

2023 Milestones

Management Solutions continues to focus on profitable growth and is becoming increasingly international and more diversified from both an industry and a geographical perspective. Above all, Management Solutions has an outstanding portfolio of global and local clients who are leaders in their respective industries.





Transmitting

High
Low

Close
112.25
112.25
112.25



172.29 - 4.49

1,023.88 - 13.73

0.00 + 0.00

24,285.95 -178.74

6,952.86 - 7.46

11,192.69 +54.20

25,927.68 - 91.73

Creating value in the age of Artificial Intelligence

At Management Solutions, we recognize the transformative power of AI and the challenges it brings



Alfonso Serrano-Suñer. Yearly Meeting 2023, Madrid, Spain

Under the theme "Creating Value in the Age of Artificial Intelligence", Management Solutions held its Annual Convention in July at the Royal Theatre in Madrid

During the Convention, which served as the culmination of the firm's twentieth anniversary celebrations, the international macroeconomic context was analyzed, the firm's achievements were reviewed, and the objectives for the coming year were set. This section summarizes some of the approaches put forward at the meeting.

In previous years, themes such as transformation, sustainable growth, trust, leadership and entrepreneurship have been addressed.

This year, the Meeting focused on a highly topical issue that impacts the firm's value proposition: value creation in the age of Artificial Intelligence.

After reviewing new developments in AI, the firm's positioning in the face of this emerging and highly transformative advance was presented.

AI, as defined by the U.S. Department of State, is a machine-based system capable of making predictions, recommendations, or decisions that influence real or virtual environments for human-defined objectives.

The evolution of AI can be compared to that of the Internet: both began as research projects, were integrated into specific industries, and eventually spread to society at large, demonstrating their enormous potential. All this happened very quickly, with little time to assess the risks and opportunities.

The truth is that the Internet has become a fundamental tool in our lives today; it is hard to imagine what our work would be like without it; and it is not out of the question that something similar will happen with AI.

The progress in the use of AI is undeniable. Solutions such as ChatGPT have achieved the fastest adoption record in history, with 1 million users in 5 days, 100 million in 2 months, and more than 1 billion six months after launch.

The advance of Artificial Intelligence has been aided by factors such as the ease of use of these technologies and the democratization of access to technology (a direct result of the digital transformation in which we are immersed).

The intuitive user interface of Large Language Models (LLM) or the use of "co-pilots" in the main software products on the market have simplified and universalized the use of AI. These factors, together with the (so far) free nature of many AI-based services, have contributed to its rapid adoption.

Looking back in history, AI as a scientific discipline began to take shape in the 1950s, when a group of researchers at Dartmouth College set out to create a machine that could think and learn like a human. It was at the Dartmouth Conference in 1956 that mathematician John McCarthy coined the term "Artificial Intelligence" as "the field of science and engineering concerned with the creation of intelligent machines".

Also in the 1950s, another forerunner of AI, Alan Turing (the British mathematician who cracked the Enigma machine during World War II), formulated the famous test that bears his name, designed to measure a machine's ability to exhibit intelligent behavior similar to or indistinguishable from that of a human being. This test is still used today to evaluate the results of AI-based solutions.

The following decades saw remarkable advances, such as the creation of Eliza, a natural language processing program that could simulate conversations with humans. But it was not until the beginning of the 21st century that AI began to have a real impact on a wide range of industries (medicine, agriculture, automotive, energy, finance, education, etc.).

While the most spectacular was yet to come, in fact it is happening right now (as we are witnessing it) and it coincides with the emergence of generative AI and especially LLMs such as the Open AI Foundation's GPT-4 and its Chat GPT interface. It is not the only one, of course, there are open source models such as Bloom, and tech giants have also developed their own LLMs, among them Bard (Google), Bedrock (AWS) or LLaMA (Meta).

In fact, the latter (LLaMA) unintentionally became an open-source model after its sources were leaked, giving a decisive boost to the research and development of "open" models.

In any case, despite their rapid development and widespread use, the monetization of LLMs is still in its embryonic stage, with two basic models emerging: payment for services or advertising.

Current LLMs are based on an architecture called "Transformer," introduced by Google in 2017, which consists of an autoregressive language model that generates word-by-word predictions (using deep learning techniques). To do this, LLMs are trained on massive amounts of data, most of which comes from undisclosed sources, with the risk that this entails.

In the largest LLMs, the neural network can reach billions of parameters, and training times can be months. This, combined with the massive use of LLMs, leads to a very significant energy consumption. The point is that they are not taught grammar, semantics or language structure, but learn to predict the next word in a sentence given the previous words.

In this learning process, simple and expected abilities "emerge", such as continuing or summarizing a text, but also other surprising and unexpected ones, not yet fully explained, such as making logical deductions, explaining a metaphor, understanding irony, or programming, among many others.

These language models are reaching levels of understanding and formulation of text and code that are very close to, and at some points superior to, human understanding. It is difficult to grasp the enormity of the implications of AI and its transformative potential. It is important, therefore, to pause for a moment to consider some of the key challenges to the adoption of AI.

Creating value in the age of Artificial Intelligence

True to our purpose, we are committed to creating value through AI, thus contributing to the sustainable growth of our customers, professionals and society

Indeed, some of the AI boosters themselves have signed an open letter calling for a six-month freeze on the training of the most powerful LLMs in order to better understand them and regulate their risks.

The first of these challenges, and perhaps the most troubling, is the bias, if not outright error, that can be present in the results of AI-based models.

LLMs "speak" confidently and are very credible (known as the "Eliza effect"), but the reality is that they can be wrong, have potentially very dangerous biases, or make up answers altogether.

The OpenAI Foundation has admitted that ChatGPT has shortcomings, mainly because its models were trained with data from the Internet, which itself has shortcomings and biases.

In response to the risks arising from such biases, control mechanisms are being developed for some LLM solutions. However, the issue is not simple, as such control mechanisms could easily turn into a kind of censorship.

In any case, and in order to mitigate these biases, it is necessary to detect them, identify their origin, and provide the possibility to correct the source of the bias in an explicit and transparent way. This is not an easy task, since we are talking about deep neural networks that can reach billions of parameters and whose interpretability is very complex.

Another clear challenge in the application of AI is the information sources themselves. LLMs absorb texts and learn to imitate them. If those texts contain errors, biases, or misinformation, the model will reproduce those problems.

To mitigate this risk, it is essential to understand and manage the sources used in training. Unfortunately, LLM providers are often not transparent about their sources.

And the European Parliament itself has already expressed its opinion on this issue, warning that generative models such as GPT will have to meet additional transparency requirements.

Another challenge, closely related to all of the above, is that of privacy and the ethical use of the results of AI solutions.

LLMs can be trained with confidential data, and by operating in the cloud, this can lead to privacy or intellectual property violations. Some European countries have banned or temporarily restricted access to certain LLMs for data protection reasons.

To mitigate these risks, as outlined in our framework for using LLM-based solutions, it is essential to (i) obtain customer consent and be transparent about its use; (ii) prohibit the inclusion of confidential information; (iii) anonymize own and third-party data used; and (iv) always verify results against reliable sources.

We could go on listing many more challenges associated with the extensive use of AI, such as security or efficiency issues or competitiveness, but the fact is that not using AI can become a competitive disadvantage.

To conclude this section, however, it is worth highlighting one final challenge: the sustainability of LLMs. Although some studies highlight the potential of AI to combat issues such as climate change, the reality is that its energy consumption raises significant concerns.

So much so that there are already regulators (such as the European Parliament) that will require "measurement and recording methods that allow the environmental impact of [AI] systems to be calculated".

And it is only natural that regulators and supervisors also take a position on the use of AI. Regulations such as the European Commission's AI Act and the AI Bill of Rights in the United States seek to establish legal frameworks to address some of the key challenges associated with its adoption.

At Management Solutions, we recognize the transformative power of AI and the challenges it brings. And we are also convinced of the value that can be added by its proper use: effective, ethical and safe.

Therefore, true to our purpose, we are committed to creating value through AI and thereby contributing to the sustainable growth of: i) our clients, ii) professionals, and iii) society.

With respect to our clients, our commitment is based on the continuous updating of our value proposition in order to respond to the new needs that arise around AI.

One example is the explainability techniques we have developed to help interpret the decisions made by AI models, thus helping to build trust in them.

In addition, to avoid potentially irreversible dependencies on third parties, we have spent years refining our own model building methodology (including AI models): Modelcraft, a methodology that enables the efficient development of advanced models (with greater predictive capacity and shorter development times) while maintaining control over the building and documentation process.

Another example is our solutions for managing the privacy of data used by AI models; not only those related to BCBS239 or GDPR, but also the developments we are making (in collaboration with leading experts) around federated learning and distributed computing.

All of this and more has been integrated into our new AI value proposition, which is designed to guide our clients through the process of: i) evaluating, ii) adopting, and iii) monitoring AI. Addressing both use cases and regulatory compliance.

In relation to its commitment to the Firm, i.e. to all its professionals, Management Solutions has developed its own framework for the adoption of AI, which defines the rules for its internal use. In addition to this framework and in terms of regulation, a specific chapter on basic AI rules has been developed and made available on the intranet, and technical notes have been prepared to facilitate the dissemination of knowledge on the subject.

In addition, the Firm invests heavily in the training of its professionals through a plan that is constantly updated with the help of R&D, the heads of our meta-competencies and the University.



Creating value in the age of Artificial Intelligence

A plan that takes the form of more than 300,000 hours of training per year, of which 70,000 are dedicated to new technologies and advanced modeling (machine learning, big data, etc.).

In addition to this, there is also a certification plan in several areas, particularly in relation to large technology platforms, including aspects such as cybersecurity, cloud systems architecture and, of course, AI.

Finally, in terms of the firm's commitment to society, we should mention our research collaborations with universities (through academic chairs) and with prestigious institutions such as the Royal Academy of Sciences, the CSIC or the Círculo de Empresarios, to name a few. Another highlight is the scientific dissemination that takes place through specialized

publications and the organization of events or participation in international forums where, among other things, the firm shares its vision on AI.

In addition, many of these collaborations have resulted in: i) cutting-edge, advanced modeling projects (such as the development of more sustainable LLM); ii) novel applications of AI (such as the identification of patterns in virology); or iii) contributing to the development of alternative energies (such as hydrogen).

In short, in the age of AI, we remain true to our mission of creating value propositions for our clients and committing to their effective implementation.

But none of this would be possible without a differentiated culture. Because what we do and how we do it matters.

A culture of service, of generosity and humility, of critical thinking, of results orientation, of the constant pursuit of excellence. A culture of entrepreneurship that pushes us to step out of our comfort zones and into uncharted territory until we master it so we can continue to grow.

What better proof of this than to see how, after more than twenty years of entrepreneurship, the Firm has been able to become 42 times bigger. Today we are over 3,600 professionals of extraordinary value, operating in more than 50 countries in Europe, the Americas, Asia and Africa, through our 45 offices around the world.

We are building a great Firm that aims to lead business consulting internationally, in all the industries in which it operates and in all the service lines it provides to its more than 1,800 clients, who in turn are major global and local leaders.

A Firm that has a talented team, with a strong analytical profile but at the same time with a deep knowledge of its clients' businesses. A multicultural, young and well-trained team. A team of entrepreneurs that demonstrates its dedication to service, talent and commitment to value creation, also in the age of AI.



Yearly Meeting 2023, Madrid, Spain

In 2023 we once again surpassed our qualitative and quantitative objectives for the year, growing in excess of what we had budgeted for. Once more we increased our market share, and did so in a way that is organic, diversified and sustained, irrespective of economic cycles while applying a management model that maximizes our potential, guarantees professional development for our people and creates the basis for sustained growth in the coming years.

We have continued to widen our scope of activity to cover new markets, as well as to consolidate our presence in countries in which we were already operating (we are now present in more than 50 countries across Europe, the Americas, Asia, Africa and Oceania). All of our service lines have grown in a balanced way and we have also made important progress in industry diversification.

As a result, we have increased our presence in many of the organizations with which we were already collaborating. By extending the provision of our services to new areas and business divisions, with industry diversification driven by our expansion into the distribution sector, we have continued to increase our client base.

This client base is composed of over 1,800 clients, large multinationals, corporations and leading local firms to which we have added over 300 new names, all of them of strategic importance in their respective markets. In addition, we have

further developed our presence and visibility with the regulators and supervisors of the markets in which we operate.

As already mentioned, the growth of our business would not have been possible without the extraordinary team of more than 3,600 professionals that make up our Firm. A team of talented, committed professionals, recipients of a strong corporate culture based on values that make the difference. A team that has grown from the base up and is global, multicultural, multidisciplinary and fully integrated. A team with integrity and responsibility, capable of providing differential solutions to the challenges our clients bring to us.

In short, we have once again exceeded all our goals in all the geographies in which we are present, in all the industries in which we operate and in all the service lines we provide.

We face the future with enthusiasm and confidence, with the firm intention of helping our clients grow in a sustainable manner.

At Management Solutions, we will be whatever we set out to be, convinced that the best of the Firm is yet to come.



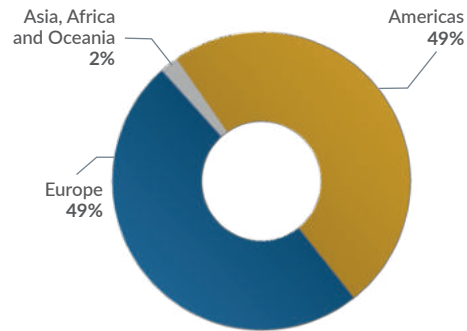
Yearly Meeting 2023, Madrid, Spain

Diversification

During 2023 we have continued to make progress in our diversification process:

- ▶ Achieving consistent growth in the Americas, Europe, Asia, Africa and Oceania.
- ▶ Intensifying our activity in all regulated industries, maintaining our leadership in Finance, gaining market share in Energy and becoming increasingly active in Telecommunications and Other industries.
- ▶ Expanding our client portfolio.
- ▶ Updating our solutions offer:
 - Strategy
 - Sales and marketing management
 - Management & financial information
 - Risk management and control
 - Governance, organization and processes
 - New technologies

Geographical diversification⁴



Americas

- ▶ North America (United States, Canada and Mexico) is growing strongly, strengthened by new openings in Mexico (Querétaro).
- ▶ South America achieved record growth of over 50%, led by Brazil with the opening of an office in Rio de Janeiro.
- ▶ Growth in all Central American countries.

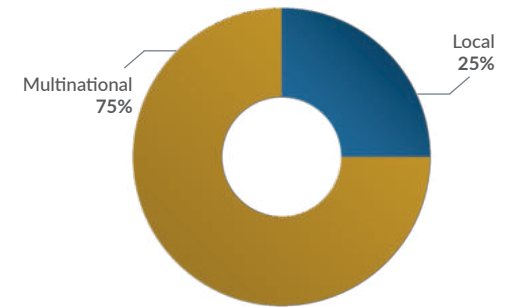
Europe

- ▶ Spain achieves 15% growth and strengthens its position with the opening of Malaga.
- ▶ The UK, German and French offices consolidated their leadership with double digit growth.
- ▶ Italy and Poland grew strongly (+50%) and opened new sites (Bologna and Wroclaw).
- ▶ The Netherlands, Portugal and the Nordic countries grew by more than 20%.
- ▶ Switzerland tripled in size.
- ▶ Continued growth in the rest of Europe (with emphasis on Eastern Europe).

Asia, Africa and Oceania

- ▶ Business in China and Turkey was consolidated.
- ▶ Business in Africa grows, with focus on South Africa
- ▶ Commenced operations in Australia with the opening of an office in Sydney.

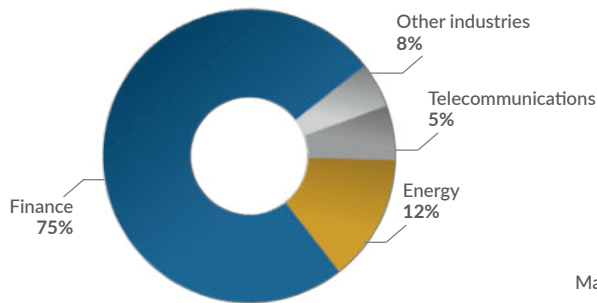
Client diversification⁴



- ▶ More than 1,800 active clients
- ▶ 300 new clients (across geographies and industries)
- ▶ Reinforced presence in clients:
 - Increased presence with leading global and local clients.
 - Increased relations with regulators, supervisors and supranational organizations.
 - Strengthening of the relationship model with strategic suppliers.

⁴ measured in consulting hours

Sector diversification ⁵



Finance

- ▶ Sustained growth (20%+) based on:
 - Greater specialization by business (payments).
 - Leaders in Digital Transformation and Sustainability.
 - Leaders in regulatory compliance.

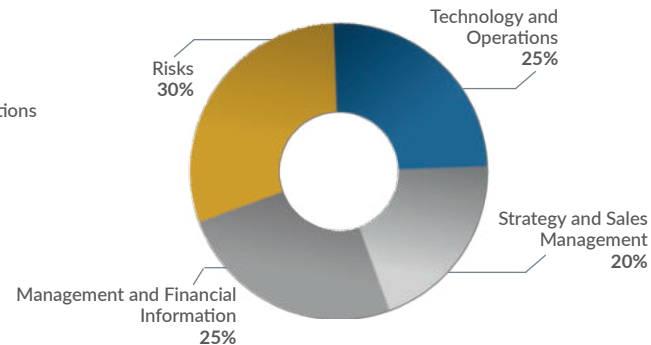
Energy and Telecommunications

- ▶ Strong growth (20%+) driven by:
 - Increased client base.
 - A broader range of services (digital transformation, Artificial Intelligence, Agile, sustainability, etc.).
 - Deployment of both practices in more countries (especially in the Americas).

Other industries

- ▶ Exponential increase in activity in industries such as distribution, pharmaceuticals, technology, construction, manufacturing and service companies, and education.

Diversification of solutions ⁵



- ▶ More than 5,000 projects (50% new) across all our metacompetencies:
 - Sustainability (ESG).
 - Artificial Intelligence (Hatari, Gamma).
 - Data Governance and Modeling (MRM, Validation).
 - Digitalization ("go to cloud").
 - Efficiency (organization and processes).
 - Profitability and financial strength.- Advanced Risk Management (financial and non-financial).
 - Cybersecurity
 - Continuous improvement of our proprietary solutions:
 - Modelcraft University.
 - MS²: measuring climate impact.



“In the face of a changing reality, we are constantly refining our value proposition”

Today, more than ever, companies are looking for appropriate responses to an uncertain and ever-changing environment.

This requires us to understand in depth the new competitive dynamics, to identify the problems faced by our clients, to provide valuable solutions and to collaborate in their effective implementation.

In particular, we have made great efforts to develop a differentiated value proposition on issues as relevant to our clients as the process of adopting Artificial Intelligence or sustainability.

At Management Solutions we develop innovative solutions that take advantage of technological disruption to make processes more efficient, improve the customer experience, better control risks and extract more value from available information. Solutions,

In short, solutions that create value and enable profitable and sustainable growth for our clients.

Marta Hierro
Partner at Management Solutions

⁵ measured in consulting hours

Growth and innovation

Profitable growth

Our high internal organic growth levels guarantee a career progression model far superior to that of our competitors.

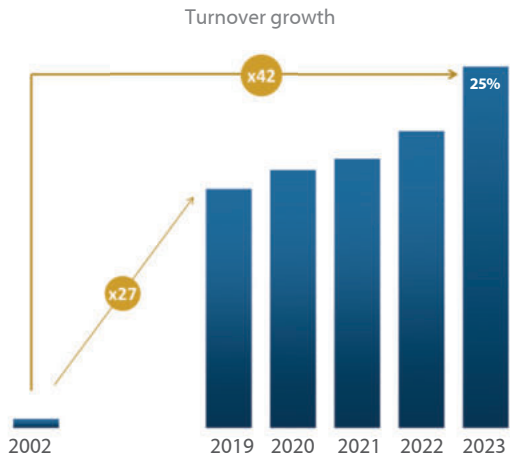
R&D&i innovation

Investing in R&D&i and training are key differentiating elements in our value proposition to the market.

Human Resources Management

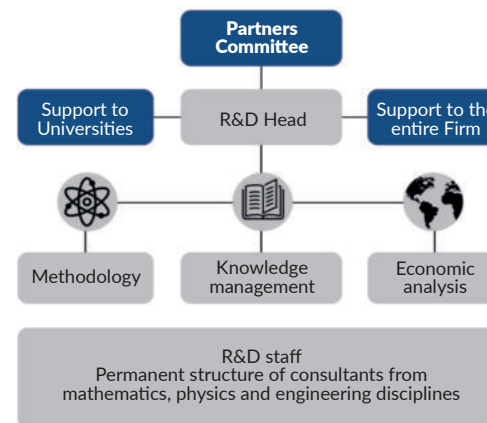
Guarantee, through our partnership model, a professional development that rewards the merits of each of our professionals, with the entrepreneurial character of the firm being a distinctive approach of our business management.

Profitable growth



- ▶ Sustained growth of 25% (organic, diversified, profitable)
- ▶ Nearly five million hours of consulting work
- ▶ Gaining share in our main markets
- ▶ Rigor in financial management
- ▶ Fulfilling the five pillars of our Y25 strategic plan:
 - Commitment to sustainability
 - Greater quantitative and digital offering (more alliances)
 - Multinational growth ("one Firm")
 - Industry specialization (new industries)
 - Smart working

R&D&i innovation

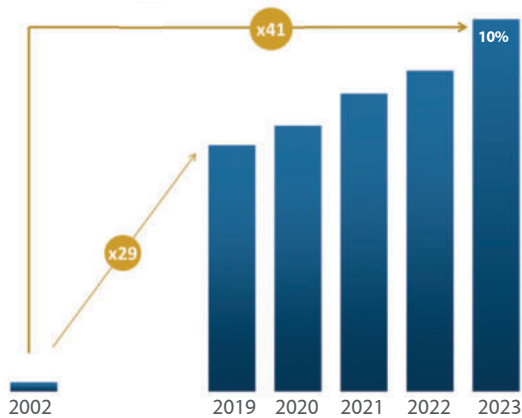


- ▶ Investment equivalent to 10% of the Firm's capacity
- ▶ Permanent structure formed of teams for:
 - Methodology (Innovation)
 - Knowledge management (metacompetencies regulations, benchmarks, publications, training, etc.)
 - Economic outlook analysis
- ▶ Global coverage (all countries, industries and service lines)
- ▶ Regulatory hub in Frankfurt, seat of the ECB
- ▶ Collaboration with universities / institutions / companies
- ▶ Global R&D Plan (more than 250 actions executed):
 - Methodology:
- Applied AI (seven new value propositions in the field).
 - Support to the academic Chairs: iDanae Chair in Big Data and Analytics (UPM), Social Impact Chair (U.P. Comillas) and Chair for Hydrogen Studies (U.P. Comillas).
 - Collaborations with the Royal Academy of Sciences of Spain (in areas such as virology and sustainable AI)
 - Knowledge management:
 - Closely targeting of value propositions
 - Training Plan Update
 - Regulatory alerts service (through three channels: app, web and social networks).
 - More than 100 specialized publications (internal and external)
 - Economic analysis: a global report and detailed reports for 22 countries.

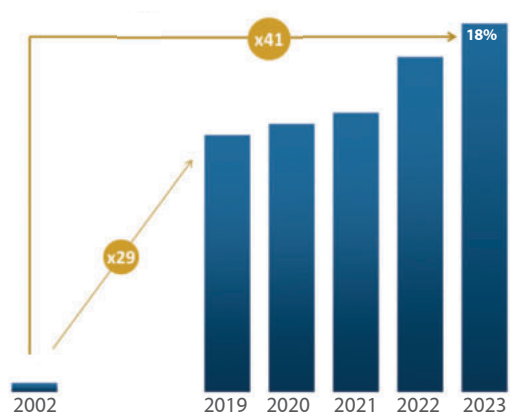
⁶400 million euros in annual turnover

Human Resources Management

Annual percentage increase in number of employees



Training hours



In 2023 we again exceeded the qualitative and quantitative objectives we set for ourselves

- ▶ More than 3,600 professionals, growing from the base up, with more than 1,000 new hires and more than 300 internships during the fiscal year.
- ▶ Promotion based on merit for the entire pyramid:
 - Reinforced top line of management (18 new Partners and 18 new Directors).
 - Increased managerial capacity (162 new Managers and Supervisors).
 - Organic growth in all categories.
- ▶ Global management of our pyramid ("one team").
- ▶ Excellence in talent recruitment (more than 200,000 candidates evaluated).
- ▶ Strengthening of links with universities and post-graduate programs:
 - Presence in more than 370 European, American, Asian, African and Oceanian faculties.
 - More than 350 collaboration agreements.
 - More than 10 awards for Bachelor's or Master's theses as well as sponsorships.
 - Teaching at some of the most prestigious universities in Europe and the Americas.
- ▶ Strengthened our supervision, evaluation and mentoring processes
 - Continuous evaluation processes, rewarding talent
 - Biannual mentoring program (trying to align the needs of our professionals with the opportunities offered by the Firm).

- Biannual Human Resources follow-up to the management team
- ▶ Emphasis on training:
 - More than 330,000 hours invested in training
 - More than 750 courses taught (17 new)
 - Continuous improvement of our Training Plan:
 - Tenth graduating class of the Management Solutions - ICADE Business School Master's Degree in Business Consulting in Spain.
 - Sixth graduating class of the Monterrey Tec Diploma in Mexico.
 - Advanced training program in partnership with INSPER in Brazil.
 - e-Learning development (Moodle and Coursera) for standard/voluntary training.
 - External complement: focusing on the management team (CFA, FRM, PMP, CISA, ICAI-IC, Cloud, etc.).

Communication and organizational flexibility

Communication

- ▶ Promoting the Management Solutions brand to our stakeholders.
- ▶ Strengthening our communication channels (Intranet, Website and Social Networks).
- ▶ Disseminating valuable publications (white papers, technical notes, regulatory analyses, economic outlook reports, etc.).
- ▶ Maintaining a presence in forums and institutions of recognized prestige in each of our sectors of activity.
- ▶ Supporting the academic world through chairs, agreements, internships and specialized courses.
- ▶ Developing sponsorship and patronage work in favor of science, culture, arts and sports.
- ▶ Involving ourselves with those most in need through solidarity actions within our scope of action.

Organizational flexibility

A fluid and continually adapting organizational structure oriented towards value creation allows us to adequately respond to our high growth levels.

Communication



- ▶ Increased brand promotion on the occasion of our 20th anniversary.
- ▶ Digital communication channels:
 - New content on our intranet and website (training pills, webinars, One Team, etc.).
 - Deployment of new languages on corporate website.
 - New content on Social Networks.
- ▶ More specialized publications:
 - Publication of white papers on hydrogen, Explainable Artificial Intelligence and financial crime.
 - Quarterly economic reports (4 global and 88 country reports).
 - Technical Notes and Regulatory Developments (cross-industry).
- ▶ Enhanced presence in professional and supervisory forums.
- ▶ More Social Action, patronage and sponsorship:
 - More than 50 solidarity activities: "Double your support to the earthquake victims in Turkey", Christmas in Solidarity, VI Solidarity Race, Solidarity Christmas Concert, blood donations, computer equipment donations, corporate volunteering, participation in solidarity sporting events, etc.
 - Partnerships with NGO's and foundations (Teatro Real, Royal Academy of Sciences, Fundación Pro RAE, Escuela Superior de Música Reina Sofía, Fundación Princesa de Girona, Fundación ONCE, Fundación Prodis, Fundación SERES, etc.).
- ▶ United Nations Global Compact.
- ▶ More support to our Sports Clubs in all our offices:
 - More than 1,000 participants in internal and external tournaments
 - Organization of sporting events: golf tournaments, paddle tennis tournaments, indoor soccer and other sports (curling, chess, volleyball, beach tennis, etc.).

Organizational flexibility



- ▶ Reinforcement of internal areas and functions:
 - Strengthening of our structure in all media areas
 - IT transformation plan implementation:
 - Process automation(BC/MIS).
 - Implementation of the new TESS web.
 - Strengthening of IT security.
 - Opening of offices in Málaga (Spain), Stockholm (Sweden), Wrocław (Poland), Querétaro (Mexico), Rio de Janeiro (Brazil) and Sydney (Australia), and renovations/extensions in Barcelona (Spain), London (United Kingdom), Amsterdam (Denmark), Mexico City (Mexico), Bogotá (Colombia), Quito (Ecuador) and São Paulo (Brazil).
- ▶ Global control function (Internal Audit, Quality and Compliance):
 - Updating and dissemination of corporate policies.
 - Ongoing training of all professionals on corporate policies.
 - Development of a global compliance map.
 - Internal Audit and Quality Assurance Reports (annual/semi-annual/quarterly/monthly).
 - External certifications for Processes (ISO 9001), Cybersecurity (ISO 27001), Crime prevention compliance (UNE 19601), Business Continuity Management System (ISO 22301) and in carbon footprint calculation (ISO 14064).



Ignacio Layo, Yearly Meeting 2023, Madrid, Spain

"For another year, we have exceeded every goal we set for ourselves"

We have built on our strengths, striving to do well what we do best: serve our clients with excellence, integrity, humility, generosity and passion.

As a result, the year ended with excellent results and sustained growth of more than 25%.

This success is undoubtedly due to the extraordinary team of professionals that make up Management Solutions.

A talented team with a strong analytical profile combined with a deep knowledge of the business of the industries for which they work; a team that is also multicultural (over 40 nationalities), young and well educated, ethical,

responsible and committed. In short, a team of entrepreneurs.

In line with our motto, we have made things happen. And we have done so by demonstrating a great capacity to adapt and transform to create value in the age of Artificial Intelligence.

Ignacio Layo
Partner at Management Solutions



Yearly Meeting 2023 São Paulo, Brazil