



# **DIGITAL MEDIA & COMMUNICATION**

We transform the value chain  
of the Telco & Media sector with digital  
technologies, redesigning business models,  
processes and user experience.



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20+ years covering positions in the ICT arena allowed Giampaolo to gain cross-sector experience. He worked on R&D projects, with activities in cross-sector European projects. He coordinated several EU R&D projects (i.e. NRG-5 and 5G-Media). He has been carrying out innovation and industrial initiatives.



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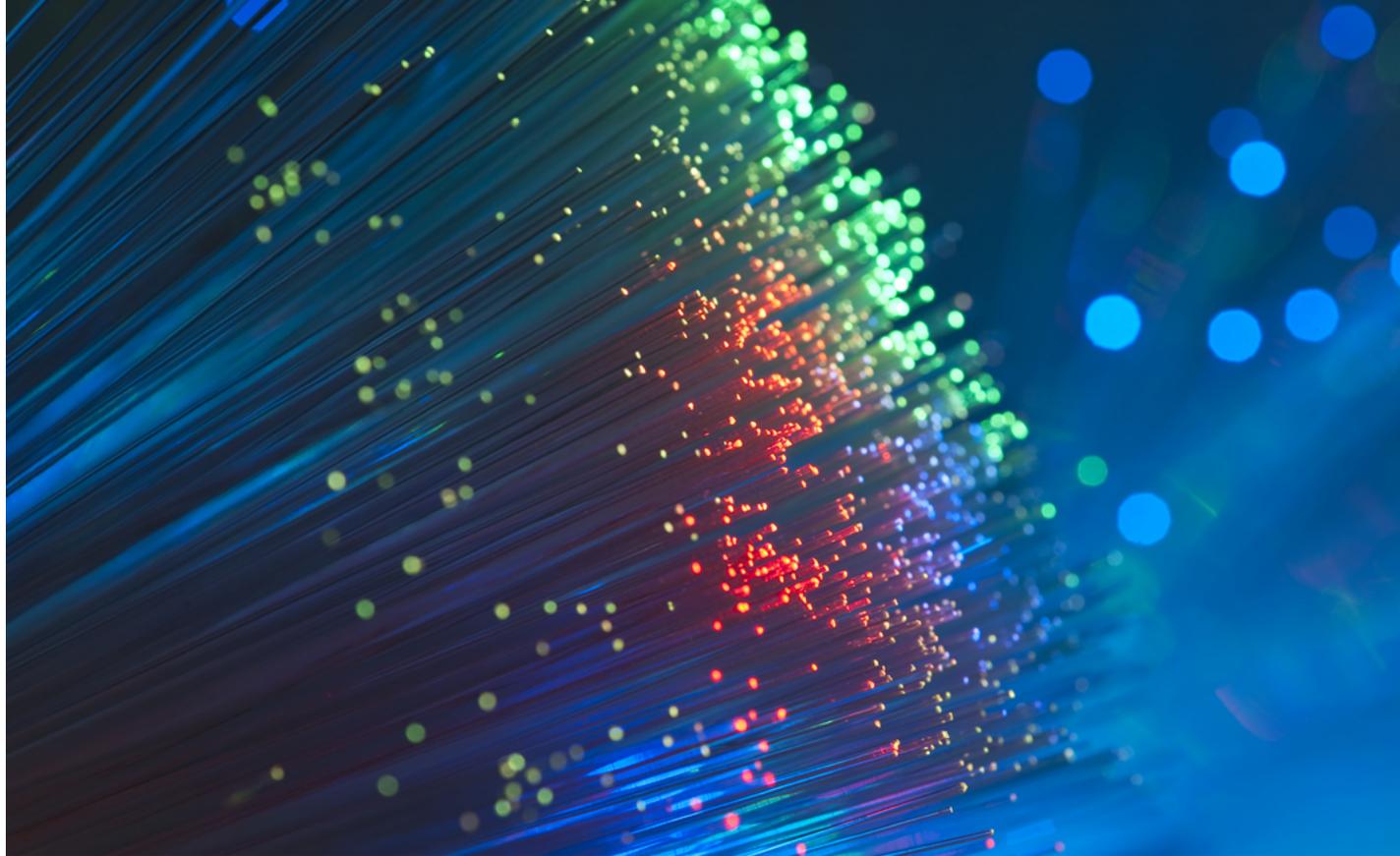
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1

# TRENDS, CHALLENGES AND OPPORTUNITIES



**Since the first weeks of Covid-19 emergency, the entire Media and Telecommunications sector supported our work, our social life, the activities and the people we care about.** It did so by guaranteeing us virtual access to the world, through the Internet, thus mitigating the isolation imposed by social distancing and by the fear of spreading the infection. We have therefore witnessed (and participated to) a widespread use of communication methods that only up to a few months ago were considered, if not frontier, certainly not essential as today: just think of the incredible success of videoconferencing platforms. In order to sustain such need for "hyper-connection", **market players may find a great opportunity** to start a definitive process of innovation and digitalisation, to evolve infrastructure and business organization management, as well as to rethink their value proposition and business models.

Most analysts consider this acceleration towards Digital Transformation to be a real opportunity for a market which is likely to be more resilient than others during 2021 and will therefore be able to recover a large part of the contraction suffered during the pandemic. Operators not only have the opportunity to eliminate the technological delay that has characterised the market in the recent years, but also to go beyond this remediation and invest in innovation. This will mean **focusing on automation and on Cloud** to make their structures more agile: think, for example, of how automation can reduce the "human" presence in media preparation & playout processes, making them leaner and therefore safer. It means investing in the **potential of Artificial Intelligence, data exploitation and 5G** to take the business beyond logics that are obsolete, if not harmful, to the survival of operators.

After the economic boom of late 1990s and the beginning of the new millennium, thanks to the rapid development of mobile and network services, the Telecommunications market has in fact started to undergo an increasing contraction, with a relative drop in revenues.

The crisis generated by the pandemic and by the need to build a New Normal in which technology can and must support a corresponding social and economic renaissance, will push the sector to **consider connectivity, an increasingly widespread and critical element, as a commodity on which to create new services**. This new way of thinking about the value chain can also become the best tool for curbing the competition from **Over-The-Top** operators such as Netflix or Amazon, which are able, even during the current crisis, to respond to user requests with a reduced time-to-market and a high-quality customer experience.

All this must be supported by a true renewal of multimedia content providers, which can explore the diverse possibilities created by the **new interactions between the world of television and that of the Web**.

In the Media & Communications realm, Digital Transformation is articulated along the **digitalisation of processes and the exploitation of data**: these two lines should be accompanied by a coherent and technologically advanced management of all end-customers' touchpoints with the brand.

New technologies such as Artificial Intelligence, Cloud, Augmented Reality and Robotic Process Automation (RPA), can in fact be used as enablers with which to create more agile, integrated businesses, capable of overcoming the now obsolete structural logics. On the other hand, Big Data and Analytics, associated with the power of Machine Learning algorithms, help us to rethink the business plans of players operating in the sector, with the aim of **offering increasingly personalised services**. Such services are suitable for a user who has become a digital subject and is able to take advantage of and create content, therefore being increasingly more demanding and focused on a simple, intuitive and mobile-first media experience.



This journey, which goes beyond an approach to the market based solely on cost reduction, can allow companies in the sector to create a new digital DNA, thus becoming the actors of a complex ecosystem. All this, by making the most of their **differentiating factors and the development of integrated business models**, with which to regain competitiveness and reduce pressure on margins.

Beyond the needs that are emerging during the current crisis, with **5G networks which today are establishing themselves as the new frontier of innovation** to be conquered and managed, the Digital Transformation of the media and communication sector becomes even more imperative. Although the Covid-19 emergency is slowing down the roll-out of the new generation networks (which even before the pandemic did not seem to be that close), many analysts believe that, during 2021, 5G networks will have a first impact on telecommunications companies and media operators, promoting the creation of new services that play a significant part in the future of the sector.

For all companies in the Media & Communication sector, the technological acceleration caused by the pandemic is an opportunity to implement a renewed vision of their strategic positioning. **An impetus towards the future that will be possible thanks to the knowledge and adoption of emerging technologies**, with operators that will not only be able to strengthen their core business, but also to create new business models to interpret and anticipate users' needs and requests.



# 2

# ENGINEERING IN DIGITAL MEDIA & COMMUNICATION



## Fashion

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## DIGITAL MEDIA & COMMUNICATION

Our vision for Digital Media & Communication is to be the end-to-end transformation partner for our Clients leveraging the digital technologies to create value, enabling new and integrated business models and improved operational processes. We support Media & Communication companies during their digital journey, **starting from the analysis of "as is" processes and infrastructure to identify current synergies or obsolete working methods.** This specific expertise, together with a deep knowledge of the possibilities offered by new technologies, allows us to identify inefficiencies and bottlenecks. We also support the optimization of core processes and the simplification of systems, up until the digitalisation of products and services, for an overall strategic repositioning through the creation of ecosystem-based platforms.

Strengthened by our leadership role in the ICT market, our Group is in fact recognised by the market as a reliable partner, one that can offer more traditional evolutionary management services to ensure the running of businesses' existing legacy systems, **as well as strategic partner to co-design new solutions and business models.**

Also thanks to the various **projects carried out by the Research and Innovation Department**, we are promoting an offer that exploits enabling technologies to support companies in their Digital Transformation journey. Together, we create synergies to develop solutions to transform IT systems, optimising and managing both infrastructure and multimedia content through innovation and, as previously mentioned, ensuring the continuity of existing activities.

Indeed, if on the one hand we exploit the full potential of Cloud, Blockchain, AI & Advanced Analytics, and Robotic Process Automation to stimulate the re-engineering of processes that **make companies more agile and efficient**, on the other hand, we offer a set of innovative products aimed at enhancing the efficiency of infrastructure, with a consequent reduction in management and monitoring costs.



## DIGITAL MEDIA & COMMUNICATION

For example, through OverIT, an Engineering Group company, we support players with Augmented Reality solutions such as SPACE1, which, integrated with the DiVE platform and the potential of IoT, facilitate the remote maintenance and monitoring of infrastructure.

Moreover, with our skills and expertise in AI & Advanced Analytics, we support companies in **exploiting data to create consumer offerings that are increasingly personalised and targeted**, especially now that the new HbbTV technology, combined with Artificial Intelligence, enables to make the most out of **TargettedADV**, also thanks to the hybridization of TV4.0 expected with the **switch-off in June 2022**. Moreover, with our AI skills we support companies in the creation of new business models based on B2B services designed to bring the most innovative solutions to the market, taking full advantage of the latest 5G networks. Engineering's offer is comprehensive and complete, ranging from the management and efficiency of networks and infrastructures, to the design and development of multimedia content and its distribution through a new value chain.





By leveraging these skills and expertise, our offer in Digital Media & Communication represents an **innovation programme aimed at creating value for all actors involved, in a win-win logic**. A portfolio of services, products and solutions designed to address different strategic approaches and to mitigate the risks brought on by change, which starts from a careful assessment of the impacts on organisational aspects, processes and system, linked to the introduction of new technologies.

With 30 years of experience in the sector, we bring value to our customers:

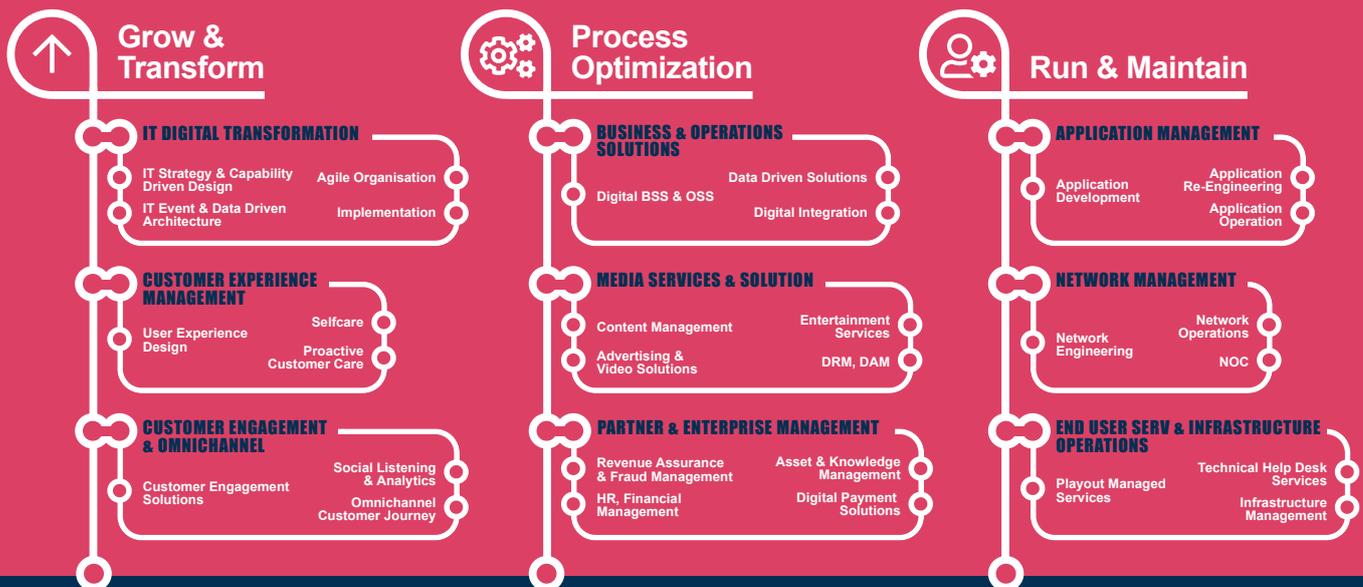
- **Accelerating the journey towards Digital Transformation**, by combining our proprietary assets and our process-focused skills and leveraging an extensive ecosystem of partners, which enable us to cover the entire value chain and to promote innovation
- **Collaborating with our customers** to design and develop ad hoc IT transformation strategies and agile organisational models, taking advantage of the latest digital technologies to create a better customer experience, to redesign operational processes and to create new business models that bridge the gap with the frontiers of innovation
- **Taking full advantage of our system integration experience**, combined with enabling technologies, in order to build and implement new platforms and service applications that support and stimulate the journey towards digital transformation, while at the same time leveraging their existing resources.

# DIGITAL MEDIA & COMMUNICATION

Our **portfolio** for **Digital Media & Communication** provides an integrated overview of Engineering’s skills and expertise made available to customers operating in the sector. Each area covered by this offer – belonging to different **vertical streams** – is tailored to the specific characteristics of the market and is aimed at supporting companies in the sector during specific phases of the change, according to a paradigm of “sustainable change”. This paradigm aims to derive the resources needed for the transformation of the core business and of growth, from the efficiency of operational management and the simplification of cost structures, in a continuous, self-feeding process, leveraging the benefits of enabling technologies, some of which are already in a mature state (e.g. Cloud, Cybersecurity and Data Governance & Management), while others are still in the adoption or diffusion phase although fundamental for the evolution of the business (e.g. Blockchain, Artificial Intelligence and IoT).

## PORTFOLIO MAP

# Digital Media & Communication

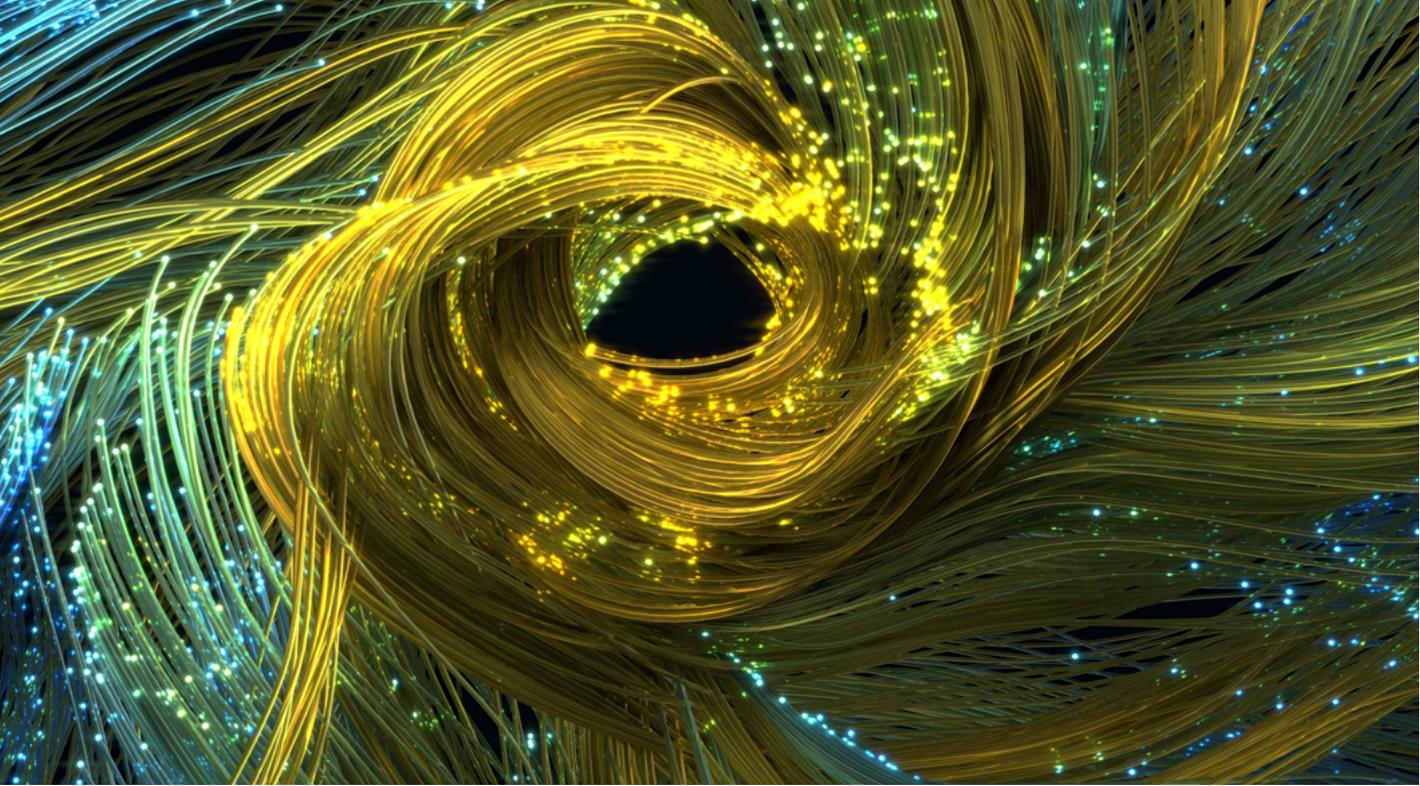


### ENABLING TECHNOLOGIES

- AI & Advanced Analytics
- Cloud
- Cybersecurity
- IoT
- Robotic Process Automation
- AR / MR / VR
- Blockchain
- Data Management

# 3

## **GROW & TRANSFORM**



Digital revolution and new generation networks are the strongest enablers that can trigger a profound review of core business and growth objectives in Media & Communication. The latter bring players towards the future, and must begin with a total redesign of processes and systems. We can support this thanks to our in-depth knowledge of the market, our skills in frontier technologies and our ability to co-design solutions with customers to evolve their value proposition.

**We support industry players in rethinking their role in the digital economy.** We help them go beyond a one-sided perspective of their core business, towards an ecosystem where users are increasingly demanding digital subjects, who wish to enjoy content in an immediate, intuitive and mobile-first way. In this broader vision of the market, Communication Server Providers (CSPs) become value chain integrators as they interact with their business customers as partners capable of offering innovative B2B services to embrace the potential of 5G networks.

**Engineering offers business, process, architectural and technological skills and knowledge** for the design, implementation and governance of companies' digital transformation programmes, including everything that is necessary to overcome the cultural and organisational gap.

Starting from the sharing of the organisation's vision, strategy and business capabilities, Engineering **supports its customers in assessing the impact of Digital Transformation on processes and on the organisation**, in the design of IT interventions and the definition of the relative implementation roadmap, with a continued focus on sustainable change and being fully aware that taking advantage of investments already made and of operational efficiency represent key drivers of the Digital Journey.

The implementation phase is based on E2E governance services that use methodologies and best practices developed over decades of experience gained by Engineering in complex IT transformation programmes. These are integrated with **change management** services (organisation, processes, training and communication) to support the implementation and adoption of the new working approaches induced by digital technologies.

In addition, also Cybersecurity services are provided to secure access to the systems and data, and to monitor what happens inside and outside organizations, so as to anticipate potential cyber attacks and continuous regulatory compliance.

### **Customer Experience, Engagement & Omnichannel**

Thanks to the adoption of “open digital” architectures, Engineering supports companies in the sector in **making the most of the potential of “data”** (data-driven, rather than process-driven), both in terms of strategic decisions, and of solutions that improve customer experience.

In defining and implementing the customer experience for their consumer customers, Communications Service Providers (CSPs) must implement media business models on which to provide services, products and digital media content that converge on Web and television.

Engineering adopts a **Live Service Design approach**, collaborating with organisations in the creation of new services that fall outside pre-established schemes and are based on the analysis of market trends, by envisioning new usage scenarios, defining a solid customer experience and monitoring and verifying the return, over time, of the services created.



As part of our portfolio, we also offer a set of services and solutions designed to enable effective, user-friendly and integrated “caring” tools on each digital channel, with a focus on simplifying and anticipating the solution based on the specific problems and needs of users. Customer care solutions cover the following areas: loyalty, proactive sales, post-sales and service assurance.

The process of building a **quality customer experience** must take into account the analysis of the relationship between the customer and all the company touch-points along the customer journey. This analysis, together with that carried out on the purchasing process from an E2E perspective and the synergic and integrated management of the various contact points from an omnichannel perspective – and no longer simply of the availability of different channels as in the multichannel model – are key factors for ensuring effective customer retention, putting the customer at the very centre of the relationship. In this context, we provide **services and solutions for the omnichannel integration of the customer experience** both for the back-end and for the front-end (apps, Web Portals, IVR, etc.).

Markets are increasingly becoming “conversations” interwoven with data and information. Consequently, we support our customers with **Social Listening & Analytics** services and technologies, which enable and monitor the acquisition and analysis of data on the needs of users of the services, on the “presence” of customers’ brands on social media networks, on the opinions of users and industry leaders about them, monitoring the “brand reputation” and providing support in the definition of a Social Media Strategy.

### Playing on the Cloud

Within the Digital Media & Communication realm, Engineering has often collaborated with its customers in the redesign of their Customer Experience..

One of the many examples concerns the creation of an innovative entertainment service for an Italian telecommunications provider, determined to establish itself as a media operator capable of converging different services and user experiences. This is a **multimedia content and digital services offer that includes a Cloud gaming capability**, characterised by a high-quality user experience and available in streaming directly from home TVs. A success story, in which overcoming technological limits such as network latency, video quality and the adaptability of games to the cloud infrastructure, was also made possible by taking full advantage of Engineering’s key assets: technology partnerships, proprietary cloud infrastructure, the expertise and professionalism of our design consultants and the design and development of the application solution.

# 4

# PROCESS OPTIMIZATION

Engineering's portfolio supports Media & Communication companies in achieving **maximum operating efficiency and, at the same time, a quick time-to-market of digital services and products**, thanks to the continuous alignment of the processes and systems with the needs of the market.

Our Media Services & Solutions include Content Management applications for the creation, adaptation, ingestion and delivery of media content distributed on digital channels. In the Digital Terrestrial Television (DTT) segment, **Sogeit Solutions, an Engineering Group company**, supports its customers in the E2E operational management of media management processes, from the acquisition of multimedia content to the airing of live programmes and the handling of secondary events (e.g. the addition of overlays, scrolling messages, graphics, etc.). It also collaborates with broadcasters in the creation of programming schedules to guarantee their correct timing, ensuring the sequence of contents and above all, respecting the publishers' guidelines.

Thanks to the introduction of the HTTP/2 protocol, which facilitates the union between the IP protocol and the digital terrestrial signal, thus **allowing the Web world to interact with the TV world**, Sogeit Solutions is also experimenting the possibility of bringing content from the Internet inside a normal TV show.

This would create innovative integrated services in which the mobile phone will turn into a virtual remote control that will allow viewers to access the programme in a completely new and original way.

Moreover, with the advent of the new DVB-I standard, new enabling technologies (e.g. HbbTV) and an increasingly "intelligent" use of data, the television sector will experience a profound transformation: broadcasters will have the opportunity to learn more and more on TV users, and the latter will be able to benefit from increasingly advanced and personalized services.





Access profiling via the web will subsequently make it possible to use the acquired data in order to offer the user **highly personalised shopping experiences**, by transforming multimedia content into a tool that integrates TV with, for example, the world of fashion, e-commerce or mass retail.

In this context, thanks to the skills of **Cybertech**, a Group company and the first operator on a national scale specialized in Cybersecurity, we offer SIEM (Security Information and Event Management) services to guarantee a complete view of the company's IT security status and **compliance with GDPR privacy regulations and IAM** (Identity Access Management) services to govern access to systems and data, ensuring that users are "who they say they are" and that they have the appropriate access to perform their duties.

Our Media Services & Solutions also include the following areas:

- **Advertising & Video Solutions** for the management and delivery of advertising and video content across all digital channels
- **Entertainment Services** for the provision of services such as gaming, video-on-demand, digital music, digital books and digital valued services
- **Digital Rights Management (DRM), Digital Asset Management (DAM):** vertical solutions to support the copyright protection of digital media and the management of the end-to-end life cycle of corporate digital assets.

Our solutions and services, designed to support business and partner management processes, cover the following areas:

- **Revenue Assurance & Fraud Management:** E2E services and solutions, ranging from the definition of strategies and processes, to the identification of technologies, metrics and operational support
- **HR, Financial Management:** E2E services and solutions designed to support financial management and human resources based on the main ERP technologies available on the market, complemented by a corporate competence centre offering certified skills and expertise
- **Asset & Knowledge Management:** services and technologies designed to support the process of creation, acquisition, maintenance and usability of tangible and intangible resources of customer companies, including resource planning for broadcasting
- **Digital Payment:** services and solutions designed to support payments for the use of services and digital content from mobile devices, using digital wallets
- **Business & Operations:** vertical services and solutions for the transformation of processes and systems that support the business and operational aspects, as described in greater detail in the next section.

### Business & Operation Solutions

For our customers' Digital Journey, the transformation of processes and systems supporting the business and operations is fundamental. In fact, their optimisation and integration, together with overcoming the complexity brought on by legacy systems, stimulates the pursuit of **change and growth strategies**, which are necessary in order to promote, market, sell, enhance, provide and manage traditional services, but above all, the new use cases introduced by the digital economy, enabling the integration of business models and a quality customer experience of the digital customer-subject.

The offer consists of a range of services and solutions in which Engineering boasts a profound vertical market expertise, developed over decades of collaboration with companies operating in the sector.

- **Digital BSS & OSS:** the design and implementation of Digital BSS and OSS solutions based on “state of the art” software packages and “open digital” architectures. The coverage of processes and systems is comprehensive and provides solutions and services in the Customer & Partner Management, Billing & Revenue Management and Network Operation Management areas
- **Data-Driven Solution:** the design and implementation of data-driven IT solutions to support real-time functionality (e.g. event-driven communications, real-time data inquiry, etc.) and data management capabilities (e.g. DWH, BI, Big Data, Analytics, etc.)
- **Digital Integration:** the design and implementation of EAI solutions based on a wide range of digital technologies, from API-centric management to micro-services, service containers and iPaaS.

### **Digital Transformation of processes for Customer Experience**

In collaboration with a leading Italian telecommunications player, we achieved a success story, developing an IT solution capable of quickly adapting to new business models, aimed at the **marketing and management of advanced digital services**. The definition of a new technological architecture based entirely on data and on the concept of a “micro-service,” overcoming the complexity of legacy systems and the redefinition of business processes, have led to a clear improvement in the customer experience, by facilitating, amongst other things, the unification of the user experience on the app and web channels, as well as the recovery of operational and organisational efficiency, thanks to architectural and operational simplification and the first real introduction of an Agile/Devops working model in the IT structure.

# 5

## RUN & MAINTAIN

IT and network systems that are reliable and aligned to the business, as well as the technological infrastructure, are fundamental for guaranteeing an efficient management of operations and the provision of competitive services, with high-quality standards and capable of fully exploiting the potential of Digital Transformation.

In the Media & Communication realm, Engineering is recognised as a reliable partner, capable of offering services that guarantee the **continuous management of “business as usual”** on core or secondary activities. In particular, our offer includes:

- **Application Management, Operation & Re-engineering** for the design, development, evolutionary/corrective maintenance and operational management of business and enterprise systems, based on “agile” management models
- **Network Management** with network engineering and operation services, such as the analysis, design, implementation, monitoring and management of network applications and solutions to support the Fulfilment & Assurance processes. In particular: Order Management & Service Activation, Performance Management, Fault & Trouble Management solutions.

In this context, Engineering also avails itself of the experience and solutions of OverIT, a Group company that leverages specific capabilities offered by its Geocall and SPACE1 products to support companies in the Media & Communication market engaged in the supply, sale, installation, inspection and repair of telecommunication assets: the offer includes end-to-end solutions that cover the entire process, from the design and creation of networks (also thanks to the strong integration with GIS systems), to their delivery and installation at the end customer’s facilities, with the subsequent management of reports relating to damage or anomalies.

This sector also includes **Sogeit Solutions’ Network Operation Centre (NOC)** offer for the DTT segment, which guarantees the correct transmission of the contents through the national DTT television network, monitoring and managing hundreds of broadcasting stations throughout the country. The NOC Group ensures the operational efficiency of the infrastructure, 24/7. The distribution of the channels takes place through a capillary control and management of the links used to broadcast the TV signal and through the management of the signals transmitted by data networks, satellite systems or point-to-point connections. The considerable experience gained in the provision of these services, together with an offer that involves the adoption of innovative technologies such as AI, IoT and video analysis for the monitoring and resolution of infrastructure problems, online or remotely, enable our customers to significantly reduce OpEx costs related to complex infrastructure management.

- **Infrastructure Operation** for the design, development and management of infrastructural technological platforms in compliance with technological, quality and safety standards. Together with technical support to the end user for first- and second-level troubleshooting and with **Infrastructure Management** services and solutions, as detailed below.
- **End User Services** include an offer dedicated to media-broadcasting companies, consisting of infrastructure solutions and services for the safe and fast transmission of TV channels and content through **Playout Managed Services**. This vertical offer, provided by Sogeit Solutions, guarantees the correct preparation of channels, on a 24/7 basis, within the stringent audio/video quality parameters requested by publishers, as well as services in emergency contexts. The perimeter of intervention depends on specific needs and requires action procedures capable of guaranteeing the perfect success of broadcasting operations through redundancy systems for each element of the television broadcasting chain, safeguarding the programming schedules through automation software (over the air), in order to respect the challenging SLAs imposed by the sector. For live broadcasts, the Group manages each event by means of specialised personnel, from the reception of the signals to the external audio contributions that may be necessary (e.g. sports commentary).





## Infrastructure Management

Engineering's offer of E2E Infrastructure Management services and solutions relies on the availability of corporate assets, consolidated and developed over time, of outsourcing and facility management services and solutions, and new business models of the digital age. Our services range from the Cloud, used today by many companies in the sector in order to streamline the organisation, to Robotic Process Automation (RPA) for the automation of operations and the adoption of the IoT for remote infrastructure management.

These technologies are complemented by an integrated network of four data centres located in Pont-Saint-Martin, Turin, Milan and Vicenza, managed by Engineering D.HUB. Together with the highly professional skills offered by our resources, these ensure the provision of ICT Transformation services with high added value, the outsourcing of resources, systems and infrastructures, Cloud Computing (IaaS, PaaS, SaaS), hosting and housing services, professional consolidation and modernisation services and desktop and server virtualisation services.

### **Full Outsourcing**

Engineering is the protagonist of the **ambitious Full Technology Outsourcing programme** adopted by a leading Italian operator, which offers its business and consumer customers fixed and mobile broadband services (Fibre, xDSL, LTE), Voice (VoIP and mobile), VAS and OTT. This collaboration is a tangible example of how the transformation of IT can allow a company to achieve a strong competitive position in the market, by improving customer service levels and significantly reducing the Total Cost of Ownership.

The basis for launching a digital transformation programme by the operator, driven by business drivers and based on technological “state-of-the-art” digital enablers, provided for:

- **the adaptation of IT processes** to ITIL and CMMI best practices, with shared and measurable service levels
- **the reduction of the Total Cost of Ownership** application, through the reduction of “poor quality” and infrastructural reworking
- **the achievement of saving** through the reduction of physical Data Centre spaces (-70%), physical servers (-65%), storage (-50%) and networks (-60%) devices and electricity costs (-60%).



# 6

# WHAT IS THE FUTURE OF DIGITAL MEDIA & COMMUNICATION?



The future of the Digital Media & Communication sector is strongly characterised by the extensive Digital Transformation that companies in the sector continue to be engaged in. Covid-19 crisis has produced a strong acceleration of all innovation trends, and market players should not undergo this push but **take the opportunity to innovate operational and business processes and to create new “revenue streams”** by reinventing existing business models.

Digital Transformation in the field of Media will require a significant compression of costs and, above all, of the times for making content available and usable. From this point of view, a centralized vision of the activities and a complete integration with external suppliers will certainly speed up the processes.

**Telcos are expanding their current service portfolio**, by moving away from traditional voice and data connectivity solutions, to media services such as TV, IoT and Enterprise Cloud solutions. However, the competition of more agile and slender players in the same offer segments, reduces revenues and margins. Moreover, Media-Telco convergence attempts undertaken over the past 5 years, both in Europe and America, have been characterised by heavy investments in the purchase of content, which have not, however, produced all the desired results. On the contrary, companies that took a back seat in the acquisition of exclusive rights and adopted partnership policies with industry leaders, have strengthened their market positioning and their economic and financial performance. In essence, the focus on content has contributed to reducing the “churn” of Telcos which, however, cannot afford to fight increasingly more costly wars for the acquisition of rights.

Today, also in light of the current crisis, the profound transformation that **leverages innovation, the adoption of new digital technologies, the upgrade and the capitalisation of existing assets**, relying on partnerships with players that extend the value and supply chain, seems to be the best way forward for Telco and Media companies that are ready to look for new and important opportunities to grow their business.





The demand for advanced connectivity, which emerged in recent months, has highlighted, more than once, that within the framework of an ecosystem value chain, the **development of 5G, while certainly not free of risks and uncertainties concerning the possible use cases, regulatory constraints and economic returns, can help play a fundamental role in the enterprise segment**. This, by enabling business services that are quite different from each other to coexist on the same network, with the guarantee of security and efficiency. **Network Slicing** enabled by 5G makes it possible to subdivide the network into multiple “virtual networks” that are dedicated, but based on a common infrastructure, and therefore able to address the specific requirements of different applications, services, devices and customers.

This type of infrastructure facilitates the development of new business models, by enabling the simultaneous management of different vertical markets (e.g. transport and automation, manufacturing and industry, energy, media & entertainment, healthcare, etc.) and the consequent need to support services that are different in terms of transmission capacity, latency and reliability, thus providing a viable solution to the increasing complexity of the network.

In an effort to find businesses and use cases that ensure adequate returns, CSPs will look at these markets from a different perspective, by identifying them, on a par with connectivity, as privileged and differentiating assets. Indeed, they will focus their attention on the B2B customer segment as a partner along the value chain, carving out a role for themselves that no longer sees them simply as “enablers” or “connectivity suppliers”, but as “system integrators”, **thanks to platforms that support new offers and business models transversal to the traditional markets**. Moreover, the New Normal that we are being called upon to create needs scenarios to open up in the B2B world, thanks to innovative real-time applications in various sectors: from the Automotive Industry to E-Health and the Augmented City.



On the other hand, however, the 5G challenge puts the focus on the importance of various strategic and operational assessments. The evolution of the network and its efficient use, through the automation and virtualisation of functions, forms the very basis on which Telcos will build value-added services to bring to the market. This will enable them to become **real multi-service players, capable of offering complex solutions that integrate proprietary and third-party services, digital platforms and technologies**, which in turn will serve as integrators.

The way forward calls for major investments in the short and medium term, both on the network and IT infrastructure side, and on the business organisation side, which must become agile and leverage human capital that offers new talent. Agility is conceived in an all-encompassing manner and includes the transformation of OSS (Operational Support Systems) and BSS (Business Support Systems), the creation of **data-driven rather than process-driven architectures**, which enable a unique and comprehensive view of customers and of the organisation, the use of advanced analytics techniques, all the way to the adoption of Artificial Intelligence for internal use (operational excellence), as well as to support new business models.

As part of the digital disruption emphasised by the Covid crisis, the **Media & Entertainment segment will also face major challenges in transforming its business**. Over the next few years, many analysts predict a growth in OTT, VR, Internet Advertising and Gaming services, in which 5G is expected to become a strong accelerator, at the expense of a reduction in traditional publishing services. However, the development of the sector is dependent on the ability to **customise services**, which must be based on complete customer knowledge, ensuring that the latter is offered a user experience in which, alongside the content, the context becomes fundamental. Personal data is therefore the key to personalising the services offered, while Analytics and Artificial Intelligence techniques can offer a competitive advantage, crucial to the achievement of this challenging goal.

Media companies must therefore also contend with a transformation of obsolete infrastructure, evolving towards solutions that facilitate a significant reduction in costs, consequently leading to an increase in the competitiveness of the sector. To achieve this, they require system integrators, or rather partners, capable of supporting them in this profound transformation of infrastructure, processes and business models.

To anticipate and subsequently accompany businesses in implementing these changes, at Engineering we collaborate with leading players in the sector and constantly invests in the future. This includes numerous research projects, coordinated by the **Research & Innovation Department** and co-financed by the European Commission, through which it relies on the latest technologies to experiment with innovative forms of creation and use of multimedia content. These projects include:

- **HYPE 360 project, focused on the creation of new forms of entertainment** based on the convergence between traditional videos and video games. The project makes use of technical solutions for the creation and delivery of “immersive” and interactive videos, together with assets that guarantee the ability to improve interaction and the customer experience.
- **CPN Project, focused on the development of recommendation systems for personalised content use** through a platform based on micro-services architecture and fully open source components. Characterised by ease of use and configuration, the platform facilitates the management of the communication of the components included in the toolbox and the functionality of customer applications (via the API Gateway). It also offers a web interface for the administration, monitoring and management of resources. The project also includes solutions based on smart contracts and Blockchain, which are currently still under development and implementation, **to facilitate the management of media authenticity and intellectual property.**
- **5G Media Project** is focused on the ability to create different applications between **5G networks and the media**, for the production and distribution of content, as well as game development and virtual reality.
- **Easy TV Project**, which aims to facilitate access to multimedia services for individuals with disabilities, offering new fruition mechanisms, as well as improving interaction based on a multi-lingual approach, adapting it to the preferences of visually or hearing impaired users and providing personalised content as part of a single, multi-terminal platform.
- **Fandango Project** is focused on the development of new Big Data and Artificial Intelligence applications to support the fight against disinformation, fake news and deep fakes, thus supporting the validation of digital content and news.

The digital revolution will allow Media & Communication companies to rethink their role outside pre-established patterns, so they can discover new ways to become competitive in a highly changed and constantly evolving context. The watchwords should therefore be: strategic vision, leveraging of existing assets, centrality of the customer experience and ability to collaborate in the value chain of the entire ecosystem.

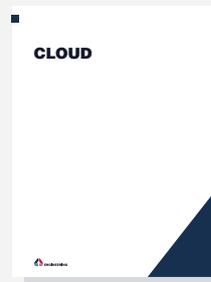
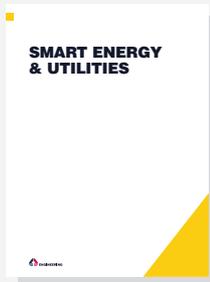
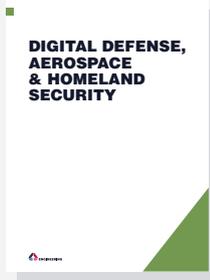
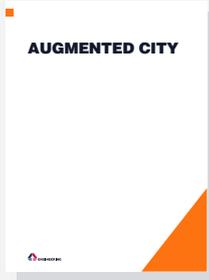
# ENGINEERING

Engineering is one of the main players in the field of Digital Transformation of public and private companies and organizations, offering an innovative offer targeted at the main market segments. Together with its subsidiaries, the Engineering Group is committed to pushing the envelope as regards the application of emerging technologies. It also works in the area of system implementation and integration and on redefining processes in order to promote innovation for the benefit of businesses and Public Administrations.

With around 12,000 professionals in 65 locations spread across Italy, Belgium, Germany, Norway, Republic of Serbia, Spain, Sweden, Switzerland, Argentina, Brazil and the USA, Engineering manages projects in over 20 countries, supporting customers in the business areas where digitalization is having the biggest impact. Its products and services cover all strategic sectors, including Digital Finance, Smart Government & E-Health, Augmented Cities, Digital Industry, Smart Energy & Utilities, Digital Media & Communication. The group aims to help change the way in which the world lives and works, by combining technological infrastructures organized in a single hybrid multicloud, the capability to interpret new business models and specialist competences in all next-generation technologies: AI & Advanced Analytics, Cybersecurity, RPA, Digital Twin, IoT, Blockchain. With significant investments in R&D, Engineering plays a leading role in research, by coordinating national and international projects thanks to its team of 450 researchers and data scientists and a network of academic partners and universities throughout Europe. One of the group's key strategic assets is its carefully considered staff training policy. Engineering, since 1999, has had its own dedicated multidisciplinary training academy, the "Enrico Della Valle" School of IT & Management. With 300 certified trainers and hundreds of courses, the School has delivered more than 19,000 days of technical, methodological and process training during the last year.

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