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MÁTICA PARTNERS GROUP

PURPOSE-DRIVEN SOLUTIONS

Inteligencia Artificial, Big Data, Business Analytics,
Gobierno del Dato y de la IA, y soluciones Event-Driven.

WE ARE A CUTTING-EDGE TECHNOLOGY COMPANY. BORN SEVEN YEARS AGO, WITH A CLEAR PURPOSE: TO HELP BUSINESSES SOLVE COMPLEX AND IMPACTFUL PROBLEMS THROUGH THE RESPONSIBLE USE OF DATA, TECHNOLOGY, AND ARTIFICIAL INTELLIGENCE.

"WE LEAD THE TECHNOLOGICAL REVOLUTION
THAT IS RAPIDLY TRANSFORMING US GLOBALLY."

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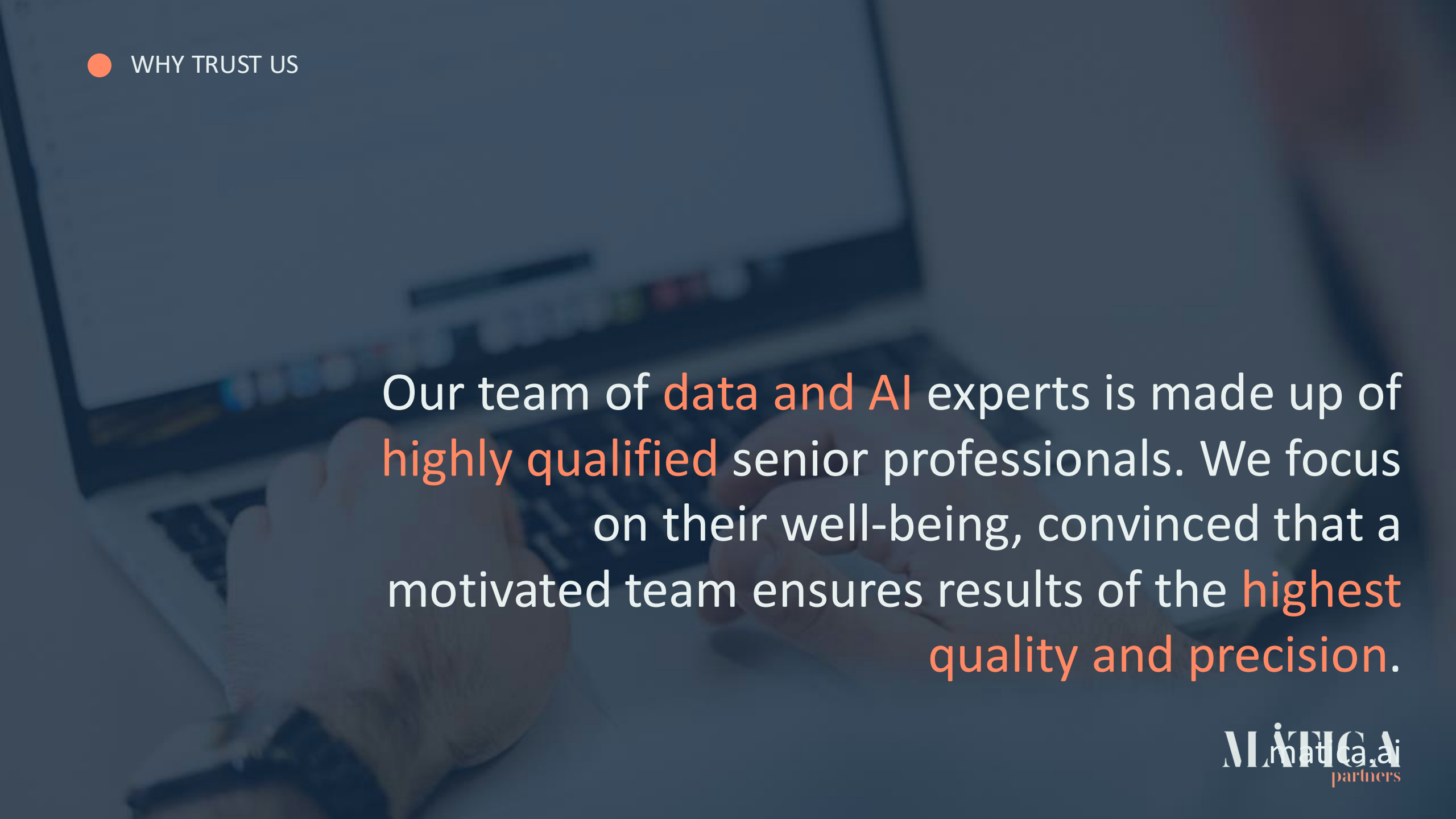

Our team of data and AI experts is made up of highly qualified senior professionals. We focus on their well-being, convinced that a motivated team ensures results of the highest quality and precision.

1 HIGHEST EXPERTISE AND SPECIALIZATION

We don't aim to be the best at everything, but rather 'the best' at what we do.

2 WE TAKE CARE OF OUR TEAM

KM0 Partnership, 100% flexible work hours, remote work, etc. Focus on the employee.

3 HIGH PERFORMANCE AND MAXIMUM PRODUCTIVITY

We work when, where, and how we can be most productive, always adapting to our clients.

4 TRANSPARENCY AND HONESTY

We concisely present our level of expertise and, in collaboration with our clients, assess the suitability of our partnership.

5 HIGHEST LEVEL OF CONFIDENTIALITY

We never talk about our end clients, nor do we use their name or image in vain.

6 SOUL

We are a company that says "please" and "thank you".

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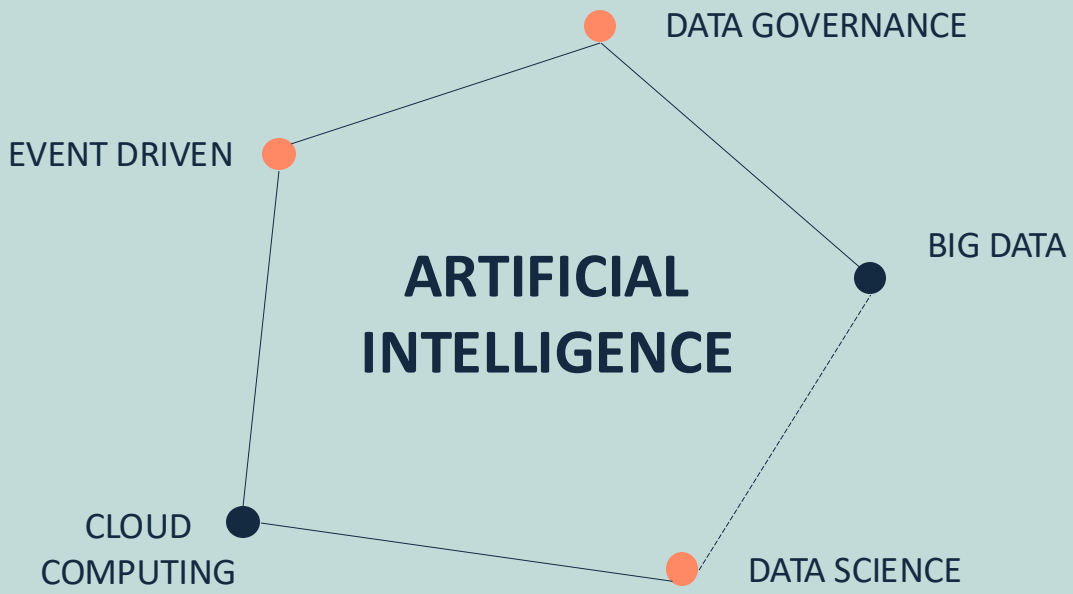
What do we excel at in Mática?

1



2 Detecting and turning initiatives based on Big Data and Artificial Intelligence into success.

3 Optimizing and automating 'data engineering' activities to enhance 'data science.

4 Collaborating with third parties to meet the needs of our clients.

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PARTNERSHIP

Microsoft Partner

Silver Data Platform

Gold Data Analytics

aws partner network

CONFLUENT

ANJANA DATA

Informatica

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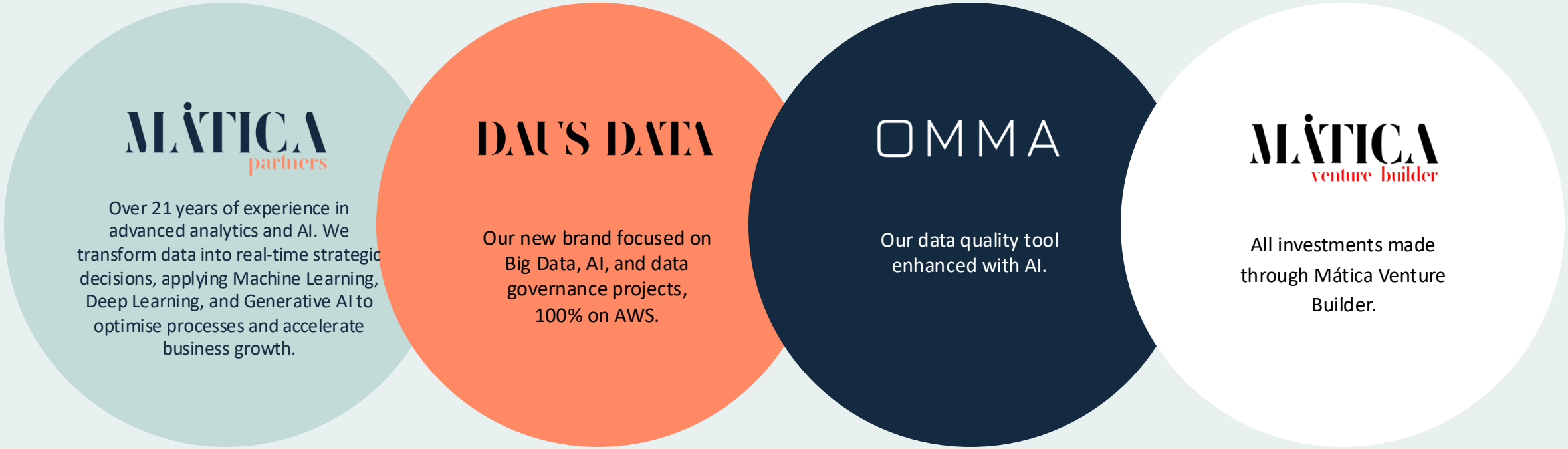
MÁTICA PARTNERS GROUP IS ALL ABOUT INNOVATION AND SERIAL ENTREPRENEURSHIP. AN EXAMPLE OF THIS IS:



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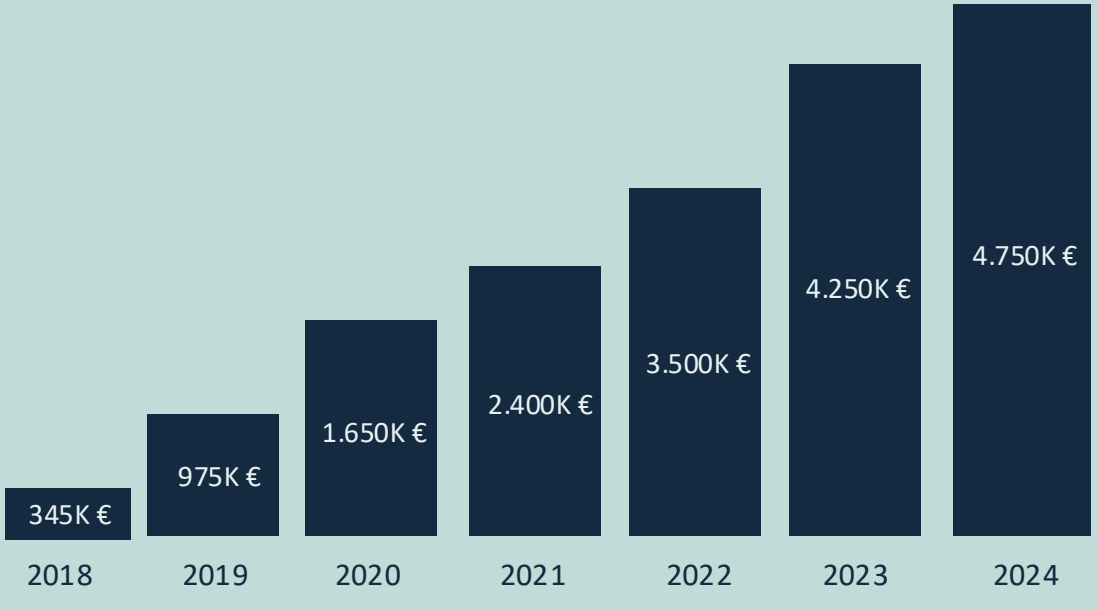
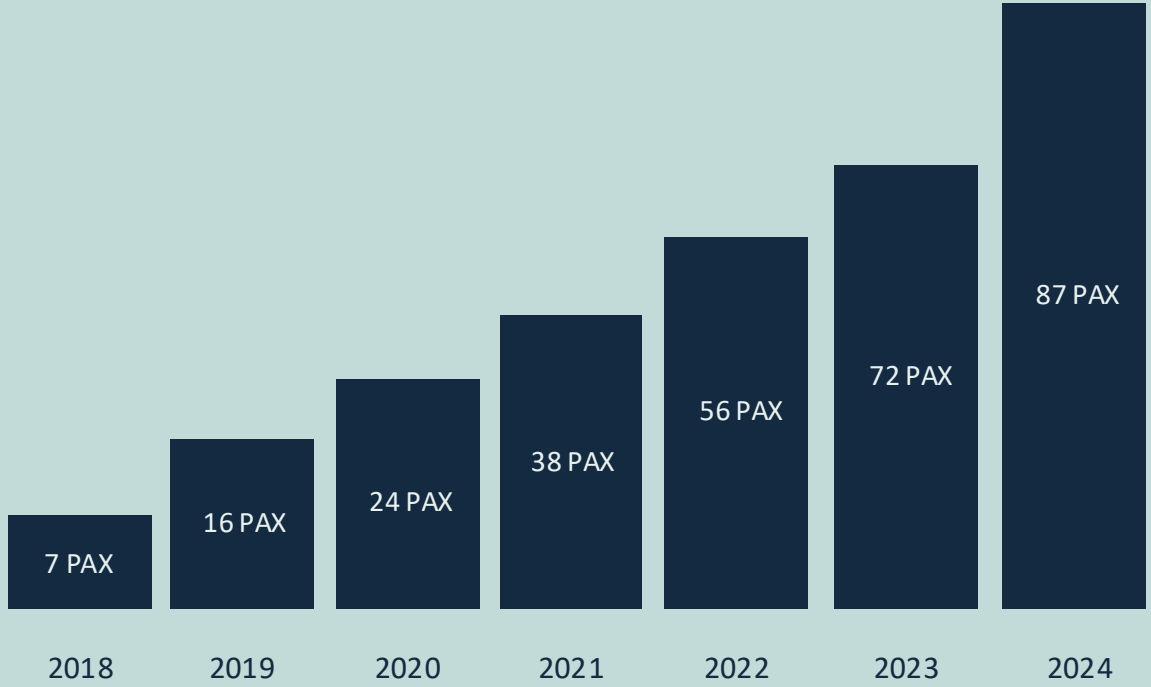
partners

MÁTICA IN NUMBERS



100% STEAM



47% Women

53% Men

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MATICA TECH SPECIALIZATION: **AZURE CELL**

Azure

The key to the Azure cell is specialization: **specific areas of knowledge** with the highest level of excellence. Our focus of specialization covers both **batch** and **NRT** processes (helping companies move from **data-driven to event-driven concept**).

1 DATA PLATFORM

- Storage: Storage Accounts
- Databases: SQL Database, CosmosDB, Synapse Analytics
- Processing and Orchestration: Data Factory, Databricks, Stream Analytics
- Events: EventGrid, EventHub
- Securing and high availability
- Python/R in virtual machines, Databricks in massive models and NRT

2 IA

- Generative AI
- Statistical models
- Standard Machine Learning: Classification, Regression
- Recommendation models
- Deep Learning and Reinforce Learning

We apply the model that best solves the problem, not the most complex

3 OTHER SERVICES

- APIs NLP
- Video processing APIs
- Enrichment APIs and Geolocation
- Integration with Power BI
- Other services:
  - Azure Functions
  - Power Apps
  - Logic Apps

We cover the full cycle of our customers' data-related needs

Advice and Consulting → **Corporate Architecture** → **Analysis and Project Design** → **Development and Design** → **Operation and Maintenance**

Microsoft Partner

Silver Data Platform
Gold Data Analytics

MATICA SPECIALIZATION: DAUS DATA

DAUS DATA

aws

Daus Data is born from the AWS specialization cell of Mática Partners with the following focus: **maximum knowledge of AWS and the highest level of excellence**. The purpose of Daus Data is to have a team of high knowledge in all areas of the AWS platform from Architecture, Networks and Processing to the development of Data and AI platforms.

1 DATA PLATFORM

- Storage: S3, Lake Formation.
- Databases: RDS, Redshift, DynamoDB.
- Processing and Orchestration: AWS Glue, AWS EMR, Step Functions, AWS Lambda.
- Events: EventBridge, SQS, SNS
- Secure and high availability.

2 IA

- Generative AI
- Statistical models.
- Standard machine learning: classification, regression.
- Recommendation models.
- Deep Learning and Reinforce Learning.
- LLM models and agents with AWS BedRock.
- AWS Sagemaker for AI and MlOps model management.

3 OTHER SERVICES

- Design and implementation of serverless architectures.
- Building APIs with AWS APIGateway.
- Creating secure network environments with AWS VPN or Direct Connect.
- Platform governance with AWS IAM, CloudTrail, and others.
- Data visualization with AWS Quicksight.

We cover the full cycle of our customers' data-related needs

Advice and Consulting → **Corporate Architecture** → **Analysis and Project Design** → **Development and Design** → **Operation and Maintenance**

aws PARTNER Advanced Tier Services

- Public Sector
- AWS Glue Delivery
- Amazon EMR Delivery
- Amazon Redshift Delivery
- Amazon QuickSight Delivery

MATICA SPECIALIZATION: **IA AND MACHINE LEARNING**

GENERATIVE AI

Conversational agents, Copilots Support, Delivery Systems and RPA

NLP

Information structuring, text classification, data analysis, feeling

FORECASTING

Financial forecasting, sales forecasting, ARPU and stock-outs

OPTIMIZATION

Price optimization, supply chain, network flows and logistics

GRAPH MODELS

Recommendation systems, graphs of knowledge

SEGMENTATION / CLASIFICATION

Segmenting customer/behavior/product, customer churn, Log classification

COMPUTER VISION

Image segmentation, object detection and classification, correction of perspective

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Solution Accelerators

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Frameworks that enhance our productivity and the excellence of our work.

GENERATIVE AI

For the development and deployment of generative AI solutions using market-leading LLM technologies, including security, monitoring, and model comparison.

TIME SERIES FORECASTING

That enable us to offer Financial Forecasting projects and services to our clients, with short-, medium-, and long-term indicator predictions.

AI GOVERNANCE

To implement AI Governance policies that integrate with leading data governance technologies, ensuring an ethical, secure, transparent, and sustainable approach while maintaining regulatory compliance.

Our **purpose** drives us to put ourselves in our clients' shoes, understanding their need for agile solutions to complex problems. That's why we deliver results within weeks, integrated with corporate data and with **measurable business impact.**

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GENAI Framework

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GENAI FRAMEWORK: **APPROACH**

MATICA CREATES FROM **CHATBOTS (RAGs)** FOR CLIENTS AND **SQL INFORMATION RETRIEVAL** AGENTS TO **AGENTIC SYSTEMS** FOR COMPLEX REASONING WITH CONNECTIVITY TO INTERNAL SYSTEMS AND/OR APIS.

PRIVATE AND SECURE INFRASTRUCTURE

Implementation with **OpenAI, On-Premise**, or any cloud environment such as **GCP, AWS, or Azure.**

CORPORATE ARCHITECTURES

We work based on **reference architectures** in Generative AI.

AGILE AND FLEXIBLE

Thanks to Matica's GenAI framework, we develop and **deploy applications 80% faster.**

PRODUCTION READY

Matica's expertise is not focused on PoCs but on **production-deployed systems** for our clients.

OUT OF THE BOX MONITORING

Default **monitoring** of generative AI **usage and consumption**.

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GENAI FRAMEWORK: **IMPACT AREAS**

Mática has developed a support framework for building Generative AI applications that significantly enhances development efficiency without sacrificing complexity or adaptability. It enables predictable development timelines while providing all essential elements for a production environment, including security, monitoring, and performance.

DEVELOPMENT

- Rapid prototyping and idea validation
- Secure development
- Market-leading reference architectures
- Enhancement of libraries like LangChain by extending their functionality

DEPLOYMENT

- Public and private environments
- Concurrency and security
- Public or Cloud-Native on AWS, adapted to the client's infrastructure

MONITORING

- System Evaluation and Performance
- Cost control and predictability
- Usage monitoring

CROSS

- Based on market-leading reference libraries
- Extensible across all its components
- Creation with just a few lines of code
- Easily integrable with any other Python code

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GENAI FRAMEWORK: **COMMERCIAL SQL AGENT**

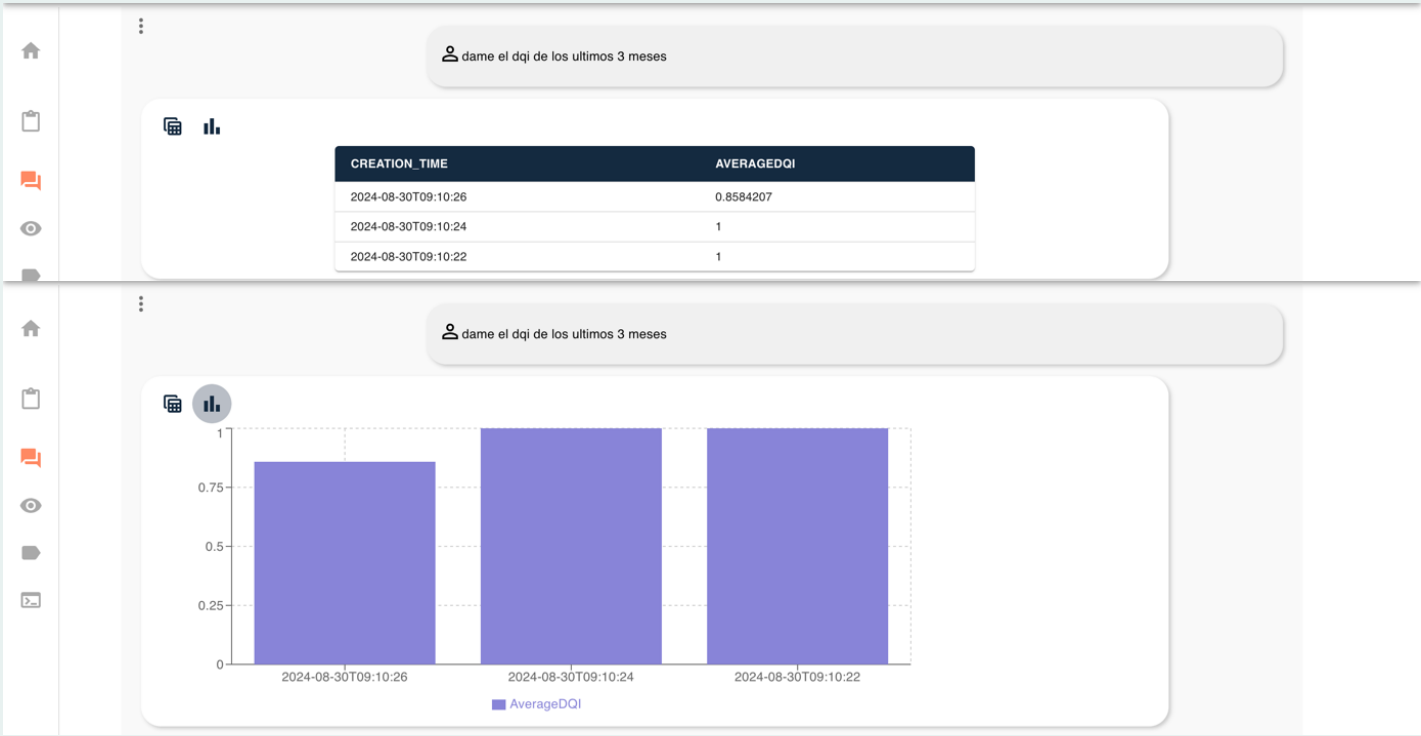
The client had multiple dashboards for analysing commercial activity, but the sales team often needed specific information about a client, sector, etc., without having to access and navigate through multiple dashboards. Additionally, they wanted to minimise the learning curve and resistance to change.

[Commercial SQL Agent]

An agent based on AWS (Amazon Bedrock) was created, which, based on the client's information needs, can query the commercial DataLake, retrieve the data, and present information to the user in a rich format, including tables, charts, and text.

Key factors:

- **Integration with the client's corporate messaging tools** (Teams) to make the agent a seamless team member
- **Multilevel security integration:** role-based data access security, prompt security
- **Scalable multi-agent structure**, both vertically (more complex agents) and horizontally (new specialised agents)



GENAI FRAMEWORK: **SUPPORT MAILING AUTOMATIC PROCESSING**

The client had a set of mailboxes for handling incidents and queries, each requiring over 70 man-hours per week for responses. A system of agents was created to handle more than 90% of requests through a structure of specialised assistants.

[Support Assistant Architecture]

Based on a multi-agent architecture system:

- **Router:** Based on the user's request and context (if available), it selects the relevant support area or topic and directs the request to a specialized assistant.
- **Specialized Assistant:** Assistants responsible for handling specific types of requests. Four types of specialized agents were created:

  - **Semi-automatic response agents:** Based on a set of predefined responses (typically providing information about tool URLs) and customer data (retrieved from Active Directory or HR tools), the system delivers one of the predefined responses.
  - **RAG (Retrieval-Augmented Generation) agents:** Typically used for queries related to procedures, regulations, etc. The assistant retrieves relevant information from the client's private systems and provides an explanatory response.
  - **SQL agents:** Used when retrieving information through database queries is necessary (with or without data modification).
  - **Complex reasoning agents:** Required for connecting with APIs or multiple systems, involving a sequence of steps and complex reasoning.

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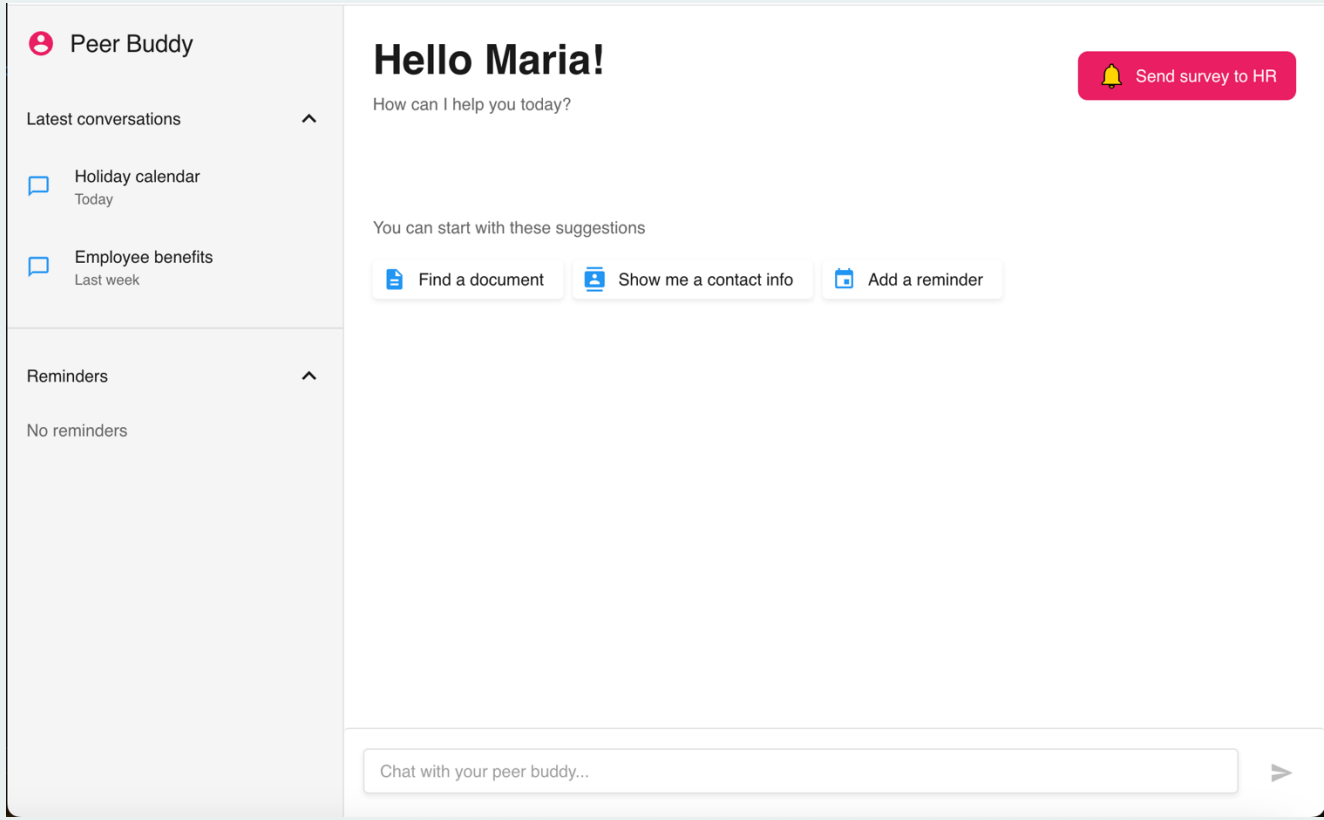
GENAI FRAMEWORK: **PEER BUDDY**

Employee support assistant providing guidance on company policies and regulations, meeting recommendations, HR insights, and employee satisfaction monitoring.

[Peer Buddy]

Creating a Peer Buddy is not just about building a chatbot. It is an intelligent agent equipped with tools to provide users with information and recommendations, including specific features such as:

- **Long-term memory:** Builds a real-time employee profile based on interactions, delivering relevant and personalized information in every conversation.
- **Sentiment analysis:** Monitors emotions and states to detect frustration, motivation drops, and other concerns.
- **Employee satisfaction tracking:** A tool designed to monitor and improve key satisfaction indicators during an employee's first months.



[Evolution]

Currently evolving to integrate with the company's Career Path, providing employees with information and recommendations for career development, as well as automated support for internal processes and procedures.

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GENAI FRAMEWORK: **OTHER USE CASES**

[Chatbot Migration: DialogFlow to GenAI]

Migration of an employability and training offer inquiry chatbot from a traditional DialogFlow-based system integrated with AWS to a GenAI architecture using LangChain and AWS Bedrock. This project not only enhances the chatbot experience by minimizing instances where it fails to provide a response but has also reduced support and maintenance costs by 70%.

[Technical Document Analysis (Internal)]

An assistant capable of analyzing papers, documents, and books on a specific topic, creating real-time query bots that enable thematic analysis, exploration, and recommendations on related areas of interest. Currently evolving towards automatic generation of tutorials and training materials.

[TalentMatch (Internal)]

An internal tool for matching job offers with candidates. The system automatically parses received CVs for a job opening, classifies them based on a predefined taxonomy, and prioritizes them according to the weight (importance) assigned by the user to each element. This ensures a personalized and weighted recommendation of profiles tailored to user preferences.

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FINANCIAL FORECASTING

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TIME SERIES FORECASTING: **APPROACH**

Mática has developed a framework for forecasting sales, financial KPIs, and inventories that enables optimization of financial planning, logistics management, and business strategy, as well as improving the monitoring and planning of commercial strategy.

Precise

Forecasts that exceed market standards (90-99% accuracy).

Proven

In over 100 markets and 1000 products.

Integrable

Deployed in less than 2 months and integrated into the client's systems.

Flexible and scalable

Short, medium, and long-term forecasts scalable to new markets and products.

Automated

Automated data analysis, preparation, modeling, evaluation, and monitoring.

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TIME SERIES FORECASTING: **CAPABILITIES**

Our framework combines **our forecasting library**, which automates and standardizes the most common and repetitive processes throughout the end-to-end forecasting development flow, **with the work methodologies and expertise** gained from our experience in global-scale forecasting projects.

1 LARGE-SCALE FORECASTING

Our library is developed in PySpark to solve large-scale forecasting problems.

2 AUTOMATION OF ALL PHASES

We have automated the processes of exploratory analysis, data preparation, model training, and model selection.

3 INTEGRATION OF EXTERNAL VARIABLES

We enhance our forecasts with internal indicators, as well as economic and contextual indicators.

4 CUSTOMIZED EVALUATION METRICS

We automatically and flexibly evaluate models with metrics that adapt to the context of each business and use case.

5 RESULTS EXPLOITATION

We integrate our results with visualization tools and existing tools to facilitate adoption and exploitation.

6 ITERATIVE AGILE METHODOLOGY

Iterative production deployments in less than two months of work.

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SALES VOLUME FORECAST

Forecast
01/03/2024

Year
Selección múltiple

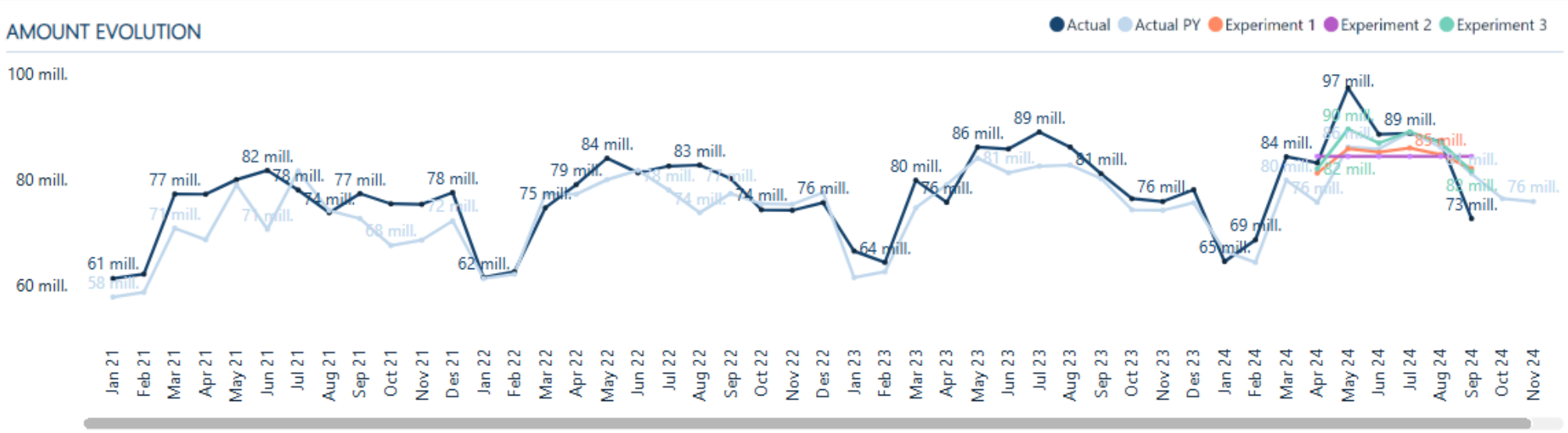
Month
Todas

Experiment
Todas

Country
Selección múltiple

Product
Todas

AMOUNT EVOLUTION



ACCURACY BY EXPERIMENT

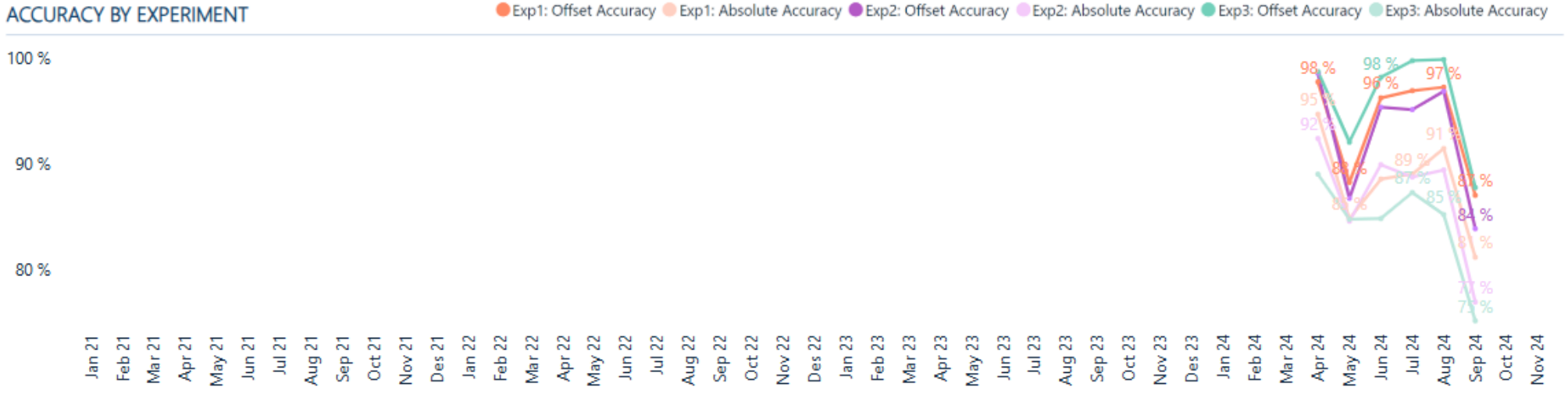


Image of a view of the sales forecasting project framework developed by Matica Partners S.L.

TIME SERIES FORECASTING: **SUCCESS CASES AND RESULTS**

Sales forecasts that exceed market standards.
(+95% accuracy)

Improvement of traditional manual forecasts.
(+80% of cases with a **+20% improvement)**

Over **1000 products** and more than **100 global markets.**

Long term
(18-month horizon)

+15 macro and microeconomic **explanatory variables.**

Deployment in **Cloud infrastructure** and **integration** with **planning tools.**

Deployment in iterations **of less** than **2 months**.

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AI GOVERNANCE

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By 2030, it is expected that 70% of organizations will have adopted AI-based solutions. This is why emerging regulations in this sector are setting the standards that companies must follow when implementing such solutions.

Our AI Governance Framework is designed to establish a structure around all aspects of AI to ensure its ethical, reliable, responsible, fair, secure, and transparent use.

AI GOVERNANCE: **BENEFITS**

OPERATIONAL

Operational Efficiency and ROI

Well-implemented AI governance, tailored to the needs and structure of the organization, can optimize internal processes, improve productivity, save costs, increase agility, reduce redundancies, and minimize inefficiencies, making AI development up to 70% more efficient.

Responsible Innovation

Ensures a competitive advantage by making AI developments sustainable and aligned with the company's values and goals, promoting sustainable growth, ensuring a balance between technological innovation and security, and preventing efforts from being underutilized.

Regulatory and Legal Compliance

Ensuring that AI systems comply with local and international regulations helps avoid legal issues, fines, sanctions, and potential lawsuits, which can result in costs higher than the initial investment in implementing AI governance.

Trust and Transparency

A responsible, transparent, and ethical approach, managing risks, compliance breaches, and ensuring fair and unbiased content production, enhances customer trust and strengthens the company's reputation.

Risk Mitigation

Identifying and managing risks related to transparency, biases, quality, privacy, and AI security minimizes the likelihood of incidents that could harm individuals/groups, damage the company's reputation, negatively impact customers, and incur significant financial costs.

REGULATORY

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AI GOVERNANCE: **KEY AREAS**

ORGANIZATION AND STRUCTURE
Structure, Roles, and Responsibilities needed to implement AI Governance within the organization

RELIABILITY - ACCOUNTABILITY

RISKS AND COMPLIANCE
Alignment with corporate risk management and ensuring established compliance

ETHICS AND FAIRNESS - EXPLICABILITY

TOOLS AND TECHNOLOGY
Tools and technologies to support the implementation of the AI Governance Framework

TRANSPARENCY – ACCOUNTABILITY

ACCOUNTABILITY – RELIABILITY

OPERATING MODEL
How AI Governance ensures responsible, transparent, and trustworthy AI throughout the AI system lifecycle.

RESPONSIBILITY – ETHICAL PRINCIPLES

POLICIES, PROCEDURES, AND STANDARDS
Definition of policies and procedures to support the implementation of AI Governance.

EXPLICABILITY – TRANSPARENCY

MONITORING AND AUDIT
Monitoring of AI systems in production, compliance, associated risks, and policies and procedures.

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AI GOVERNANCE: **IMPLEMENTATION METHODOLOGY**

INCREMENTAL AND ITERATIVE APPROACH IN 3-MONTH PHASES

1. AI Maturity Level Assessment

- Review the current AI governance model in the organization
- Review the existing AI strategy

2. AI Governance Framework

Policies and Procedures

Governance Structure

- Define key elements in the AI governance structure
- Define roles, responsibilities, and members of AI governance boards and committees
- Alignment and integration points with other governance structures

Operative Model

- Define evaluation criteria throughout the AI lifecycle
- Define core AI governance processes

AI Risks

- Review the existing AI risk governance
- Create a risk taxonomy
- Identify the most relevant AI risks
- Set objectives and metrics for risk management

Tools and Technology

Monitoring and Auditing

3. Roadmap

- Identify AI governance initiatives to be carried out
- AI governance initiatives roadmap based on priorities

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100 %

Regulatory Compliance

≈70%

Operational Efficiency

>50%

Cost Reduction

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Sucess stories

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SUCESS STORIES

COMERCIAL DATALAKE

WORLD LEADER IN
FOOD & BEVERAGES

Mática, in the last two years, has accompanied one of its clients in the scope of its new DataLake, from the initial conception to its implementation and subsequent support.

We have done the consultancy and technical advice, its construction, development of use cases, imple-mentation of processes, user training, change management and management and maintenance of infrastructure, from the initial needs to advanced aspects of security and privacy of data and good practices.

OPTIMISATION AND SUPPLY PLANNING

WORLD LEADER IN
FOOD & BEVERAGES

We ingest, clean, unify, harmonise, historicise and enrich in DataLake the sales data provided by different data sources with very different origins, both in terms of typology and granularity. All this in the shortest possible time, so that they can be consumed in very short time windows.

The consumption will be of more or less processed information: data scientists need less processed data than business users who are looking for information to present in their dashboards.

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SUCESS STORIES

IMAGE AUGMENTATION PROCESSING

WORLD LEADER IN
FOOD & BEVERAGES

An integration of information from image augmentation providers, together with the integration with a Next Best Action model, has been carried out to provide the commercial team with real-time information on the commercial actions to be carried out in the shop.

This information in turn has been integrated into the commercial DataLake to provide performance and performance measures as close to real time as possible.

PREDICTIVE MODEL FOR GAZPACHO SALES

WORLD LEADER IN
FOOD & BEVERAGES

Based on information as diverse as weather forecasts, sales history or the planning of marketing and promotional actions, we have provided a system that allows us to predict, both for a period of 2 weeks and for 11 months, the sale of gazpacho units, at SKU and retailer level.

The solution also allows us to show the incidence or level of correlation of each variable and achieves an accuracy level of 96.5% for a two-week period and 89.2% for 11 months.

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SUCESS STORIES

EUROPEAN QUALITATIVE AND QUANTITATIVE DATALAKE

WORLD LEADER IN
FOOD & BEVERAGES

Creation of the corporate DataLake where both qualitative and quantitative business information from more than 15 countries has been ingested, processed and modelled.

The information has been enriched through the integration of Cognitive Services, and analytical models have been implemented to carry out an automatic cleaning and deduplication of information.

FINANCIAL REPORTING

COMPANY IN THE
COMMERCIAL SECTOR

We developed predictive financial reporting models using analytical models on Databricks, integrated at the reporting level with Tableau to provide global economic insights to a multinational in the retail and food sector.

Machine Learning Ops productization with solutions available on both AZURE and AWS for continuous model integration, unit testing and continuous model delivery.

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SUCESS STORIES

BIGDATA & IOT IN THE BUILDING AND CONSTRUCTION INDUSTRY

NATIONAL CONSTRUCTION COMPANY

We have created an environment capable of loading in a Big Data environment the information received in streaming, both our own (sensors with Zeegbee technology installed in the buildings) and external information (mainly meteorological information).

Once we have enough information, we can apply analytical inference and business logic for the detection of thresholds that allow an early and preventive detection of anomalies with the same (quality of the concrete forge, humidity, etc.)

SIMULATION AND OPTIMISATION OF LOGISTICS

WORL LEADER IN RETAIL AND FASHION

With the aim of improving medium-term logistics planning, we developed a logistics centre simulator (digital twin).

Taking as a starting point the planning of the volumetries of both the number of garments and their inputs and outputs in the logistics centre, we provided a logistics simulator that anticipated how the optimal centre should be built, in terms of m2, mechanical elements of classification, sorting and distribution and the volumetries and organisation of storage in silos.

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SUCESS STORIES

RECOMMENDATION ICT VOCATIONAL TRAINING

LEADING FOUNDATION IN EDUCATION, EMPLOYABILITY, DIGITAL CULTURE AND VOLUNTEERING

After a first phase in which the employment and training map and the Foundation's virtual professional counsellor were built, Mática has started a second phase in which operational and maintenance costs are optimized and procedures are industrialized to focus efforts on pursuing the massive use of the tool by professionals as well as their recurrence.

In this second phase, analytical and predictive capabilities will be enhanced to offer, for example, a true "learning path" and improve omnichannel services.

PREDICTIVE MODEL OF SPORTS INJURIES

TOP 5 FOOTBALL CLUB WORLDWIDE

The aim of the Sportomics project was to create an injury prediction model that could predict the risk of each player in each football team from the data obtained via IoT in training sessions and from their metabolomics and genomics.

The study, in addition to providing a tool for identifying injury risk, identified factors with the greatest impact on the likelihood of injury for each player.

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ELECTRICITY GENERATION AND CONSUMPTION FORECAST

ELECTRICITY AND GAS SECTOR COMPANY

Creation of electricity generation forecast models depending on the generation technology (wind, solar, cogeneration, etc.) both in the short and long term, and consumption forecast models in Medium Voltage / Low Voltage.

This system allowed the client to forecast the load on the grid to plan corrective and maintenance operations, estimating the optimal moments of load on the grid.

REAL TIME ANOMALY DETECTION IN LOGS

LEADING TELECOMMUNICATIONS COMPANY

Anomaly forecasting through the application of classification models capable of processing log information in real time, classifying it based on its nature using NLP models and applying real-time anomaly detection models to detect both anomalous records and to search for anomalous structures based on the nature of the log.

This system allows the corrective areas to focus on the groups of logs that really constitute incidents and prioritize them automatically to increase efficiency.

MÁTICA partners

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