ecosystem of services and solutions, able to guarantee a mobility that goes beyond the transport means used, ensuring efficiency and sustainability.
>
> **Alfredo Belsito**
> Automotive and Industries eXcellence Global, Engineering
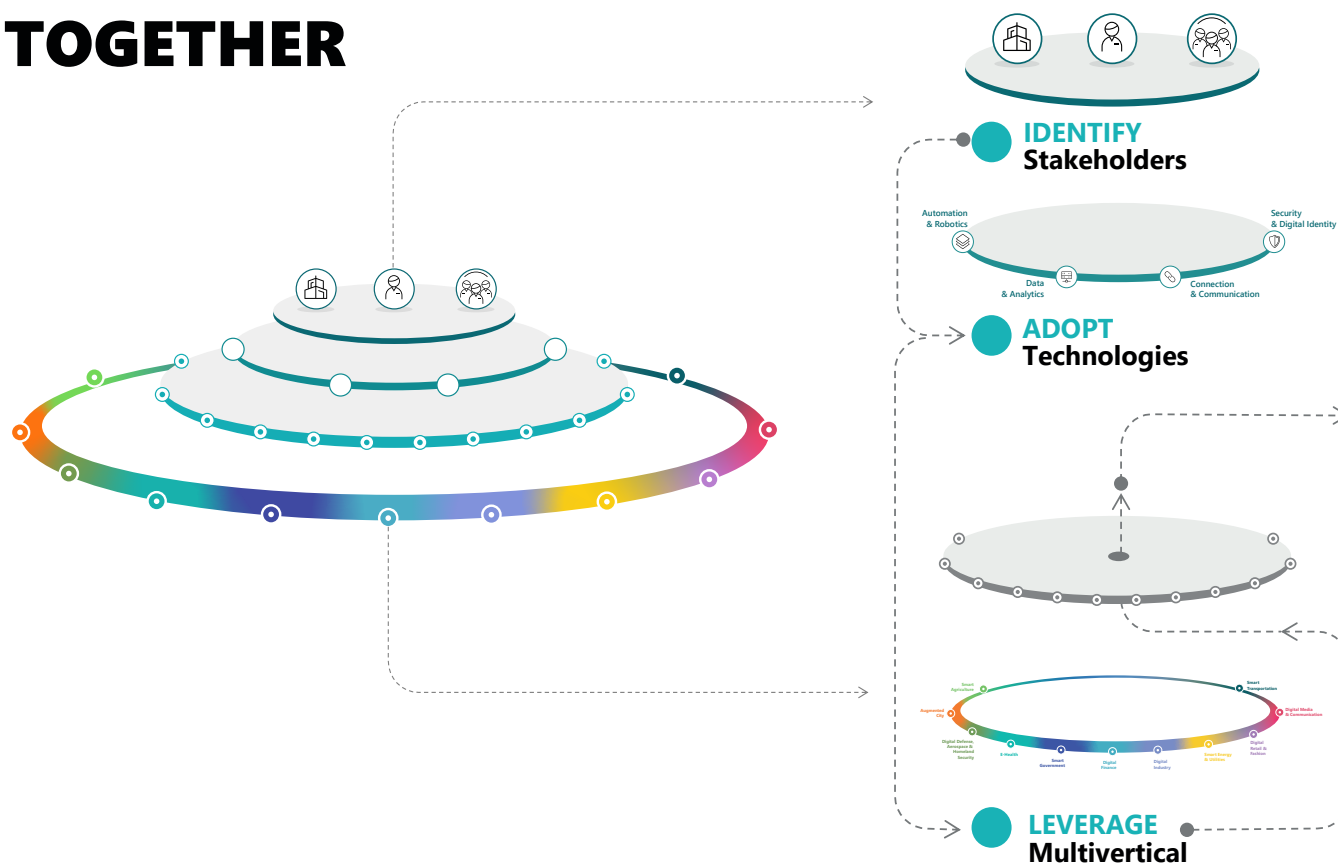
ENERGY RESOURCES & SUSTAINABILITY

This ecosystem focuses on Resource management and how sustainability is shifting, globally, our approach to resource utilization. Overall this shift is reflected in infrastructure and building management, light management, smart mobility, in the supply chain leveraged to transport resources. As for other ecosystems above, the need to improve what we use and how we use, tailoring it to specific needs and time frames is going to be at the heart of an ecosystem which will prove crucial in not only boosting economies in the future but in regulating our relationship with our planet. An overall revolution from regulations to environmental risk management and all next steps

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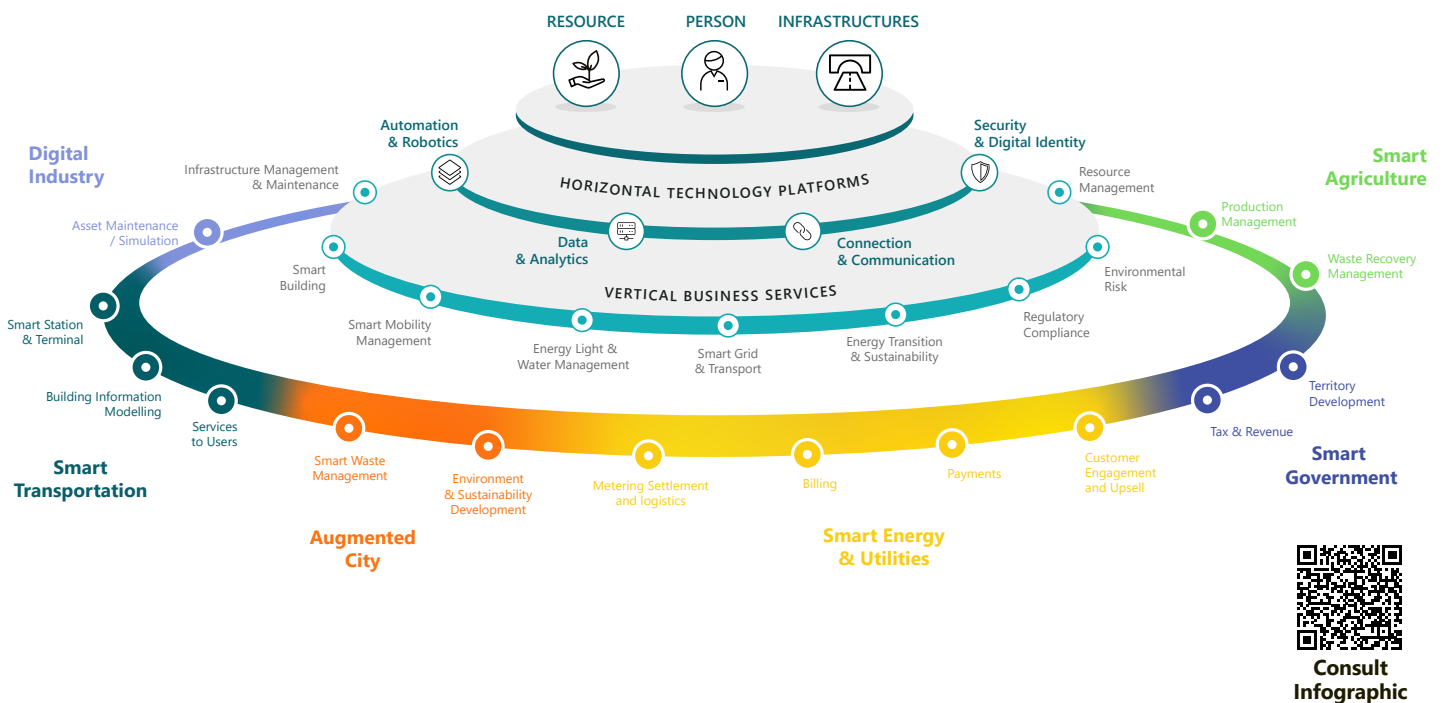
> The challenges relative to Energy Transition and Environmental Sustainability are progressively leading to the creation of an ecosystem in which the energy need no longer leads to differentiating the various market sectors (gas, electricity, oil, etc.), whose differences are reducing to ensure that they are increasingly integrated.

Vincenzo Tartuferi
General Manager Utilities & Telco Division, Engineering

LET'S BUILD YOUR DIGITAL ECOSYSTEM TOGETHER

IDENTIFY
Stakeholders

Automation & Robotics

Security & Digital Identity

Data & Analytics

Connection & Communication

ADOPT
Technologies

Smart Agriculture

Smart Transportation

Augmented City

Digital Media & Communication

Digital Defense, Aerospace & Homeland Security

E-Health

Smart Government

Digital Finance

Digital Industry

Smart Energy & Utilities

Digital Retail & Fashion

LEVERAGE
Multivertical

OUR TOOLBOXES

TOOLS

#OUR PLATFORMS #DATA MANAGEMENT PLATFORMS
#METERING BILLING PROVISIONING
#API MARKETPLACE
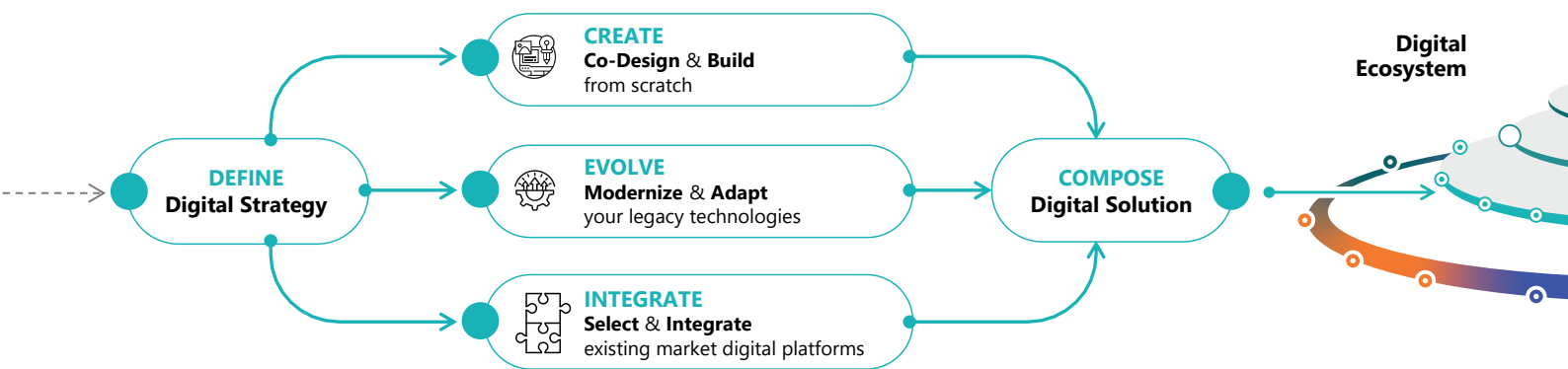#PROPRIETARY & PARTNERS SOLUTIONS
#DATA SPACES

CAPABILITIES

#DIGITALIZATION #INNOVATION #LOW CODING
#DESIGN THINKING #CO-DESIGN
#UX & USABILITY / ACCESSIBILITY
#PROCESS AND SERVICES REDESIGN #CONNECTIVITY
#INTEROPERABILITY #SYSTEM INTEGRATION
#DATA VISUALIZATION #BUILD #SUSTAINABILITY
#DIVERSITY #INCLUSION #SIMPLIFICATION

TECHNOLOGIES

#AI & ADVANCED ANALYTICS #CLOUD
#INTELLIGENT AUTOMATION (RPA)
#CYBERSECURITY #IOT #BLOCKCHAIN
#AR / MR / VR #DIGITAL TWIN

KNOWLEDGE

#TECHQUILIBRIUM #DIGITAL TRANSFORMATION
#RESEARCH & INNOVATION #CONTINUOUS NEXT
#CHANGE MANAGEMENT #PROJECT MANAGEMENT
#MULTI INDUSTRY PROCESS KNOWLEDGE
#DIGITAL EDUCATION #COMMON RULES

CREATE
Co-Design & **Build**
from scratch

EVOLVE
Modernize & **Adapt**
your legacy technologies

INTEGRATE
Select & **Integrate**
existing market digital platforms

DEFINE
Digital Strategy

COMPOSE
Digital Solution

Digital Ecosystem

DIGITAL ECOSYSTEMS DECISION MAP

Thanks to our value proposition and approach, we help businesses to design and develop their digital ecosystems across the whole decision-making process:

– We can identify **ecosystems stakeholders, services and the competencies** needed to deploy them

– We can advise whether to integrate existing **digital platforms**, or to develop new ones to support service delivery or ecosystems, and carry out projects from **design** to **implementation** and **evolution**

– We can identify **third party platforms** and integrate them into the ecosystems or evolve **legacy applications** already in place on stakeholders' IT ecosystems.

Our key value used to be our knowledge of our partners core processes. Looking forward our key capability will be that of being able to compose innovative solutions.

These solutions however require **different approaches** in design phase, as well as in the building and integrating phase. And we must do so increasingly by adhering to **common norms and rules** to enable and accelerate a European wide digital revolution.

WELLBEING

Recent events have demonstrated how prevention is and will be key in managing rising population numbers and the need for healthcare. To improve lifestyle, cure from home, preventing critical peaks will require healthcare to work closely with pharma companies which will be boosting their supply chain and sales and marketing capabilities to be able to cater to a new and growing way of taking care of oneself

Our Wellbeing ecosystems covers the full spectrum of what is linked to human health and wellbeing. From the Governmental regulatory activities to the actual production of pharma products to the distribution and selling all the way across the full range of the Supply Chain. This ecosystem involves Government institutions, private pharma production companies and all the layers involved in getting their products into the hands of the individuals who need them. Covering regulatory aspects, manufacturing, logistics, marketing and sales activities.

Consult Infographic
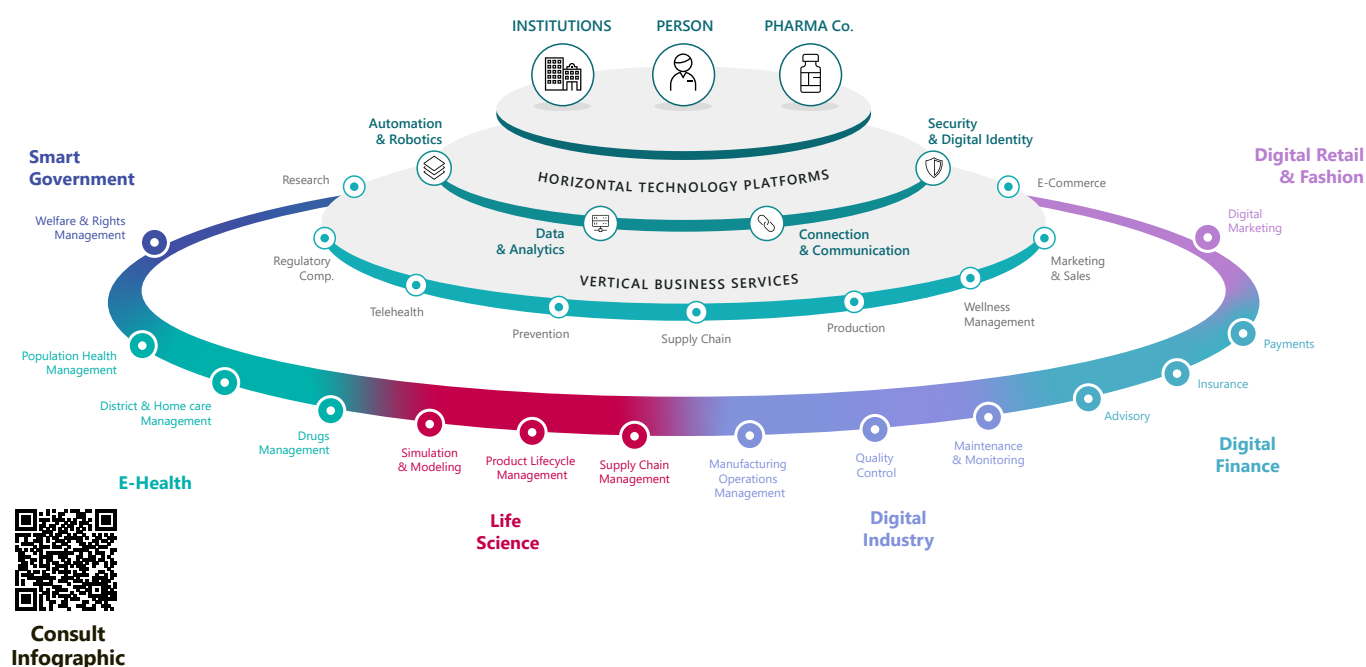
> It is necessary to put the citizen/patient/consumer at the heart of an ecosystem where skills deriving from different areas are harmonised into processes finalised to meet their needs.
> Thanks to our expertise, in Engineering we can facilitate and accelerate the blending of these skills, transforming complexity into an opportunity to create wellbeing.

Maurizio Pecori
Head of Industry & Services Market, Engineering

WEALTH & COMMERCE

Our Wealth: how is it spent and how is it used? What is regulated and what is a personal choice? How do our new core values affect the way we spend and invest? A revolution is sweeping across the financial landscape and all players are expanding beyond their traditional boundaries.

Our Wealth & Commerce ecosystem includes the full lifecycle linked to the cycle of life of....money and wealth. From the financial institutions (both public and private) to the more personal aspects of investments, savings and overall financial training and decision making down to the commercial aspects of how wealth is regulated, administered, saved, invested and spent. An interesting shift is how these ecosystems are bringing back the true meaning of value exchanged when it comes to wealth and commerce. As money represented value, as we digitalize money we revert to concepts of wealth and value as means to trade in services and goods. How people chose how to spend and invest their wealth may revolutionize the way businesses prosper. In fact it has already started.

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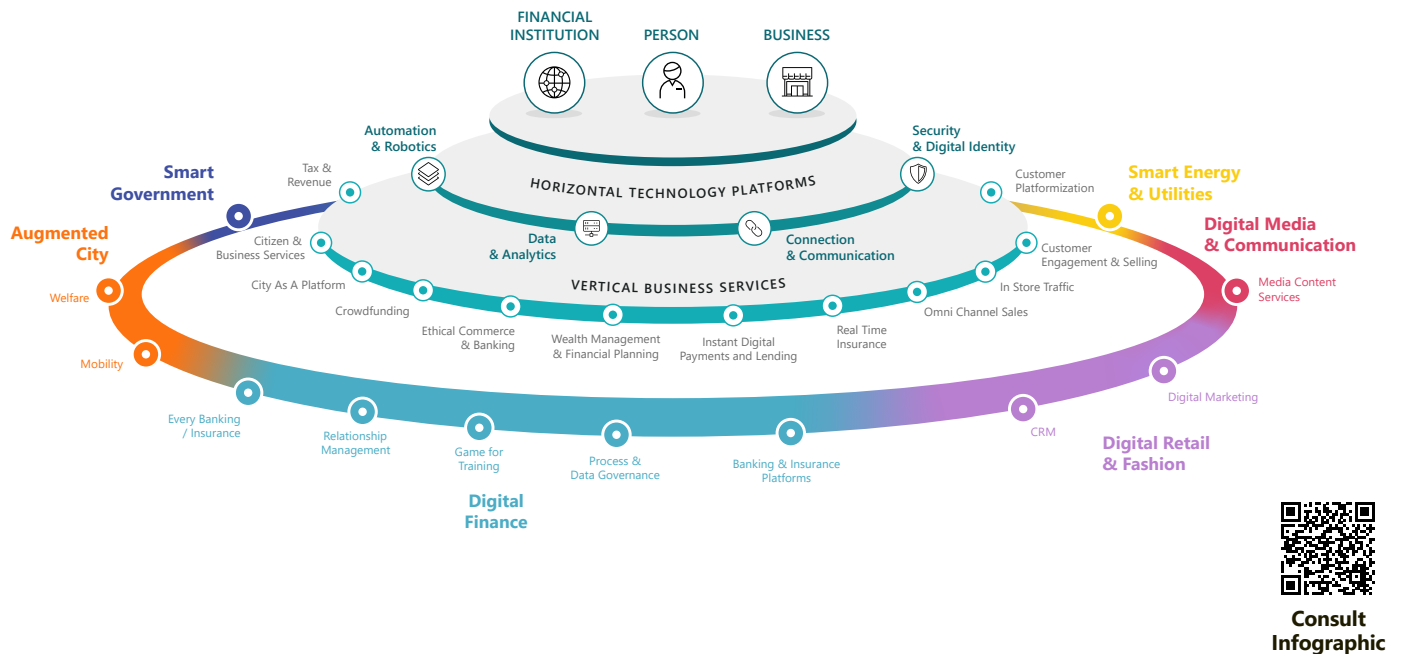
> It is necessary to be able to invest in different supply chains, learning to communicate with them, to create a network where everyone, doing their job, will contribute to the richness of the ecosystem. We find ourselves in a world that longs for integration and collaboration. And in Engineering we put ourselves forward as the partner, and partner aggregator, providing them, to become the primary facilitator of these new and fruitful interconnections.

**Giuseppina Volpi**
General Director Digital Finance, Engineering

6 ENGINEERING THE NOW

AN INTERCONNECTED ECOSYSTEM OF TECHNOLOGIES, PLATFORMS AND DIVERSIFIED DIGITAL KNOWLEDGE SUPPORTING TODAY'S COMPANIES.

In building our New Normal, creativity and innovation can profoundly reshape our world and address some of the crucial issues we need to face, considering finite resources and a period of continuous change with no available roadmaps. Blending business and technology capabilities where blending agility and reliability will prove crucial, and an orchestrated multi vertical approach can be a strategic accelerator. To have the right partner by your side will prove crucial if you aim to keep abreast of these changing times and capture the opportunities this new world, and its new frontiers has in front of us. Here at Engineering, we bring to the table technology knowledge and business know how, from all sectors. We are able to build, integrate and augment technologies and compose solutions. Drawing experiences from all business and technology contexts, deeply understanding new needs and ready to deliver tailor made experiences.

At the heart of this transformation there are three driving knowledge streams that must always be combined and in equilibrium. The knowledge of traditional technologies, where much of the legacy business lies, the knowledge of advanced technologies, which enable this transformation but above all a deep knowledge of the core business processes. At Engineering we have focused on supporting and transforming these core processes for decades, wave after wave of new technologies, we chose to be relevant on the things that mattered the most: providing the best technologies and skills to those processes on which businesses rely to evolve and grow. These knowledge streams must be constantly and increasingly rapidly refreshed. Continuous waves of innovation and technology are heading our way, in times where there is already scarcity of IT Skills.

At Engineering we are constantly looking ahead towards the frontiers of technology to learn and explore, before emerging technologies go mainstream how they can best be deployed and leveraged. We do this through our R&I activities, which counts hundreds of international research projects carried out with our global innovation network EU institutions, Research Organizations, Universities, tech firms and of course all our clients and partners. We ensure that our strategic M&A activities, continuously bring fresh skills to the group, as well as working with all of our partners. To continuously explore though is not enough and through our Internal IT Academy we are continuously reskilling and upskilling our people (as well as our clients).

WE ARE ENGINEERING
MeetUp 2021
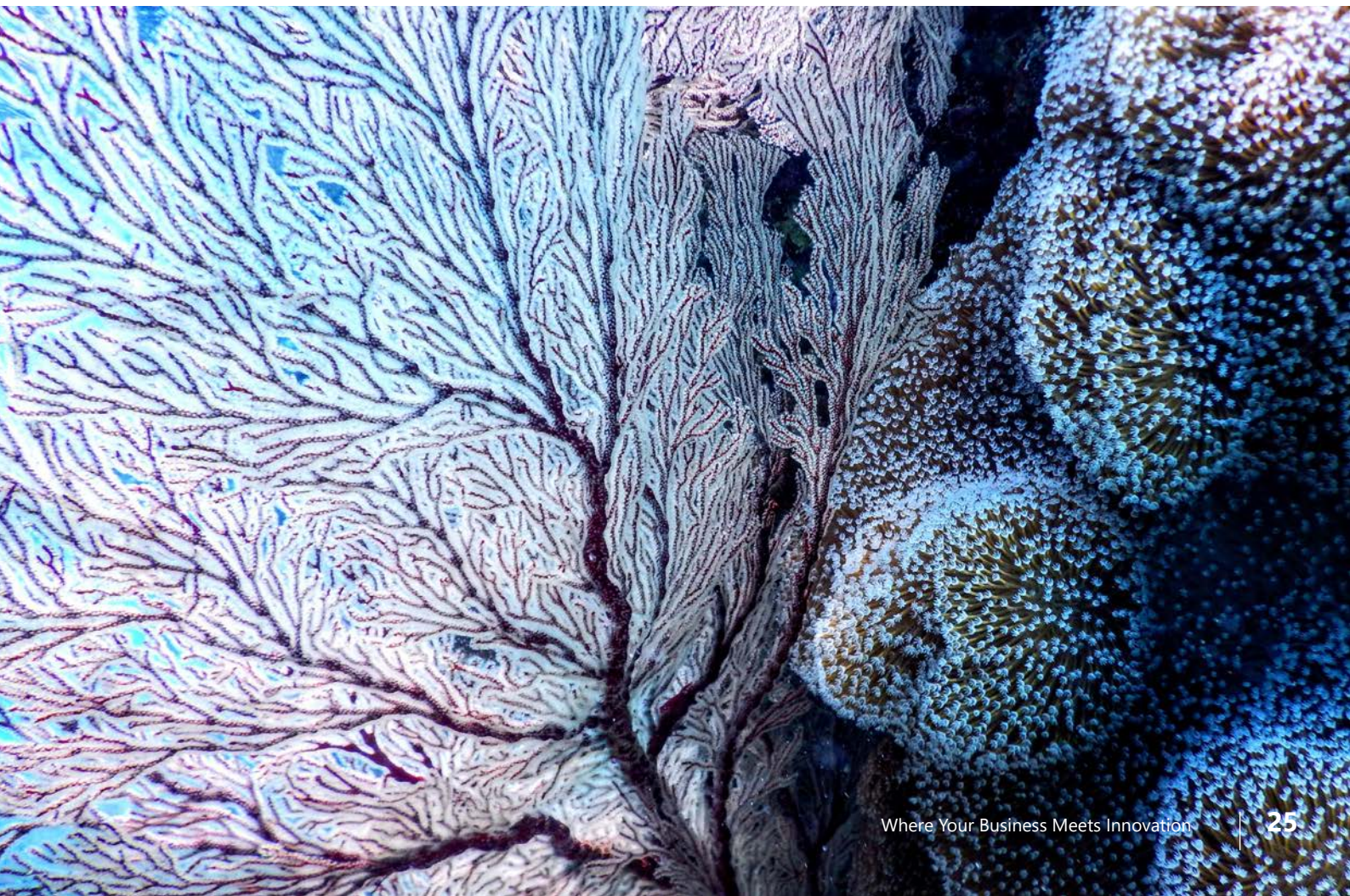
> Today, data must be at the centre of our business actions: Big Data platforms allow us to find interconnections between structural and non-structural data, to create truly data-driven strategies, that allow us to be guided by the data and not just to use the data at a later stage to understand what happened.

Debora Guma
Group CIO Lactalis, Italy

Exploring, upskilling but also being an active member of the international community that is defining rules and guidelines, by sitting at all the tables that are defining the standards of Cloud (Day 1 Member Gaia-X), Cybersecurity (European Organisation for Security), A.I., Data Spaces (International Data Spaces Association), defining guidelines and shaping the future.

To solve today's issues with technology alone is not possible. At Engineering technology has always been an enabler to business, but it is our knowledge of the business, its processes, as well of its users, that enable us to implement the best technologies and build solutions that combine tailor made functionalities to usability. Through our delivery centres we are able to build, manage and transform solutions, our consulting helps rethink and redesign processes and solutions. Our dedicated excellence centers make sure our solutions are more usable and accessible. Our whole organization has always been focused on the management and continuous transformation of core strategic processes, on enabling our partners to leverage the power of digital to create new business models.

Our Delivery Model ensures that horizontal technology capabilities, are combined, in an orchestrated manner to the business knowledge, thus delivering true value, continuously.

AN ECOSYSTEM
APPROACH
TO CYBERSECURITY

We believe it is time to raise the bar when it comes to discussing and facing cybercrime. We have heavily invested in Cybersecurity and believe that this war needs to be fought at a higher level than organisation by organisation, but more at an ecosystem level. We are close to all organizations that have suffered and will suffer such attacks and wish they can fully focus on their incident counting on a more professional approach by media and competitors.

Our concept on ecosystem security can be expressed simply as "Secure us to secure me". To be prepared to address and manage increasingly sophisticated cyber threats and targeted attacks, companies will need to adopt "adaptive security" frameworks composed of technologies and services that can predict, prevent, detect and remediate most advanced cyber security threats and targeted attacks, ensuring business continuity and resiliency with minimal impact on performance.

Information sharing is a concept supported by most corporate executives and government officials/agencies responsible for reducing and responding to cybersecurity breaches related to their organizations. In the system of private companies this theme is still strongly unexpressed because of the obvious reputational damage that can be created.

"Adaptive security" is created by studying at the table the best strategy to ensure the continuation of work even outside the company and is based on the ability to find the right compromise between hardware constraints and operational procedures and the Information Sharing so as to prevent and anticipate threats and activate only those security protocols necessary to avoid creating points of reference for attackers.

Marco Tulliani
Global Chief Security Officer, Engineering

The importance of co-designed solutions

In innovation processes, the best results are obtained when two directions are followed simultaneously: the scouting of a high number of ideas, to increase the likelihood of finding the idea that can truly generate new value; and the classification and careful selection of ideas so that resources are only directed towards those that are valid.

This is even more true when faced with the challenge of creating solutions that are not only able to respond to the needs of the moment or the context in which they are implemented, but are built to be quickly adapted and adjusted to new scenarios that may be unpredictable - as with the Covid-19 pandemic.

This is why innovation processes that produce the most appreciable results in terms of value require a co-design approach and teams that involve not only suppliers' technical structures, methodology specialists, market and technology trend analysts, but, above all, the various stakeholders. In fact, it is by working alongside the final user that solutions can be created - not in the confines of a laboratory, detached from the context of use, but in a space that is as "contaminated" (and therefore enriched) as possible by the real interests of those who will use or re-use the solution in question. This overcomes the logic of a product that responds to the needs of a specific (and temporary) problem, to create solutions that become ecosystems capable of receiving and integrating new technologies and, therefore, new processes and new business models.

Co-designing innovation represents an extraordinary opportunity to work together with our partners, stimulating creativity at both business and technology levels. We do this by increasing efficiency in processes and results, and also thanks to the experience we gain with our Research & Innovation Department.

Here at Engineering, we co-design solutions by setting up specific innovation ecosystems made up of industrial partners, SMEs, start-ups, universities, research centres and, of course, our clients, who are the real beneficiary of the value built through the innovation process.

Today the concept of "democratisation of health services" assumes the role of simplification, extension and participation. A further impetus derives from this ethical concept, to involve citizens and professionals in co-design projects, to plan "customised" services and instruments for the needs of both service users and the health system.

Antonio Delli Gatti
Healthcare Director, Engineering

Low coding, agility applied to software

In recent years, increasingly pervasive and rapid digitalisation has profoundly changed the way we approach software development. The overcoming of product and lock-in logic, the need to move in increasingly agile contexts and to create ecosystems based on the interoperability of data have led to the need to develop efficient and flexible software that is not just easy to use, but also ready to be reused and remodelled.

In this context, the advent of low-code platforms (which entail few instructions in scripting languages that are easy to learn) makes it possible to design applications visually, focusing on the behaviour they should assume rather than on the actual implementation.

These platforms enable the creation of applications, data flows and process automation in a graphical way by combining pre-existing building blocks, i.e. small software components that can easily be adapted to various contexts and whose interconnection allows the definition of the application logic. They are usually updated directly by the platform providers, who introduce new functionalities and solve critical issues without involving the user.
By lowering the costs of deploying and maintaining resources, the adoption of a low-code platform enables:

– Fast-prototyping

– Automation of processes

– Harmonisation of heterogeneous data sources

– Big Data and Analytics

– AI-powered business models.

Digital Enabler's Data Mashup Editor

The low-code Data Mashup Editor platform is part of the Digital Enabler suite, Engineering's Digital Ecosystem platform. It enables the integration of heterogeneous data sources and the processing of real-time data streams to feed apps and dashboards that provide support in decision making. One of its main characteristics is its capacity to interface with databases, web services, and legacy systems in just a few clicks, exposing data (raw or harmonised) via API.

In the Data Mashup Editor there is a palette of operators (building blocks) which allow for interaction with the input data stream. Operators are also available for the execution of Machine Learning algorithms and for scientific computing, allowing the realisation of scenarios in which Artificial Intelligence plays a key role.
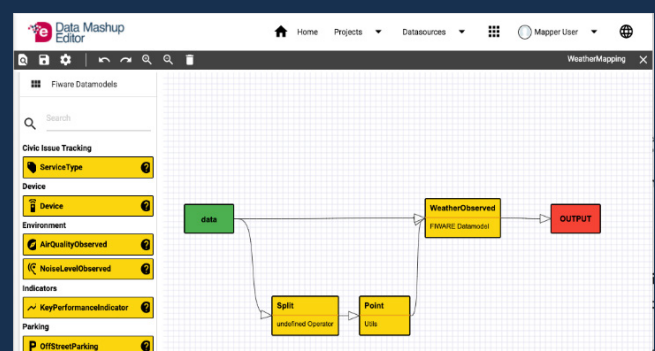
API for composable business

Composable Business and Composable solutions are a natural evolution of Digital Business and solutions.

Composing applications itself as a concept is nothing new. From integrating packaged applications through Enterprise Service Bus architectures all the way to composing ERP components today.

APIs are enabling us to create and/or connect new processes and services by leveraging the full power of digital ecosystems. Digital Ecosystems leverage data coming from multiple Databases, applications and services.
This multi-source data is connecting to application layers via APIs, enabling digital services that are typically made available through a front end layer once again connected via APIs.

API' Service Bus decouples back-end systems from management of the front-ends and digital channels. It secures business continuity and modularity of the architecture.

So APIs really are at the heart of this composable business trend which is flourishing through digital ecosystems and really is the evolution of digital business.

These solutions are composed, rapidly, for specific needs. This means that as needs and strategies evolve or change completely so can these solutions be reassembled and composed differently. Guaranteeing thus continuous and adaptive value to changing needs and stakeholders.

Data spaces, interconnected digital ecosystems

Today, economic growth, competitiveness and innovation are strongly linked to the need for accessible and interoperable data. But in order to face the new challenges offered by the data economy, there is a need for common rules and technologies within a given ecosystem, to guarantee reliable and sustainable solutions for all stakeholders. In this context, the concept of "data spaces" as interconnected digital ecosystems emerges: these are ecosystems that guarantee greater availability and accessibility of data as well as secure and reliable sharing through the provision of digital platforms, appropriate ICT tools, and the application of clear and shared standards and governance rules.

Within data spaces, the principle of "data sovereignty" applies: control over data remains in the hands of those generating it, while ensuring that data can be used by others in accordance with strictly defined rules. Data spaces therefore allow the creation of data-driven and cross-sectoral value networks with no geographical boundaries, to the advantage of all stakeholders: businesses, public administrations, research bodies, associations, etc.

For this reason, initiatives such as IDSA and Gaia-X are fundamental to the realisation and sustainability of data spaces. Such projects bring about concrete collaboration between companies from virtually all of the main industrial sectors as well as software companies and research bodies. Through federated design, open standards, and data sovereignty, the data space ecosystem offers small, medium, and large companies equal opportunities and conditions in data exchange.

> European competitiveness takes shape around the concept of data spaces, veritable interconnected digital ecosystems promoted by a greater availability of data, digital platforms and an advanced cloud infrastructure, that can enable an efficient response to all the new challenges of the data economy

Dario Avallone
R&D Director, Engineering

Engineering Enterprise Solutions Competence Center

Our Competence Center, Engineering Enterprise Solutions (EES), which focuses on solutions managing business processes related to the main software vendors: SAP, Microsoft and Oracle, and not only, takes this flexible approach with its Clients. Enterprise Solutions are often at the heart of a digital transformation, as they manage the core business processes. Our approach, named Digital2Evolve, through an initial analysis of the processes managed by information systems, help steer Clients to choosing new digital suites and identifying customizations and take them back to a standard when deemed opportune or transform them to new customizations on Cloud platforms.

The move to Cloud here is seen as an opportunity not only to transform and take advantage of the many notable benefits, but also to prepare companies to further welcome innovations in an ever faster moving digital era. This approach takes advantage of both digital suite standards and the intelligent services of Cloud platforms (PaaS).

Engineering Enterprise Solutions and its experts with cross-process skills and consolidated expertise in several sectors help their Clients evolve to improve their business processes with the use of Enterprise Solutions. Our main Enterprise Solution vendors contribute to the development of our composable solutions approach through new digital platforms and technology integrations. This allows for companies to choose the best fitting building blocks throughout their digital evolution. A more flexible approach to IT architectures is key to being future ready, to creating intelligent composable businesses.

EES brings together building blocks (from SAP, Microsoft and Oracle), where Clients are brought to see the business value and savings in more standard blocks, results in the ability to benefit from a composable solution approach, where the most suitable blocks are chosen, and important key business differentiators (customizations) are kept.

7 ORGANIZING THE FUTURE

**AGILITY AND FLEXIBILITY
TO DOMINATE CHANGE,
SOLIDITY AND EXPERIENCE
TO TRANSFORM IT INTO EVOLUTION.**

We are witnessing the beginning of a new industrial revolution, based on data and digital technologies. But what makes this moment in history so special isn't so much the actual technologies – most of them have been around for some time – but it is their collective and simultaneous maturation, the ease with which they can be combined and integrated (from Cloud to Artificial Intelligence, from Cybersecurity to IoT, from Intelligent Automation to Virtual Reality). As in other revolutions, when opportunities and innovation brought on by new technologies met the needs of businesses and organizations, the world evolved. Traditionally, the adoption of technology (and IT in particular) was strongly linked to the concepts of improvement and efficiency: doing things better, faster and at a lower cost. Today, in a full Digital Transformation era, technology is having a direct impact on the actual business models and, consequently, also on the actual results of these organizations. It is impossible to separate technology from business. As a result the usability of a technology is beginning to be as important as its functionalities.

But this acceleration brings with it complexities and dangers to manage. How can I secure new skills? Which new technologies should I focus on? Which technologies should be replaced and which should be maintained? How can I manage the pace and speed of change? How do I keep my people in line with new needs? How can I grow my Business? How can I reshape my ecosystem? What lessons can I learn from other experiences? How do I decide what to evolve? What to dismiss? What to build? What to compose? The pandemic clarified for everyone that digital is vital for all sectors and its adoption will only accelerate thanks to the continuous and growing evolution of all technologies. We are already witnessing an exponential increase in the availability of data. And this is totally transforming our current decision-making processes. Digital technologies will enable us to make better decisions faster but today we are facing a potential perfect storm: an exponential growth in technological potential, combined with a potential gap in available skills, all within a context of limited resources.

WE ARE ENGINEERING
MeetUp
2021

At this time of dramatic technological discontinuity, a company cannot aim at digitalisation while remaining traditional at its core. Instead, it needs managers able to see and design the future, both within and outside the organisation.

Massimo Proverbio
Chief IT Digital & Innovation Officer, Intesa Sanpaolo

It is a moment of discontinuity, with enormous difficulties but also with enormous opportunities for those who will be able to adopt the right technologies and apply them to their own context. The acceleration that we are experiencing thanks to the maturation of new technologies will redesign the profile and dynamics of all our markets. The growth of data value and its transversality will direct business models towards new ecosystems: digital ecosystems based on transversal technological capabilities and focused on providing digital business services, shaped on the needs of well-defined stakeholders. We will learn to use this speed if we can keep our goals in focus, as companies but also as individuals, using technology as a tool.

Change is a never-ending activity. It requires agility, flexibility, adaptability... but business also needs reliability. We aim to provide both Agility and Reliability. Our mission has not changed in these 40 years, we will continue to engineer innovation, supporting business through the best technologies, transforming the world we work in, the world we live in and the world that looks after us. The future will need creativity, knowledge and vision, which is exactly what we provide and have provided, for years, to thousands of clients all around the world.
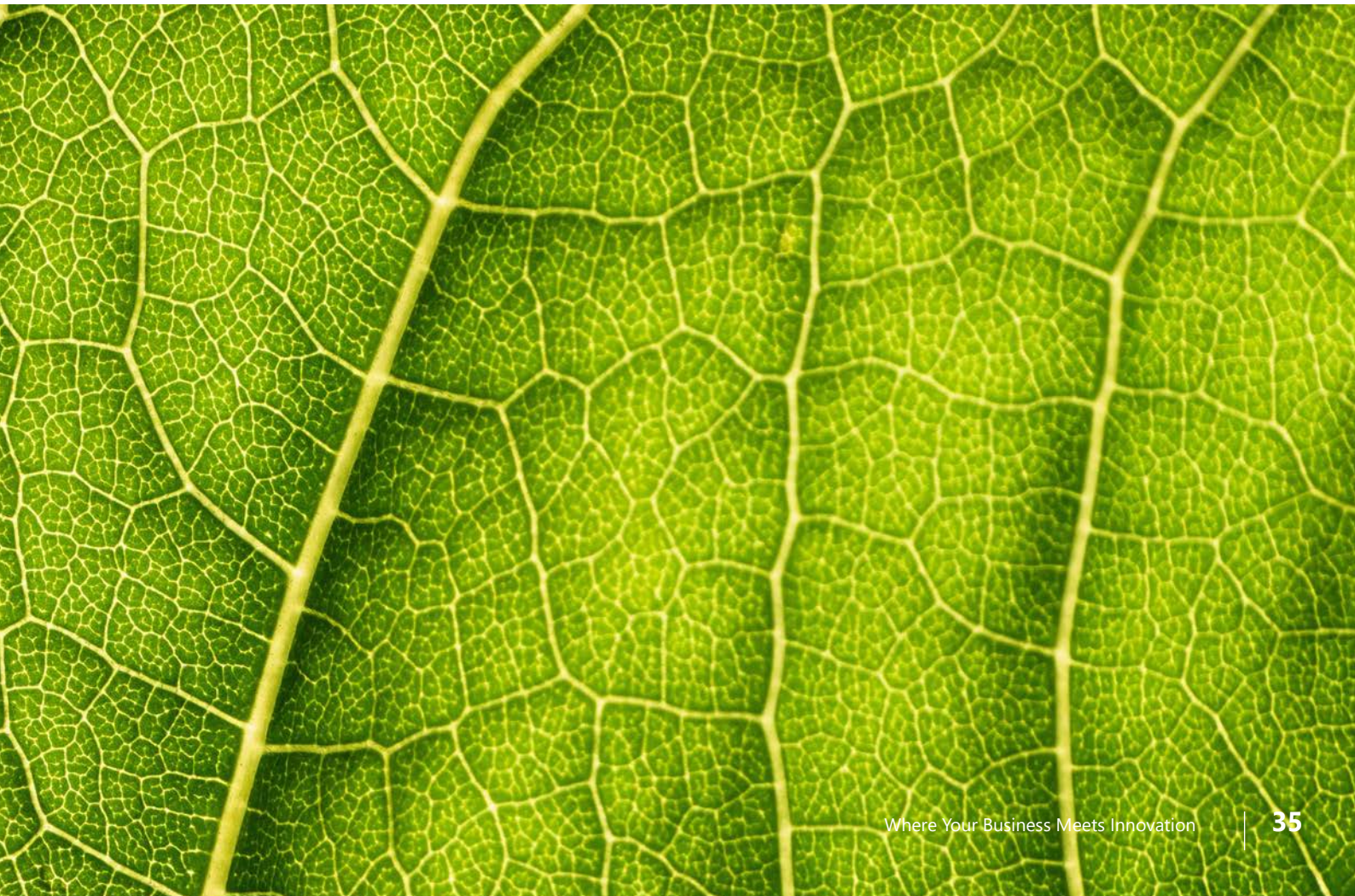
ENGINEERING

For more than 40 years Engineering has been one of the main actors in the digital transformation of both public and private companies and organisations, with an innovative range of services for the main market segments.

With approximately 11,600 professionals in 40+ locations (in Italy, Belgium, Germany, Mexico, Norway, Serbia, Spain, Switzerland, Sweden, Argentina, Brazil, and the USA), the Engineering Group designs, develops, and manages innovative solutions for the areas of business where digitalisation generates major change, such as Digital Finance, Smart Government & E-Health, Augmented Cities, Digital Industry, Smart Energy & Utilities, and Digital Media & Communication. In the course of 2020, Engineering has supported its partners in the continuation and protection of their businesses and key processes, assisting in the design of their 'New Normal' and the mapping of new digital ecosystems. With its activities and projects, the Group is helping to modernise the world in which we live and work, combining specialist skills in the final frontier of technologies, technological infrastructures organised in a unique hybrid multi-cloud model, and the ability to interpret new business models. With important investments in R&D, Engineering plays a leading role in research, coordinating national and international projects with a team of 450 researchers and data scientists and a network of scientific and academic partners throughout Europe. One of the Group's strategic assets is the expertise of its employees, whose development is promoted by a dedicated multidisciplinary training school that provided more than 15,000 training days over the last year..

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THE WORLD
WE LIVE IN

THE WORLD
WE WORK IN

THE WORLD
THAT LOOKS AFTER US

AUGMENTED CITY

DIGITAL INDUSTRY

SMART GOVERNMENT

SMART ENERGY & UTILITIES

DIGITAL FINANCE

E-HEALTH

SMART TRANSPORTATION

DIGITAL RETAIL & FASHION

DIGITAL DEFENSE, AEROSPACE & HOMELAND SECURITY

DIGITAL MEDIA & COMMUNICATION

SMART AGRICULTURE

Our point of view on

DIGITAL TRANSFORMATION

ENGINEERING INNOVATION

ENGINEERING THE NEW NORMAL

WHERE BUSINESS MEETS TECHNOLOGY

AUGMENTED CITY

DIGITAL DEFENCE, AEROSPACE & HOMELAND SECURITY

DIGITAL FINANCE

AUGMENTED MIXED AND VIRTUAL REALITY

BLOCKCHAIN

DIGITAL INDUSTRY

DIGITAL MEDIA & COMMUNICATION

DIGITAL RETAIL & FASHION

CLOUD

CYBERSECURITY

E-HEALTH

SMART ENERGY & UTILITIES

SMART AGRICULTURE

DIGITAL TWIN

IOT INTERNET OF THINGS

SMART GOVERNMENT

SMART TRANSPORTATION

Coming Soon

ROBOTIC PROCESS AUTOMATION

AI & ADVANCED ANALYTICS

DIGITAL WORKPLACE

DIGITAL WASTE

DIGITAL EXPERIENCE: CULTURE & TOURISM

SUPPLY CHAIN

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