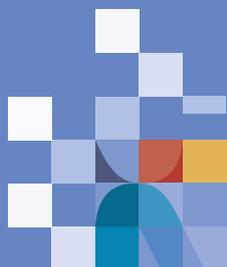




FUTURE
AT HEART

NTT DATA Data & Intelligence CoE



CONTENTS

**pag.
3**

ABSTRACT

**pag.
4-5**

1_ COE

**pag.
6**

2_ TEAM & SKILLS

**pag.
7**

3_ LINES OF ACTION

Strategy

Architecture

Solutions

Experimentation

Open Ecosystem

**pag.
14**

4_ A GUIDE TO START

Abstract

NTT DATA has created the Data and Intelligence Center of Excellence (D&I CoE) to support clients in addressing challenges and tackling hurdles when embedding D&I technologies to achieve business differentiation and technical excellence, thriving through the current fast-moving and dynamic market conditions.

In this way, the D&I CoE has the mission of being a:

- Know-how leader in the latest D&I technologies.
- Global innovation booster through a comprehensive offering based on our full-fledged expertise.
- Active contributor in the Open D&I ecosystem, fostering knowledge democratization and social impact.

These objectives are executed by our D&I CoE teams, integrated by multidisciplinary experts that share the uttermost expertise and work hand-in-hand to achieve a holistic approach, developing end-to-end D&I top-notch projects.

The CoE offers strategy services that align business needs with innovation, service design, governance, and advisory on architectures, enabling scalable models and customized solutions. Moreover, we leverage Hyperscalers' cloud specialized assets to accelerate time-to-market processes and to foster D&I capabilities and know-how combined with our experimentation work.

In this way, our clients benefit from personalized support, activating different services that best fit their current maturity level and set goals.



1_ D&I CoE

Organizations are navigating in the midst of the technological revolution, changing the rules of market competitiveness and framing a new era for all those who aspire to thrive in the market.

That is why data and Artificial Intelligence (AI) are key levers to drive technological innovation in order to achieve differentiation among competitors and generate continuous business value.

For this reason, NTT DATA has created its Data & Intelligence Center of Excellence (D&I CoE), where we support our customers address their organizational needs within this new competitive environment,

delivering D&I services, assets and accelerators that align a three-fold vision: cutting-edge **technological** capabilities, robust **strategic** practices, and sound **business** decision-making.

Vision

The D&I COE is the spearhead in the innovation arena, whose core focus is to provide advisory services by centralizing the differential capabilities of data and intelligence that provide excellence and technological maturity for our clients. For this purpose, we count on a multidisciplinary team of experts with in-depth expertise regarding technological innovation strategy around data and AI.

Mission

Know-how leadership: The D&I CoE leverages the observatory capabilities provided by the NTT DATA Research Institute to achieve expertise leadership by offering a holistic view of new market trends, latest Hyperscalers' developments, emerging customer needs, and market analysts' guidance.

Global innovation reach: we translate market insights into a D&I service offering that integrates end-2-end solutions, bringing together strategic, technological, and business insights, generating short-medium-term value impact to our clients, who operate in different sectors, industries, and geographies.

Social impact and engagement in the open ecosystem: The CoE fosters the evangelization and democratization of D&I knowledge, contributing to the promotion of the technological revolution, collaborating hand-in-hand with multiple stakeholders such as CIDAI, SERES, DigitalEs, academic institutions...

"We identify our client's maturity level and guide them throughout the entire journey to become a D&I-driven organization".

David Pereira
Head of D&I EMEAL

"We bring innovation to our customers' doorstep, providing differential and pioneering e2e D&I solutions."

Jacinto Estrecha
Head of AI Spain

"Our team's talent, expertise, and diversity of skills translates into successful project delivery and differential value to our clients."

Marc Sangüesa
Head of D&I CoE



NTT DATA
Living Lab



2_ Team & Skills

CoE's key to success and the differential value lies in its reduced and multidisciplinary team of experts. The diversity of skills and expertise of its members manage to cover all areas of Data and Intelligence, obtaining a global and holistic view of technologies combining strategy, business, and technology. The composition of the CoE includes four main types of profiles:



Data Scientist



Data/AI Architect



Data/AI Strategist



Data/AI Engineer

Following the CoE's mission, the team is focused on projects where their expertise is necessary due

to their avant-garde nature, continuous training, and research to be at the forefront of new technologies and spread their knowledge both internally in the company and externally.

In this way, CoE's team has an up-to-date and complete understanding of D&I executing end-to-end projects. Among the variety of activities performed, we have a broad range of service offerings to support each of our clients, attending to their needs and maturity level, along with research and investigation practices and engagement and enrichment in the AI ecosystem itself.

The different lines of action are:

- **Strategy**
- **Architecture**
- **Solutions**
- **Experimentation**
- **Open Ecosystem**

3_ Lines of Action

STRATEGY

D&I Strategy is the building block that shapes our vision of ethical and responsible use of data and AI, and an application that unites a deep understanding of business needs with the most innovative technological expertise. This allows us to perform an end-to-end solution approach and drive a thriving intelligent, and ethical business transformation in our clients' organization.

AI strategists participate in all the projects executed in CoE's pipeline collaborating hand-in-hand with the other teams in the Hub. The AI Strategy Team guarantees the proper alignment between the business objectives to be achieved and cutting-edge D&I technologies by defining a robust roadmap and governance practices that ensure the correct integration of the solution across the organization.

Thus, customers are backed with a set of accelerators, proprietary methodologies, and tools such as the AI Governance Assessment Framework, the AI-Driven Service Design methodology, and the AI Audit Tool.

Moreover, we also contribute to the CoE's market observatory mission, identifying changing customer behavior, tech trends, and upcoming developments to enrich and expand the overall COE's offering.

In addition to these activities, Strategy also collaborates with the rest of NTT DATA in the creation of global value propositions, works together with experts from different sectors in the verticalization of our solutions and offering, and participates in a variety of internal and external outreach activities.



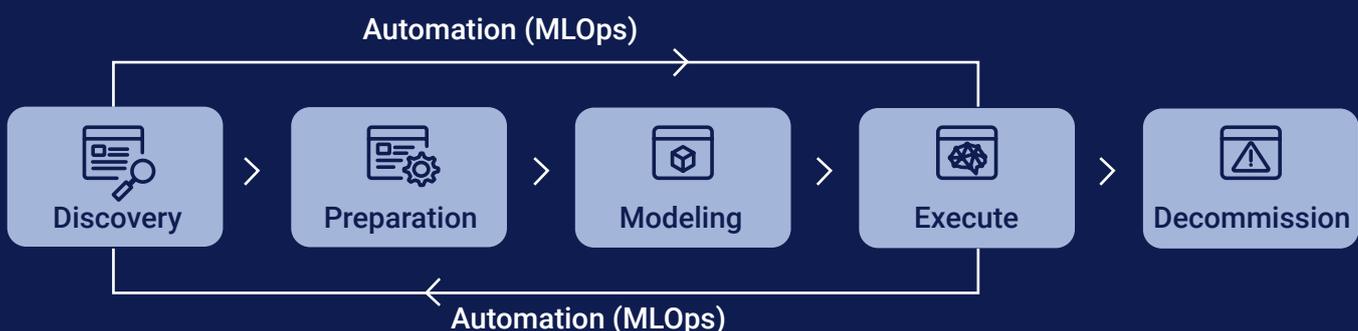
ARCHITECTURE

As organizations begin to scale advanced data and AI solutions, they face significant architectural challenges. That is why, at COE, we endeavored to carefully elaborate a specialized, differential, and mature AI and data architecture value offering, supporting our clients in the development and advisory of D&I projects.

Our D&I architects work relentlessly to define the best practices, standards, and guidelines, create reference architectures in the main cloud providers, and deliver packaged services, seamlessly addressing all the hurdles an organization may have (MLOps, DataOps, Data Management, Data Mesh, Data Fabric, D&I Governance...). Furthermore, our entire offering is verticalized, having experts specialized in different cloud providers as well as formalizing partnerships with Hyperscalers, such as:



Likewise, this area stands out for its unique practice of MLOPs, integrating sub-services of solutions benchmarking, maturity assessment, and automation of processes, tailoring them to each client's maturity level, managing to speed up the deployment of the architecture. In this matter, NTT DATA Spain is the first company included by Google Cloud in its MLOps accelerator program.



SOLUTIONS

New Artificial Intelligence technologies pose complex challenges to our customers; that's where the CoE experts come into action to support different projects through their knowledge of the most advanced techniques and their experience in innovation.

There are several types of projects launched from the Solutions area: from an advisory about leveraging new technologies to tackle an organization's challenges by creating something from scratch or redirecting a project already started, to help scale a PoC or even participating in the client's innovation process.

We leverage cloud capabilities that serve as a base to later aggregate our own know-how and build customized solutions to best serve our clients.

SOLUTIONS EXAMPLE: Computer Vision

Each technique or area of expertise has its own challenges and particularities. For example, Computer Vision is an emerging technology with great potential to ease and automate human tasks. Beyond the technological limitations, a great challenge for any organization is to find the ideal application to take full advantage of it, which is why we support them with advisory work.

"Our vision of creating tailor-made solutions based on outstanding know-how in different areas allows us to go beyond the hype of AI and truly bring out its full value"

Corin Navarré
Manager @ D&I CoE



Natural Language Processing

Another example of techniques worked from the CoE are those related to Natural Language Processing (NLP). CoE provides in-depth NLP expertise to support clients' complex challenges while building collective knowledge and developing best practices to guide the use of NLP in all the company's projects.

Furthermore, CoE is pushing the creation of the verticalization offering of NLP technologies by industries or business domains, saving valuable time and reducing efforts to NTT DATA's clients.

These verticalizations allow to build agile customized solutions, such as co-official languages, specific vocabulary of a field or even organization, being more effective with less data, etc.

Assets

Once the solutions are mature, have a high degree of acceptance in the market, and address detected needs, the CoE launches new assets that help reduce time-to-market for specific capabilities. After CoE's efforts, NTT DATA specialized teams take over the maintenance, management, and further evolutions of the assets.



Dolffia

Unlocking unstructured data with NLP
by NTT DATA

Success story: Dolffia

An enlightening example of this is Dolffia, an AI-based product that allows the user to understand language, learn and assist in decision making by unlocking information from unstructured sources. In addition, it allows automating customer interaction processes, streamlining internal Backoffice procedures, and helping employees with tasks such as documentation search.

Other assets are Edison, a dynamic pricing solution based on Reinforcing Learning; Underwriting, a solution for life insurance underwriting; and Lumen, a platform covering the AI lifecycle.

EXPERIMENTATION

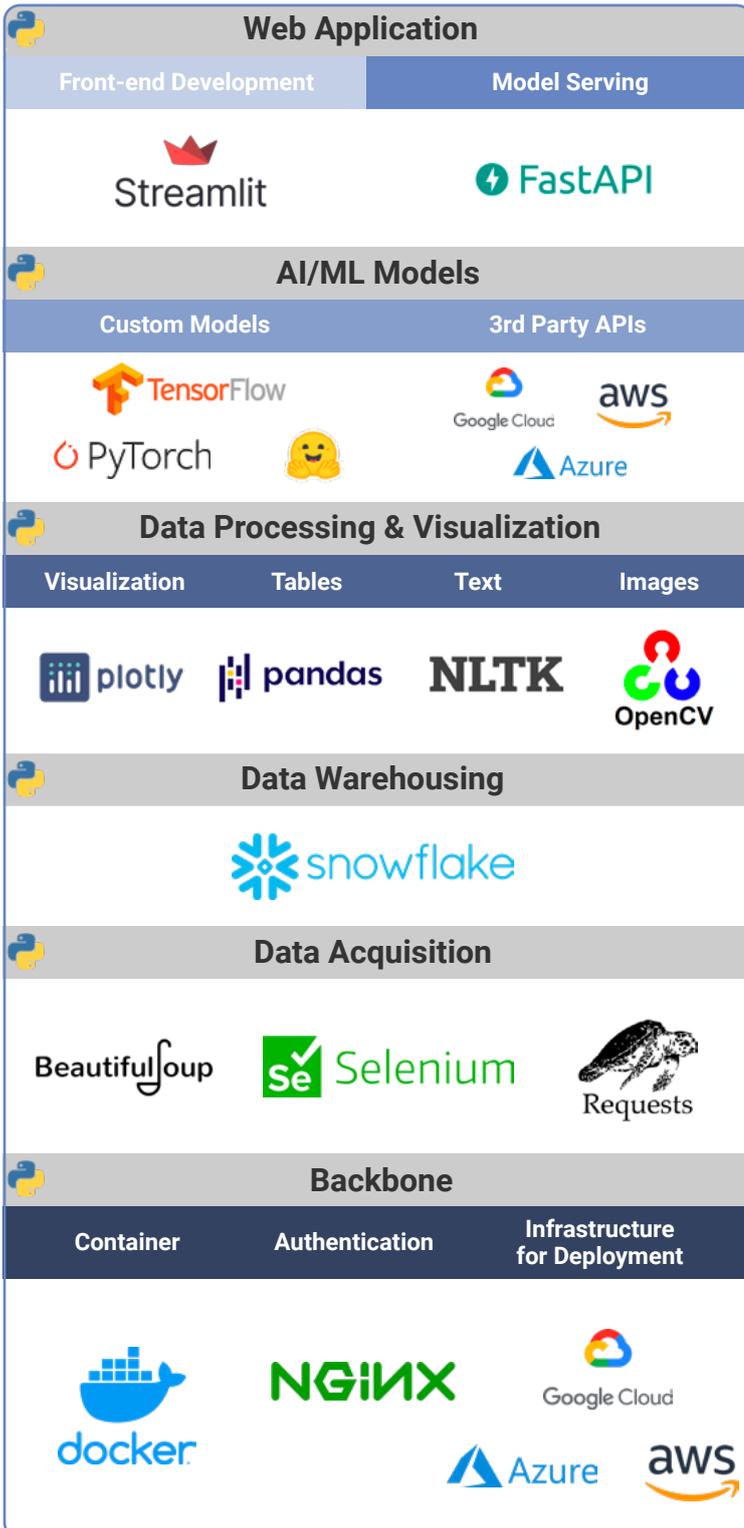
As we have seen, the D&I market is very dynamic, new techniques and libraries emerge every day and providers are eager to rapidly develop new solutions. At CoE, we believe in the culture of AI experimentation to transform technological foresight into concrete applications and services that deliver outstanding customer experiences and generate differential market competitiveness.

Prototyping

To speed up the experimentation process and support our clients unlock the value of data and AI, we have a Prototyping lab and Showcase that harness a comprehensive AI technology stack, which combines Python data stack with vendor products and cloud AI solutions to know and experiment with new discoveries

We also have a branded methodology called AI-Driven Service Design and Prototyping Studio, which revolves around three key levers paramount in our experimentation process: perform a thorough market scan, unlock the power of internal and external data to create robust AI models, and enhance stakeholders' experience. This results in the delivery of a one-of-a-kind PoC, reducing time-to-market and saving the company's resources.

Currently, the NTT DATA's Showcase, comprises more than 20 AI use cases, to display our robust AI capabilities; inspire our clients to drive D&I-powered innovative solutions, and boost our know-how by testing different AI-related technologies.





OPEN ECOSYSTEM

Technology advancements are developing at a skyrocket velocity in the Data & Intelligence field, unleashing a tsunami of innovation. The best way to boost business innovation is by harnessing the Open Ecosystem, where groundbreaking ideas, unexploited data, fresh capital, and cutting-edge AI services and solutions are waiting to be exchanged. From the CoE, we actively participate in the AI ecosystem in different areas and levels:

Knowledge Democratization

The first level of dissemination is at internal **NTT DATA training**. CoE experts continuously share discoveries and knowledge generated in their daily work with other CoE colleagues and NTT DATA's teams. This ensures that the expertise generated permeates throughout the organization and ensures that the latest advances reach all our customers.

Next comes the **customer level**, with whom we provide training and share our expertise during each project development. In this way, we achieve a common grounding point, which facilitates the creation of new solutions and promotes successful change management.

On the other hand, we participate in all kinds of activities with **third parties**: hackathons, events, talks, and conferences. Our experts are an active part of the ecosystem, democratizing the use of new technologies, concepts, and trends.

Innovation collaborations

The maximum expression of participation in the D&I ecosystem is our involvement in a wide range of collaborative projects:

NTT Data is a founding partner of the initiative and participates in all CIDAI working groups, becoming a driving force for new projects with great potential for the country's companies."

Marco Orellana
CIDAI Manager



In the AI LabS, we develop frameworks that empower organizations to comprehend ethical and social challenges to implement a Responsible and Inclusive AI.

Beatriz Gómez-Escalonilla
Director of Development at Seres



NTT DATA is a **partner of CIDAI**: Data Tech and AI Innovation Center in Catalonia. From this digital innovation Hub, we work in researching advances in Data and Intelligence by creating disruptive Proofs of Concept. For example, we investigated the state-of-the-art of homomorphic encryption as a tool to increase data security and confidentiality and graphs to improve AI models.

We are also **participating in Adlife**, a European Horizon 2020 Project that seeks to improve the health and quality of life of the elderly population suffering from advanced chronic diseases. In Adlife, our experts are working to implement ML models trained with Federated Learning techniques to guarantee the privacy of the different hospitals' data while empowering the doctors with valuable data and prediction.

Together with **Fundación Seres**, an entity that seeks to promote Social Responsible practices among enterprises, we have created **the Labs for a Responsible AI**. In this sense, the most worthwhile projects include the publication of "LabS Decalogue for a Responsible and Inclusive AI"; and "The design of AI services with a human-centric approach"; and "The design of AI services with a human-centric approach". Our experts also participate in the Radar Seres forums.

NTT DATA is also a member of DigitalES, the Spanish Association for Digitalization. Among the many initiatives led by DigitalES, CoE members participated in the creation of the IA Healthcare Ethics Report.

4_ A Quick Start Guide

As we have seen, we have reviewed the different capabilities, skills, and knowledge fostered in NTT DATA's D&I Center of Excellence. Thus, from the Hub we seek to empower all our clients with D&I capabilities by embedding them throughout their organizations and accelerating the processes by harnessing methodologies, accelerators, and Cloud capabilities.

To achieve this, we treat each client on a case-by-case basis, **understanding the level of maturity from which they start**, the objective to accomplish, and the hurdles to overcome. In other words, we understand what clients are looking for and how the COE can provide personalized support.

○ Take your first steps towards

We understand that the client does not have built-in AI services but is looking to take its first step with confidence and determination. Therefore, we offer our services of strategy definition, roadmap and AI journey ideation while keeping in mind the regulatory requirement compliance and ethically responsible practices.

○ Speed up innovation and experimentation

Our clients seek to go a step further, materializing technologies and business cases through rapid experimentation and prototyping, validating the actionable value that AI delivers to organizations.

○ Bring your AI initiatives to Scale

We help our clients implement scalable solutions from a business and technological architecture point of view, seeking to cover the end-to-end solution lifecycle and scale through MLOps and governance practices.

D&I COE TEAM

EXECUTIVE TEAM

Marc Sangüesa
Manager

Corin Navarré
Manager

Jose Perona
Lead Engineer

STRATEGY/AUTHORS

Marta Pastor
Lead Analyst

Rose Barragan
Analyst

Oswaldo Llovet
AI Storyteller

SOLUTIONS

Ignacio Barahona
Manager AI Assets

Mohammed Adil Moujadid
AI Innovation Manager

Nohemy Pereira Veiga
Expert Data Scientist

Fiorella Carla Dotti
Expert Data Scientist

Marina Alonso
Data Scientist

Marilena Budan
Data Scientist

Sara Diaz
Data Scientist

Jaime Franjul
Data Scientist

Marcos Fernandez
Data Scientist

ARCHITECTURE

Pablo Martin
Chief Data Architect

Francisco Javier Motos
Expert Architect

Julio Conca Pastor
Expert Architect

Alejandro Oliva
Architect

Gerard Reverte
Cloud Architect

About NTT DATA

For 2021 Gartner's Magic Quadrant, NTT DATA has been named a Challenger service provider. This supports NTT DATA's goal to help clients maximize their business value through technology implementation expertise, innovation practices, and trustworthy Data and Intelligence (D&I).

The company shares the Innovation DNA as part of NTT Group, which boosts the innovation in the open ecosystem and fosters responsible AI across its operations.

As a trusted global innovator, our values come from "consistent belief" to shape the future society with clients and "courage to change" the world with innovative digital technologies.

Key Contacts



DAVID PEREIRA PAZ
Head of Data & Intelligence EMEAL



JACINTO ESTRECHA
Head of Artificial Intelligence



MARC SANGUESA PUIGVENTOS
Data & Intelligence CoE Manager

JULY 2022