

Expanding strategic vision: The role of Non-Utopian Unreal Scenarios in decision-making

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ABSTRACT

The main goal of this study is to document the Non-Utopian Unreal Scenarios—or NUUS—and to propose a mathematical approach, presenting them as a strategic tool that seeks to contribute to decision-making processes in various fields, in addition to those already existing, such as, for example, the Hurwicz, Wald, Savage and Laplace criteria. Traditional scenario planning often focuses on probable outcomes, which can limit strategic vision and the preparation of strategies that go beyond the limits set by the six existing scenarios. However, NUUS encourages the consideration of improbable but possible high-impact scenarios, thus broadening the scope of strategic planning. We employ a qualitative methodology, integrating insights from the scenario planning and risk management literature. We further highlight the limitations of conventional approaches prioritizing the Maximax and Maximin criteria, proposing a seventh scenario incorporating a broader range of possibilities. The study demonstrates how NUUS can facilitate more robust strategic foresight by analysing historical case studies and theoretical frameworks. Mathematical reasoning is used to develop a framework for calculating the implications of these scenarios, emphasizing the importance of probabilistic thinking in risk assessment. We show organizations can benefit from adopting NUUS to navigate uncertainty and reduce risk. We also discuss the practical applications of NUUS, illustrating its potential to inform strategic decisions in complex environments. This study contributes to strategic management by integrating NUUS into decision-making frameworks. Although further empirical studies will be required to validate the effectiveness of NUUS in real-world applications, with the ultimate goal of equipping organizations with the tools necessary to thrive in an increasingly unpredictable world, the conceptualization of NUUS could serve as an impetus for this. The implications of this study extend beyond theoretical discourse and offer practical insights for practitioners seeking to enhance their strategic planning and scenario exploration capabilities.

1. Introduction

In 2015, through a TED conference led by Bill Gate, he discussed how unprepared humanity was to face a pandemic. By that time, despite the outbreaks that other viruses had already experienced, such as Chikungunya (in 2004) H1N1 (in 2009) and Ebola (in 2014); talking about a pandemic seemed a distant and unlikely scenario.

However, 2019 took companies, organizations, and entities of all kinds by surprise the appearance of COVID-19 was not foreseen in the strategic plans, not even as an unforeseen event that could be faced with a virus of that magnitude, it was something of a fiction, a content of reflection in a conference, or a mental exercise. This kind of catastrophe was not even an imaginary scenario at that moment.

As it is known, the scenarios can be described as “alternative sets of possible future occurrences where the impact of various arguments in

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an organization is anticipated, this one probably standing as the most popular technique of social prediction". (p.279), in the words of David (2003), cited by Conill et al. [1].

However, according to the same [1], the scenario method began to be used in the mid-1950s, within the strategic and military studies developed by the Rand Corporation, so it can be intuited that studying scenarios it is not exclusive to social studies. These might be proposed and constructed at the time of devising a strategy, be it financial, marketing, political or economic, in addition to the military field.

After reviewing the literature associated with the topic, it seems that there are three most popular scenarios when studying the consequences of any action, when planning a strategy or when looking for the most optimal option when making a decision, especially when Game Theory is used as a strategic tool. These scenarios are usually the optimistic, the trend and the pessimistic. The trend scenario is also known by other names such as 'real' or 'conservative' scenario. This study has considered only these three main scenarios in its development. However, it also explores the concepts associated with other scenarios such as the idealistic or utopian, the contrasted, and the catastrophic.

Each scenario has certain characteristics, related to the limits of the problem posed and is adjusted, as will be seen later, to what is expected to be found if any of them occurs.

Now, when thinking about the three main scenarios mentioned, from a critical perspective, it is possible to ask: Are these three scenarios, raised by several authors, enough to make the decision or propose a strategy?

Barker (1985) explains that paradigms are patterns or models that establish the way of doing things, therefore limiting oneself to studying only three scenarios could be considered a generally accepted paradigm in some disciplines.

As part of the aim of this document, both the three scenarios mentioned above and others—which will be studied in the following pages—, are not enough to cover all the possible responses to a problem, depending especially on its characteristics, and therefore it does it is necessary to propose an additional type of scenario that complements the existing ones, which could be called «Non-Utopian Unreal Scenarios», hereinafter referred to as «NUUS».

The concept of NUUS will be discussed in more detail in this document, but it can be said that they are those exploratory scenarios that are not contemplated when exploring possible responses, changes, reactions, or events but that, due to certain factors associated with chaos and uncertainty, may materialize when none of the scenarios foreseen—at the time of carrying out any strategic planning— come to pass. This significantly differentiates them from the traditionally explored scenarios, since the NUUS only materialized when none of the three common scenarios (trend, pessimistic and optimistic)—or any other one—, had occurred.

It is important to highlight that the NUUS do not make necessarily direct reference to a chaotic and negative event, as occurs when catastrophic scenarios are explored, since they can be presented as situations that completely change the strategic line drawn that could be highly or relatively convenient or not.

On the other hand, NUUS differ from contrasted scenarios precisely because they are not explored through a Four-Quadrant Approach matrix, using the Delphi method or through a PESTEL analysis, to name three methodologies associated with contrasted scenarios. This is because NUUS are scenarios that are outside the limits of the scenarios usually explored, although they may derive from any of them.

One way to understand where the NUUS are located, compared to the 6 traditionally known and studied strategic scenarios, has been illustrated in Fig. 1.

Although the type of scenario proposed here has been discussed and developed by the authors of this study before the appearance of COVID-19 (experienced worldwide at the end of 2019 and weakened at the end of 2021), the pandemic has become an indirect demonstration of the existence of NUUS, related to unexpected results with low uncertainty,

not because of the lockdown, but its consequences. The spread of a pandemic certainly implies the loss of human lives or their impact, so its impact is not uncertain. However, depending on its scope, the consequences of a pandemic will depend on the response that each entity, government or region offers and that is where the NUUS can materialize.

It can be said then that the main problem that is expected to be addressed in this study, when proposing the NUUS—from a theoretical perspective and its mathematical formulation—, lies in the need that companies, organizations, entities and institutions have—as well as groups and individuals—to explore all possible scenarios, to project objectively and sufficiently, the strategies, actions, and decisions that need to be taken in a particular situation.

Although the addition of a fourth scenario—the seventh if we count all the existing ones—, if only the three most used (optimistic, trend, and pessimistic) are taken into account, it does not seem to be a topic that was discussed in the past, the economic repercussions that it has meant for companies, organizations and entities, the emergence of the pandemic, after a year, seems to offer the ideal conditions to introduce a disruptive element—as the NUUS—to strategic planning and decision-making that allows proactivity when proposing the scenarios that can be faced.

It is necessary to highlight that this research does not intend to annul, correct, contradict or belittle the points of view of other authors regarding the concepts, uses, and utility that they have proposed and developed in their works concerning the scenarios used in different disciplines.

2. Review of literature

2.1. Scenarios and types of scenarios

Apparently, there is no single position regarding the concept of scenario planning, according to [2]:

The existing differences are usually reflections of the use of decision aspects in scenarios, which are applied to a different extent. It deals with mixing possibilities of external environment development which is not usually influenceable or partly influenceable by the decision-making subject on the one hand and an intentional selection of a certain action variant by this subject on the other hand [2, p. 1].

However, a coherent line can be found that is shared by several authors in relation to the concept of strategic scenarios, as described below.

For example, Gaspars-Wieloch [3] states that, "scenario planning is (...) often very helpful in uncertain decision problems" (p.22), although this statement does not necessarily apply only to uncertain scenarios.

Bishop et al. (2007), cited by Luesink et al. [4] explain that "scenario planning is part of a foresight study, where scenarios help to create actual stories about the future" (p.2).

It can be intuited that before any upcoming or future decision, any decision-making entity must explore and know the possible results of its actions and, based on this, prepare the next steps. This is, in the opinion of the authors of this study, one of the reasons why it is imperative to know how many and which scenarios should be explored and projected before making a decision, however complex or simple it may be.

Luesink et al. [4] highlight that "as scenario planning is booming in business continuity and crisis management, a multitude of methods are being developed, contributing to a wide array of concepts and approaches" (p.9), which suggests that the emergence of new concepts, proposals or models that allow for expanding the current vision of the scenarios that are studied when planning strategies is logical.

For Kahn & Wiener (1968), cited by Martínez [5], a scenario is understood as a "hypothetical series of events constructed with a view

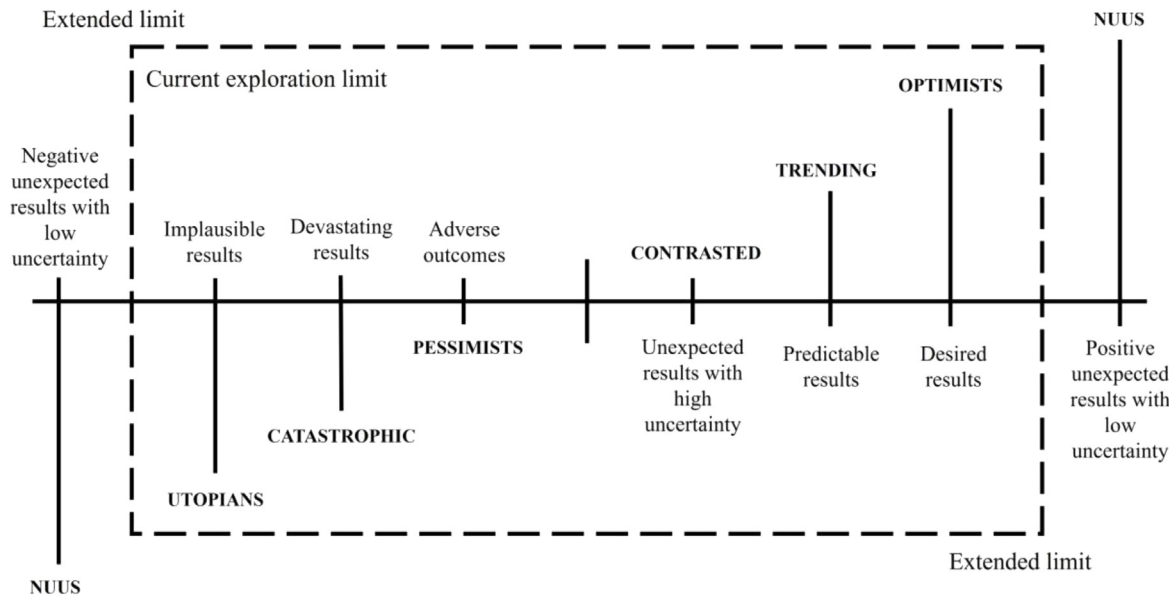


Fig. 1. NUUS and their position compared to other strategic scenarios. Source: Elaborated for this study.

to bringing to light causal sequences and decision knots”. (p. 10), while for Bluet & Zemor (1970), also cited by Martínez [5], a “scenario is a set formed by the description of a future situation and by the series of events that allow us to move from the original situation to the future situation”. (idem)

Cordova and Rouwette [6] explains that the “scenarios are a set of narratives describing different alternative futures, constructed with an iterative approach based on the uncertainties of the context, with the aim to raise awareness of plausible futures and increase performance of the organization” (p.9).

There are two key aspects into the above concepts, which are found in the words «hypothetical» and «alternative futures».

It is known that something hypothetical is that situation, response, event, action or consequence that could or could not happens. Even, according to [7] it can be something imaginary.

Now, according to [8], the term “alternative futures” —sometimes exchanged for future-thinking— implies to the exploration of “multiple possible futures rather than trying to predict the most likely one” (p. 29). Cork et al. [8] also state that this type of strategic exercise “enable people to understand how the present might sit in relation to (...) possible futures, broaden their imagination about possible futures, foster a shared understanding of desirable or preferable futures, and explore pathways towards those and other futures” (idem).

The approaches above are essential in understanding the NUUS proposed here as hypothetical scenarios oriented to explore not unlikely alternative futures.

It is important to highlight that according to Gabiña (1998), quoted by Martínez [5], there are two types of scenarios:

(...) exploratory ones, which start from previous and present trends and lead to plausible futures; [and] the anticipatory or normative ones, built from alternative images of the future, desired or feared, and designed in a «retro projective» way, depending on whether they take into account the most probable or the most extreme evolutions, can also be trend or contrasted, respectively [5, p. 10].

Regarding NUUS, these should be considered as exploratory scenarios —as was already stated—, due to the search for future alternatives that are not completely improbable or strictly impossible or fantastic.

Unlike Gabiña (1998), Masini & Medina (2000), cited by Vásquez and Ortégón [9], state that there are six scenarios that can be studied

when exploring strategic actions or decision-making, these scenarios are, according to them: the trend, the optimistic, the utopian, the pessimistic, the catastrophic and the contrasted one.

In general, when proposing scenarios to establish strategies or choose the best action —under the premise of facilitating the study of the most likely events— only three of them are usually studied: the optimistic scenario, the pessimist, and the trend —as has already been stated—, even more so if they are constructed through specific criteria to Game Theory. To understand the NUUS is important to explain those mentioned scenarios.

Based on [9], a trend scenario is the one that:

(...) tries to show what will happen if things continue as they are. However, it is not enough to think about the extrapolations of the trends that can occur, it is necessary to explain what are the historical factors, or new ones that influence or contribute to the expected trend being similar to the current one, that is, it is necessary to specify those factors that make the trend tend to strengthen [9, p. 152].

Vásquez and Ortégón [9], also explain that an optimistic scenario is:

(...) located between the trend scenario and the utopian, ideal or more desirable scenario. The optimistic scenario contemplates reasonable and positive changes that do not border on an inordinate ambition, based more on wishes than on the fundamentals that the facts and data carry. The optimistic scenario proposes desirable but plausible or credible actions that distinguish what can be achieved in the short, medium and long term Vásquez and Ortégón [9, idem].

And Vásquez and Ortégón [9], also explain that a pessimistic scenario is understood to be one that:

(...) contemplates a deterioration of the current situation but without reaching a chaotic situation. It is the scenario that is in the middle of the trend scenario and the catastrophic scenario or that situation that dramatically and rapidly worsens a system due to destabilizing, unexpected and uncontrolled factors Vásquez and Ortégón [9, idem].

Different studies have included optimistic and pessimistic scenarios, especially when the researcher tries to show only two possible outcomes. An example of this can be the study carried out by Nordgren [10], offering a critical analysis of the debate on climate change, where he explored only those two scenarios.

Now, Gómez et al. [11], also explain two additional scenarios, the idealistic or utopian scenario and the contrasted scenario.

When speaking of idealistic or utopian scenario, Gómez et al. [11], refer to that scenario “where appropriate positive changes occur to generate positive reinforcement processes, commonly called «virtuous circles», which also demand that decisions be made that make this possible. series of events”. (p. 17)

Regarding the contrasted scenario, Vásquez and Ortegón [9] explain that it is the scenario:

(...) where the unexpected happens and uncertainty reigns, that is, where there are many breakthrough factors that break the existing trends at a given moment. Its consequences should not necessarily be considered negative, as it is a scenario that invites you to think creatively about new possibilities to channel positive events or counteract negative ones. This scenario is reserved for «thinking the unthinkable». The contrasted scenario is important to the extent that it forces us to think that everything can change abruptly, however it is not an arbitrary scenario because it must have an argumentative logic that supports it Vásquez and Ortegón [9, p. 152].

Finally, Astigarraga [12], states that the catastrophic scenario is the one who “dramatically and rapidly worsens a system due to destabilizing, unexpected factors and out of control”. (p.9).

When reviewing the six scenarios mentioned, it can be inferred that they are associated with internal and external variables, mainly associated with possible changes that may or may not occur and, therefore, alter what is stated in each scenario.

Nevertheless, it is important to highlight what is stated for [6] when they say that “a scenario is constructed not with the goal to predict the future or make a forecast, but rather to construct multiple possible stories of future situations” (p.9).

Considering the statement of Cordova and Rouwette [6], any effort to explore possible future situations is plausible, and it should not be regarded as a strict forecast of incoming events, they are just a likely visualization based on what we know, we estimate or what we fear or desire.

2.2. Decision-making and game theory

According to [13] decision-making “involves an act of identifying and ably selecting among an array of alternatives based on the inclination. It includes variety of processes that are all intermediate steps between thought and action which are the precursors to behaviour” (p.32), and as is known those alternatives are study using different scenarios and tools as Game Theory, to name one of them.

Using Game Theory to explore scenarios when making decisions is not unusual in the management field. Studies such as those carried out by Batiuk and Kuzyk [14], Long and Duan [15], and Thomas et al. [16] show how exploring scenarios through game theory can lead to the most optimal decision.

With regard to decision-making and game theory, the three scenarios explained above take on particular importance when strategies such as those of Wald, Laplace, Hurwicz and Savage are studied. As [17], puts it, the previously mentioned strategies, also known as criteria, are used when the probabilities are unknown or ignored. They are also considered alternative management methods to reduce risks, as [18] stated.

Related to Wald criterion, Vitoriano [17], explain that:

(...) the worst is supposed to happen, and choose the alternative that gives the best value. In this way it is ensured that in the worst case the best possible is obtained, which corresponds to a pessimistic vision of what can happen. In the case that payments are costs, this philosophy implies choosing the minimum of the maximums, calling them the minimax, while if they are profits, it will be the maximum of the minimums, calling them the maximin [17, p. 7].

Mathematically speaking, Hein [19], explain that Wald’s equation comes from given “random variables X_1, X_2, X_3, \dots with common finite mean and a stopping rule τ which may depend upon the given sequence, we will be interested in finding conditions such that the following holds: $E(X_1 + \dots + X_\tau) = E(X_1)E(\tau)$ ”. (p.1)

Regarding Wald’s criterion, it is necessary to highlight that his criteria have been designed for homogeneous environments, however, as [20] explain, a “homogeneous environment is an assumption that might not be met in realistic situations”. (p. 4.731), therefore, it could be said that it is a valid hypothetical approach and, at the same time, non-utopian.

Vitoriano [17] also stated that the Hurwicz criterion:

(...) combines pessimistic and optimistic attitudes, valuing each alternative with a weighting between the best and the worst possible. This criterion presents the difficulty of estimating the value of the decision maker’s optimism index, so that the solution is usually obtained for all the possible values of this index and an attempt is made to place the decision maker in any of the intervals resulting from the optimism index [17, idem].

According to [21], Hurwicz criterion is:

(...) a middle ground between the Maximax and Maximin criteria. It involves choosing a coefficient of optimism $\alpha: 0 \leq \alpha \leq 1$. Then the criterion selects the alternative with the highest weighted payoff: $\max\{i\} (\alpha \max\{j\} C_{ij} + (1-\alpha) \min\{j\} C_{ij})$ [21, p.2]

About Savage strategy, Vitoriano [17], refers to the fact that it:

(...) takes into consideration the opportunity cost or penalty or regret for not correctly foreseeing the state of nature. These opportunity costs are evaluated for each alternative and each state, making the difference between the best of that state and what that alternative provides for that state, building the so-called matrix of penalties or opportunity costs. The above criteria are applied to this matrix, and the expected cost can be applied, or, what is more usual, the minimax criterion, then also known as the criterion of minimizing maximum regret [17, p. 7].

In the words of Quliyev et al. [22], “Hurwicz criterion takes into account the possibility of both the worst and the best market behaviour for the company. As such, the worse the consequences of erroneous decisions, the greater the desire to insure against mistakes”. (p.70), as can be seen, two of the three most used scenarios are presented in the Hurwicz criterion.

Paraskevopoulos [23], explain that in Savage criterion:

(...) regret is defined as the opportunity loss $r(a_i, \theta_j)$ to the decision maker if action alternative a_i is chosen and state of nature θ_j happens to occur. Opportunity loss is the payoff difference between the best possible outcome under θ_j and the actual outcome resulting from choosing a_i . Formally:

• If $v(a_i, \theta_j)$ corresponds to positive-flow payoff then:

$$r(a_i, \theta_j) = \max\{v(a_k, \theta_j)\} - v(a_i, \theta_j) \tag{1}$$

• If $v(a_i, \theta_j)$ corresponds to negative-flow payoff then :

$$r(a_i, \theta_j) = v(a_i, \theta_j) - \min\{v(a_k, \theta_j)\} \tag{2}$$

Finally, the Laplace strategy, explained by Chaves [24], refers to the action of:

It is based on the revenue maximum MAXIMAX HURWICZ <i>Optimistic scenario</i>	It is based on the probability objective of occurrence LAPLACE <i>Trend scenario</i>
<i>Pessimistic scenario</i> MAXIMIN O WALD HURWICZ It is based on the minimum profit or least loss.	SAVAGE MINIMAX

Fig. 2. The three most common scenarios and the Game Theory tools to study them. Source: Elaborated for this study.

(..) assume that each of the N data measured in a data series, K_i , has the same $1/N$ frequency of cases of the recipient population that is defined. This premise allows estimating the approximate value of the mean U as the arithmetic mean of the data [24, p.53].

Pierse [21] explains that Laplace criterion “chooses the alternative where the average payoff is highest: $\max\{i\} ((1/n) \sum\{j\} C_{ij})$ ”. (p.3).

Based on [17], and [24], explanations, it is possible to say that Wald and Savage strategies explore pessimist scenarios. Hurwicz strategy could be used in both, pessimist and optimist scenarios, and Laplace strategy works in a trend scenario, as can be seen in Fig. 2.

As can be seen, in Game Theory, the three mentioned scenarios—the optimistic, the trend, and the pessimistic—are mainly used when Wald, Hurwicz, Savage and Laplace are considered to establish a possible move or strategy.

2.3. Strategic scenarios, risks and uncertainty

Risk and uncertainty come together. Risks do not depend exclusively of historical data or statistics, As [25] explain that “risk is still present even if quantifiable statistics are not. If risk is measured by relative frequency, then some risks are unquantifiable, which creates uncertainty” (p.9). However, the idea of building scenarios responds to the need to reduce both risks and uncertainty.

But risks are not only found in the responses, actions or events that may occur after a strategy has been implemented; risks are also present when we study scenarios intended to explore alternative futures.

Authors as [26] and [27] talk about the risks inherent in studying strategic scenarios in practice. Misinterpretation of a strategic scenario often occurs in the first approaches or studies carried out to determine possible responses or reactions to an action or movement carried out by a company or organization. It occurs at this stage because the measures to avoid bias and/or distortion of data are not as demanding as one would expect. When presenting the projections for review and subsequent analysis for decision-making, it is possible to underestimate the costs, risks and consequences and/or overestimate the benefits in a highly optimistic way. This can lead to failed decision-making that increases the risks and, at the same time, the costs associated with the chosen strategy.

Flyvbjerg [28] relates the scenarios strategic misinterpretation as a behavioural bias. He states that it is “the tendency to deliberately and systematically distort or misstate information for strategic purposes”. (p.1). However, it is prudent to note that misinterpretation of scenarios is not always a deliberate action, but can occur when tools are not used properly or not all possible scenarios have been built. It can also occur when data is out of date or when data has been omitted by accident.

Regardless of which scenario is being explored, whether optimistic, pessimistic or trend-oriented, there is a risk of misinterpretation of the hypotheses presented when they are not properly analysed, studied and reconsidered, even when tools such as artificial intelligence have been used to establish alternative futures.

3. Rationale of the study

Strategic planning cannot be considered as something static. As has been seen, there are at least six types of possible scenarios that any company, organization, entity, or nation can face, although only three of them are the most used.

Expanding our vision when visualizing the future, to make it less uncertain, is a responsibility that, as strategists, we cannot ignore and, therefore, it is part of it to explore the tools that allow us to be more successful in projecting our steps and establish the responses that we will receive from our actions and anticipate, in the best way, our decisions.

It is for all the aforementioned aspects. Hence, it can be said that the rationale of this study can be explained in three perspectives:

- **From an academic perspective:** NUUS may be studied, compared, discussed, and criticized in the academic environment, thereby generating spaces for the generation of new strategic knowledge, visualization of unforeseen situations or with little probability of occurrence or aspects related to teaching in the management of the information necessary for decision-making.
- **From the business perspective:** The study invites companies, organizations, and institutions that need to preview scenarios to coordinate and respond to the requirements of markets (or the demand of some sectors), to develop strategies—through the NUUS—, in the face of situations less likely or that can be ruled out because they are not considered possible. This could offer a competitive advantage for anyone who has anticipated such scenarios and has alternative plans to overcome them.
- **From a professional perspective:** Adding a fourth scenario to the three most used could offer a broader vision, closer to reality, and more objective when projecting strategies, action plans, and decisions. Having an additional tool such as NUUS would allow exploring the pros and cons of the actions that can be carried out both individually or collectively, making it easier for the professional strategist to offer better advice.

On the other hand, it can be considered as a rationale of this study the disruptive vision of how the scenarios could be projected when a strategic plan is developing. This approach implies questioning the comfort zone in which the scenario study could be found. Additionally, the study of this proposal could promote a non-traditional understanding of strategic planning and decision-making.

4. Methodology

4.1. Aim

The main objective of this study is to document and propose the NUUS as an additional option for devising strategies, decision-making, and projected scenarios in any field, and to propose a mathematical formula to calculate them.

4.2. Design and setting of the study

Given the nature of this study, the methodology used should be considered qualitative, with an emphasis on documentary review, and mathematical, inferential and deductive reasoning.

The documentary review is based on data collected from different sources (paper, journals, books) that provided content related and/or linked to the purpose of this study.

To strengthen the scientific position of the research, mathematical, inferential, and deductive reasoning have been used.

According to Sri et al. [29], mathematical reasoning is “a process that is carried out to get a conclusion based on logical-mathematical premises based on relevant facts and sources that have been assumed to be true” (p.2). Therefore, once the conceptual framework of the NUUS had been developed, it was started from the premise of their existence and proceeded to develop a formula that would allow them to be calculated.

For they part, Boddez et al. [30], state that inferential reasoning consists of the study of the premises that lead to obtaining conclusions after carrying out long and slow reasoning processes that can be represented as a modus tollens argument.

And, finally, for [31], deductive reasoning is “the process of inferring conclusions from known information (premises) based on formal logic rules, where conclusions are necessarily derived from the given information and there is no need to validate them by experiments”. (p.235)

Based on the aforementioned concepts and aspects, the methodology chosen for this study follows the required steps to support the conceptual framework and the mathematical approach proposed here.

4.3. Limitations

The study is limited —from a theoretical perspective— to reviewing the three strategic scenarios generally used (optimistic, trend and pessimistic), to establish the conceptual framework of the NUUS, and at the same time, to propose the mathematical formulas to calculate them.

5. Analysis and discussion

5.1. Why to talk about non-utopic unreal scenarios?

Before talking about the NUUS, it is important to explore whether aspects associated with reality or unreality have been considered beforehand when developing scenarios in strategic planning. For example, when Zuluaga & Hoyos (2009) describe the optimistic scenario, they explain that “it is a scenario that can be above the trend, but is not considered utopian or unreal”. (p.17), but when they are describing the idealistic scenario, they associate it only with the utopian aspect, omitting the word «unreal» in the description. This could mean that the idealization of something, although improbable, should not necessarily be considered unreal. And that is what happens when it is compared the definition of unreal with two different sources.

If the [32], is consulted, the word «unreal», textually means “lacking in reality, substance, or genuineness”, but the [33] states that the word «unreal» could be used as something “extremely or surprisingly good”. Considering the last definition, it is possible to infer that if something is labelled as “extremely good” —for example— it must be felt or experienced, even if it is visualized as «unreal».

In the other hand, the [34], defines reality as “something that is neither derivative nor dependent but exists necessarily” when referring to one of its meanings, so it can be inferred that when something lacks existence it is unreal and that it becomes real once it exists effectively.

In the case of the term used in the NUUS «unreal-scenarios» it refers to the fact that —although probable— they have not occurred, so they are not a real fact in a precise moment, they are hypothetical and, therefore, until that moment they are unreal, based on what was explained in the previous paragraph.

It is important to differentiate between «unreal» and «unrealistic». According to [35], an unrealistic thing is something “not realistic: inappropriate to reality or fact”, so, unrealistic could be understood as something impossible to happen or exist.

Now, Merriam-Webster Dictionary [36], dictionary defines the term «utopian» as “of, relating to, or having the characteristics of a utopia”,

and the same source defines «utopia» as “an imaginary and indefinitely remote place”.

It is important to note that the term utopia comes from the homonymous work of Sir. Thomas More (1478-1535). In his article Tomas Moro (1478–1535), Watson [37], explains that “the term ‘utopian’ is often used to refer to an idealistic and highly desirable idea or concept but at the same time totally unworkable and unrealistic”. (p .181)

Once the previous points have been clarified, it can be established that the researcher, to name the scenario proposed here, have taken as a basis the concepts offered by the Merriam-Webster dictionary, from which, as already indicated, it can be inferred that when something does not exist, from effectively, that something can be considered unreal; However, it is important to emphasize that the effective non-existence of something does not imply the impossibility that it could exist or happen.

Therefore, by consensus, the researchers of this study consider that as long as the situation can be managed with the three traditional scenarios (optimistic, trend-oriented, and pessimistic) or any of the three additional ones (idealistic or utopian, contrasted, and catastrophic) already known, the seventh scenario —proposed here—, does not exist and, hence, it might be considered «unreal», something out the limits of the traditional studied scenarios. However, when none of the six scenarios offer a solution, and answer, and/or any strategy or tactic to face the problem, the scenario that has been considered «unreal» makes its appearance, especially when the vision of the problem posed is expanded, as will be explained later.

Although it is true that the proposal made by the authors could be understood as «initially unidentified scenarios», it was considered to call them NUUS, because the term turned out to be more in line with the main idea of the new proposed one, and in this way the NUUS can be better differentiated from catastrophic and contrasted scenarios.

Likewise, since the term «utopian» is generally associated with something unfeasible, the authors consider that —given the conditions for the appearance of the seventh scenario proposed here—, this scenario must guarantee the viability and materialization of what is explored in it. It is this requirement that automatically makes it a «non-utopian» scenario.

Regarding to the question «why we should talk about NUUS», it can be said that the answer lies in the strategic need to increase the number of options that allow us to anticipate alternative futures, make the best decisions, and reduce risk and uncertainty. Until now we have six possible scenarios, the seventh is proposed here and many other ones could be developed in the near future.

5.2. Non-utopian unreal scenarios (proposal)

Barker [38] states that there is only one way of seeing, foreseeing, and ideating the future, and that is to go beyond the limits of our paradigms. The NUUS could help with that.

The proposal the NUUS arises from the existence of solutions, situations or responses that are not present in the elements that make up the six aforementioned scenarios and that, therefore, are not considered or included when carrying out an analysis, making a decision or for the projection of future consequences, trends and/or actions to face a problem. As these solutions are possible and feasible, something that does not exist effectively in the original statement of the problem to be solved of faced, they can be considered as unreal if the concept issued by the Merriam-Webster dictionary is respected. The main characteristic of the NUUS is that they can only materialise when —as already explained—, none of the three traditionally studied scenarios occur, such as the optimistic, the trend or the pessimistic, nor the other three additional scenarios mentioned in previous paragraphs.

However, in addition to what has already been stated, researchers propose to understand the NUUS as:

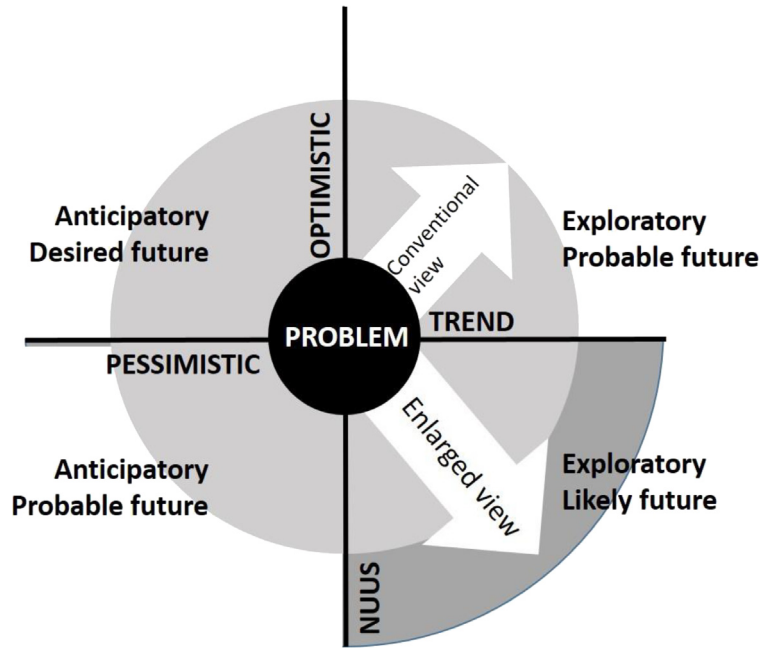


Fig. 3. Graphic representation of the NUUS.
Source: Elaborated for this study.

Those scenarios that contemplate solutions, responses, actions, events, or any other situation that are not foreseen within the limits of conventional scenarios, but that can respond to a specific problem or resolve it, offering an option or intervening in decision-making at the time of study, with the strategy, action or response obtained being possible to be carried out, faced and/or implemented.

It can also be said that NUUS broadens the conventional view with which a problem is usually observed, limiting it to three possible scenarios, as is commonly done, expanding them to arrive at an optimal response that must satisfy the parties involved, solve the problem or prepare us to face a specific event, whether negative or positive.

5.3. Prospects and NUUS

Gaston Berger, cited by Astigarraga [12], defines the prospective as “the science that studies the future to understand it and be able to influence it” (p.3), and the scenarios try to predict the future to, precisely, impact on the.

Bertrand de Jouvenel, also cited by Astigarraga [12], proposed the concept of «future-proof», “that is to say that the future can be conceived as a multiple reality” (p.14). Therefore, it can be inferred that prospective methodologies are supported in this line of thought.

Godet [39], explains, in accordance with the concept of utopia, that all “possible scenarios are not equally probable or desirable” (p.11), and that these depend especially on the level of uncertainty that is handled.

Godet [39], also states that:

Uncertainty about the future can be appreciated through the number of scenarios that divide the field of probability. In principle, this number is higher depending on the greater uncertainty; but only in principle because it is necessary to take into account the difference in content between the scenarios: the most likely ones can be very close or highly contrasted [39, p.12].

Based on this explanation, a place can be found for NUUS because its content must be considered very close, which places it in this type of scenarios in the likely or alternative future, as it shown in Fig. 3.

5.4. Characteristics of the NUUS

It can be said that the NUUS proposed here are characterized by:

- Find plausible and possible answers to real problems, beyond the limits existing in those problems and the way it can be study in the conventional existing scenarios.
- Be oriented towards immediate futures, so it does not contemplate abrupt changes.
- Provide answers to problems with little uncertainty or with manageable levels of uncertainty.
- Offer an expanded vision of the problem, overcoming the natural limits that the optimistic, pessimistic and trend scenarios expose without this meaning to obviate its logic.
- Present an optimal response, without that response necessarily being the most optimal. This is because NUUS do not pursue profit maximization or loss reduction as Hurwicz, Wald or Savage.
- Be an exploratory scenario.

According to these characteristics, then, it is possible to understand that NUUS are oriented towards exploring options that, in traditional scenarios, would not be possible to locate.

The support of NUUS can be found, also, by making a simile between the scenarios explained here and mathematics, especially when studying the nature and characteristics of numbers.

The optimistic and trend scenarios could be seen as the natural numbers (N), while the pessimistic scenario could be compared with the integers (Z), since they subtract; and, finally, NUUS could be compared with rational numbers (R), since these have a finite quantity in their decimal extension, as explained by Zermeño [40].

Natural and integer numbers offer exact solutions, while rational numbers do not, but that does not prevent these from being seen as plausible solutions.

5.5. Difference between of the NUUS and the idealistic and contrasted scenarios

Now, given the description of the idealistic or utopian scenarios by Gómez et al. [11], it can be seen that the NUUS, proposed here, differs

from the idealistic one, since this last scenario supposes the existence of positive changes to generate processes of positive reinforcement, while the NUUS pursues the expansion of the conventional vision. Furthermore, based on the approach of Sir. Thomas More (1478-1535), cited by Watson [37], when he refers to utopia as a “desirable but at the same time totally unviable and unrealistic” approach (p.181), another difference is presented, since the NUUS suggests that the answer is completely possible to materialize.

Likewise, if the description of the contrasted scenario is taken into account, explained by Gómez et al. [11], it can be seen that it differs from the NUUS proposed, since it is not a question of responding to the occurrence of the unexpected and is not carried out in the face of uncertainty, on the contrary, the NUUS proposed here is oriented to seek answers beyond the limits of the problem, which requires knowledge and certainty.

It cannot be ignored that [9], explain that the contrasted scenario “is reserved for «thinking the unthinkable»”, (p. 152), it is important to highlight that they expose it under the premise that “everything can change abruptly” (idem), while the NUUS does not base its proposals on sudden changes, but on responses that can satisfy the expectations of the parties involved even if they are not entirely optimal. Additionally, the NUUS are not built through a Four-Quadrant Approach matrix, using the Delphi method, or through a PESTEL analysis, as was explained in the introduction.

5.6. NUUS and Game Theory

In a Game Theory problem, devised by Ray [41], can exemplify the proposed concept of NUUS proposed here.

It can be read in the problem proposed by Ray [41]:

Two couples live together and each one has to decide the number of children to have. The raising of the children has a cost, if they are ours of «c» monetary units per child. On the other hand, as the two couples live together, the children of the other also impose a cost, this cost is equal to «d» for another’s child. Having children also generates benefits, each couple only benefits from their own children. The total benefit of having «n» children is equal to A (n). If each couple can have a maximum of two children, identify each of the elements that make up the game [41, p. 740].

Although the aforementioned problem does not lead to an administrative or managerial situation, the approach requires a sharp strategic vision and an objective analysis of the situation, which allows its content to be extrapolated to an organizational scenario where, given the conditions, some aspects may involve actions similar to which the case exposes in other contexts.

If the case is transferred to an administrative or organizational situation, it could be proposed as follows:

Two companies share the same office and each one has to decide the number of interns to have. The hiring of interns has a cost of “c” monetary units if they are from the first company. On the other hand, since the companies share the same office, the interns of the other firm also impose a cost, this cost is equal to “d” for an intern of the second company. Having interns also generates benefits, each company only benefits from its own interns. The total benefit of having “n” interns is equal to A(n). As in the original case proposed by Ray [41], each company can have a maximum of two interns, therefore, it is possible to identify each of the elements that make up the game and perform the calculations corresponding to its different options.

When analysing the problem, the following payment matrix emerges, as shown in Table 1.

Table 1
Payment matrix based on Ray’s problem.
Source: Elaborated for this study.

		COMPANY 2	
		1 INTERN	2 INTERNS
COMPANY 1	1 INTERN	—Option 1— 1A-(C+D), 1A-(C+D)	—Option 2— 1A-(C+2D), 2A-(2C+D)
	2 INTERNS	—Option 3— 2A-(2C+D), 1A-(C+2D)	—Option 4— 2A-(2C+2D), 2A-(2C+2D)

Table 2
Payment matrix with assigned values based on the problem proposed by Ray [41].
Source: Elaborated for this study.

		COMPANY 2	
		1 INTERN	2 INTERNS
COMPANY 1	1 INTERN	—Option 1— -15,75; -15,75	—Option 2— -75,5; 18,75
	2 INTERNS	—Option 3— 18,75; -75,5	—Option 4— -37,5; -37,5

If random values⁴ are assigned to the letters proposed in the problem posed by Ray [41], as follows: A is 2 times D. D is $\frac{3}{4}$ of C. C is equal to 75. Since C has a value of 75, the value of D is 56.25 and that gives A value of 112.5 monetary units.

By substituting the numbers for the values, we can obtain the following payoff matrix, as can be seen in Table 2.

Based on the Table 2, the following analysis emerges:

- **Option 1** (1 INTERN; 1 INTERN): If Company 1 decides to have 1 intern but Company 2 chooses to have 1, both companies would have the same money deficit.
- **Option 2** (1 INTERN; 2 INTERNS): If Company 1 decides to have 1 intern but Company 2 chooses to have 2 interns, the Company 1 would have a deficit of 75.5 monetary units while Company 2 would only receive 16.74% of the benefit per child. This situation is repeated in a reverse way in **Option 3** (2 INTERNS; 1 INTERN).
- **Option 4** (2 INTERNS; 2 INTERNS): In this case, it is observed that each company has chosen to have 2 interns, therefore both companies would have a deficit of 37.5 monetary units.

The idea of this exercise is to make the most optimal decision, which appears to be located in quadrant 1 INTERN; 1 INTERN even though both companies would have losses.

Based on the scenarios described above, it could then be said that, depending on the case, Option 2 (1 INTERN; 2 INTERNS) is optimal for Company 2, while Option 3 (2 INTERNS; 1 INTERN) is optimal for Company 1. In the aforementioned situation, the scenario of the option 1 (1 INTERN; 1 INTERN) could be the conservative or real scenario, while the scenario of the option 4 (2 INTERNS; 2 INTERNS) cannot be other than the pessimistic one, as represented in Fig. 4.

But, given the numbers, would this analysis be complete?

If both companies decide to have an intern, their income will be reduced or not substantial. Under conditions of inequality, with one company is having one intern and the other two, the burden for the company with one intern would be greater than that for the company with two. And if you both decide to have two interns, their finances are similarly affected again; Therefore, the options stood by the problem, although valid, do not allow them to reach a real optimal solution, this because what is optimal for Company 1 is not optimal for Company 2 and vice versa.

⁴ These values were assigned only as an academic exercise and do not respond to any approach made by Ray [41].

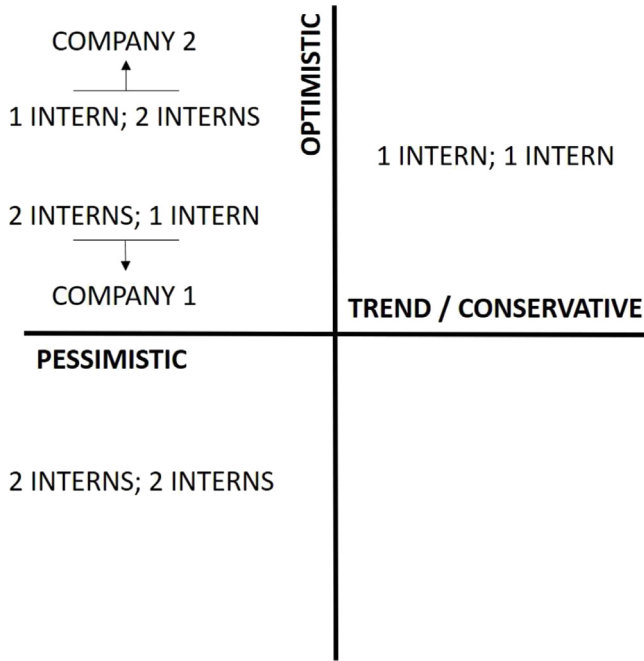


Fig. 4. Observed scenarios based on the problem proposed by Ray [41].
Source: Elaborated for this study.

Additionally, it can be observed in the payment matrix there are two (2) Nash equilibria, in the option 1 (1 intern, 1 intern) and in the option 4 (2 interns, 2 interns).

According to [42]:

(...) a Nash equilibrium of a game is an agreement that neither party can break at will without losing. That is, if someone wants to break the pact and does so unilaterally, they risk earning less than what they would have earned within the pact [42, p. 140].

But, for the problem proposed by Ray [41], according to the values assigned to the letters, there is no gain, in both equilibria it is lost.

Therefore, the solution to the problem could be found if NUUS are used.

This NUUS would correspond to making the decision to have zero (0) intern, given that the conditions, from the economic point of view, would not favour the parties involved; which is completely plausible and possible to do.

Note that having zero (0) intern is not an option in the problem, since the approach clearly states that they must decide the number of interns to have up to a maximum of two (2).

The problem invites us to think of one (1) or two (2) interns, because, on the contrary, companies would not be encouraged to offer a benefit per intern, so, The problem invites us to think of one (1) or two (2) interns, because, on the contrary, companies would not be encouraged to offer a benefit per intern, so, it is understood that if there were no interns there would be no benefits at all.

Therefore, the unreal scenario is presented as that quadrant where an answer will be found that is not foreseen among the options, solutions and/or outputs to a problem, or does not exist in an effective way, but that, directly, it represents a benefit for decision makers if this scenario is explored.

It is imperative to emphasize that it is not a viable scenario for one of the two companies to have interns and the other not, since for the latter it would become an additional expense, since not having interns would not receive benefits and would have to respond to the costs caused by other company's interns. The NUUS would be represented as shown in Fig. 5.

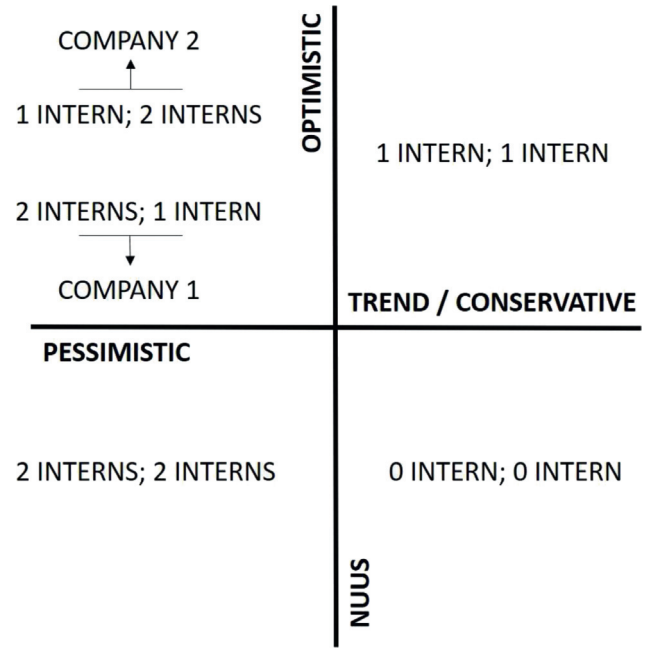


Fig. 5. Decision-making distribution according to the scenario (including NUUS).
Source: Elaborated for this study.

As can be seen in Fig. 5, using the NUUS, the answer to the problem could be not having interns at all, since the expenses associated with having interns exceed the contributions they would receive for the same reason. Not having interns, when the problem arises, is a credible and possible answer.

5.7. NUUS criterion

Just as the strategy of Wald, Savage, Laplace, and Hurwicz can be expressed mathematically, NUUS can also be explained and represented in the same way.

The mathematical equation shown below is based on the calculation of probabilities. It is a model developed based on the foundations of the Bayesian theoretical proposal. It emphasizes the occurrence approaches based on probabilities, rather than the more traditional approaches to statistics that are based on the study of frequencies.

The mathematical model consists of two formulas —proposed by the main author of this study— that can be used interchangeably since the result obtained from any of them, as long as it fits the premise that accompanies it, offers the most probable NUUS.

In the first proposed equation (NUUS₁), the result must be ~ 1 to be considered the most probable NUUS.

$$NUUS_1 = \frac{\left(\frac{Mv}{-Hp}\right) - \left(\frac{mv}{-Lp}\right)}{(Mv - Lv)} \approx 1 \tag{3}$$

In the second proposed equation (NUUS₂), the result must be << -1 (or the result that is farthest from -1), to be considered the most probable NUUS.

$$NUUS_2 = \frac{\left(\frac{Mv}{-Lp}\right) - \left(\frac{mv}{-Hp}\right)}{(Mv - Lv)} \ll -1 \tag{4}$$

Where:

- *Mv* is the major value registered of the event.
- *mv* is the lower value registered of the event.
- *-Hp* is the major negative probability of occurrence of the chosen event, and

- $-Lp$ is the minor negative probability of occurrence of the chosen event.

To calculate $-Hp$ the following equation is used:

$$-Hp = \left(\frac{-1}{n} \times (n - 1)\right) \tag{5}$$

To calculate $-Lp$ the following equation is used:

$$-Lp = (-1 - (-Hp)) \tag{6}$$

Where n is the number of events to be projected.

This model establishes the relationship —direct and indirect— between the occurrence and non-occurrence of a phenomenon. After that, the complete range between the highest and lowest probability of occurrence is considered as the total of probabilities. In this last part of the methodology, similar approaches to integrated comparative indices are followed.

5.8. NUUS contribution

Like any other attempt, in any branch of knowledge, to broaden our vision and offer tools that help us reduce risks and minimize uncertainty, the NUUS have been proposed to cover the gap that exists in the six existing scenarios and, especially, in the three most used, which consists of the absence of additional options when none of them occur or materialize.

Having a tool that facilitates the exploration of events, occurrences, responses, actions or consequences that have not been incorporated into any of the six existing scenarios can be useful, even when the occurrence is remote.

For example, if the COVID-19 pandemic had been considered a NUUS, some social, business, political and health actions could have been foreseen and executed in the face of a global event that was considered possible but unlikely.

5.9. Examples of NUUS

5.9.1. The COVID-19 (negative unexpected results)

A practical example of the operational use of the NUUS criterion could be found in the pandemic suffered in 2020 due to COVID-19, if a negative event is considered as part of the alternative future.

Without considering —in the following analysis— the institutions dedicated to the study and projection of health emergencies, such as WHO (World Health Organization) or FEMA (Federal Emergency Management Agency), it is difficult to imagine that any company or organization has included in the study of the probable scenarios (optimism, pessimistic and trend) the emergence of a pandemic and the drastic reduction of its operations due to the quarantine.

As can be inferred, none of the predicted scenarios occurred, not even the pessimistic one, so the only remaining scenario, in a condition to be predicted, is the NUUS.

No company in Spain —for pointing out a case— took into account for 2020, the probability of a Tsunami, Hurricane or Pandemic in its strategic planning, since these events have a low probability of occurrence and they are very rare.

For example, according to José Martínez, quoted by Marcos [43], marine earthquakes “of considerably high magnitude (between 6 and 7 or higher) that can affect the Iberian Peninsula [and cause a Tsunami] occur approximately every 1500 or 2000 years” (p.2).

However, if it is estimated which of the three events aforementioned —outside the three scenarios traditionally studied— could be the more likely, in the event that pessimistic, trend or optimistic scenarios do not occur, this would be the estimation, as can be seen in Table 3

As can be seen, if the NUUS₁ criterion proposal is followed, the result should be ~1 to be considered the most likely NUUS and, in this case, it would correspond to the pandemic.

Table 3

Example of the estimation of a NUUS.

Source: Elaborated for this study.

Likely event	Mv	mv	$-Hp$	$-Lp$	Result
Tsunami	10%	2%	-0,66	-0,33	-1,14
Hurricane	8%	0,50%	-0,66	-0,33	-1,41
Pandemic	9%	2,50%	-0,66	-0,33	-0,93

Now, it is important to highlight that the values shown here in Table 3 for each event (Tsunami, Hurricane, and Pandemic), correspond to the estimated average of different sources consulted and not to a specific source, so they should not necessarily be considered as official figures. For the purpose of this study, the values have been placed as an academic exercise.

The previous exercise allows us to infer that companies, institutions, or organizations must make estimates of the events that they consider to be part of a NUUS, in order to determine whether or not this scenario could occur when none of the three main scenarios (optimistic, pessimistic and trend) occur, and/or the other three scenarios (idealistic or utopian, contrasted, and catastrophic) have been ruled out

5.9.2. The Operation Dynamo (positive unexpected results)

Churchill’s strategies have been studied and analysed in different periods of contemporary history from the late 1940s to the present. Studies such as those carried out by Lough [44] and Gerth [45] are proof of this, where his beginnings and training, as well as his ability for diplomacy, state management and strategy, are explored.

In relation to the above, one of the examples that could illustrate the use of NUUS, although indirectly and without being aware of it —without mathematical calculation documented—, can be found in the strategy carried out by Winston Churchill in the so-called «Operation Dynamo».

Although the numbers and calculations used for this cannot be established with complete certainty, it is known that all the scenarios studied to evacuate the troops gave pessimistic results. There was no room for uncertainty, the power of the Nazis was known and how they would respond to a direct incursion. However, history documents the exploration and execution of a strategy base on one scenario that did not exist in the forecasts and that promised to solve the problem: using non-military ships.

This is how [46] explains that “regardless of size, speed or performance, any ship capable of crossing the English Channel was welcomed. In small boats of all kinds (...) the Allies managed to escape the Nazi siege”. (p.10)

The Operation Dynamo shows how the NUUS can appear when all the other explored scenarios have been explored and, after a deep evaluation, have not occurred.

6. Conclusions

The study of different scenarios offers the decision-maker and/or the parties involved in a problem the opportunity to convert the data they handle into the information they require to make a decision, carry out a move, create a strategy or any other action that allows them to respond to said problem. The more scenarios are studied, by inference, the closer one can be to a response that can be considered adequate.

This study highlights the importance of developing robust strategic planning frameworks that can effectively address challenges that may be overlooked or not considered when projecting future scenarios. By introducing the concept of NUUS, the research highlights the need to broaden traditional scenario analysis, going beyond those commonly used, such as optimistic, pessimistic and trend scenarios. This disruptive approach aims to provide companies, entities, organizations, groups or individuals with a broader understanding of possible future events, thus improving their preparedness and ability to adapt to uncertainty. The

preliminary findings of the study reveal that NUUS could offer plausible solutions to real-world problems while managing levels of uncertainty, justifying the addition of these scenarios because organizations must anticipate all possible scenarios, even those that may be considered the least likely, which could translate into a competitive advantage as it would allow them to develop alternative strategies that would be unthinkable for those who are unaware of the existence of NUUS.

However, although the use of NUUS does not ensure that the chosen response to a problem—or the projection of an event—is the most optimal, since these scenarios do not respond to criteria such as Minimax, Maximin or Maximax, like other tools of Game Theory; this does not mean that the response or solution, event or action that arises from them does not satisfy the decision-maker's expectations. This clarification is based on the exploratory nature of NUUS, which seek to foresee alternative futures and, for the sake of objectivity, it is not prudent to claim that their results should be considered the most optimal ones.

The implications of this research lie in its potential impact on management, as it fosters a change in the way organizations approach strategic planning and decision-making. By incorporating NUUS into their strategic frameworks, entities could better navigate complex environments and proactively respond to unexpected or unlikely events. This approach could not only enhance organizational resilience, but would also foster a culture of innovation and critical, disruptive thinking that seeks to push the boundaries of generally accepted paradigms.

The practical applications of the NUUS framework are broad and could span several sectors, including business, economics, public policy, medicine, among others. Organizations could use NUUS to conduct scenario analysis that informs strategic decisions, resource allocation, and risk management practices. Furthermore, the study can serve as a basis for practitioners and academics to explore and refine the concept of NUUS, thereby contributing to a broader discourse on strategic foresight.

NUUS represent an option when a response tailored to the immediate future is required and whose previous analysis of the three traditional scenarios does not offer solutions that can be considered adjusted to the expectations of the problem and, therefore, does not promote the adoption of any of them. These scenarios could also be considered an alternative when looking for solutions that require objectivity, maturity and leadership in the face of probable and immediate futures, and could also be used to prevent unexpected but probable events.

Looking ahead, future research could focus on developing mathematical formulations associated with NUUS and exploring their applicability in different contexts and industries. Incorporating empirical studies could help validate the effectiveness of NUUS in real-world scenarios, providing valuable insights into its practical utility. By further developing the understanding of scenario planning, this research paves the way for driving more resilient and proactive mechanisms to visualize and prevent changes or trends in an increasingly uncertain world.

7. Managerial implications

The inclusion of NUUS in the administrative and business field has several managerial implications, as has already been commented on in the previous pages.

The NUUS completes the Cartesian map when establishing the possible scenarios that a company, organization, or country could experience as a consequence of their actions in the past, present, or future.

Additionally, the NUUS allows being more wide-ranging when previewing unexpected changes or unlikely events that under traditional schemes are left out when projecting the possible scenarios that the company, organization, country, or entity will have to face, where they are not necessarily in a position to avoid or control them.

The inclusion of NUUS could represent a competitive advantage for those who want to be proactive and develop strategies that cover unexpected or unusual situations.

On the other hand, considering these types of scenarios in the strategic planning process could improve decision-making and thus guide the tactics that the company, organization, entity, or country has to carry out to achieve its objectives.

A manager or strategist must have a broad vision of all possible scenarios, therefore, incorporating the fourth scenario, to the three ones most used so far, constitutes an added value to the analysis, projection, and development of strategies and set of possible decisions that him/her could have. The incorporation of the NUUS could multiply the chances of success in any operation.

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Code availability

No software has been required.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

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