

Navigating tomorrow

The role of insurance in a society embracing GenAI



▶ Introduction

Artificial Intelligence (AI) has been making its way into our professional and personal lives for decades, helping to transform the world we live in. Generative Artificial Intelligence (hereinafter “Generative AI” or “GenAI”) promises to follow the same path with a much higher rate of technological development and social and business adoption.

This technology is being **quickly adopted due to its ease of use** and the astonishing quality, speed, and versatility of its results. One of its main advantages is accessibility: anyone with a computer, smartphone, or tablet with an Internet connection **can use very powerful tools; that isn’t the case with other technologies, whose most advanced applications are limited to “experts.”**

This technology has such a transversal impact that **all sectors have reacted almost immediately to its emergence**, dedicating resources to exploring potential applications in their current operations and business models. At the same time, there has been an attempt to exercise control over its use in the business world, although paradoxically, its use in the personal sphere is widely accepted. This phenomenon also represents a remarkably unusual reaction compared to the way other technologies have been received in the past.

At MAPFRE we have a fundamental principle: we care about what matters to our customers. And that involves putting ourselves in their shoes and taking on their worries and concerns as our own. In this regard, we have immersed ourselves in **exploring the potential of Generative AI**, seeking ways to apply it to optimize both our operations and our products and services. **We are identifying and testing use cases**, and we are even bringing some of these promising initiatives to the production stage.

However, we believe this approach is not enough. At MAPFRE we are considering the fact that this technology is being adopted by a wide variety of users, regardless of age, skill, or interest in technology. This diverse range of users and GenAI's different uses presents a wide array of possibilities for anybody with a digital device.

We want to delve deeper into society's use of this technology and consider how its widespread adoption, together with the diverse possibilities for technological development, may impact our way of life. **We want to reflect on new behaviors that we could adopt, emerging risks, and potential needs that could arise in various future scenarios.** MAPFRE is committed to being there for people, accompanying and caring for them, and to achieve this, it must **anticipate what lies ahead and be well-prepared for it.**

In the exercise in this report, **we don’t attempt to predict the future. Our objective is to carry out a balanced, bold, and sincere reflection on the eventualities that could arise in every possible scenario for the evolution of Generative AI.** By doing so, we'll be able to work so that, no matter what the future may hold, the best possible scenario for everyone materializes.

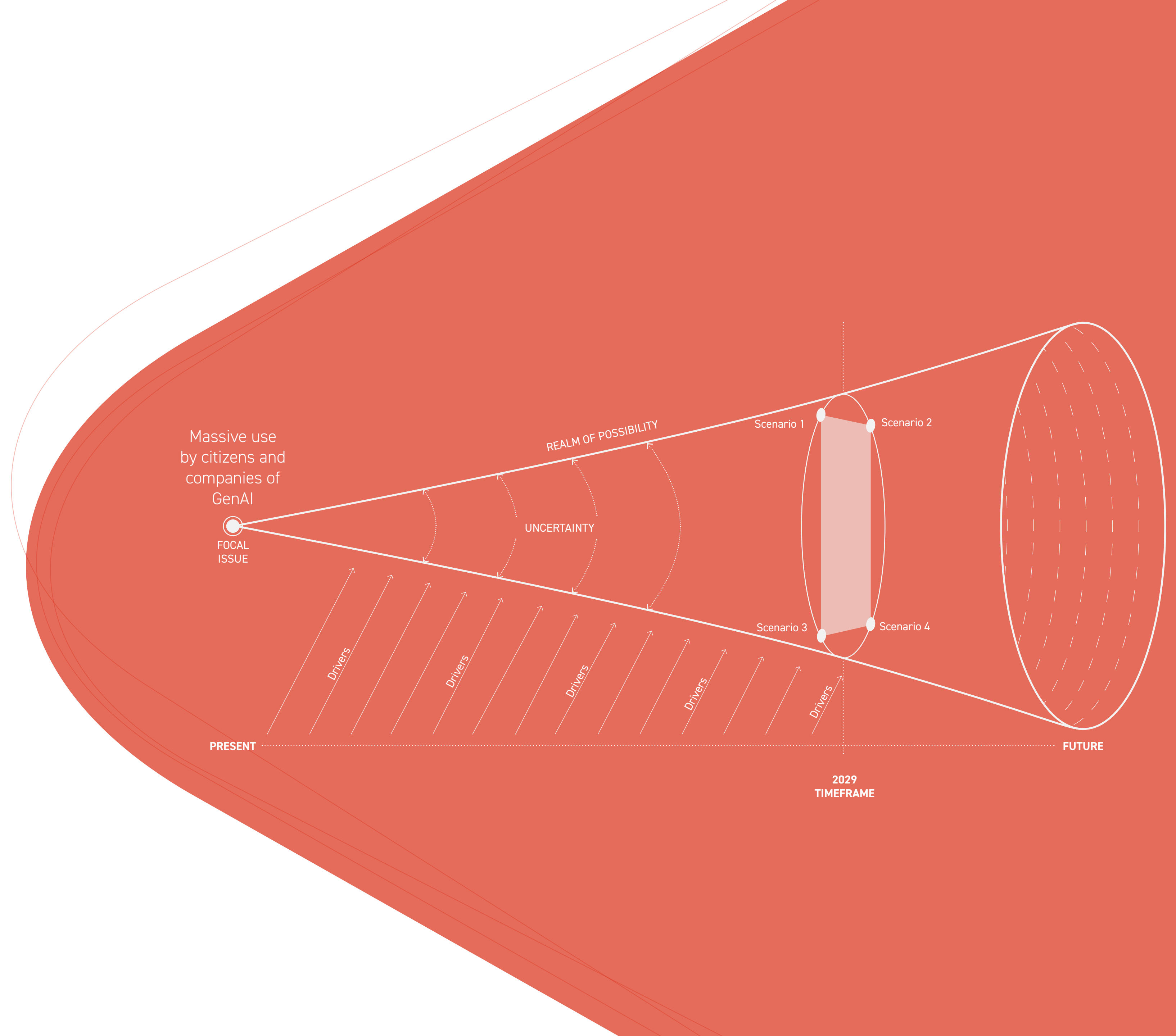
For this purpose, we applied the **futurecasting** methodology, which makes it possible to anticipate scenarios derived from the progress and mass adoption of Generative AI, both in the personal and corporate sphere. This rigorous and proven methodology was the main tool of our study. We also conducted extensive research and **interviews with experts in different fields worldwide, including technologists, economists, sociologists, psychologists, and anthropologists.** With this information, we outlined four plausible scenarios. Rather than determining their probability, we focused on their possibility, based on the research carried out. **These scenarios are intended to serve as a basis for reflection and the development of initiatives that generate a positive impact on society.**

► Methodology

In this study, we used the **futurecasting methodology to anticipate scenarios arising from the evolution and mass adoption of Generative AI**, both in the personal and corporate sphere (focal issue). The four scenarios aim to define the playing field in which reality will materialize around the central topic. Therefore, **the defined scenarios are extreme within the limits of plausibility, without trying to determine probability**, and they allow us to cover the entire spectrum of plausibility for the evolution of Generative AI. **Reality should be somewhere between these four scenarios.**

This methodology allows participants to be placed in the four alternative futures, helping to explain how this situation is arrived at, what implications it has, and what opportunities could arise.

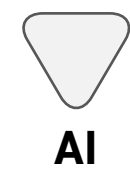
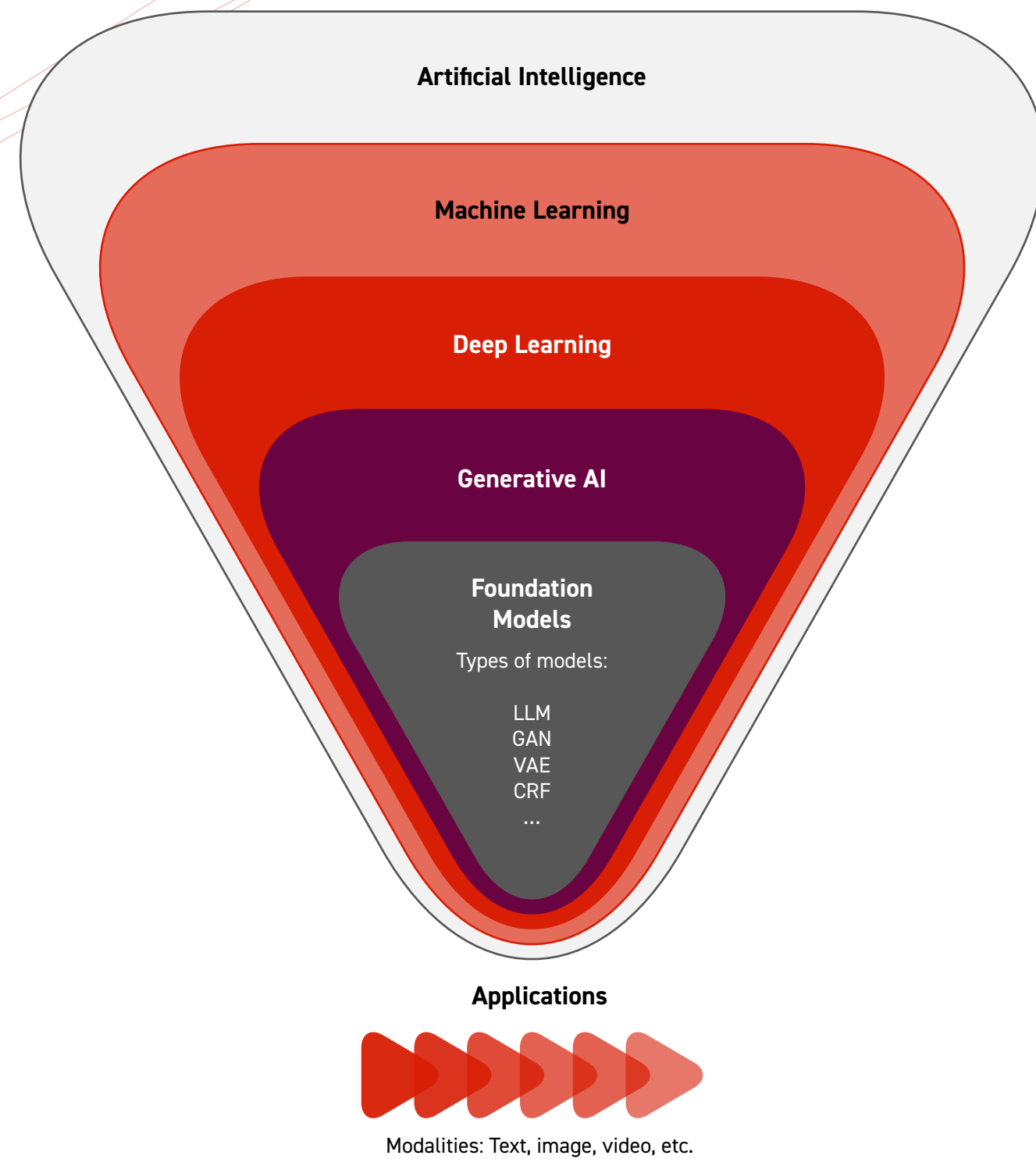
The scenarios were generated using knowledge captured through primary and secondary research methods. For our primary research, technological, industrial, sociological, psychological, and behavioral experts were interviewed worldwide. Based on the understanding reached, we identified the factors that will determine how reality will take shape around the central topic. These factors were grouped together under **fourteen drivers that construct the scenarios for GenAI's evolution.**





▶▶ Generative AI

▶▶ Conceptual environment for Generative AI



AI

Artificial Intelligence is the ability to perform functions normally associated with human intelligence (decision-making, complex problems, etc.). AI is possible thanks to various computational methods, mostly of a probabilistic nature.



ML

Machine Learning (ML) is a branch of AI that uses techniques to **create models that learn to perform functions without being explicitly programmed for it**. This is achieved through data-based training.



DL

Deep Learning (DL) Learning is a branch of ML that uses advanced computing techniques inspired by the neural networks of the human brain to **create models that identify complex patterns of a data set**. The greatest advances in AI are currently in the field of DL.



Generative AI

Generative AI is the family of AI systems whose capabilities transcend the mere recovery of predetermined responses, being able to generate new content without explicit programming, based on a trained algorithm and user instructions.



Foundation models

Task execution system through the generation of content, developed by training an algorithm with Deep Learning techniques based on large volumes of data. These models are the basis for the subsequent development of Generative AI applications.



Applications

Solution based on foundation models, adapted to a specific function and offered to users through a simplified interface.

A single model (e.g.: Stable Diffusion) can give rise to multiple applications (DrawThings, Diffusion Bee, InvokeAI).

▶▶ Conceptual environment for Generative AI

Types of models

There are different types of models defined by multiple factors, such as architecture and focus, the data set on which it is based, and the type of training.

Among the model types, LLM (Large Language Model) stands out, as it is the type of model on which applications such as ChatGPT are based.

- ▶ **LLM:** It uses natural language processing (NLP) to manage language-related tasks. (understanding and generating text-based content as a response).
- ▶ **Generative Adversarial Network (GAN):** It is comprised of two neural networks: a generator that creates new data and a discriminator that evaluates whether they are real or generated (used for realistic images).
- ▶ **Other:** Much of Generative AI's evolution is due to more innovative approaches to developing models, resulting in multiple types of models, such as VAE, CRF, etc.

Modalities

Generative AI applications are categorized by their modality, i.e. the type of content they generate, recognize, interpret, or edit.

The modality depends on numerous factors, including the type of model used.

The main modalities include:

- ▶ **Text**
- ▶ **Image**
- ▶ **Vídeo**
- ▶ **Audio**
- ▶ **Code**
- ▶ **Other:** Avatars/3D images/UI...

The **trend is toward multimodality**, i.e. the ability to handle different types of content (e.g.: ChatGPT premium version or Gemini).

Ecosystem and roles in the GenAI world

INFRASTRUCTURE

Key resources and components that guarantee the necessary computing for the training and deployment of Generative AI models.

Includes the manufacture of hardware such as chips (GPU, CPU, etc.) or cloud platform support (Data Centers, networks, etc.).

HARDWARE MANUFACTURING

Manufacturers of hardware for computing:
Semiconductors, chips, and processors.

Manufacturers of hardware for devices related to Generative AI:
Devices such as smart glasses, smart watches, or specific devices (Ai Pin).

Robotics manufacturers:
Domestic or industrial robots that automate activities.

CLOUD COMPUTING

Cloud platforms:
Cloud-based resources that allow models to be developed without the need for local infrastructure.

FOUNDATION MODEL

Obtaining and preparing data and conceptual design, developing advanced algorithms, implementing technological infrastructure, training and evaluating the model, and continual improvement.

A crucial element to accelerate this phase are code libraries, which provide codes, tools, and pre-written and reusable frameworks (e.g. Google TensorFlow or META Pytorch).

DATA ANALYTICS

Data capture and storage:
Solutions for capturing, storing, and managing large volumes of data.

Data processing:
Privacy solutions such as synthetic or anonymized data generation.

ALGORITHM PROGRAMMING AND TRAINING

Model developers:
Design, development, and training of algorithms, with open-source or private distribution models.

Code libraries:
Set of code that provides functionalities and algorithms for the development of AI applications.

MLOps:
Support and supervision throughout the model's life cycle (development, training, and deployment).

APPLICATIONS

Development of specific software solutions. They may be based on third-party models, published in repositories (Model Hubs), or through APIs.

This phase also includes companies specialized in providing external support for the development and implementation of applications.

DEVELOPMENT

Application developers:
Depending on the content format used and/or generated, the applications may be:

Multimodal: Able to integrate data from multiple input sources and generate content in multiple formats.

Unimodal: Only capable of integrating and/or generating text, image, video, or audio content.

SERVICES

General integrators:
Professional services for AI solution development, monitoring, and advising

Specialized support:
Startups specialized in the field of Generative AI (for example, responsible use of AI).

REGULATORY BODIES

The regulation of AI is being driven at a country level (China, the US, and the UK stand out) or by groupings of countries (the EU stands out), but also by other associations that are working together to achieve a shared scientific understanding and agreed policies for mitigating AI risks.

RESEARCH CENTERS/ UNIVERSITIES

In terms of research, centers that were previously engaged in data analytics and new research centers created for this purpose (AI) stand out, in addition to the most prestigious universities around the world, which also have specialized teams for AI topics.



Drivers



▶▶ Catalog of drivers

The evolution of GenAI's impact depends on fourteen main drivers, seven certain and seven uncertain.

Certain drivers

Certain drivers refer to factors/drivers that barely change or whose degree of uncertainty does not overly impact Generative AI's evolution. Therefore, it's relatively easy to predict their status and future evolution within the period under analysis.

SOCIAL ACCEPTANCE OF GENAI

This means the extent to which the population is willing to test/use/adopt Generative AI. The attitude toward GenAI since 2022 has been curiosity, surprise, and fascination. While this technology is beginning to generate a certain degree of suspicion due to ethical issues and potential social effects (hyper-personalization, influence, etc.), it's foreseeable that society will eventually accept it naturally due to its ability to make people's lives easier.

COMPLEMENTARY TECHNOLOGIES

Generative AI broadens the potential of complementary technologies, such as traditional AI, robotics, and XR, in several areas. When combined with them, it improves its processing capacity, opens the door to new technological approaches, and enables innovative forms of interaction through multimodal devices, thus connecting with the physical environment more efficiently.

DECARBONIZATION POLICIES

Globally, governments and institutions are strengthening decarbonization targets to combat climate change. This includes initiatives such as limiting emissions, focusing on recycling and reuse, reducing polluting waste, and migrating to cleaner alternatives for mobility and energy generation. **This transition will affect the energy requirements of GenAI, which will influence its path and development.**

INTENSITY OF COLLABORATION

Collaboration has been fundamental in the development of innovation projects in AI, particularly through open-source initiatives. The level of collaboration between companies, regulators, and communities will continue to influence the pace of technological and market development. In addition, institutional and inter-organizational collaboration will be crucial to establish standards and regulations that promote innovation and technological potential.

CONCERN ABOUT CYBERSECURITY

Generative AI increases the accessibility and impact of cybercrime techniques such as deepfakes, phishing, and social engineering. Although it should also lead to the development of more effective cybersecurity tools against these new attacks, **we can envision a near future in which cybersecurity concerns increase** considerably.

PREPARING THE ECONOMY

Adopting Generative AI requires preparation at both the business and economic level. Technical human capital is needed to keep pace with innovation and integrate GenAI into value chains, update existing technology stacks to guarantee scalability, and ensure the level of digitalization of the economy in general.

AVAILABILITY OF COMPUTING

In addition to the development of more advanced and efficient processors and creation of new models, a critical factor for its mass implementation in the market is the availability of computational resources. **The widespread adoption of Generative AI is expected to require a considerable amount of calculation power,** which could generate certain bottleneck events that slow the pace of expansion due to the need to produce new chips and the insufficiency of existing infrastructure.

▶▶ Catalog of drivers

Uncertain drivers

Uncertain drivers refer to factors/drivers whose status and future evolution within the period under analysis is hard to predict due to their disruptive nature or high volatility.

LEVEL OF TECHNOLOGICAL DEVELOPMENT

Generative AI's technological development is critical for its potential and impact and includes key factors such as speed, versatility, and content quality, the correction of biases, hallucinations, and level of autonomy. Development requires innovation with regard to computing capacity and efficiency, new model architectures, and improvements in data collection and curation, as well as in training processes.

IA/GENAI REGULATION

Generative AI impacts legal rights, such as those of data privacy and private property, justifying regulatory intervention. Regions such as the EU, the US, and China are starting to create specific regulations in this regard that vary in terms of scope and rigor. **The approach and level of regulation will influence legal security, investment, and acceptance**, with an impact on development and social and business adoption.

ACCESS TO FINANCING AND SUBSIDIES

Access to funding from governments, large technology companies, startups, institutions, and/or private investors is crucial for the development of initiatives in Generative AI. This financial support promotes the creation, production, and application of advanced systems, being essential for their advancement. These **investments foster technological progress and establish the foundations for significant improvements in the research and development of GenAI.**

MARKET DYNAMICS

The Generative AI market is dominated by large players along the value chain, with a high concentration in computing capacity and a moderate concentration in model creation. However, the production of applications is relatively atomized. **Future market concentration or fragmentation will influence technological evolution** and how GenAI's impact on our reality materializes.

IMPACT ON THE LABOR MARKET

GenAI technology, due especially to its capacity to automate recurring and creative tasks, **is changing the demand for skills and the availability of jobs.** Although it represents a potential replacement of certain employment profiles in several sectors, it also creates new opportunities in the design, implementation, and maintenance of Generative AI systems.

DEFINITION OF LIABILITIES FOR AI

If Generative AI attains a certain level of autonomy, situations may arise in which the consequences of its decisions cannot be attributed to natural or legal persons. Therefore, **regulation must provide tools to public institutions to adapt the principles of assigning liabilities to this new environment**, thus promoting a legal security framework that fosters private initiative.

TOTAL COST OF USE

The cost of adoption and use, essential for the development and application of new models, is determined by various factors, such as the efficiency of chips, energy cost, talent availability, ease of integration into organizations, and taxation. Therefore, this aspect **will be decisive in the adoption of Generative AI and its impact on reality.**



▶▶ Scenarios



▶▶ Scenarios

Based on our research, which involved reviewing reports, papers, and articles, as well as interviewing experts from different fields (technology, sociology, psychology, economics, regulation, etc.), **we put together four plausible scenarios for 2029.**

These scenarios depict extreme realities, but they are within the realms of possibility, according to the perspectives collected during our research. We do not assess the probability of them occurring. **We only say that they are possible and that a combination of them will determine how reality is influenced by the evolution of GenAI.**



▶▶ Scenarios

Social and economic impact

Level of labor and domestic adoption & psychological impact due to abusive use and awareness



Remember all the GenAI hype?

- ▶ Generative AI is a mature technology, without high financing flows and with high usage costs (similar to today).
- ▶ Adoption is mainly productivity-oriented, with limited interaction that poses a barrier to use.
- ▶ High awareness of its limitations.

Tech titans

- ▶ Fast pace of development controlled by a small selection of Big Tech companies, which moderate the frequency of launches at will.
- ▶ High adoption by companies and individuals, with high compatibility with other technologies in the ecosystem of these Big Tech firms.
- ▶ Effective transition at the workplace level and irritation due to accumulation of Big Tech power.



Chasing an antidote to chaos

- ▶ Regulation limits Generative AI's potential for technological development, raises use costs, and limits viable use cases.
- ▶ Regulation hinders adoption by companies and discourages domestic use.
- ▶ High level of awareness of psychological effects.

The journey to homo sAlpiens

- ▶ Generative AI is a transformational and fully accessible technology.
- ▶ Mass adoption, with multiple use cases and a seamless interaction with the user.
- ▶ Low awareness of the high psychological impact of its omnipresent use.



Potential of technology

Technological development & total cost of Generative AI & competitive dynamics

SCENARIO 1

▶ The journey to homo sAlpiens

Year 2029. **The technology has evolved very quickly in the last five years.** It wasn't just a passing fad in 2024. GenAI is still a topic of constant conversation, and people seem unlikely to stop talking about it anytime soon.

Generative AI can create any type of text, image, audio, or video with such a **high level of realism that it's increasingly difficult to distinguish between original and artificial content.** It can hold extremely natural-sounding conversations, even **even generating a sense of empathy and creating emotional bonds.**

It's so **accessible and easy to use** that it has been adopted by people of all ages. However, although its cost is accessible for many applications, not everyone can afford it. Those who use it especially do so in the form of advanced personal assistants.

At the business level, there are significant advantages in terms of **productivity, activity transformation, and customer relationship models.**

Regulation is permissive in general, with exceptions related to national security and geostrategic independence. There is a dynamic and very active competitive environment in the development of applications based on Generative AI.



SCENARIO 1

The journey to homo sAlpiens

At the individual level, **almost everyone uses it daily in the form of personal assistants or new services based on it.** Its ability to generate all kinds of content with an extremely high level of personalization has transformed consumer habits and life at home. **It simplifies life in many ways, although in some cases it reduces our critical thinking skills.**

Every family member has their own personal assistant that gathers detailed information about its user to personalize the experience, messages, etc. They have a certain degree of autonomy in making minor decisions. The fluid communication between virtual assistants and devices enables effective collaboration, even between different ecosystems (mobility, health, entertainment, retail, education), etc.

Virtual assistants are increasingly intelligent, and their conversation level is so high that for some people and in some circumstances, **interacting with machines is easier and more comfortable than human interaction.** GenAI lets us access capabilities that previously required a lot of dedication and experience.

People demand immediacy and are becoming less patient, especially in young generations. In this situation, interpersonal interactions are gradually being reduced. **The option of having virtual pets, friendships, or romantic partners is catching on, and people find a real source of affection in them.**

Young people make more advanced use of Generative AI applications. **Adult generations are more aware of the risks from the overuse of digital tools,** while young people have a lower level of awareness. **The addiction to technology and level of isolation is increasing, and the mental health impacts are visible.**

At the corporate level, adoption is slower: companies cannot keep pace with the development of the technology. The existence of inherited structures in the economy, insufficient talent to manage and deploy technology, and the need for legal validation of some applications makes it difficult to adopt them in the business context. Even so, we are at a point where the processes of integration are being standardized. **Adoption is in full swing, and in many aspects its impact is quite positive in terms of efficiency.**

For example, in the field of health, **healthcare workers experience significant relief in terms of bureaucratic tasks and patient care.** . In this regard, virtual assistants are a great ally for the diagnosis and psychological support of patients. They can also assist patients in a personalized way and resolve minor health concerns, improving wait times. There is an **improvement in the efficiency of pharmacological development.**

Keys

- ▶ High capacity of virtual assistants to interact, capable of communicating naturally and warmly, and sometimes indistinctly with human interaction, with assistants replacing a large part of communications with people.
- ▶ Widespread trust in Generative AI at a personal and professional level, even for tasks that require high levels of quality and robustness, generating high dependency and even addiction at a personal level.
- ▶ High levels of personalization in products and services, experiences, messages, and pricing.
- ▶ Greater accessibility to technology, especially for the elderly.
- ▶ Greater capacity to influence collective and individual tastes and preferences, standardization of thought and polarization.

SCENARIO 1

The journey to homo sAlpiens

GenAI tools have greatly democratized cybercrime: a hacker can launch highly sophisticated attacks. Although defenses have evolved quite positively, they have done so late. New tools and protocols are being developed to avoid the impact of deepfakes in social engineering scams.

The high capacity of models to create nearly perfect content **has exponentially increased their potential to deceive and manipulate.** This capacity is no longer limited to criminal organizations. While most people, like companies, are more aware, their level of vigilance is insufficient.

Implications

- ▶ There is a **high risk of cyberattacks and fraud due to the democratization of cybercrime and growing capacity for damage and deceit.** The most vulnerable demographic segments are those with less training in technology, capacity for discernment, and awareness. This risk poses a significant threat to the sector, and risk accumulation **may reach levels that are impossible** for certain players or even the industry to take on.
- ▶ Dependence on increasingly sophisticated, Generative AI-based virtual assistants will lead to a **growing level of isolation, significantly impacting mental health and increasing chronic diseases due to sedentary lifestyles.** In addition, **the loss ratio for home insurance will rise** due to the increased amount of time spent at home, while the seamless operation of virtual assistants will **reduce the road accident rate** attributed to cell phone use.
- ▶ Personal or professional assistants, with deep user knowledge and hyperpersonalization based on extensive interaction histories, together with avatars, sophisticated virtual pets, and even virtual partners, have **significant potential as assets of financial and emotional value** for both individuals and companies.
- ▶ There is a **risk that companies may lose their relationship with customers** due to the constant intermediation of personal assistants in meeting user needs, interactions, and purchasing processes.
- ▶ **High data availability,** together with AI-based analytics capabilities and hypersegmentation, may lead to a reduction in random events, a basic principle of the insurance industry.
- ▶ Like other sectors, the insurance industry will face the **challenge of adapting its teams to the new operating models driven mainly by AI and Generative AI.** This process will involve updating skills, capturing expert talent, and, in extreme cases, restructuring existing capabilities.

SCENARIO 2

▶ Remember all the GenAI hype?

Year 2029. **The technology has gradually improved, but at a significantly slower pace than in the early years and doesn't seem to have much more room for improvement.** It hasn't attained the levels of quality and autonomy that most gurus predicted, nor have many of the inefficiencies of the initial models been solved.

In the personal sphere, adoption has been high in recent years. We continue to use Generative AI; **text, image, and audio tools are very useful, but we already know what kinds of functions can help us. At the corporate level, adoption is gradual.** Productivity and capabilities have increased with the use of specific assistants, but their high cost and frequent errors limit the widespread use of integrated solutions in companies.

Regulators have generally opted for a restrictive posture that limits the pace of adoption, particularly in certain sectors where especially private data is generated and in which potential errors in the models can have extremely adverse consequences.

GenAI has entered our lives and provided us with highly useful tools, but almost no one is talking about it anymore. **The focus has shifted from Generative AI to other, more attractive technologies that are now generating hype.**



SCENARIO 2

Remember all the GenAI hype?

Generative AI's impact on the relationship between people has not been that significant. People use it pragmatically, without the intention of replacing interactions or emotional relationships.

Virtual assistants offer an improved version of the solutions that were already marketed five years ago, with low-quality interactions. Also, participants from different ecosystems aren't integrated. This is a limitation in the home environment, where there is little practical dependence in everyday life.

GenAI applications have been used to develop complementary technologies, such as virtual or augmented reality. Generative AI is therefore considered a secondary element that has facilitated and quickened the development of far more important technologies.

In the social sphere, **this technology is used in discrediting and disinformation campaigns through deepfakes.** However, it didn't take long for people to develop a critical mindset towards fake news. Due to the awareness of its power to manipulate, many resources have been allocated to educate the groups most vulnerable to deceit and the power of suggestion.

At the corporate level, **improved labor productivity is the main financial consequence of the emergence of GenAI.** Specifically, companies have been able to standardize the use of its applications for tasks involving a high level of data processing. Industries such as pharmaceuticals stand out, in which drug development times have been reduced.

In addition to the integration of corporate Generative AI tools, which standardize processes and usage methods by the entire workforce, **employees use solutions at the individual level to perform non-critical tasks.** Trust in GenAI applications remains low, and their widespread use for tasks that require precision and robustness is considered malpractice.

In this regard, **Generative AI is replacing mechanical work that requires a low level of intellect.** This is expected to leave more room for the development of more demanding intellectual and creative skills and abilities.

In the field of health, **healthcare personnel experience some relief from bureaucratic tasks when interacting with patients,** thanks to a chatbot that asks simple questions to understand the reason for the visit and take down basic information. However, **hospitals must offer personalized care if requested,** as there is a reluctance to accept high levels of depersonalization by some individuals.

Although the technological progress of Generative AI has been limited, **it has facilitated cybercrime.**

Keys

- ▶ Significant increase in productivity in completing routine tasks that involve a high level of information processing, but a limited capacity for interaction that requires user training in prompting techniques.
- ▶ Generative AI is limited to practical use, without the ability to generate emotional relationships.
- ▶ Companies have discouraged the use of Generative AI.
- ▶ Generative AI is not a technology that generates expectations in itself, but it's a relevant enabling technology for the development of other disruptive technologies.
- ▶ Vulnerability to cyberattacks, especially in elderly people unfamiliar with the capacity of technology.

SCENARIO 2

Remember all the GenAI hype?

Implications

- ▶ Although the results of Generative AI haven't lived up to the hype, it will have a **significant impact on the insurance industry in certain areas, such as cybersecurity, fraud, and productivity.**
- ▶ Generative AI's development will be sufficient to facilitate **new cyberattack and fraud techniques** that would cause significant damage to both individuals and companies and may represent **large risk accumulations** for specific players or the industry as a whole.
- ▶ In the business sphere, the widespread use of Generative AI will be **discouraged for critical tasks that require full accuracy**, but its potential for automating relatively simple and recurring tasks will generally materialize as far as its usage costs allow.
- ▶ However, on a personal level, **its use will be more widespread as a tool for content creation and productivity**, facilitating many everyday tasks.
- ▶ Disappointment over the limited progress of Generative AI, despite the massive attention it received in both the social and business fields (even surpassing previously trendy technologies such as blockchain or metaverse, and comparable only to the emergence of the Internet or smartphones), **could lead to an increase in skepticism toward future technologies** that promise a revolutionary change in the future.
- ▶ Likewise, the devaluation of Generative AI's potential and the interest in new technologies that attract companies' attention could lead to its **capacity being underused due to a "saturation effect."**
- ▶ **Generative AI's impact on the Home, Mobility, and Life and Savings lines of business is expected to be marginal.**

SCENARIO 3

▶▶ Chasing an antidote to chaos

Year 2029. **The technology is advancing significantly, and its capabilities and performance are expected to continue improving.** Generative AI can create remarkably realistic images, audio, and video and hold conversations with a high level of understanding and fluidity, although **without expressing itself all that naturally or generating an emotional bond with the user.** The only obstacle to the development of GenAI is the **restrictive stance of regulators that hinders a higher level of adoption.** Even so, that level is becoming significant for both individuals and companies thanks to its **reasonable cost of use, despite the limitations associated** with the technology's efficiency and regulatory compliance requirements. At the personal level, restrictive regulation has not directly limited the use of Generative AI applications, but it has indirectly led to greater awareness and an attitude of prudence and skepticism against the risks arising from its use.

This strong adoption is generating a **situation of economic growth, where the recycling of capabilities and labor expertise is a corporate need, but it will take time to be implemented.** In this context, a debate emerges on the possible need for a new income redistribution system based on increased taxation and the approval of a Universal Basic Income.

Despite the regulatory context, the anticipation of **tremendous development attracts sources of private financing.** Public funding is also high in order to control the technology at the institutional level through initiatives such as research. The GenAI industry is organized around different ecosystems spearheaded by technology leaders.



SCENARIO 3

Chasing an antidote to chaos

The relationship between people is growing more distant due to the reduced need for social interaction, although machines do not replace human affection or generate emotional bonds. There continues to be a certain preference for human interaction due to assistants' lack of fluidity and warmth. Consumer rights protection institutions have managed to **prohibit the use of robots in customer service in areas such as health or banking**.

In general, **people interact with technology naturally** thanks to improved voice interaction, which provides high-quality and versatile responses. **Generative AI increases digital dependence and isolation**, generating an intense debate on the risks of digitalization and possible limitations to its overuse.

Interactions with home assistants are seamless, and they are especially used for simple tasks requiring a low level of autonomy. Regulatory limitations affect the use of tools and their compatibility with other systems, as data sharing is a barrier to fluid integration between applications. Despite this, these assistants are quite useful in everyday life, and their adoption has been significant and is expected to increase progressively.

In general, **GenAI's impact on mobility is restricted to specific functions relating to the driver's user experience and passenger entertainment. There is a slight reduction in the accident rate caused** by the reduction in cell phone use, and an increase in the risk of claims fraud.

In the business environment, the use of Generative Artificial Intelligence has led to a **generalized improvement in productivity, especially in sectors with intensive information processing**. In fact, the role of those who used to handle information is changing, and now they also perform rather precise analysis and interpretation tasks. There is also a **growing shift in creative and artistic skills as a source of professional value, and they have been relegated to the realm of leisure**.

In the **health sector, technological development enables a high level of diagnosis, helping to relieve a significant part of the burden of mechanical patient-care tasks**. However, the use of GenAI applications in the industry is restricted and subject to demanding approval processes.

Technological progress has expanded the capacity of numerous malicious actors to execute high-level attacks, and the defense strategy is based on training all agents in the value chain and on the development of tools and protocols. In the case of households, solutions are emerging focused on protecting the most vulnerable groups. **The open-source community is heavily involved** and receives significant funding to promote initiatives aimed at personal use.

Keys

- ▶ Fluid interaction, although it requires some learning and adaptation by the user, and without the naturalness necessary to generate emotional relationships.
- ▶ To a certain extent, there continues to be a preference for human interaction over interaction with bots, especially in customer service.
- ▶ Regulation generates greater social awareness, laying the foundations for a debate on the risks of digitalization and possible limitations on its overuse.
- ▶ High regulatory barriers to innovation based on the use of sensitive data, such as medical data or data generated in the home.

SCENARIO 3

▶▶ Chasing an antidote to chaos

Implications

- ▶ **The ongoing regulatory debate on the risks derived from Generative AI fosters greater awareness of the dangers of adopting GenAI** in relation to its impact on mental health, cybersecurity, and the protection of private data and original content.
- ▶ **Restrictive regulation limits the legal use of Generative AI, but this does not guarantee that its exploitation for malicious purposes is avoided.** Therefore, the threat of cyberattacks and fraud remains relevant.
- ▶ The **rejection of Generative AI** due to its possible harmful effects **may result in a division in terms of preference**, with certain groups clearly preferring human interaction with clients despite the remarkable capacity of GenAI-based chatbots.
- ▶ In line with active and restrictive regulation, **political action may lead to an increase in public investment and public-private collaboration**, creating a favorable climate for the demand for protection and remediation against risks, particularly in the health field.
- ▶ **Restrictive regulation will limit its implementation in companies due to the demanding requirements to be met, restrictions on use, and liabilities arising from the use of GenAI.** This may also have a negative impact on development of the startup ecosystem due to the difficulty of complying with strict regulations, in favor of large players.
- ▶ **Restrictive labor regulations** designed to mitigate the impact of increased productivity caused by Generative AI could be a **competitive advantage for new players in the market or those with more agile**, scalable structures thanks to technology without the restrictions of inherited organizations.
- ▶ **A context of social and economic instability may be generated due to the incipient impact of Generative AI on employment**, which would mainly affect the middle class.

SCENARIO 4

Tech titans

Year 2029. **There has been tremendous technological progress in Generative AI. Its generative capacity is immense, with extremely efficient performance. This development was led by only two companies, with exponential growth that has left other competitors behind.**

This growth is due, firstly, to the **creation of multi-purpose solutions**, capable of covering a multitude of niches with high quality and efficiency, and secondly, to **synergies with other Big Tech lines of business** (retail, cloud, software development, entertainment, etc.).

On a personal level, **adoption is high in the private and professional sphere, but not massive due to the moderate cost of use. At the business level, adoption continues at a slower pace** than the technology's development, partly due to ambiguities that arise in terms of assigning liabilities, and the full potential of Generative AI does not materialize.

For this reason, **the two leading Big Tech companies consider slowing the pace of their launches** to give companies enough time to integrate them properly and to obtain more returns from each one.

This strategy by Big Tech will allow **more time and resources to be allocated to training employees in new capabilities and to the reconfiguration of workforces** to adapt them to new roles.



SCENARIO 4 Tech titans

The **most transactional personal interactions are reduced and relegated to assistants without this constituting a replacement for emotional connections** – GenAI still has limitations in decision-making and autonomy.

It not only reduces the need for interaction between people within the same household – a space dominated by the assistants of the two leading companies – but also with family members or friends outside it. **For young people, who are increasingly isolated at home, technology is practically the only way to socialize. This generates a growing tech dependence and addiction** aggravated by GenAI, while promoting a **culture of immediacy and constant search for stimulus.**

Voice interactions have improved, but they still have many limitations, and it is easy to tell the difference when you interact with a robot instead of a person. **Users therefore still prefer to interact with people in customer service.**

In this context, **certain cognitive skills** (memory, creativity, ability to synthesize, etc.) **are decreasing**, given that assistants do perform adeptly in these areas. There is also **standardization of thought, as well as reinforcement of confirmation and polarization biases, and manipulation of collective and individual tastes and preferences** due to the high level of influence held by the two companies after developing Generative AI.

In the business world, productivity has increased, and improvements in the efficiency of the economy as a whole are also observed. For example, in the pharmaceutical industry, administrative tasks and drug discovery processes have been reduced, and in the educational sphere, a transition is underway to a practical and interactive teaching model of great interest to students.

GenAI was applied initially to repetitive tasks with low added value and quality requirements; now **it's used in tasks that require analysis, accuracy, and robustness. Despite this, adoption is unable to keep pace with technological development**, slowing down the launch of new products and updates by the "Tech Titans," who must focus on the compatibility and synchronization of their portfolios.

The health sector is one of the most challenging due to its high specificity, the variability of health regulations between countries, and ambiguity in the attribution of liabilities. For this reason, the development of models and tools in this sector is still led by companies specializing in health, although the Big Tech firms are making significant investments in them.

In general, Generative AI helps to **make healthcare personnel extremely efficient**, improving access to knowledge, psychological support for patients, and assistance with diagnostics and decision-making.

Keys

- ▶ The integration and compatibility of Generative AI tools with other technologies developed by Big Tech (e-commerce, entertainment, software development, etc.) is the foundation for the adoption of the technology as well as user experience.
- ▶ Interaction with GenAI-based bots is common, yet reduced to transactional interactions, since they do not improve human experience.
- ▶ High dependence on closed applications and ecosystems of technology leaders, aggravated by a lack of public policies limiting the power of Big Tech.
- ▶ Greater capacity to influence collective and individual tastes and preferences, standardization of thought and polarization.
- ▶ Stable social climate, although with certain reservations about the accumulation of power by large technology companies.



SCENARIO 4

Tech titans

In the automobile world, integration of personal assistants in vehicles is limited due to delayed adoption. However, the accident rate has dropped due to the reduced use of cell phones in favor of voice, while the risk of claims fraud has increased.

Regarding cybersecurity, **technological development has democratized cybercrime**, allowing amateur hackers to launch attacks with surprising efficacy. Despite this, the Big Tech firms, which dominate almost the entire market, have the best teams specialized in cybersecurity solutions, generating a solid first line of defense.

Implications

- ▶ Technology being controlled by a few select players could lead to a marked standardization of behavior patterns. This **homogeneity may limit the potential of personalizing the offer**, given that patterns tend to converge.
- ▶ Big Tech's domination of the customer relationship and data through assistants and their ecosystem, **control of the technological value chain, and enormous analytical capacity may lead to its intermediation in the insurance market**, and even its entry into the market, threatening the position of current players.
- ▶ Control being in the hands of a small selection of players could lead to the **creation of more effective cyberprotection and anti-fraud mechanisms. Despite this, technology's potential to enable malicious cyberattacks and fraud will remain high.**
- ▶ The extensive dependence of society and the economy on these actors represents a considerable risk from the perspective of digital security. **In the event of a temporary interruption in its GenAI models or applications, the impact would be systemic for the insurance industry.**
- ▶ **Generative AI's moderately high usage costs**, while not limiting, **may indeed lead to a capacity gap between companies and individuals** who can afford the most advanced tools and technologies and those who cannot.
- ▶ In this context, some irritation is expected to arise in society due to the growing control of Big Tech, which could lead to **minority movements opposing these companies and tech omnipresence and dependence.**

The background is a vibrant red with various shades and textures. It features several overlapping, semi-transparent, wavy lines that create a sense of movement and depth. On the right side, there is a white, hand-drawn style outline of a rounded square or rectangle. In the center-left, there is a white play button icon (a triangle pointing right) followed by the text "Lines of action" in a clean, white, sans-serif font.

▶▶ Lines of action

▶ Lines of action for the insurance industry

In these four scenarios, new risks emerge, while some preexisting risks are exacerbated by the proliferation of **Generative AI**. These risks are intrinsically linked to emerging and not-so-recent needs that become more relevant to our customers. **In response, the insurance industry must address two key aspects.** On the one hand, protecting itself and protecting its customers against these risks, and on the other hand, adapting to meet the new protection needs that arise. Below are some examples of areas of opportunity to pursue for the insurance industry.

NEW CUSTOMER RELATIONSHIPS AND MORE SUITABLE PRODUCTS

Generative AI will promote interaction with customers, fostering a new relationship model supported by chat assistants that will offer greater accessibility and transparency in the insurance world. This conversational approach not only facilitates the exchange of information, but also enhances the quality of the data collected.

This **makes it critical for the industry to prioritize the ethical use of data, protect customer privacy, and avoid discrimination.** Meanwhile, a huge opportunity arises to capitalize on this information to **develop products and services increasingly tailored to the customer's needs**, (e.g: microsegmentation for dynamic insurance, on/off insurance, hyperpersonalized offers, etc.).

In this context, with a relationship model based on hyperpersonalized personal assistants that will intervene in the customer relationship, the **industry must seek alliances and work on differentiation.**

FRAUD

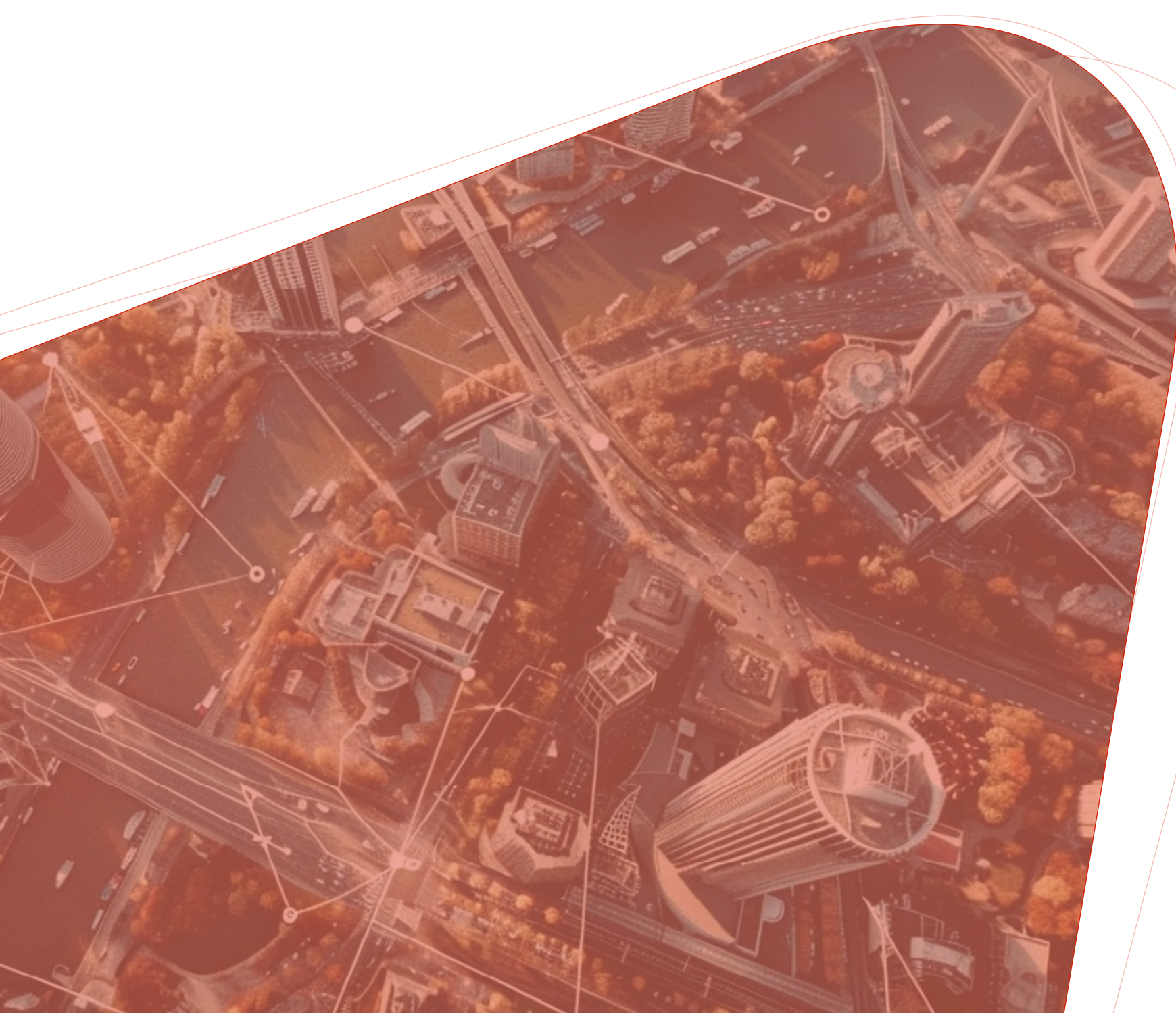
The democratization of tools that make it possible to falsify images, audio, and videos will trigger an **exponential increase in attempted claims fraud for insurance companies.** Therefore, these institutions must implement **mechanisms and tools that enable the detection of false evidence**, whose level of sophistication will be increasing.

TALENT TRAINING AND RESKILLING

The use of GenAI and other digital technologies requires **training for all employees** of any corporation.

On the one hand, there is a clear need for **expert profiles in areas directly related to GenAI** (technological infrastructure, data, security, regulatory compliance, ethics, etc.) to ensure the correct deployment, governance and use of GenAI in the corporate environment. However, **it is even more necessary that the profiles not in charge of deploying and managing it, but of using it in their day-to-day work, know the proper way to do it, its implications, its limits (legal and ethical) and the risks of misuse.** In fact, **the use of this technology occurs at a personal level very often**, regardless of whether it is enabled in the company or not, which implies that the need to train all profiles on GenAI is imperative, no matter of the deployment plans within each company.

On the other hand, it is not enough to understand and assimilate the technical aspects. It is also necessary to understand the context surrounding its progress and development from the point of view of its impact on individuals and society, as well as **to ensure that the applications developed generate a positive impact.** To this end, it will be necessary to consider profiles from areas such as humanities and social sciences (**sociologists, anthropologists, psychologists, linguists, etc.**).



▶▶ Lines of action for the insurance industry

HEALTH AND MENTAL HEALTH

Generative AI offers great potential for improvement of medical care processes and access to medical knowledge. It could also revolutionize the development and personalization of treatments, optimizing their effectiveness and improving the patient experience. This technology also has the potential to improve the experience of medical personnel by freeing them from administrative tasks, allowing them to focus more on direct patient care.

The flip side of the coin is that this technology could aggravate physical health problems (e.g: chronic illnesses from a more sedentary lifestyle) **and mental health issues** (e.g: social isolation or tech addiction) already observed as a trend due to the use of digital technologies in general.

The insurance industry must strengthen its commitment to services and products to prevent and treat such illnesses, and contribute to leveraging these technologies to improve the patient experience and effectiveness of treatments.

In the health field, educating society on the proper use of technologies is crucial. In terms of healthy lifestyles, there should be more emphasis on explaining healthy ways of integrating technology into our daily lives, the effects it can have on human health, how to identify them, and what measures to take in this regard.

CYBERPROTECTION

The expansion of Generative AI poses an unparalleled challenge in data and system security, given the increased sophistication of cyberattacks. This technology opens the door to the creation of undetectable malware, the generation of deepfakes for the purposes of cyberbullying, the deployment of phishing with natural language, and the ability to impersonate identities. This potential for deceit is not restricted solely to criminal entities but becomes relatively accessible to any individual.

Against this backdrop, companies will demand greater protection through insurance with suitable coverage and services aimed at preventing, detecting, responding to, and recovering systems after cyber attacks. In addition, individuals will have a **growing demand for security-oriented products and services, covering all family members.** In this context, awareness and training in the responsible use of technology will be essential to deal with the avalanche of new attacks.

In more extreme scenarios, **Generative AI could facilitate the creation of highly personalized digital assets,** such as virtual assistants trained to provide hyper-personalized care or digital identities (e.g. virtual pets) with great value to their owners. **This scenario could boost the demand for products and services specifically designed to protect these assets,** including measures to protect their vulnerabilities, prevent manipulation and fraudulent use, as well as insurance against theft or destruction of these assets.

RESPONSIBLE USE OF AI/GENERATIVE AI

The adoption of Generative Artificial Intelligence by individuals and companies entails risks ranging from system performance to regulatory compliance, and especially the possibility of discriminatory biases. **Aspects such as intellectual protection and privacy will be a priority.** Companies, and in some cases individuals, will demand **protection through insurance and services that facilitate the responsible and reliable use of Generative AI-based tools.** The concept of Responsible Artificial Intelligence (RAI), understood as the set of frameworks that help control AI and mitigate its risks by seeking a positive impact, will gain importance by addressing risk control and mitigation in the growing adoption of GenAI.

The awareness and education of society regarding the responsible and appropriate use of Generative AI is essential in all areas. Insurers must contribute in this regard, taking preventive measures to reduce the risks to which individuals and companies are exposed.

The background is a vibrant red with abstract, flowing, and layered patterns. A white play button icon is positioned to the left of the text. To the right of the text, there are several thin, white, overlapping lines that form a complex, rounded, and somewhat chaotic shape, resembling a stylized signature or a decorative flourish.

▶▶ Conclusions

▶▶ Conclusions

Generative AI has burst into our lives, impressing us in a matter of months with its astonishing applications and ease of use. How will it evolve in the future? Even the most prominent technology experts, some of whom were interviewed during this exercise, have vastly different views on the potential of this technology. **Expectations, in general, are tremendous. There is an immense level of interest and constant debate.** Some compare it with the arrival of the Internet, while others liken it to the launch of the iPhone. Some people warn of its dangers; others claim it will drive humanity toward new horizons. **At MAPFRE we know the future cannot be predicted, and we have no intention of doing so, but we do believe that we can help build it.**

Our future in the next five years is likely to be somewhere in the middle of the four plausible scenarios we have dared to propose. This exercise is part of MAPFRE's commitment to contribute to a collective and specific reflection that establishes the foundations on which insurance companies' commitments and responsibilities will be built in the future.

As insurance companies, we accept responsibility for protecting our customers. Maintaining a close relationship with them is essential for understanding their priorities, identifying what they want to protect and how, and adapting to an environment characterized by transformational and, in many cases, accelerated changes. We'll use systems that revolutionize our way of interacting, and labor roles will require new skills. We'll use various tools and processes to learn and grow. Regardless of the context we face in the next five years, we'll experience changes, and at MAPFRE we want to get ahead of them and start working to ensure that we are well-prepared.

The pace of Generative AI's evolution, and especially its potential impact, is causing considerable uncertainty. There are several unpredictable factors that will determine its real impact. These include the evolution of the cost of use, the degree of accuracy and reliability it may achieve, regulatory restrictions, the ability to reconfigure job profiles, and the impact on human cognitive functions.

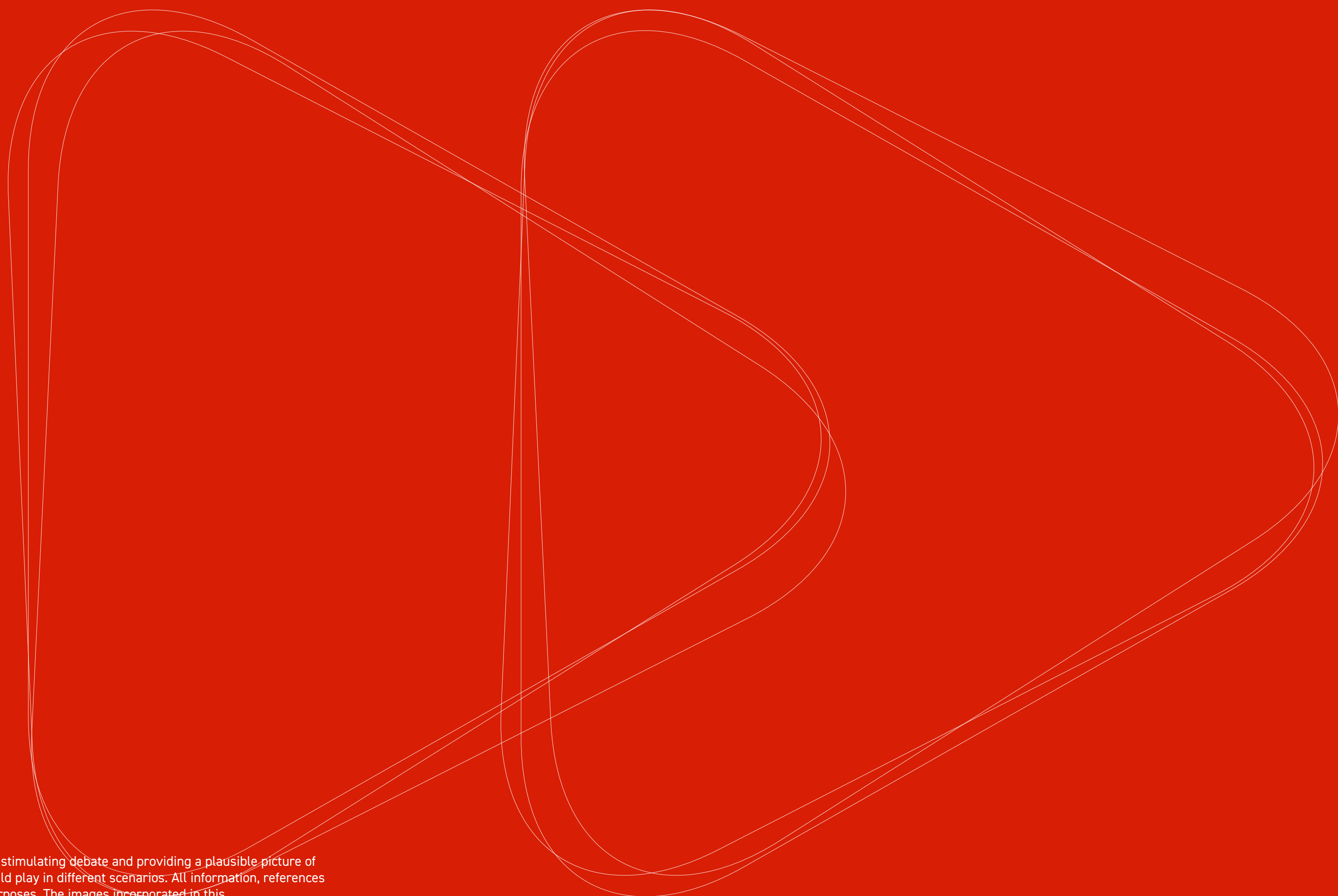
However, many of the lines of action and areas of opportunity reflected in this study respond to situations that already exist and are already being worked on. In most cases, **Generative AI will intensify and accelerate these aspects, but it will not originate them from scratch. In other words, it will act as a catalyst rather than a creator.**

Assuming that there are technology applications that we can't imagine yet, and considering a time horizon of just five years, we must recognize that we might be overlooking some things, but others are indisputable. So, it's time to start building. **MAPFRE will focus on improving our fraud detection systems, exploring the integration of Generative AI to increase productivity in our processes, and optimizing the experience of our customers** and their interaction with us to make it simpler and more natural. **We'll continue to work intensively to protect our customers' privacy,** offer them the best solutions in cybersecurity and health, and help them to use this technology appropriately.

We all have the duty to learn how to use Generative AI appropriately.

**There is no time to waste.
At MAPFRE we are already on it.**





This document has been drafted by MAPFRE with the sole purpose of stimulating debate and providing a plausible picture of how Generative AI could impact society and the role that insurers could play in different scenarios. All information, references and examples are presented in good faith and for non-commercial purposes. The images incorporated in this report have been produced using Generative AI tools.

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