

NTT DATA AI Labs

An innovative approach to identify AI-driven initiatives
and bring prototypes to Scale



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Executive Summary

In a context of fast digitalization and high-speed technology development rollouts, speeding up innovation and unlocking the full potential of D&I initiatives have become the north star for many organizations.

Even, under this scope of technological solutions burst, business managers and technological leaders struggle to productize and scale AI projects because they lack the environment and the tools to create and manage a rapid testing and production of scalable AI prototypes, that promote agile and continuous innovation while fostering continuous business value throughout the organization.

Thus, in order to keep up with the market's fast pace, ensure a successful product differentiation from competitors, and motivate the preference of an increasingly demanding customer profile in interacting with your organization, we support our clients to lead the market with avant-garde scalable Digital Intelligent Services fresh out of the oven thanks to our NTT DATA AI LABS.

The AI Labs offer a 3-block approach for ideating fast AI initiatives that tackle the business needs and technological hurdles in an innovative way, involving a wide range of critical roles under a common working methodology for the development of D&I projects, and finally, leveraging cloud capabilities that can be embedded throughout the entire AI Lifecycle that enable to scale Digital Intelligent Services.

We support our clients to envision how technological innovation can be embedded in their organization and bring scalable Digital Intelligent Services to the forefront.

DAVID PEREIRA PAZ
Head of Data & Intelligence Europe

Chapter 1

Discover Our AI Labs



1.1 Tackle the organization's pain points with our AI labs

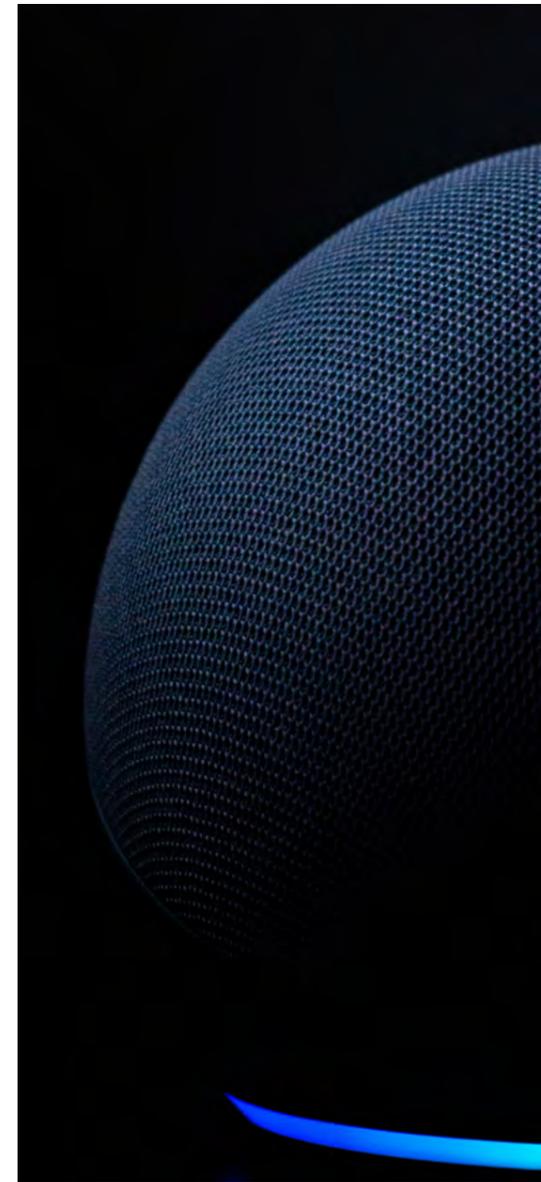
We live surrounded by Digital Intelligent Services, from receiving recommendation on what products to buy or music to listen to, to getting the best route based on real-time road constraints. Like this, thousands of algorithms work to make our lives easier without us even realizing it.

However, while many organizations are attracted by the hype generated by these AI solutions, many are still juggling to achieve a working AI prototype, not knowing what it will lead to or how to integrate into a robust AI journey. Hence, some of the areas, where they especially struggle, may be:

- Understanding what solutions and use cases pre-exist in the marketplace that address these same challenges.
- Having difficulty getting to grips with which use cases have the greatest impact and value.
- Identifying how many use cases there are that affect business units
- Evaluating the technological maturity of in-house solutions with those currently available in the marketplace
- Orchestrating the variety of profiles involved in creating new AI-driven initiatives.

At NTT DATA, we support organizations across all sectors to lead, accelerate and elevate their Digital Intelligent Services to foster market differentiation and customer's preference for an increasingly competitive market.

For that, Our AI Labs are an innovative approach that allows identifying which AI initiatives can best serve our client's strategic business objectives, rapidly experiment to develop Data & Intelligence (D&I) prototypes with Cloud technologies and take them to scale as Digital Intelligent Services, leading to higher levels of innovation and business value realization.



1.2 Why leverage AI labs

Objetives Differential Value Of Our AI Labs

-  IDENTIFY opportunities and needs by working with the organization's business units.
-  DESIGN advanced data and intelligence solutions to capture these opportunities.
-  DRAFT a business case and roadmap for each opportunity, in order to obtain approval for its development.
-  ENFORCE AND DEPLOY the end-to-end of the approved initiatives, generating the corresponding documentation.
-  ENSURE the follow-up, maintenance and impact measurement of initiatives, transferring knowledge to the internal team.

Benefits

Generating business value

- Translation of business questions into actionable Data & Intelligence driven prototypes and services.
- Generate new insights from AI-driven initiatives to support decision-making in business areas and move towards a Digital Intelligent model.

Driving incremental revenue potential

- Unlock the value from data by creating rapid Proofs of Concept (PoC) that ultimately reduce the time-to-market of final products.
- Encourage innovation leveraging AI Cloud capabilities, shortening experimentation cycles, and avoiding high internal development costs.

Fast-tracking experimentation

- Accelerated experimentation through visually compelling prototypes with curated storytelling.
- Orchestration of resources(data, infrastructure) and talent for taking AI services at Scale.

Investing in avant-garde solutions

- End-to-end conception and development of services and products embedding AI.
- Multidisciplinary expert teams, that also advise on human-centric, trustworthy & responsible AI systems, by following ethical guidelines from the ideation stage.

AI Labs provides a differential factor that brings an aggregating vision, enabling our clients not to start from square one and attain continuous business value.

JACINTO ESTRECHA
Head of Artificial Intelligence Spain



Chapter 2

How do we bring AI labs AI to scale

2.1 Methodology

AI Labs is paramount for speeding up the organization's AI Experimentation, ideating, testing, and innovating advanced AI solutions. For that, our AI Labs AI Labs leverage a 3-step methodology approach focused on identifying potential AI initiatives that drive the most value for the organization, prototyping those with the highest viability, and taking them to scale with minimum effort.

AI BUSINESS VALUE

- 1 Business units' alignment on what should be understood by AI capabilities and innovation.
- 2 Business Value Scan, benchmarking all AI-driven applications that offer the most potential value.
- 3 Selection and fine-tuning of the AI initiatives, defining the scope and feasibility for prototyping.

FAST PROTOTYPING

- 4 Development of the analytical model leveraging AI capabilities in the cloud.
- 5 End-to-end solution testing, upon which, the results serve as a reference for the evaluation of the business case.

AI AT SCALE

- 6 Architectural Design: Define the feasibility and profitability of the initiative, and understand how to integrate it into the infrastructure.
- 7 Deployment: Production release, and integration of the model with data sources and operating systems for consumption at scale.

OUR APPROACH

Our Business value Methodology helps you understand what type of D&I use cases fit best the technological maturity of the organization and tackle the unit's pain points

Leverage the Prototyping Methodology to implement ideas into tangible products, refining, validating, and releasing only the right ones.

Define the MLOps Framework for the chosen D&I solution, addressing the potential risks involved in putting it into production and ensure the scalability of AI solutions.

2.2 Scale your AI labs with cloud capabilities

The AI Labs is conceived as an ongoing journey, in which different capabilities are continuously explored for specific innovation purposes. This exploration shapes the overall understanding of the AI Cloud market, allowing our clients to leverage Cloud providers' market-ready tools and capabilities from their service catalog for AI developments.

As a result, our clients avoid in-house research & development high costs and concentrate their talent and funding on the quest for the most adequate ways to solve the business challenges they face. It is possible to embed cloud solutions in the AI lab process, depending on one's organization's needs, objectives, budget, and technology maturity level, through four different approaches.

END-TO-END INTEGRATION

AI Cloud offers a fully managed development environment and infrastructure integrating the most advanced tools for maximum control and efficiency over the AI lifecycle.

PLUG & PLAY

Access to pre-trained analytical models and applications, available for agile adaptation to specific business needs, generating a highly reproducible prototype within the organization.

SCALABILITY

AI Cloud facilitates automatic scaling of AI solutions to successfully serve as many predictions as needed as well as accessing large volumes of data seamlessly from development environments.

PAY-AS-YOU-GO

AI cloud capabilities allow matching the consumption of AI services to your demand, allocating resources more efficiently, and driving greater cost efficiency for companies.

Cloud capabilities underpin harnessing market-ready solutions that can be integrated into the AI Labs workflows seamlessly and at a smaller cost.

ADIL MOUJAHID
Innovation Technical Manager at CoE



Chapter 3

Our Operating Model



3.1 Critical roles

At the same time, the AI Lab is conceived to orchestrate an AI operating model that involves the different participating roles under a common working methodology for the successful development, implementation, and consumption of AI initiatives.

Thus, we rely on the expertise of a multidisciplinary team of experts that range from subject matter experts and business translators to AI professionals, including data scientists, data engineers, and MLOps architects.



AI Project Manager (AI PM)

They use their domain knowledge to manage the end-to-end of an AI project: defining the project's objectives and KPIs, assessing the viability and time delivery, establishing milestones and tracking progress, overcoming glitches, and setting the project's budget and roles involved. Moreover, they ensure AI solutions generate outcomes that can be interpreted by business units and communicate them in order to foster AI adoption.



Business Analyst (BA)

Business analysts use their business and technical knowledge to help business leaders identify viable use cases that address key business problems. In addition, they may conduct market analysis for supporting the case definition. This role supports data scientists understand the business goals of the projects and translate model insights into business insights during model development.



Data Engineer (DE)

They focus on identifying data sources, analyzing the quality of the data, cleaning up data sets, and implementing requests that come from data scientists, especially in the line of transforming data (e.g. create feature engineering) based on model requirements. Moreover, a data engineer develops data pipelines that simplify and automate data flows and data transformation and identifies major sources to consolidate data for analytics.



Data Scientist (DS)

A Data Scientist extracts valuable insights from data using sophisticated statistical learning techniques. They are the solely responsible in charge of ML models' development and collaborate closely with the engineering team to prioritize data transformations for training data and features for prediction.



ML Engineer (MLE)

They are in charge of validating, refactoring, and optimizing the productivity of models, as well as running periodic maintenance check-ups of the model. Furthermore, they optimize ML models for performance and scalability, by automating the ML pipeline, from data ingestion to prediction generation, as well as, deploying them into production to ensure repeatable and dependable operation.



Visualization Expert (VE)

On the one hand, they are the highest experts at translating data into charts and graphs that are useful for both AI technical teams and end-user in delivering visually engaging prototypes. In other words, they make sure that visualization tools are interpretable and relevant for each stakeholder, supporting AI design needs. Additionally, this role also supports the maintenance of dashboards and reporting.



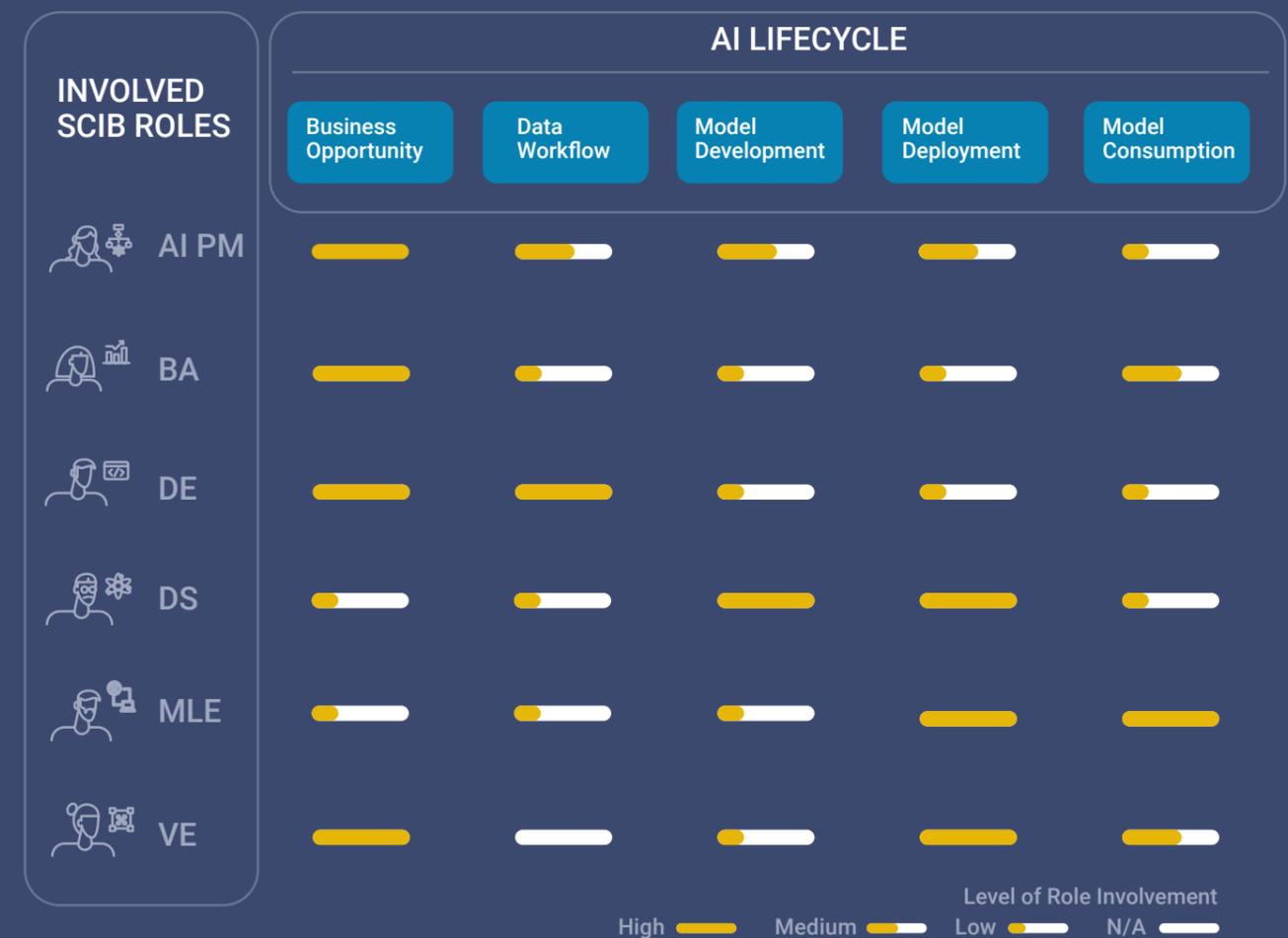
3.2 Responsibilities across the AI lifecycle.

The AI labs counts with a **technical and strategic expert team whose mission is to spearhead innovation to lead the way with avant-garde AI solutions that can scale.**

MARC SANGÜESA
Head of D&I CoE

With the aim of streamlining ongoing experimentation and scaling AI prototypes, it is essential that the daily activity of the different roles involved in the AI lifecycle is optimized through tasks and clearly documented.

That is why, our robust AI Labs organizational model oversees the entire AI lifecycle, identifying which critical roles tackle the challenges and pitfalls per each phase, avoiding incurring in overlaps, misunderstandings, and tasks that do not correspond to the specific profile. As a result, it overcomes delays in development and errors, and attains successful projects with a high stakeholder engagement.





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.

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