

Committed to our clients

Consistently exceeding the expectations of our clients is instrumental to building our leadership position in the business consulting industry.



>1,800
global and local
clients



300
of which are new



>100
specialized
publications



Client focus

The client is the reason we are in business and is our main management priority



Our strategic partners

In order to anticipate and respond to the changing needs of our clients, Management Solutions maintains a solid network of industrial and technological alliances with leading technology companies.

Working closely with these companies enables us to offer our clients the most innovative services and to ensure the effective implementation of our value propositions.

Our success is due to our clear focus on the client, with whom we work closely and whose expectations we strive to exceed in order to become a trusted partner. We implement a client relationship model that allows us to know each client's specific needs and to be in a position to offer each client a differentiated value proposition.

Management Solutions provides value-added services that stand out for the durability of results and practicality of implementation.

Client diversification

Management Solutions pursues sustained growth supported by client diversification, seeking a balance between large multinationals and national leaders.

Solutions had over 1,800 active clients (300 of them acquired in 2023), grouped into three major segments: multinationals of American or European origin, local entities, and national or

regional confederations, which are all leading organizations in their respective markets.

In addition, Management Solutions has continued to strengthen links with regulators (central banks, international organizations, national regulators and supervisors, etc.) in the main industries in which we operate.

Global model

Management Solutions has a strong presence in local markets, but always under the umbrella of global corporate policies. The whole Management Solutions group operates as a single unit rather than an association of local firms under one brand.

Acting and feeling as part of a team, sharing the Firm's mission, goals, culture and values, are essential to successfully meet our clients' transformation processes and strategic challenges, wherever they arise.

As a professional services firm, our mission is to develop solutions that help our clients to fulfill their objectives as effectively as possible. We are firmly committed to offering services of the utmost quality, as this is the underlying motive of all our actions and the driving force behind our growth.

For this reason, all of our internal processes are subject to strict quality rules in the belief that, with the support of our highly conscientious professionals, they will facilitate the achievement of this fundamental aim. This level of quality is based on the expertise of our professionals, for whom there are ongoing training and refresher plans, and on the direct and active participation of more experienced staff on each project.

Quality control methodology

The main aim of our quality system is to guarantee that every job meets the levels of quality, value and service expected by the client. Accordingly, as a minimum, we must ensure that:

- ▶ There is coherence and consistency between the job to be done and the final product, both being clearly documented.
- ▶ The necessary knowledge and experience have been applied.
- ▶ The specified work has been competently carried out and correctly documented.
- ▶ The final products satisfy the specific requirements and are produced within the agreed upon time frame.

Each project is broken down into different activity stages or groups of activities.

The activities to be performed, their order and required techniques are detailed for each project stage while the resulting deliverables and roles involved in their production are also specified.

We perform quality control from beginning to end on all projects in order to guarantee quality levels both internally and externally (services provided to clients).

Management Solutions has a Quality and Internal Audit Area whose aim is to strengthen the Firm's control framework and to ensure it complies with regulatory requirements (certifications, audits, etc.).

This area is global in scope and covers functions related to business activities as well as provides support to our professionals across the Firm's units. They are responsible for the following:

- ▶ Corporate policies.
- ▶ Quality (certifications from quality assurance agencies, Quality Assurance process, etc.).
- ▶ Compliance with both external and internal regulations.
- ▶ Internal audit.

ISO 9001 quality certification

The Spanish Association for Standardization and Certification (AENOR) acknowledges that Management Solutions' management system is compliant with the ISO 9001 standard for business consulting activities and related technologies.

UNE-EN ISO 9001 certification shows that the management system implemented in the Firm meets the highest quality standards, ensuring resource availability, process control and continuous improvement in the provision of services.

Providing top quality service is at the core of our business

Quality Control Methodology

Activities

- ▶ Project scope review
- ▶ Definition of review milestones
- ▶ Design review
- ▶ Intermediate review
- ▶ Final review
- ▶ Project file

Deliverables

- ▶ Review plan
- ▶ Review reports
- ▶ Design/intermediate review reports (for internal use)
- ▶ Final analysis
- ▶ Final report
 - Proposal accepted by quality control
 - Document of acceptance from client
 - Authorized quality control documents
 - Finance and billing structure
 - Project plan with assigned responsibilities for each task
 - List of deliverables
 - Client satisfaction survey

Commitment to the industry

We share the expert knowledge generated by the Firm

In addition to conducting specific conferences on relevant topics of interest related to the Firm's areas of operation, we have an ongoing schedule of external knowledge sharing activities, some of the most significant being our publications and our presence in professional forums.

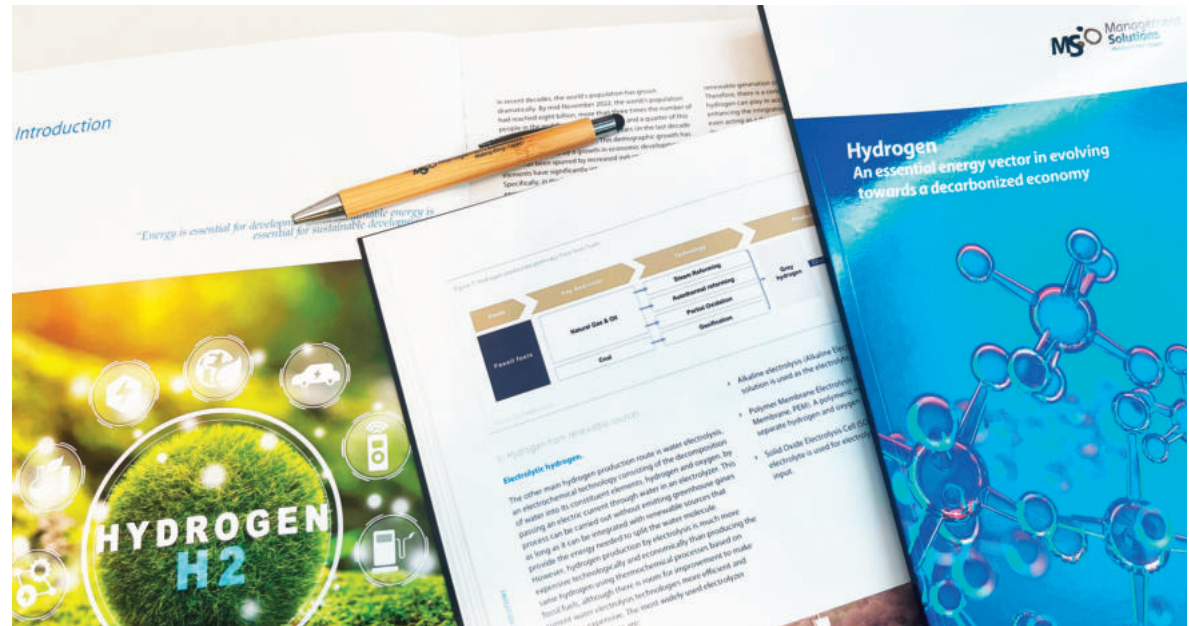
In this chapter, we highlight the main activities carried out in the field of specialized dissemination during the year.

Publication of studies and industry reports

During 2023 Management Solutions published three white papers related to hydrogen and its role as an essential energy vector in the evolution towards a decarbonized economy, the context and fundamentals of Explainable Artificial Intelligence (XAI) and the challenges in model interpretability, and on trends and challenges in financial crime prevention in the digital era.

Hydrogen, an essential energy vector in evolving towards a decarbonized economy

In recent decades, the world's population has grown dramatically. By mid-November 2022, 8 billion inhabitants have been reached, more than three times the number existing in the middle of the 20th century, and a quarter of this increase has taken place in the last 25 years (in the last decade alone this increase was 11.3%). This demographic growth has been accompanied by a process of industrialization as a means of boosting economic development. Both elements have significantly intensified the demand for energy. Specifically, in the last 25 years, total consumption of primary energy grew by 57.8% (in the last decade, the increase amounted to 14.4%, with around 80% of total global demand being met by fossil fuels: coal, oil and natural gas).



This increase in energy consumption presents a set of challenges that need to be addressed, including global concern about the impact that energy production and consumption can have on climate change. According to the United Nations, fossil fuels, such as coal, oil and gas, are by far the biggest contributors to global warming, generating more than 75% of total global greenhouse gas emissions and nearly 90% of all carbon dioxide emissions. Another important challenge to be addressed is the impact of energy production and consumption on the environment due to air and water pollution processes, land use, the need for large areas for the installation and operation of power plants, or waste management, among other reasons. Renewable energies, which contribute decisively to mitigating this impact on climate, are not exempt from producing environmental impacts (potential extensive use of land, impacts on flora and fauna, etc.). In addition, they present challenges in terms of the accumulation and storage of the energy produced, due to the variability of generation. Finally, the current energy mix poses a geopolitical challenge for countries dependent on fossil fuel energy that do not have such natural resources, which could jeopardize energy security..All this has led to a continuous exploration of additional energy sources to transform the energy mix and increase energy efficiency, seeking to mitigate these negative effects derived from the production, transportation and use of energy.

In this sense, renewable energies (excluding hydroelectric generation) are the ones that have had the greatest growth in electricity generation. Electricity production through renewable energies has increased more than 18-fold since the beginning of the 21st century, and although not all geographical areas have seen the same growth (see Figure), globally renewable energies accounted for 14% of electricity production in 2022, surpassing nuclear energy, which accounted for 9%. However, coal and gas still remain the largest energy sources, accounting for 35% and 23% of production, respectively.

In this context, hydrogen, a commonly consumed gas in industrial processes, is becoming very important because of its ability to act as a decisive energy carrier (as it can be used to store and transport energy for later release). Recent studies indicate that 60% of emission reductions could come from renewable generation combined with green hydrogen. There is therefore consensus on the key role that green hydrogen can play in accompanying this energy transition, enhancing the integration of renewable energies themselves or even acting as a decarbonization solution in some sectors (transport, industrial processes, etc.).

The development of green hydrogen is an accelerator for the hydrogen sector in general and is not incompatible with the future incorporation of other types of hydrogen, such as white hydrogen. The creation and expansion of transport infrastructure, market development, transformation of industry and adaptation of consumption patterns around green hydrogen are not only perfectly compatible with white hydrogen, but could also converge synergistically.

The objective of this publication is to provide an understanding of hydrogen, explaining the types that exist, its value chain and the main challenges it poses, and analyzing a concrete case study to illustrate in a practical way how it is possible to leverage analytical tools to address some of the challenges of its adoption process, such as the selection of the optimal site for developing new projects.

Explainable Artificial Intelligence (XAI): challenges of model interpretability

“Artificial intelligence (AI) is the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence, but AI does not have to confine itself to methods that are biologically observable”.

This was the definition of AI offered by John McCarthy, professor at Stanford University, one of the founders of this discipline and co-author of the term “Artificial Intelligence”.

However, as early as 1950 Alan Turing asked: “can machines think?” and formulated what would later become known as the “Turing test”: a test of a machine’s ability to display intelligence indistinguishable from that of a human being. Turing proposed that a human evaluator judge natural language conversations between a person and a machine designed to generate human-like responses. If the evaluator was unable to distinguish the machine from the human, the machine would have passed the test.

Although there is controversy in this regard, many authors consider that there are already Artificial Intelligences that could pass the Turing test, such as GPT-4, from the Open AI Foundation, although GPT-4 itself is not so sure about it. There



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are also more sophisticated tests, such as Winograd's schema test, which consists of solving complex anaphora that require knowledge and common sense, something that the current AI does not seem to be able to do yet.

Even so, although the field of AI is not new, dizzying breakthroughs have been made in recent years, with applications ranging from self-driving cars to medical diagnostics, automatic trading, facial recognition, energy management, cybersecurity, robotics or machine translation, to name a few.

A distinguishing feature of today's AI is precisely linked to McCarthy's definition mentioned above: it is not limited to observable methods, and, when it reaches a certain level of complexity, it poses interpretability challenges. In other words: AI models tend to have a high performance, much higher than traditional algorithms; but in each specific case it can be extremely complex to explain why the model has produced a given result.

Although there are applications of AI where it is not as important to be able to understand or explain why the algorithm has returned a particular value, in many cases it is essential and is a regulatory requirement. For example, in the European Union, under the General Data Protection Regulation (GDPR), consumers have what is known as the "right to an explanation": [...] not to be subject to a decision based solely on automated processing [...], such as automatic refusal of an online credit application [...] without any human intervention", and [the data subject] has the right "to obtain an explanation of the decision reached [...] and to challenge the decision"

All this has led to the development of the Explainable Artificial Intelligence (XAI) discipline, which is the field of study that aims to make AI systems understandable to humans, as opposed to the notion of "black box", which refers to algorithms in which only the results are observable and the operation of the model is unknown, or the basis for the results cannot be explained.

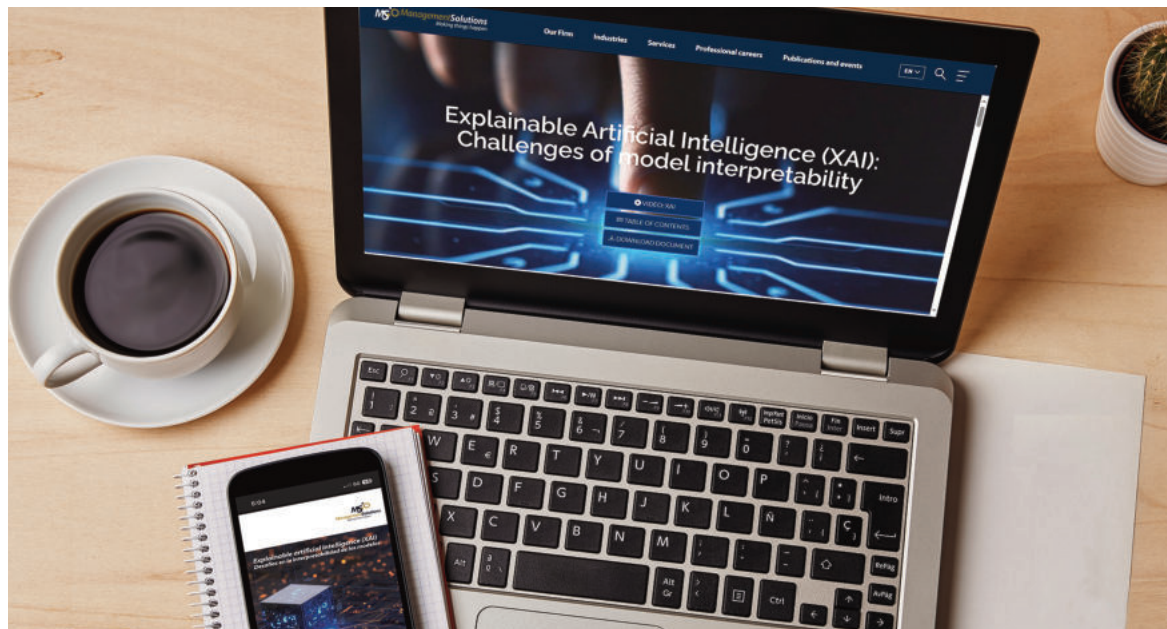
It can be concluded that an algorithm falls within the XAI discipline if it follows three principles: transparency, interpretability and explainability. Transparency occurs if the processes that calculate the parameters of the models and produce the results can be described and justified. Interpretability describes the ability to understand the model and present how it makes decisions in a human-understandable way. Explainability refers to the ability to decipher why a particular observation has received a particular value. In practice, these three terms are closely linked and are

often used interchangeably, in the absence of a consensus on their precise definitions.

These principles are achieved through basically two strategies: either develop algorithms that are interpretable and explainable by their nature (including linear regressions, logistic or multinomial models, and certain types of deep neural networks, among others), or use interpretability techniques as tools to achieve compliance with these principles.

XAI deals both with the techniques to try to explain the behavior of certain opaque models ("black box") and the design of inherently interpretable algorithms ("white box").

XAI is essential for AI development, and therefore for professionals working in this area, due to at least three factors:



- 1) It contributes to building confidence in making decisions that are based on AI models; without this confidence, model users might show resistance to adopting these models.
- 2) It is a regulatory requirement in certain areas (e.g. data protection, consumer protection, equal opportunities in the employee recruitment process, regulation of models in the financial industry).
- 3) It leads to improved and more robust AI models (e.g. by identifying and eliminating bias, understanding the relevant information to produce a certain result, or anticipating potential errors in observations not included in the model's training sample). All of this helps to develop ethical algorithms and allows organizations to focus their efforts on identifying and ensuring the quality of the data that is relevant to the decision process.



Although the development of XAI systems is receiving a great deal of attention from the academic community, industry and regulators, it still poses numerous challenges.

This white paper reviews the context and rationale for XAI, including XAI regulations and their implications for organizations; the state of the art and key techniques of XAI; and the advances and unsolved challenges in XAI. Finally, a case study on XAI will be provided to help illustrate its practical application.

Financial Crime: trends and challenges in the digital era

Financial Crime is a general concept that comprises a set of illicit activities. Although there are differences across jurisdictions, in general terms Financial Crime includes activities such as money laundering (i.e. transforming into legal the money that comes from different illegal activities), terrorist financing, breach of economic sanctions, bribery and corruption, fraud, and market abuse.

Financial Crime and money laundering (ML) is a major threat that the financial sector faces in their risk identification, management, and control frameworks. For example, focusing on ML, the amount of money laundered globally in a year is estimated to reach between 2% and 5% of global GDP, or between \$800 billion and \$2 trillion in current US dollars. However, less than 1% of it is ever seized or frozen by law enforcement agencies.

In the last years, financial institutions from many different geographies invested billions of dollars in improving their systems, people and processes to be able to tackle the increasing threat that Financial Crime poses to their stability and to their reputation. According to some industry reports, the yearly investment in Financial Crime compliance across financial institutions worldwide is estimated to be more than \$200 billion.

Several factors make the tackling of Financial Crime increasingly challenging, including:

- ▶ An ever more global economy and corresponding interconnected financial sector, that makes it challenging to perform a full traceability of money.
- ▶ Local approach to supervision. Historically, the approach to Financial Crime, and in particular the activities of AML, has been driven by local legislators and supervisors, country-specific law enforcement authorities, and financial intelligence agencies. Despite the existence of inter-governmental bodies, such as the Financial Action Task Force⁶, there has been no operational platforms, nor regulatory and supervisory mechanisms for effective collaboration and information sharing.

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- ▶ The progressive sophistication of the money laundering strategies, involving other types of crimes such as fraud or cybercrime (e.g. identity theft).
- ▶ The evolution of the payments industry towards easier, quicker and more flexible digital payments mechanisms
- ▶ The irruption of cryptocurrencies and their ability to avoid traceability of the sources of funds.
- ▶ The technological advances deployed as a result of the pandemic, which have forced financial institutions to reduce face-to-face interactions and substitute them by digital processes (including remote onboarding of new clients), more susceptible to digital crime that can eventually lead to Financial Crime.

Notwithstanding, financial institutions have strong tailwinds and can reach more powerful tools to effectively fight against Financial Crime, by identifying, monitoring, measuring, and controlling these types of illicit activities, including:

- ▶ Stronger computational capacity to execute risk identification alerts and strategies in real time involving a much richer set of data points to identify sophisticated strategies.
- ▶ More advanced mathematical modelling, including ML algorithms that can run quicker and are able to refine the strategies and improve effectiveness in the detection.
- ▶ Increased awareness from the C-suite and Board of the implications of this type of crimes, which grants multi-year commitment and investment. At the same time, increased visibility of the total cost of Financial Crime (including both

direct losses, and those from remediation and fines⁹), as well as awareness of the ever more 'connected' Financial Crime risks.

- ▶ Increased collaboration intra-company, with the removal of silos and the collaboration across departments (technology, compliance, legal, money laundering prevention, sanctions, etc.) to ensure that there is full information sharing and transparency across teams in charge of Financial Crime.
- ▶ From the early work of the International Financial Task Force, and with the work of other international organizations such as the United Nations Office on Drugs and Crime, there is much more awareness around the importance of international cooperation.

One of the activities to prevent Financial Crime that have attracted particularly large investments in the last years is AML/CTF, after a series of very notorious cases affecting large Global Systemically Important Banks, and the corresponding stronger regulatory scrutiny. However, despite the significant progress made in the reinforcement of those capabilities, the prevention of these illicit activities remains today one of the main areas of concern for financial institutions.

Given the cross-border nature of the money laundering and terrorist financing, one of the most instrumental tailwinds is stronger international cooperation across countries and regions to perform synchronized action.

In that line, regulators and supervisors are paying a key role in encouraging and enabling such global collaboration and supporting overall the prevention of these crimes. Some of the examples of regulatory action include:

- ▶ Strengthening the supervisory mechanisms to cut across jurisdictions. For example, EU's 5th Anti-Money Laundering Directive requires that the EC performs a biannual

assessment of the risks of ML/TF that could impact the internal market in the region. The outcomes of such assessments inform regional and local policymakers.

- ▶ Encouraging for a higher cooperation between local legislators and supervisors, country-specific law enforcement authorities and financial intelligence agencies. The 5th EU AML Directive requires an assessment, by the EC, of the framework for cooperation between Financial Intelligence Units in the EU European Union, and with third parties. The Directive includes the possibility of establishing a coordination and support mechanism. In that line, recently the EU announced the creation of a new EU authority to enhance AML/CTF supervision and cooperation across local Financial Intelligence Units (FIUs). The so-called AMLA will act as a central authority and will coordinate national authorities to ensure, amongst other things, that each country's private sector adequately applies EU rules. As a continuation of that effort, the EBA recently published its 'Guidelines on cooperation and information exchange between prudential supervisors, AML/CTF supervisors and financial intelligence units under Directive 2013/36/EU'.
- ▶ Pursuing the collaboration between prudential and non-prudential supervision.
- ▶ For emerging risks or areas of weakness identified as part of its supervisory process, regulators around the world are being very active in terms of issuing new regulation. One of the areas of more rapid evolution is that of cryptocurrencies.
- ▶ Encouraging the investment in data, advanced modelling and AI, including advanced outlier analysis, and graph analytics for the modelling of networks and multiple order relationships.

In this context, the objective of the white paper is to define the scope of financial crime and analyze the regulatory context, and to develop a special focus on AML/CFT trends and challenges, including the response of financial institutions to improve risk management and control frameworks, and to establish some relationships between AML/CFT and other risks that make up the concept of financial crime.

Macroeconomic outlook reports

Management Solutions continuously monitors developments related to the key macroeconomic indicators for the economies in which the Firm operates so that the Firm can draw conclusions on expected developments for the future.

This monitoring takes the form of two quarterly publications: i) a global (cross-country) macroeconomic report, which focuses on macroeconomic indicators, and ii) a detailed country report,

which, in addition to local macroeconomic information, provides an overview of key sectoral indicators (banking and insurance, energy and telecommunications).

Regulatory notes

As a firm providing professional consulting services for regulated industries, Management Solutions specifically monitors the regulatory environment affecting the industries in which it operates. On a weekly and quarterly basis, the Firm tracks major regulatory developments in the industries to which it provides advice, and compiles technical notes on regulatory developments that will have the greatest impact on those industries. Regulatory notes seek to summarize the rule, put it into context and explain some of its potential impacts.



Commitment to the industry

Specifically, during 2023 Management Solutions prepared more than twenty technical notes on the most relevant regulations published by benchmark institutions in areas such as capital (such as the technical notes on Basel III Endgame and on the BIS IV impact monitoring reports and their adaptation to the European framework), supervision (the guidance on RDARR, the Consultation on the Revised Internal Models Guidance, the document on the operational resilience of the insurance sector, the PRA's supervisory priorities for 2023 or the ECB's supervisory priorities for the period 2024-2026), restructuring and resolution (the Directive on the recovery and resolution of insurance and reinsurance undertakings), reporting and disclosure (the implementation of IFRS 9 by EU entities), or those on two new areas incorporated this year: technology and AI (with technical notes on the Financial Data Access Framework Regulation -FIDA-, the Digital Operational Resilience Regulation -DORA-, the new Payment Services Directive -PSD3- and Regulation -PSR-, the

follow-up report on machine learning for IRB models, crypto-asset markets, the AI Bill of Rights, the cyber risk stress test for insurers) and sustainability (the overview of environmental and social risks in the prudential framework, the new sustainability disclosure standards, the Nature Related Financial disclosure, the draft Delegated Act on Environmental Taxonomy, the reports on the financial impact of climate risks or the investment capacity of multilateral development banks).

In addition, for these last two areas (technology and AI and sustainability), two "live" technical notes on the regulatory landscape have been published, with continuous updates compiling and analyzing the latest regulatory publications affecting these areas.

Organization, sponsorship and participation in specialized conferences and seminars

CGRE: XXII Annual Risk Conference, Spain

Management Solutions participated in the 22nd Annual Risk Conference, organized by the CGRE (Risk Management Club of Spain), which was attended by representatives of international regulatory and supervisory bodies, as well as executives from leading Spanish financial institutions.

Under the title "New Risks, Old Problems...", the aim of the conference was to share the vision of regulators and financial institutions on current issues of great interest to the sector.

FinRegAlerts, Management Solution's financial regulatory alerts app



Since 2018, Management Solutions' financial regulatory alerts service has been supported by FinRegAlerts, an app for mobile devices developed by Management Solutions to facilitate the monitoring of financial regulatory alerts published by international, European and local regulators (US, UK and Spain).

FinRegAlerts currently includes access to the following contents:

- ▶ **Publication alerts:** summaries of documents published by international regulators (BCBS, FSB, etc.) and European regulators (European Commission, ECB, EBA, etc.), as well as some relevant local publications (Spain, USA and UK)..
- ▶ **Quarterly and yearly regulatory outlook reports:** documents that compile publication alerts and anticipate regulatory changes.
- ▶ **Technical notes:** summaries containing details of regulations that have a major impact on or hold the greatest interest for the financial industry.

The app is available for free download from major application stores.

Management Solutions, a CGRE Protector Partner, actively participated in the event by moderating one of the plenary sessions that made up the day's agenda, entitled "ESG Risks: Challenges, measurement and impacts."

"Risk Nordics", Denmark

Management Solutions participated as a sponsor in the 6th edition of Risk Nordics, a summit dedicated to risk management in the Nordic and Baltic countries, which aims to bring together banks, funds and insurers to share how they are mitigating emerging risks and meeting regulatory requirements.

Entitled "The Artificial Intelligence Law: Implications for the banking sector," Management Solutions' presentation discussed the Artificial Intelligence Act and how it will regulate the use of AI, the ECB's position on this new regulation, the obligations for providers of high-risk AI systems, and the implications for European banks.

Working breakfast "Climate risks in the insurance sector", Spain

More than 30 sustainability and risk managers from different insurance companies attended the breakfast meeting "Climate risks in the insurance sector", organized by Management Solutions, where the firm's executives, together with other industry experts, presented the situation of the Spanish market, the related regulations and a practical case study on measuring the impact of climate change.

1 Annual CGRRD Risk Conference, Dominican Republic

Management Solutions, a Premium Protector member of the CGRRD (Risk Management Club of the Dominican Republic), participated as a speaker at the first edition of the Club's Annual Risk Conference, entitled "Transforming Integrated Risk Management".

During the event, relevant aspects and current trends for the risk function were discussed in depth, addressing economic, political and environmental changes, the use of new disruptive and emerging technologies, as well as regulatory and market adjustments. The firm's presentation focused on the main trends in model risk management (MRM) and the challenges this function faces in validating the Artificial Intelligence models developed by financial institutions.

Asbanc's 12th International Operational Risk Seminar, Peru.

In addition to sponsoring the event, Management Solutions participated as a speaker at the 12th International Seminar on Operational Risks of the Peruvian Banking Association (Asbanc), which was virtually attended by representatives of financial institutions present in the country.

The objective of the seminar was to share the views of regulators, financial institutions and professional services firms on aspects related to the latest trends and challenges related to different types of operational risks. Management Solutions' presentation was entitled "Challenges and Opportunities of AI in Operational Risk Management" and shared with the participants the main challenges and opportunities related to Artificial Intelligence in operational risk management, based on the firm's extensive international knowledge and experience in this field.



Commitment to the industry

We implement an ongoing program of outreach activities and participation in specialized forums

Integration of ESG Factors in Credit Management, Spain

Management Solutions participated in the discussion forum organized by the Risk Management Club of Spain (CGRE), which focused on the current situation and the main challenges faced by financial institutions in integrating ESG risks into credit risk in various areas, such as governance, origination, monitoring, pricing, impact on collateral valuation and data management.

Practical applications of AI in business processes, Spain

The Digital Transformation Group of the Círculo de Empresarios organized a panel discussion, moderated by Management Solutions, in which experts from different fields presented case studies on the application of Artificial Intelligence in different sectors, such as finance, virology, industry and energy.

Cybersecurity workshops at AMIS, Mexico

Management Solutions held a conference at AMIS (Mexican Association of Insurance Institutions) on the Definition of the Framework for Technological and Cybersecurity Risk Management with more than 80 participants, including risk, technology and information security managers from Mexican insurance companies, as part of the adaptation process that companies are undertaking to respond to the new common guidelines established to strengthen measures in the face of increasing cyber-attacks and fraud.

FENIN's annual Compliance Forum, Spain

Management Solutions participated in the Compliance Forum of the Spanish Federation of Healthcare Technology Companies (FENIN), held at IESE in Barcelona, which was attended by compliance experts from companies in the healthcare technology sector and addressed issues related to the application of AI and its regulatory framework, as well as its use in reputational risk management through the Hatari tool.

Regional meeting LACADI 2023, Colombia

Management Solutions sponsored and participated as a speaker at the LACADI 2023 Regional Meeting on Climate Risk held in Cartagena, Colombia, which was attended by over 100 representatives of insurers and pension funds, regulators and sustainable finance experts from Latin America.

During the event, organized by the Latin American Climate Assets Disclosure Initiative (LACADI), Management Solutions' speakers shared their experiences on methodologies for analyzing the financial impact of transition risks and physical risks in insurance and financial institutions.

Model Risk Management for Financial Institutions, United Kingdom

Management Solutions sponsored and participated as a speaker at the 5th edition of the Model Risk Management for Financial Institutions convention, held in London with the aim of providing financial sector professionals with practical knowledge and trends in model risk management.

Management Solutions' presentation analyzed the proposed European Artificial Intelligence Act and its implications for the banking sector, with a special focus on the obligations for high-risk AI models.

Supervision, Risks & Profitability 2023, Italy

Management Solutions sponsored and participated as a speaker at the 2023 edition of Supervision, Risks & Profitability, an annual event organized by the ABI (Associazione Bancaria Italiana) and held in Milan.

Management Solutions' speakers presented their papers on "Explainable Artificial Intelligence and its impact on the financial sector" and "Perspectives for operational risk: DORA, value chain and ESG".



LXIV ASNEF General Assembly, Spain

Management Solutions participated as a sponsor in the LXIV ASNEF (National Association of Financial Credit Establishments) General Assembly organized in Valencia, which was attended by over a hundred senior management participants from the consumer credit industry, both from Spain and other European Union countries.

Mexican Insurers' Convention

Management Solutions was one of the sponsors of the 32nd Mexican Insurers' Convention, the main event on trends in the Mexican insurance industry, organized by AMIS (Mexican Association of Insurance Institutions), which focused on financial inclusion in insurance, future trends for the development of insurance and the role of insurance in the current economic climate.

The Firm's presentation, entitled "Measuring climate risks in the insurance industry", analyzed the risks related to climate change to which insurance companies are exposed from the point of view of their portfolios of assets and liabilities, as well as the methodologies for measuring the financial impact of physical and transition risk under different scenarios, exemplified through case studies.

XVIII ABM's Risk Management Symposium 2023, Mexico

The XVIII edition of the Risk Management Symposium, organized by the Association of Banks of Mexico (ABM), focused on opportunities for the banking world, such as open banking and the future of means of payment, risk management trends in digitalization processes, as well as the use of Artificial Intelligence, and was attended virtually by more than 2,200 people.

Management Solutions discussed the uses and opportunities of Artificial Intelligence in the banking sector through its presentation "Current trends and advances in regulatory proposals for Artificial Intelligence in banking". In addition, the firm gave a workshop on the use of tools that can enhance the development of machine learning and data science models applied to risk management.

Regulatory Trends in Banking and their Impact in Latin America and Peru

Management Solutions participated as a speaker at the breakfast meeting "Regulatory Trends in Banking and their Impact in Latin America and Peru" organized by the SBS (Superintendency of Banking and Insurance).

During the event, which was attended by the principal heads of the SBS's Regulatory Management Department, a review was

made of the current macroeconomic scenario and regulatory priorities in the area of risk, both in Europe and in Latin America and Peru. The Firm's presentation provided an in-depth analysis of key industry trends in credit risk, modeling and other financial risks, areas in which Management Solutions has extensive expertise.

ESG Beyond the Acronym - Building a Sustainable Market", organized by ACREFI, Brazil

The event, organized by ACREFI (National Association of Credit, Financing and Investment Institutions) and attended by the main heads of credit institutions in Brazil, addressed several relevant sustainability issues, such as: the importance of sustainable business models that are in line with the objectives of the Paris Agreement and respect the social challenges of each country; the integration of sustainability risks in the risk



Model Risk Management for Financial Institutions, United Kingdom

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management model and its importance for the solvency of banks; and the importance of governance in the operation of companies.

Based on the firm's knowledge and experience, Management Solutions' presentation provided an analysis of climate risk management, including the need for banks and insurers to integrate it into the traditional risk framework.

Cybersecurity Symposium, Germany

Management Solutions sponsored and participated as a speaker at the Cybersecurity Symposium organized by Bankverlag (the IT services organization of the German Banking Association) in Cologne, Germany, to address key cybersecurity issues and, in particular, the implications and challenges of implementing DORA. The symposium was attended by

representatives of German financial institutions and local regulators (such as the Bundesbank and BaFin).

The symposium was attended by representatives of German financial sector entities and local regulators (such as the Bundesbank and BaFin).

Management Solutions' presentation was entitled "Quantitative measurement of Cyber Risk: Enhancing the FAIR Model" and addressed the current approach of financial institutions to cybersecurity risk measurement, delving into the quantitative approach and presenting Management Solutions' value proposition around its practical implementation and application in the context of the Digital Operational Resilience (DORA) regulation.

Nordic Financial Crime & Sanctions Forum, Denmark

The conference, held in Copenhagen, focused on how to leverage the power of data science and analytics in the financial crime arena, while mitigating the weaknesses of a purely scientific, data-driven approach.

During the event, relevant aspects and current trends for the risk function were discussed in depth, touching on topics such as AML, sanctions, implementation of systems, exchange of AML and ESG information. Management Solutions' presentation explored analytical and data science-based approaches applicable to financial crime and how they can better address the various challenges it presents.

AI & Big Data Expo, the Netherlands

In addition to being a Sponsor Firm, Management Solutions participated as a speaker at the AI & Big Data Expo held in Amsterdam, which brought together more than 5,000 professionals from the technology sector with the aim of discovering new applications of Artificial Intelligence (AI).

ASFAC Annual Congress, Portugal

Management Solutions sponsored and participated as a speaker at the ASFAC (Association of Specialized Credit Institutions) Annual Congress, which was attended by CEOs and representatives of local and international financial institutions present in the country, as well as the Bank of Portugal.

The congress addressed the challenges facing the consumer finance industry today. During the meeting, speakers had the opportunity to review the context and projections for the distribution and automotive market, as well as macroeconomic and regulatory trends. Management Solutions' presentation was entitled "Pricing and Advanced Metrics" and reviewed the main lines of action for implementing a risk-based pricing strategy.

XIX Congress on Risk for the Solidarity Sector, Colombia

Management Solutions participated as a speaker at the XIX Risk Congress for the Solidarity Sector, an event organized and promoted by Asoriesgo, the Colombian Trade Association of Risk Professionals.

The congress examined the relevance of comprehensive stress testing in the evaluation and management of financial risks, with the participation of leading experts from different companies in the sector who reviewed the latest market trends.

Under the title "Risk management in times of uncertainty: The crucial role of comprehensive stress testing", Management Solutions' presentation focused on best practices and methodologies for conducting this type of testing.



"The Race Against Fraud", Mexico

Management Solutions participated in the conference "The Race Against Fraud" organized in Mexico City by Featurespace, one of the leading companies in fraud prevention tools through advanced analytics (AI/ML models).

The event brought together the main financial industry players involved in fighting and preventing fraud, and featured the participation of the CNBV (National Banking and Securities Commission), which shared its vision of the evolution of Mexican regulation on fraud management, as well as the presence of fraud managers from entities such as BBVA, Banorte, Banco Azteca, Banregio and Círculo de Crédito, among others. Entitled "Fraud Solutions: The Importance of Partners," the Management Solutions presentation explored the key challenges and opportunities in fraud prevention, as well as the lessons learned from its practical experience.

Quantifying climate risks and opportunities: international regulatory landscape and integration into management, Mexico

Management Solutions organized a seminar at its Torre Mayor office in Mexico City on the quantification of climate risks and opportunities, analyzing the international regulatory landscape and climate risk management integration in non-financial companies. The seminar was attended by close to 50 representatives from companies in different industry sectors, including energy and telecommunications.

The seminar featured the participation of the Firm's ESG specialists as speakers and reviewed the international regulatory landscape and how companies in the financial sector have approached the integration of these risks in their management processes. It concluded with a practical case study on risk quantification, including the use of specialist tools.

II Risk Modelling Congress, Poland

The event, held in Warsaw, was attended by representatives of local and global entities from the financial sector and addressed topics related to model risk, such as current challenges in modeling, the relationship and expectations of the supervisor, ESG risk management and the regulation and application of Artificial Intelligence.

Management Solutions gave three presentations on topics such as Model Risk management using AI and machine learning techniques; the operation, uses and risks of LLMs (large language models); and the modeling of climate risks and their integration into management.

IA ACT impact sur la modélisation des risques de crédit et les processus métiers dans la banque, France

Management Solutions sponsored and participated as a speaker at the event "IA ACT impact on the modeling of credit risks and business processes in banking" organized by Revue Banque in Paris.

The event, which was attended by representatives of the Bank of France, local and global entities of the financial sector, addressed issues related to Artificial Intelligence and its impact on credit risk models and banking business processes.

The event covered relevant aspects such as the regulatory landscape of Artificial Intelligence, the practical implications for banks, advances in modeling, validation and model management, and self- machine learning, among others.



Working breakfast "Climate risks in the insurance sector", Spain

Commitment to the industry

Argentine and Latin American Actuarial Conferences

Management Solutions participated in the Argentine and Latin American Actuarial Conference, organized by the Professional Council of Economic Sciences of the Autonomous City of Buenos Aires, giving presentations on the process of adapting International Financial Reporting Standard 17 (IFRS 17) in different geographies, focusing on the regulatory context in the region, and the Actuarial Climate Index (ACI).

Czas na ESG!, Poland

In addition to sponsoring the event, Management Solutions participated as a speaker at "Czas na ESG!", an expert forum organized in Warsaw to discuss issues related to ESG risk management.

During the event, which was attended by more than 50 experts and 250 participants, aspects related to climate change risks, ESRS E1 requirements in the field of climate risks and sustainability information, measurement of physical risks, etc. were discussed.

AACH Sustainability Conference, Chile

Management Solutions participated as a speaker at the Sustainability Conference of the Chilean Insurance Association (AACH), where the Firm's professionals presented various sustainability-related topics to insurance industry professionals and members of the AACH.

The sessions given by the Firm analyzed topics related to sustainability and the insurance sector, such as the TCFD (Task Force on Climate-Related Financial Disclosures) framework,

dual materiality analysis, carbon footprint measurement in the insurance sector, financed carbon footprint emissions, the financial impact of transition and physical risks, and social impact.

Climate Risk and Opportunity Management Course with IFC

As part of the collaboration between the two institutions on climate risk training, the International Finance Corporation (IFC), a member of the World Bank Group, through its IFC-Green Banking Academy, and Management Solutions delivered the Climate Risk and Opportunity Management course organized within the framework of El Salvador's Sustainable Industries Program.

The course, designed and taught by experts in sustainable finance and climate risk management from IFC and Management



Annual Risk Conference of the CGRRD, Dominican Republic



OPEXksa, Saudi Arabia

Solutions, was developed in a virtual format and was aimed at professionals from the Salvadoran Banking Association (ABANSA) working in the area of sustainability.

Presentation on the implementation of Resolution CMN 4.966, Brazil

ABBI, the Brazilian Association of International Banks, asked Management Solutions to present its capabilities and experience on the challenges of implementing Resolution CMN 4,966, the local regulator's adaptation of the international standard IFRS 9.

The Firm shared its knowledge on the main regulatory requirements affecting organizations today, both locally and internationally, as well as its understanding of the challenge of local IFRS 9 implementation from the perspectives of Risk, Finance and Technology, addressing the main obstacles for the industry.

Congresses with FEBRABAN, Brazil

Management Solutions participated in two congresses organized by FEBRABAN (Brazilian Federation of Banks): one on the prevention of money laundering and terrorist financing, and the other on risk management (G-RISC).

The attendees, representatives of regulators and local and international financial institutions present in the country, were able to learn first-hand about the Firm's capabilities in key aspects for the industry such as credit risk management, market risk management, ESG or the application of Artificial Intelligence techniques.

Working breakfast with the insurance sector, Brazil

Management Solutions' Rio de Janeiro office organized a breakfast meeting under the theme "Artificial Intelligence and Application in the Calculation of Provisions" to share its experience in the use of advanced AI techniques with representatives of Brazilian regulators and insurance companies.

Training session on Climate Risk Management, Brazil

Management Solutions organized an executive training session on Climate Risk Management for the financial sector at its São Paulo office.

The workshop, organized in partnership with the IFC (International Finance Corporation, World Bank Group) and ABBC (Brazilian Association of Banks), aimed to bring the attendees, representatives of the Brazilian financial sector, fundamental concepts and highlight best practices in the field of climate risk management through practical case studies, addressing topics such as the identification of opportunities, impact measurement methods, governance structure and an effective reporting model.

OPEXksa, Saudi Arabia

Management Solutions participated as a guest firm at OPEXksa, one of the most relevant business events in Arab countries held in Riyadh with the aim of accelerating the country's transformation and the implementation of its ambitious 2030 agenda, bringing together the best professionals and organizations in the world.

During the convention, the Firm participated in a debate on the role that consulting can play in the country's transformation process and offered a conference on the keys to implementing transformation projects.



"Management Solutions remains at the forefront of industry knowledge"

Thanks to our industry specialization, we are able to provide clear answers to the main challenges of the different industries in which we work.

Leveraging our presence in major industries worldwide, we seek to transfer best practices between different sectors, identifying those issues that are better solved in one sector than in another. This is possible because we work for the leading organizations in their respective industries and geographies.

We are also firmly committed to sharing the knowledge generated by the Firm. For this reason, we have always committed to maintaining a selective presence in the main industry forums of the countries in which we operate, as well as to the organization of webinars on industry trends and the publication of specialized studies on relevant aspects for each industry.

Rafael Guerra
Partner at Management Solutions