seres
fundación sociedad y empresa responsable

LabS
IA RESPONSABLE E INCLUSIVA

NTT DATA

AI Labs

Designing AI Services for people

CONTENTS

""The future of responsible and inclusive AI lies in our ability to orchestrate a model focused on people's needs.""

Introduction

Context and trends

The use of Artificial Intelligence (AI) is increasingly widespread, and companies are expressing growing concern over the need to use AI responsibly, while taking advantage of all the potential it offers to businesses and users.

The future of responsible and inclusive AI lies in our ability to orchestrate a model focused on people's needs. That is why, in the first edition of the Responsible AI LabS, held in 2020, we developed a series of Common Principles in which we stressed:

"We support an approach to Artificial Intelligence which, from the design stage, places people at the centre of the opportunities and benefits."

At SERES and NTT DATA we firmly believe that design can help bridge the gap between the repercussions of algorithms and the creation of a new model of human-machine collaboration.

Consequently, in this second edition of the LabS, we have focused on designing people-centric AI services. We have decided to do this by focusing on the banking and insurance sectors, working hand in hand with companies in them.

Because of their intense customer interaction and the availability of large quantities of data, the banking and insurance sectors are liable to undergo major transformations with the advent of AI, and will probably design services that embed this technology. Below are guidelines for doing this ethically and responsibly.

Banking and insurance: industries in transformation thanks to AI

57% of banks use AI in onboarding processes"

- Corporate Banking Out-look 2022 -

The correct use of AI offers opportunities to respond to some of the main challenges faced by these two sectors. For example, the existence of increasingly demanding customers, data and information analysis or the emergence of new players in the market, such as fintech and insurtech.

In the case of the banking sector, according to the Corporate Banking Outlook report developed by NTT DATA, 57% of banks worldwide already use AI systems in production to streamline new customers' onboarding processes. (1)

Meanwhile the insurance sector is being affected by its own technological revolution with a large increase in insurtech companies. According to the Insurtech Global Out-look 2022 developed by NTT DATA, investment in AI for designing new products and services exceeded 500 million dollars last year. (2)

In this context, the ability to develop people-centric AI services becomes crucial, and the banking and insurance sectors are the ones that can benefit the most from their use.

(1) Global Research into Corporate Banking's Future, NTT DATA, 2022 https: // uk.nttdata.com/insights/reports/corpora-te-banking-outlook-2022

(2) IInsurtech Global Outlook 2022, NTT DATA, 2022, https: //insurtech-insurance. nttdata.com/four-forces/insurtech/va-lue-chain/product-design-development/

AI LABS 4

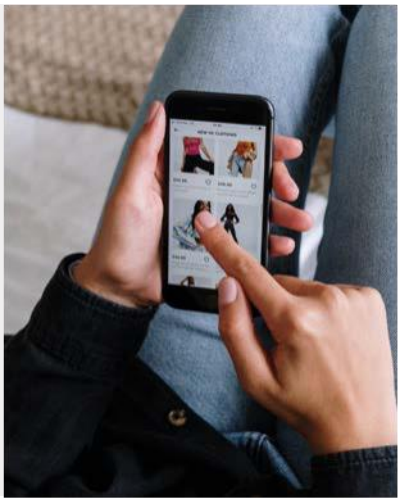
LABS 2022

On 27 April 2022, SERES and NTT DATA held the second LabS session focused on people-centric AI design. Over 30 participants from 10 companies in the banking and insurance sectors (BBVA, Caixabank, DKV, Freshfields Bruckhaus Deringer, Generali, ING, Mapfre, Sabadell, Santalucía and Santander) attended the session, in which NTT DATA's AI Driven Service Design methodology was explained. Practical examples of AI services with an anthropocentric design were given, as was a live demonstration of prototypes that apply responsible design principles.

Together with the participants, representatives of the most important banking and insurance companies in Spain discussed AI applications created to meet people's needs:

How to benefit consumers by better leveraging the value of data?

Currently, organisations waste a lot of information through manual data extraction processes. AI can unlock and structure critical information and obtain high-value insights on how to reinvent the consumer experience and offer a personalised and differential service.



How can we reduce hazards and ensure a quality work environment for employees?

Another point of interest is the development of AI solutions for preventing occupational hazards. These solutions can identify and analyse the hazards present in the work environment and determine tasks' potential for injuring workers. This enables companies to redesign jobs to improve their workers' safety.

During the workshop, the participants took part in a group discussion that yielded the following information:

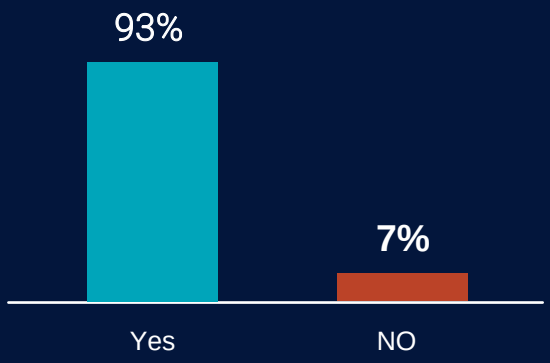
93% of attendees are currently working on AI services for people, either for customers or internal users, and 80% say they take user experience into account when designing services.

These services are seen as an opportunity to improve customer service (47%), comply with ethical codes and the CSR plan (24%), improve their market positioning (16%) or to respond to regulatory requirements (13%).

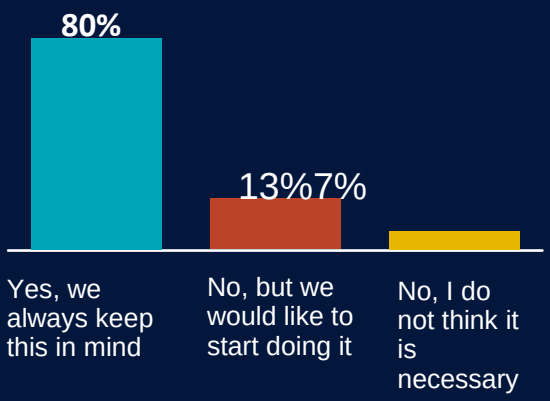
In most cases, the user experience is considered when designing these services.

As barriers to implementing AI services in their organisations, attendees stressed factors such as complexity, data protection, regulation, access to information, talent shortages, time constraints or resistance to change.

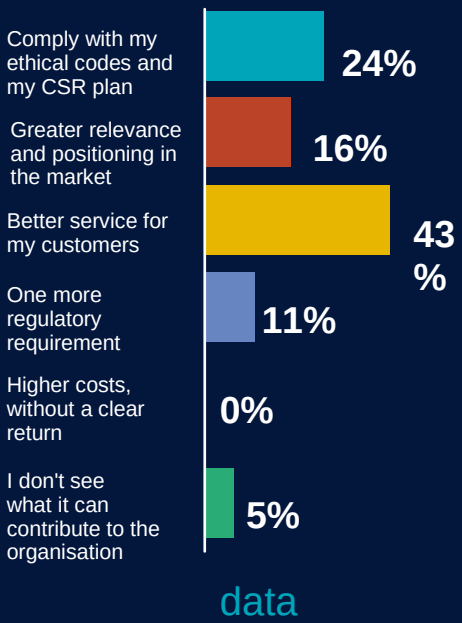
1. Is your company developing or has it developed AI-based services for end customers or internal use?



2. Do you consider the end-user experience when defining and designing your AI services?



3. From a strategic point of view, what does the idea of designing services built on responsible and inclusive AI mean to you?



4. Based on your experience and role, what challenges or difficulties do you encounter when proposing or developing AI-based services

AI Service Design Methodology

NTT Data has created an AI Service Design methodology to respond to companies' needs, helping to create anthropocentrically designed AI-driven solutions.

This methodology combines business strategy with the design and development of solutions to identify, define, test and scale new digital services.

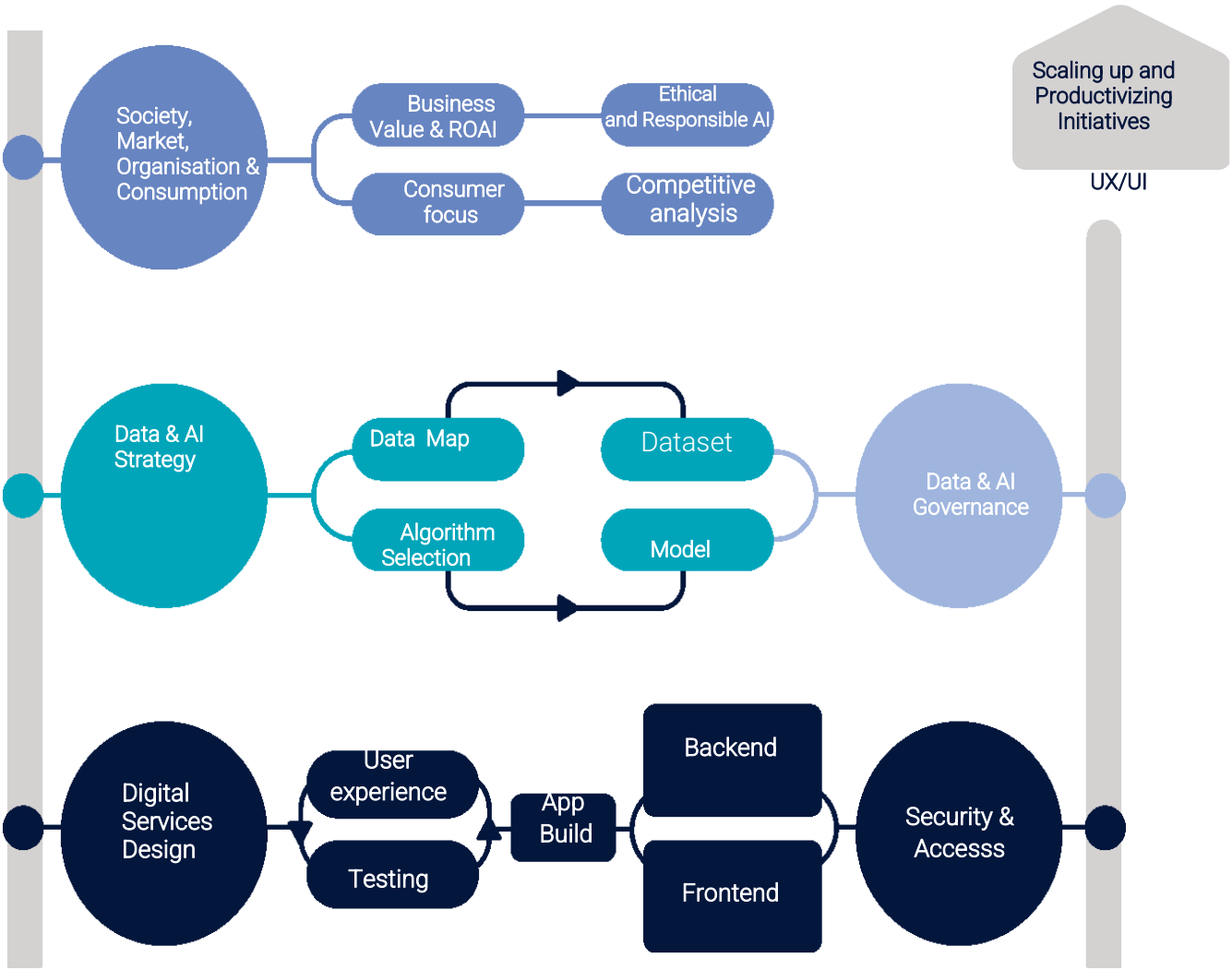
The idea is to accelerate the innovation process, creating initiatives based on identified market trends, considering the company's nature and objectives and above all, addressing the end user's specific needs.

All this is done from a practical perspective and it quickly and effectively creates functional prototypes that can be iterated and scaled up to reach a solution in production.

Executing the methodology requires the collaboration of a multidisciplinary team of experts in industry, design and technology under a collaborative model that leverages all the knowledge of the several areas to design tailor-made solutions.

For those who did not attend the labs, the following sections of this document present the foundations of the methodology using practical market examples for the banking and insurance sectors.

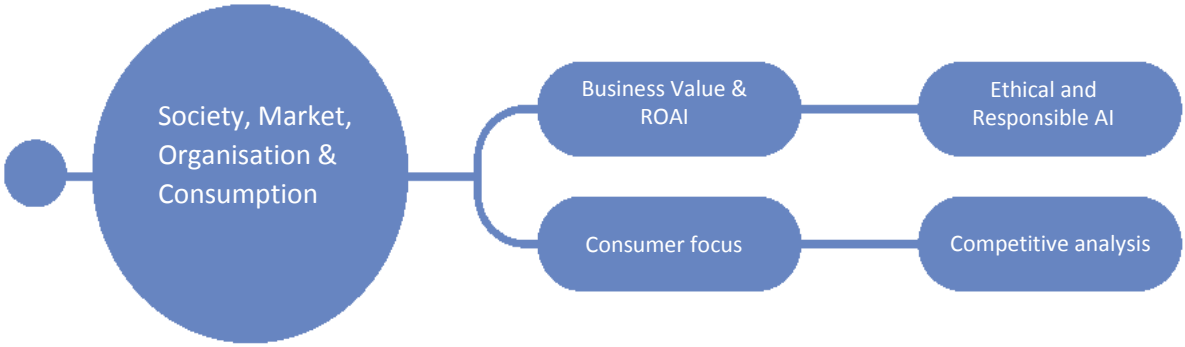
NTT DATA
AI Service Design Methodology

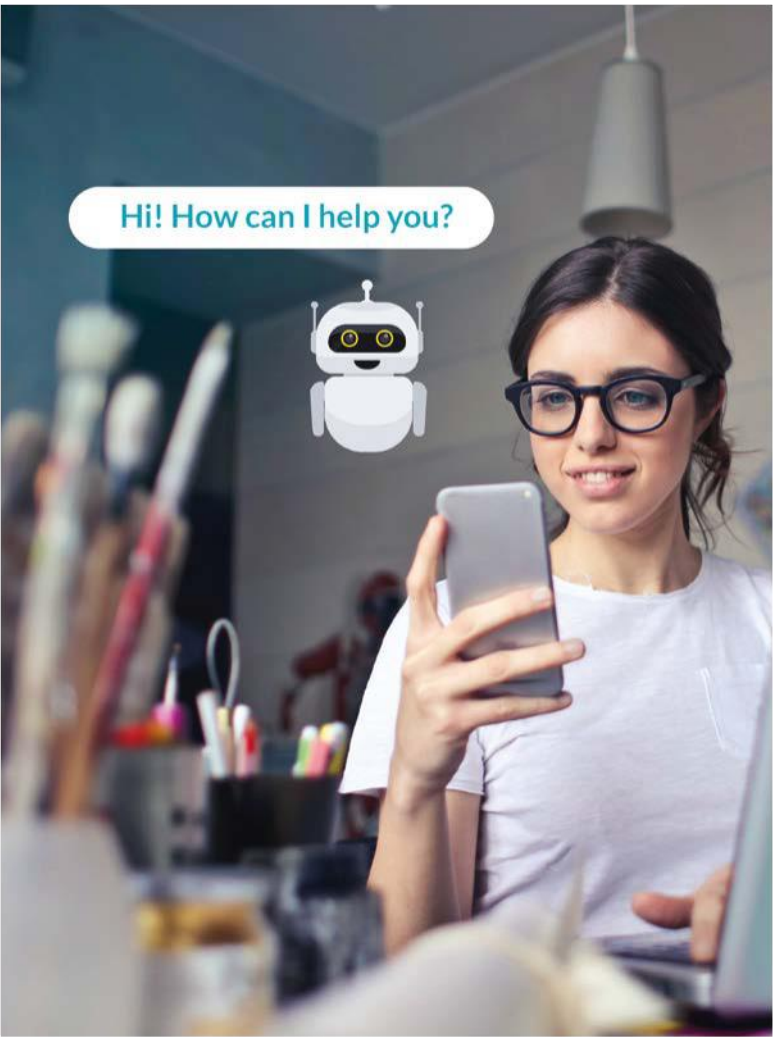


From human needs

Because it can generate value by taking into account four essential factors, the initiative's viability is guaranteed in the first phase of the methodology. The factors are:

- Society: evaluating the repercussions while preserving ethical principles.
- Market: knowing the unmet needs and being aware of how other actors are responding.
- Organisation: seeing how the initiative fits in the company's ecosystem.
- Consumer: focusing the design of initiatives on end users' real needs.





MARKET EXAMPLES

In the real world, one of the major needs of most companies is to meet the increasingly exacting consumer demands for personalised customer service in real time, regardless of the time or place of interaction.

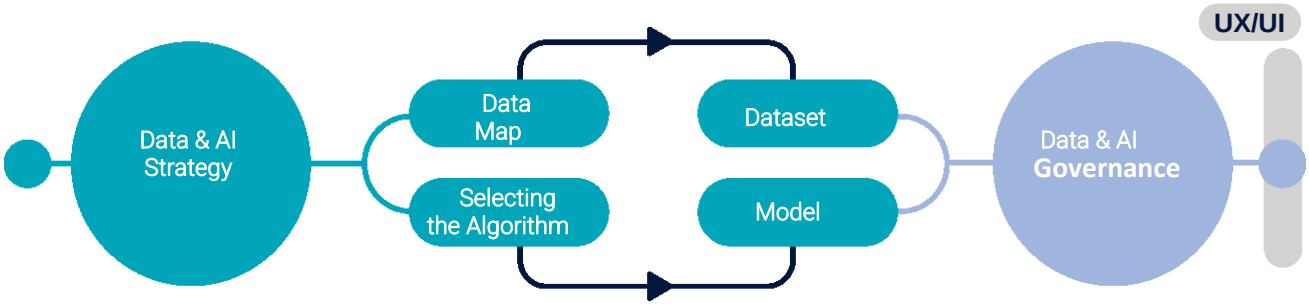
That is why chat and telephone assistant bots are part of the vast majority of organisations' Customer Services. However, customer needs must be considered when designing the bots to avoid creating a generic application or one whose lack of quality upsets consumers.

To overcome this obstacle, some banks have chosen to create tailor-made virtual assistants, accessible through all communication channels and equipped with advanced Natural Language Processing (NLP) capabilities that can measure the client's satisfaction by interpreting the context, emotions and tone used. They can also perform all types of banking operations.

Through internal and external insights

There is no AI without data. To start designing need-based AI solutions, we need to know what data is available for creating and nurturing the model. These may be internal (belonging to the organisation itself) or external (purchased or acquired from public repositories), but they must always respect and protect people's privacy.

Once the data have been identified, they must be processed and prepared so the model can be trained and subsequently tested. We must choose between developing the model from scratch, using open libraries or utilising of any of the predefined models created by the main technology vendors. Responsible AI practices must be guaranteed at all points of this process.



MARKET EXAMPLES:

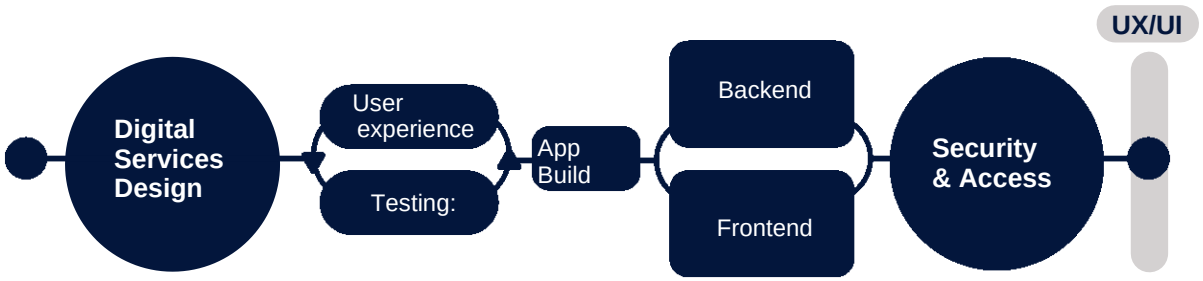
One of the salient characteristics of the banking and insurance sectors is the enormous amounts of information they manage. It is estimated that insurance companies alone receive over 1 billion pages of documents each year. However, information silos, incompatible storage systems and the need for manual work to extract
and understand the data means much of that information is wasted. Today there are many AI-based solutions that facilitate data extraction, analysis and interpretation, and some can even make decisions. In this case, we put the workers and professionals of the insurance sector at the centre of the initiative.

One example is an American insurer who created an AI solution for obtaining critical information from unstructured files and documents that allows agents to automate processes, reducing their workload and errors, while increasing accuracy and efficiency.

Reinventing experiences

If we cannot reach the end user through an application with a user-friendly interface, knowing how to correctly identify needs or having quality and robust data is of little use. To achieve an effective interface, we need experts in the design of products and user experiences to translate people's needs into functional designs, that users subsequently validate.

Testing is a fundamental part of this methodology, creating user-tested prototypes to ensure quality and that the product meets expectations. This also reduces risks, and avoids large investments without the guarantee that the final solution will be accepted by the end user.



MARKET EXAMPLES:

Well-designed AI solutions not only make their users' lives easier, but can also completely reinvent experiences, making technology a complement that adds great value. Insurers have the chance to offer new services to companies by providing innovative risk prevention techniques. This service is fundamental for organisations, as it is an elementary tool that guarantees the well-being of workers while reducing costs for companies and Mutual insurance societies by reducing claims.

With these objectives in mind, a European insurer joined forces with a Virtual Reality Start-up to create an AI- and computer-vision based tool that can:

- Identify and analyse the hazards present in the workplace
- Quickly determine the potential injuries related to each task performed
- Train the employee using examples of good practices

How to develop people-centric Intelligent Services

Beyond developing use cases that meet human needs, take advantage of the value of data and help reinvent experiences, it is essential that their design achieves a correct interaction between the technological solution and users.

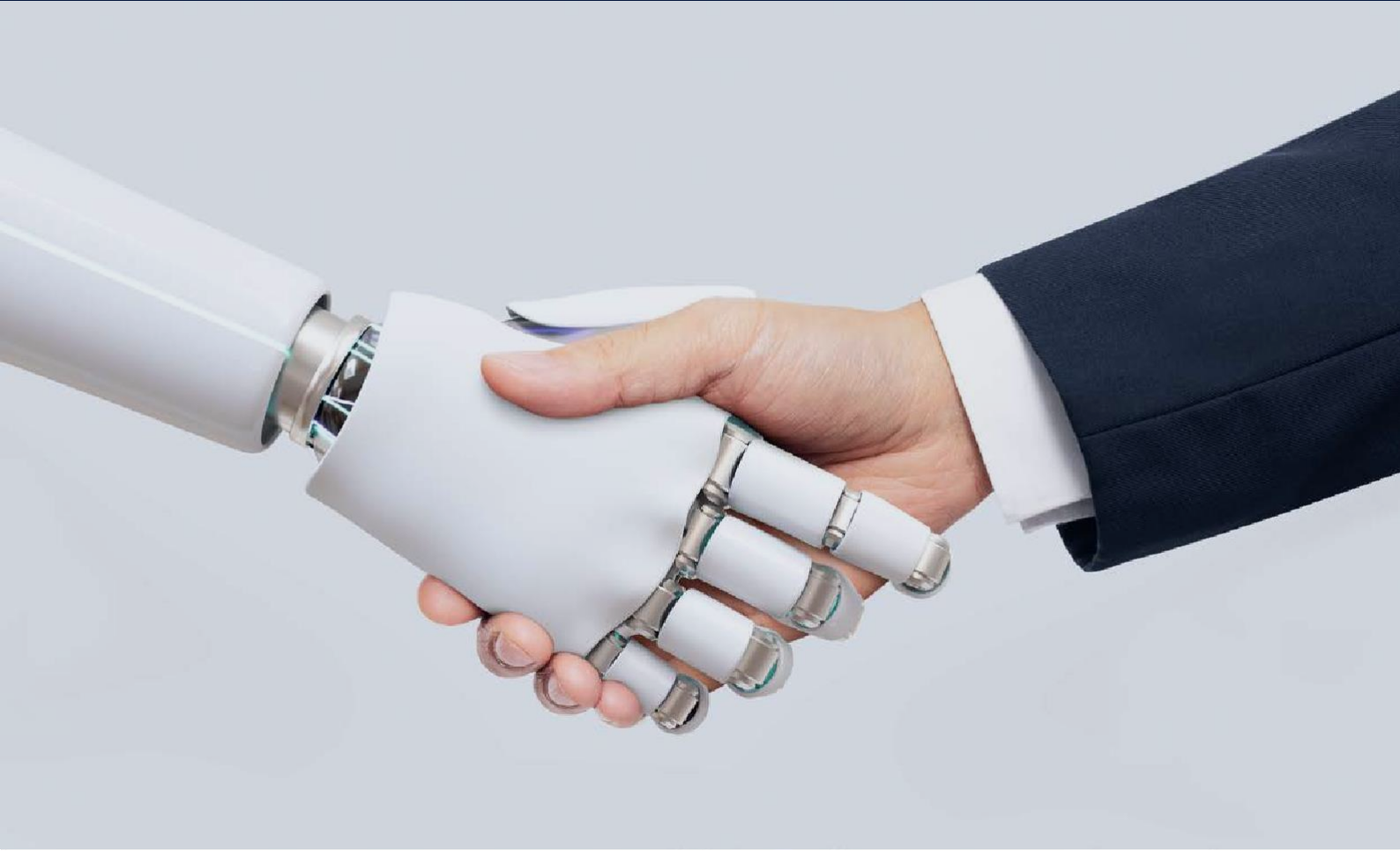
NTT DATA has identified four principles that are essential for every AI-based application, achieving an outstanding market differentiation and strengthening the link between the brand and the user:

Being trustworthy
Following ethical principles. With a focus on explainability and transparency

Adaptable
Evolve with the user, "design for forgiveness."

Relevant
Personalization with tailor-made solutions and high-value functions for people

Useful
Minimal effort for the user, making life easier



Be trustworthy

Trust must be the cornerstone of any customer relationship; AI-based solutions sometimes make people reluctant as they are considered "black boxes" whose workings are inscrutable. To ensure we win this trust, we must comply with the principles of:

Transparency: letting the user know that they are interacting with a machine or algorithm and what data is taken into account.

Explainability: being able to describe the algorithm's decision-making process and evince bias mitigation practices throughout the entire AI life cycle

A good user experience must incorporate this information in a simple way that all users can understand. With reference to the banking and insurance world, applications must inform users when they are interacting with AI, and they must have visualisation tools can explain what is happening.

Relevant

If an AI solution is to be successful and used by people it must be relevant; that is, users must think it is important.

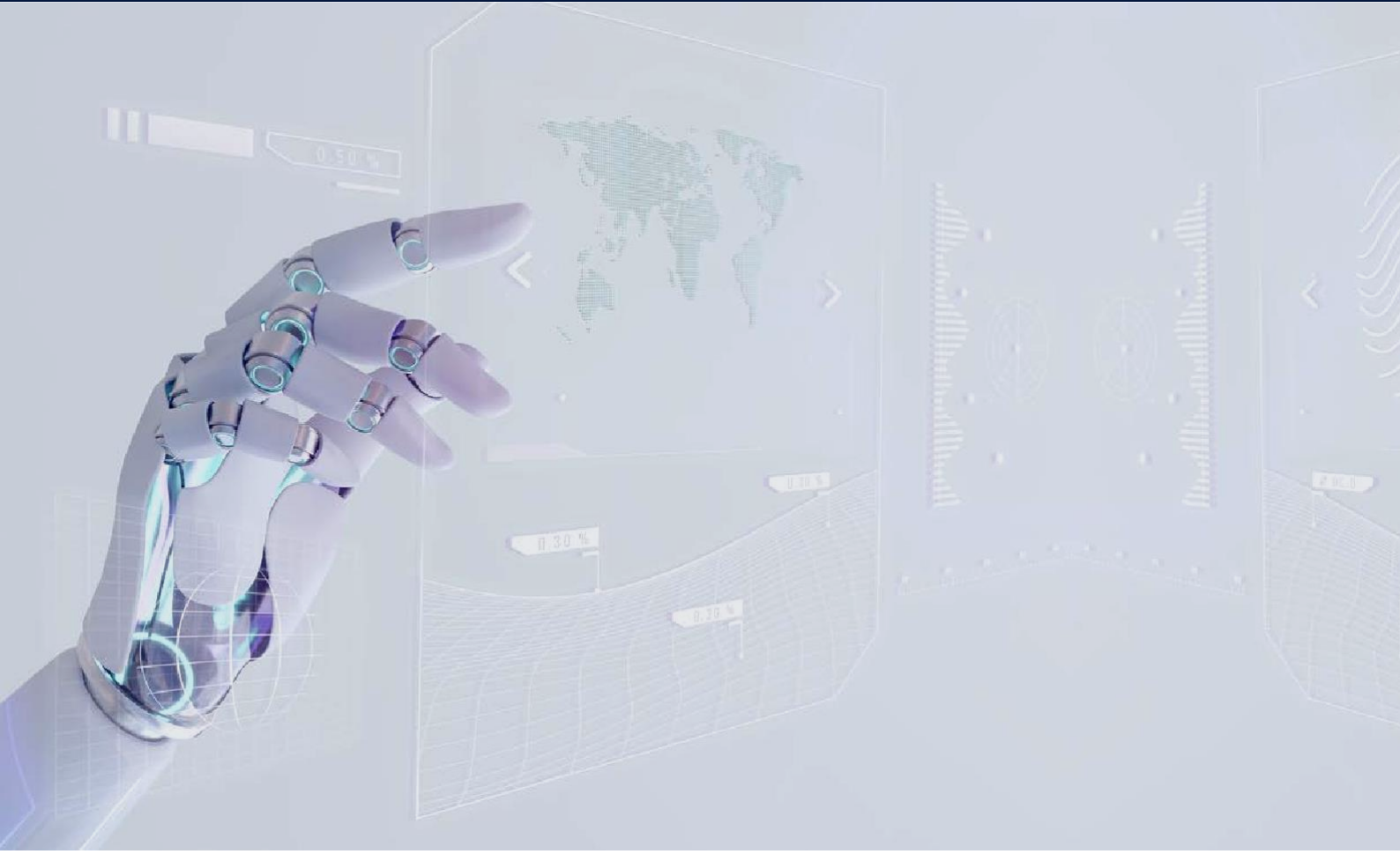
Banking and insurance companies have a large amount of data at their disposal:

Internal data such as background, user preferences and behaviour, consultation history, hot spots, etc.

External data such as market figures, statistics, trends, forecasts for different markets, etc.

This amount of data we can tailor solutions, recommendations and services to customers' needs, realities and wishes.

Features such as security alerts, early detection of fraud or unusual movements are a clear example of solutions relevant to the user.



Adaptable

Due to its characteristics, adaptability is one of AI's intrinsic capabilities, but it is also an indispensable requirement. Because most solutions are based on Machine Learning techniques, they can adapt their operation according to the user input they receive. This means they can:

1. Deliver a personalised experience and interact organically.
2. Redirect the interaction if the person is not receiving the information or care they were seeking.

To ensure a completely satisfactory experience and achieve real-time continuous improvement, it is very important to collect and include user feedback.

These features applied to banking and insurance are essential features of virtual assistants, which should be able to resolve all kinds of doubts and procedures, guide users in what they need and redirect or transfer the conversation to a human agent when necessary.

Useful

In the age of information and digitalisation, people must make hundreds of decisions every day. Any technological solution must reduce that effort and the time it consumes.

From the basics such as avoiding having to re-enter data that have already been provided, or simplifying all processes (the fewer clicks the better) to taking advantage of the latest technologies that anticipate needs or automate all kinds of functions. AI has many possibilities for being really useful.

For AI to be fully efficient and useful, we must design solutions based on human needs and include the user in the iterations of solution development.

In the insurance field, new technologies such as Internet of Things (IoT) devices offer a new range of possibilities for event detection and data collection to offer services tailored to the user.

Demonstration of AI Prototypes

By applying the methodology for designing AI services and using the four human-centric design principles as a basis, the session culminated with the demonstration of several innovative and experimental prototypes created by NTT DATA's CoE.

Among all the prototypes, "*Car Insurance Claims Processing*", is noteworthy. It uses NLP technologies to obtain all the relevant data of an insurance claim, categorise them according to their sensitivity and even classify the type of damage suffered by analysing a photograph using Computer Vision capabilities.

This is a practical example of explainability and transparency; understanding how the algorithm is using information in its automated decision-making helps to develop a more responsible and ethical AI.

The session also saw applications of other emerging technologies, such as using GPT-3 to summarise from large volumes of data. This is a practical example of explainability and contributes to developing responsible AI.

Conclusions

The practice of responsible and inclusive AI requires us to create solutions that place humans at the centre of their design, so that the technology benefits people.

Companies in the banking and insurance sectors are aware of this and are working to incorporate AI solutions that better serve their customers and reduce their professionals' manual workload.

In the case of Spain, the main companies in the financial field participated in the workshop and most stated that they have taken the end user into account when designing new services. However, there are still multiple challenges when it comes to designing AI-based solutions, such as resistance to change, regulatory procedures or data accessibility.

To facilitate the process of designing and creating intelligent solutions, NTT DATA has created its own AI Service Design methodology that guarantees the development of ethical and responsible solutions, tailored to people's needs and market demands, taking advantage of the full value of the data and providing extra value.

This methodology was presented in the Labs as part of the joint work carried out by SERES Foundation and NTT DATA to promote Responsible AI which, besides responding to companies' needs, contributes to generating a positive impact for the entire society, leaving no one behind.

About SERES FOUNDATION

SERES Foundation, a non-profit organisation, founded over 10 years ago, assists companies in their transformation and promotes their leadership in the face of social challenges. Its objective is none other than positioning the value of social matters in organisations. As a pioneering movement with 150 member companies representing 30% of GDP and 75% of the Ibex 35, it addresses the companies' social commitment from a strategic and practical innovation-based approach.

Since its foundation, we have worked with companies to address major corporate challenges in social matters, combining purpose and strategy. In the field of Artificial Intelligence, we encourage organisations to manage technology responsibly and contribute to a model of inclusive progress that leaves no one behind.

About NTT DATA

NTT DATA, a Japanese company and one of the TOP 10 largest IT services companies in the world, has over 140,000 professionals and operates in over 50 countries. In NTT DATA, we accompany our clients in their digital development through a wide range of strategic consulting and advisory services, cutting-edge technologies, applications, infrastructure, modernisation of IT services and BPOs. We bring our extensive experience in all sectors of economic activity and a great knowledge of the geographies where we are present.

We strive to build a unique and open community of people, led by shared values, which continues to grow into an even larger network of collective talent capable of multiplying our capabilities and knowledge to respond swiftly to our clients' changing needs and intelligently anticipate the future. In the Data & Intelligence field, we accelerate our clients' business transformation through innovation and a full-service portfolio.

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