

RISK INTELLIGENCE IN THE DECISION-MAKING PROCESS OF AN INNOVATIVE PROJECT

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Purpose: The purpose of the paper is to offer a fragmented proposal for a new interdisciplinary view of risk management and risk intelligence on the basis of selected and specified issues including the integration of scientific knowledge and the combination of research strategy methodologies. The content proposed in the publication related to risk analysis and management fulfils the sense of science through the developed indications for predicting and constructing an innovative future and mitigating the risk of knowledge transfer.

Design/methodology/approach: The methodological approach chosen by the author of the study is thinking guided by preconceived conclusive and explanatory sentences. The research methodology, on the risks occurring in the management process of an innovative project, is a description dedicated to the author's approach to the adopted solution to the research problem. In this way, based on methodological considerations, the organisation of the research subject has been structured.

Findings: Based on the professional experience and research carried out by the author of the publication, in the face of new economic challenges, risk analysis means the identification of features, characteristics, decomposed into its components (analysis in the intangible sense), its quantitative and qualitative components (analysis in the tangible sense) and taken into account in the implementation of an innovation project its overall, collective set.

Practical implications: In turn, the practical subject of the issues analysed in the study is the fragmented proposal of a new interdisciplinary combined view of the above problem during the implementation of high-risk projects.

Social implications: The issues related to the process of risk management during the implementation of innovation projects, which permeate economic and social areas today, become relevant for all.

Originality/value: The developmental nature of the work, is due to the importance of internal and external factors of cognitive activity and awareness conditions of the community organised into an organisation. The internal factors in the research carried out can include the variables empirically obtained in the studied organisations in terms of the causes of events. The external factors that the author considered in his work are: social, economic and cultural determinants of risk management.

Keywords: risk, risk management, risk intelligence, project, project management, decision-making process.

Category of the paper: Research paper.

1. Introduction

As experience has shown, the analysis presented in the publication should be a systems approach, in which the set of identified risks constitutes a system and its analysis, which enables an understanding of the risks that occur in the execution of innovative complex tasks in a rapidly changing environment. Such an exercise provides support to those responsible for decisions or a line of action in a specific situation characterised by uncertainty by identifying and considering the available options and comparing their anticipated consequences.

In addition, a pre-implementation and implementation analysis cannot be omitted, on the basis of which it becomes possible to establish the principles of cooperation, estimate the project budget, timetable or scope of design and implementation work. This, in turn, leads to a situational analysis, in which the company's place in a specific area will be profiled in connection with the innovative activity - in relation to the considered possibility of its development and the constraints occurring in this respect (market, demand, turnover, profits, consumer behaviour). This activity will also provide input to strategic analysis, strategic plan, benchmarking, environment analysis and competitive analysis, within the framework of objectives, brand and branches (competitor analysis, competitive intelligence).

This means that the problem in the research carried out is the presence of cognitive categories brought up from one's own culture, a realised environmental routine, linked to technological progress, environmental emotions and the presence of doctrinal biases – all of which cause possible limitations to development possibilities. Under these conditions, the social and scientific environment of expert knowledge in the sense of the influence of this environment on the formation of the contemporary boundaries of scientific rationality within it becomes essential.

In view of the editorial requirements, the content of the paper is a quantum (content capacity determined by the listed synthetic treatment of the problem) guide of the author's reflections around the holistically framed problem and a demonstration of how far this topic is new and hitherto insufficiently researched.

2. Literature Review

Today, following the opinion of A. Nieto-Rodriguez (2021) we can argue that the economies of many countries, especially the rapidly developing ones, are driven by projects. There is even talk of a process of transformation of economies towards a so-called project-economy.

Therefore, an important direction in management and quality sciences is the concept of Project Management, which was popularised worldwide as early as the 1960s. However, it was not until the 1990s that this new management concept, applied to unique projects, gained a significant number of supporters in Europe, including Poland. This happened both through contacts with developed companies applying project management in practice and as a result of the popularisation of this subject by global organisations.

The very notion of the word project comes from the Latin *proiectus*, meaning to advance/progress forward/forward (Toney, 2012). According to the authors, it can be translated as finding and presenting a way to solve a task/problem to be completed in the future.

In contrast, there is usually a consensus of interpretation of the concept in the literature, although the very popular and often cited opinion of the American authors can (and does) raise fundamental doubts. Table 1 compares the most important definitions of the term in conjunction with their main elements.

Table 1.
Overview of the definition of the term project

Nº	Distinctions	Definition
1.	<ul style="list-style-type: none"> • result 	A project is an activity undertaken to produce a result expected by the contracting party (Kisielnicki, 2018).
2.	<ul style="list-style-type: none"> • objectives and scope of the project 	According to the Project Management Institute, a project is an undertaking of a temporary nature, the aim of which is to create a unique product (manufacture of a product, provision of a service). Temporariness is understood here as a closed period of time in which a specific project sentence will be realised. Uniqueness is the uniqueness, the distinctive position of the designed product, belonging to a given class (group) of assortment ¹ .
3.	<ul style="list-style-type: none"> • objectives and scope of the project, • planning 	J.D. Frame (2012) argues that a project is goal-oriented in some way, involves the coordinated undertaking of related activities, has a finite duration (indicated beginning and end) and should be characterised by uniqueness.
4.	<ul style="list-style-type: none"> • objectives and scope of the project, • planning, • project efficiency, • control of the design process and implementation work 	In the German Project Management concept, project characteristics include goal orientation, one-offness, complexity, interdisciplinarity, organisational separation, significance (Witzel, 2013). R.K. Wysocki (2015) defines a project as a sequence of unique, complex and interrelated tasks with a common goal, intended to be completed within a specified period of time, without exceeding a set deadline, in accordance with set requirements.
5.	<ul style="list-style-type: none"> • project objectives and scope, • planning, • organisation of project teams, • project efficiency, • project implementation technique, • control of the design process and implementation work 	H. Kerzner (2015) defines the concept of a project as a project against which objectives, required resources, completion dates, costs, level of quality have been specified. Furthermore, he emphasises that projects in general should be distinguished by their uniqueness.

Source: compiled by the authors.

¹ [https://www.pmi.org/learning/library/#sort=relevancy&f:Topics=\[Leadership, 29.08.2024.](https://www.pmi.org/learning/library/#sort=relevancy&f:Topics=[Leadership, 29.08.2024.)

On the other hand, as far as the term project management is concerned, there are a number of interpretations of the concepts related to management techniques in the literature, also identified with such terms as management techniques, type of management or management method.

Based on the literature and for the purpose of this article, the authors assumed that management techniques are a set of rational and coordinated activities of people directed towards the goals of the organisation, implemented under specific conditions based on accepted procedures and rules of conduct (Malara, 2001).

Given the issue raised, it is, in the authors' view, necessary to point out that project management also involves taking into account other parameters that describe a project: time, cost and quality of results; and not just preparing action plans and writing this down in the form of a schedule. Thus, project management is an extremely complex issue in which three types of activities can be distinguished, falling under the scope of project management.

Table 2.
Tasks included in project management

Operational activities (primary)
These comprise the translation of existing inputs into the realisation of the project objective - the reference is to implement the project based on meeting a specific need and/or solving a specific problem. A distinction is made between operational activities, consisting in the preparation of a description of the project object (e.g.: project documentation, technical documentation) and executive activities, consisting in the material implementation of the project object.
Managerial activities
They focus on harmonising operational and support activities. They include: goal setting, planning, organising, motivating, coordinating and controlling.
Support activities (ancillary)
They consist of reinforcing operational and managerial activities by, among other things, creating the conditions for their efficient implementation. This group of activities can include: administrative support, accounting, legal, IT, etc.

Source: compiled by the authors.

If we are talking about innovation projects, these are usually high-risk projects, and their implementation in offshore critical infrastructure is an individual or team vision, which mainly leads to a breakthrough, characterised by identified uncertainties and variability. This state of affairs most often results from the application of the civilisational 'imagination paradigm', the essence of which boils down to the creative intellectual activity of man, postulating applicable results in the transformation of human cognitive capabilities. This transformation refers to the level of innovative reality and the subjective instrument of cognition with the implication of multi-paradigm. The realisation of such projects is most often characterised by the complexity of the problem, which is due to the lack of common or unambiguous tools to estimate objectively calculated and numerically translated quantifiability. Consequently, innovative creation under high-risk conditions becomes a way of anticipating the future based on knowledge, which is a component of our consciousness, and consciousness always precedes decision-making. Therefore, the integration of so-called project-based operational excellence within the framework of civilisational change in the maritime economy must be mainly based

on competences considered from two perspectives: people (knowledge, experience and capabilities) and organisations in an innovative high-risk project delivery system.

The management of any area of human activity has always necessitated the need to make decisions and bear the consequences of those decisions when confronted with a changing environment. The terms 'risk' and 'risk management' refer to these relationships. These terms are being used with increasing frequency, signalling the growing problem of the volatility of the external world. There are many definitions of risk in the literature. In some cases, a definition of the term 'risk' is given, while in others it is taken implicitly, as something to be taken for granted, and it is only possible to read how risk is understood from the context of the statement in which the word is used. Such an approach only exacerbates the conceptual confusion, all the more so as the concept of 'risk' is referred to both in the problem of describing people's behaviour, which is the subject of psychology, and in management theory or the problem of decision-making, i.e. in a normative sense (Gędek, 2018).

It is undoubtedly impossible to cite all the definitions of risk that appear in both domestic and foreign literature. Hence, the authors of the study, after analysing some of the available sources in Table 3, have made a brief definitional synthesis, tailored to the area of research undertaken.

Table 3.

Overview of definitions of the concept of risk

№	Author	Definition
1.	W. Ronka-Chmielowiec (2016)	<ul style="list-style-type: none"> – Risk is the chance of a loss occurring. – Risk is the possibility of loss occurring. – Risk is a state of affairs in which a possibility exists. – Risk is the probability of an outcome different from the expected outcome. – Risk is the dispersion of actual and expected outcomes. – Risk is the subject of insurance.
2.	T. Pszczołowski (1978)	Risk is the degree of likelihood of events beyond the control of the actor that cannot be accurately predicted and cannot be fully prevented.
3.	D.G. Uyemura, D.R. Deventer (1993)	Risk is the variability - measured by the standard deviation - of the net cash flow streams generated in an undertaking.
4.	M.J. Gardner, D.L. Mills (1988)	Risk is the deviation from the expected level of income.
5.	K Jajuga, T. Jajuga (1998)	Risk is the possibility of a performance outcome that is not expected, and a deviation from the expected outcome can be both negative and positive.
6.	C. Marshall (2001)	Risk is the possibility of events or adverse trends resulting in future losses or fluctuations in future income levels.
7.	M. Szemraj (2006)	Risk is the possibility of events (both negative and positive) that may affect the achievement of the intended objectives.

Source: compiled by the authors.

Adopting a neutral conception of risk, according to which risk represents both a potential opportunity and a threat, is too general. In order to identify the analysed phenomenon in relation to the business sector more precisely, a detailed risk classification is necessary. Risks are categorised on the basis of various criteria. The simplest of these is the cause of variation in the

company's financial result. Enterprise risks also include external risks, which affect the entire economic system, and internal risks, which affect the individual company. Because of this distinction, one can speak of inherent risks, i.e. risks that can be forecast on the basis of the law of large numbers; subjective risks - resulting from the incompetence of the human analyser and decision-maker; and objective risks, which result from the unpredictability of future events (Thlon, 2013). In Table 4, the authors have included a categorisation of risk according to the experience of the projects described later in this article, with the sources of risk assigned.

Table 4.

Category and sources of risk

№	Risk category	Examples of sources of risk
1.	Legal risk	licensing problems, protection of copyrights and patents, lawsuits from customers, lawsuits from employees, defaulted contracts, actions of market regulators
2.	Technical risks	technological changes, changes in quality requirements, capacity constraints, changes in demand, incorrect product implementation
3.	Non-technical internal risks	management changes, poor coordination of human resources, cash flow disruptions, employee errors, access restrictions, late deliveries
4.	External foreseeable risks	changes in financial markets, inflation, tax regulations, demand for raw materials, value of product or service
5.	External unpredictable risks	unexpected changes in regulation, fire, natural disasters, sabotage, vandalism, social unrest, unforeseen financial crisis

Source: compiled by the authors.

In summary, risk is a universal phenomenon and operating under conditions of risk is an inherent part of doing business, all the more so at a time of such a turbulent environment, which is hysterical with advancing globalisation, unstoppable technological progress or the increasing importance of scarce resources on the market (including, of course, human resources). Referring also to the definitions quoted, risk is a rather capacious term, not only in theory, but also in practice, which is particularly evident in the implementation of highly innovative, and therefore highly risky, international projects. It is therefore very important to have a detailed understanding of the nature and extent of potential risks in order to be able to select optimal solutions that, when implemented at the right time, should minimise their impact and effects.

3. Materials and methods

In measurement theory, measurement weighting is very important, because when carried out with a properly selected measurement method, it ensures high quality results by solving problems. In this case, we talk about risk taking into account its intelligence, related to the issues of: existence and unambiguity of representation, significance and scaling problems (Węziak-Białowolska, 2011).

In the case of the occurrence of risks in the implementation of innovative projects, we are talking about observable and initially unobservable (latent) phenomena, and therefore it is necessary to determine which phenomena that can be observed following a decision are symptoms or indicators of the occurrence of phenomena that constitute risks. In addition, it is necessary to determine the structure of the risk under investigation - whether it is a unidimensional or multidimensional phenomenon and whether it has latent characteristics. In other words, it is necessary to determine through which set of indicator variables, the initially unobservable phenomenon can be measured and what impact it has on forecasting negative market phenomena (Walasek-Jarosz, 2013).

In this situation, we can say that the phenomenon under study, hidden in risk, is a consequence of the occurrence of certain observable phenomena, and its indicator variables are formative indicators. We then say that the latent phenomenon under investigation is the source of the occurrence of specific observable phenomena or manifests itself through the occurrence of specific observable phenomena. The phenomena then constitute symptoms, which can be described using reflective indicators. In the situation of risk research, we can also deal with the so-called exploratory approach, in which, on the basis of a proposed set of statements treated as potential indicators of the measured phenomenon, the aim is to determine the number of its dimensions, their interpretation and their measurement (scaling). The approach used is therefore to detect the structure of the phenomenon under study and to interpret the results thus obtained. This structure can be complex (multidimensional) or simple (unidimensional).

Nowadays, in a new phase of development (informationalism), the functioning of the economy has changed, which is linked to the technological revolution, which is centred around information and the techniques of its production, storage and distribution. The development of technology also enables modelling and simulations, the analysis of which allows a better understanding of a given process, taking into account the assumed risks and their determinants. Digital social research methods have become an opportunity and a challenge. Based on them, e.g. the analysis of register data, it is possible to develop areas of data collection. But we must also bear in mind that the use of these methods carries the risk of the representativeness of the collected data. The sheer amount of data available does not increase the relevance and appropriateness of the conclusions drawn (Lincoln, 2019). Big Data as a method of social research, is a phenomenon that brings us to the civilisational breakthrough, which is defined as a system composed of data with specific properties, methods for storing and processing them, techniques for advanced data analysis and the necessary IT environment and equipment (digitalisation) (Żulicki, 2017).

However, in our research on risk and its intelligence during the implementation of innovative projects, we must take into account the fact that the applied techniques of advanced data analysis are based to a large extent on so-called found data, i.e. passively acquired data in correlation with actively acquired data (experience, research). This quantitative and qualitative

relationship will have an impact on the formulation of useful conclusions and the so-called risk of ‘discovering’ apparent correlations.

4. Results and discussion – assumptions for designing a security management model

The risk analysis presented below, in the form of a case study, concerns an innovative project subject feasibility at Blue Economy Consulting, based in Gdynia, which relates to, among other things:

1. Modular Microwave Plasma Burner - hybrid technology for the disposal of marine and hazardous waste.
2. Integrated management system for the maritime supply of strategic raw materials.
3. Power generation based on modular renewable energy source systems in small ports.
4. Innovative systems in the European Economic Area for the provision of electricity to ships in port, including electric and hybrid ships.

As a result of the risk analysis carried out using the rules of risk intelligence, with particular emphasis on understanding and learning about the factors that determine them, and on the basis of the diversity of professional experience and the diversity of sources of information, the occurrence of various types of most common risks was established. Particular emphasis should be placed on presenting the set of risks identified in the implementation of high-risk projects, the elements of which are:

1. Economic risks resulting from changes in the economic situation due to external factors (collapse of the maritime market, deterioration of the economic situation of countries in the Baltic Sea Region, economic crisis, financial problems of entities in the maritime economy).
2. Operational risks, resulting from inadequate and malfunctioning internal processes that take place in the environment of the people employed in the Project and the systems and events external to the process:
 - risks of conducting investments, which include market changes, possible increase in investment costs, shortages of maritime workers,
 - risk connected with legal procedures - legal procedures may result in the inability to complete the investment within the planned period,
 - withdrawal of the main contractor.

3. Economic (financial) risk, which may be caused by changes in economic conditions (competitive strategy):
 - debt risk - a bank granting a long-term loan to protect itself from credit risk will seek to use additional collateral opportunities,
 - investment financing risk.
4. Event risk, which can be caused by the occurrence of specific events or catastrophes.
5. Model risk, or the risk of theoretical error in the real world, which is the result of, among other things, structural risks arising from innovative assessment.
6. Risks related to the cognitive capture of the human factor, which include:
 - the deformation of the factual component and the cognitive dissonance that results from the acceptance of standards of one's own rationality on a normative and descriptive level ('theoretical blindness'),
 - the presence of mechanisms of understanding and interpretation of events that do not necessarily search for causes,
 - an interpretation that takes place solely on the basis of one's own recorded repetition of recorded events.

Under these conditions, multidimensional analytical information processing, which was carried out on the basis of having a set of individual and team skills that included analytical thinking, enabled in an informed decision-making process to solve complex problems in a set of low-risk elements that also included the following factors:

1. Cross-cultural aspects with legal, linguistic and semantic implications of legal interpretation (international consortium).
2. Distance between partners which limited the possibility of face-to-face meetings - communication barriers (another pandemic).
3. Regulatory changes - significant changes in standardisation parameters.

In contrast, the set of medium risk elements included the following:

1. Different priorities of the consortium partners - each company has its own markets and priorities and different experience in the IT sector, security standards for offshore critical infrastructure.
2. A change in the profitability of the project due to price changes (even more rising inflation).
3. Economic conditions due to overestimation of the costs of organising knowledge transfer and the associated breach of liquidity.

It should also be borne in mind that the emergence of competition in each of the projects analysed always represented a high risk.

Understanding the risks on the basis of the risks defined and identified, as well as the factors that condition them, made it possible to determine the structure of the risks identified in:

1. Corporate governance.
2. Management of risk limits.
3. Risk transfer.
4. Risk analysis through imprecise risk identification, measurement, control and monitoring.
5. Technological resources and data resources.
6. Entity communication in the company, which included the participation of all or a selected group of the company's employees, the motivation and reporting system and the participation of related parties (advisors, experts).

Furthermore, in view of the implementation of high-risk innovative projects, it is moribund to signal the main threats to the effectiveness of the use of risk intelligence in high-risk projects, which in these cases were:

1. So-called subjective 'groupthink', which resulted from an imbalance between individual and team thinking processes.
2. The occurrence of thinking errors and cognitive traps which are systematic errors in thinking and at their core represent oversimplification, overconfidence and so-called 'confirmation traps'.

The implementation of high-risk projects under conditions of uncertainty with subjective unquestionability gives rise to problems ranked outside its content, namely:

1. The objectives of the innovation activity, as points of reference, are defined on the basis of giving them their own results and their own interpretative framework adapted to them.
2. Instances of subjective sensibilisation that derive from ideas about the unquestionability of one's own or collective assumptions.
3. There is the adoption of one's theory alone, in which one accepts as valid once accepted arguments, which one also actively defends.
4. Falling into 'self-congratulation' over our own rhetoric.

However, using risk intelligence in high-risk projects, based on the extensive experience of the people involved in the projects, the presence of risk understanding factors was identified. Therefore, on the basis of risk analysis, it was possible to learn the probability distribution of all negative consequences. This made it possible to establish a tolerance band for situations of destruction of their objectives, i.e. a set of conclusions from which recommendations were made, implying the following actions:

1. Organisational:
 - the development of project management conditions which should take into account, among other things: the responsibilities of the functional persons, the complexity of the decision-making process with clearly defined decision-making tolerance bands for persons employed in the project,

- build a network of partners to manage all risks,
 - carrying out risk analyses,
 - developing the composition of project teams, including research teams,
 - building the competence sets of external needs for the necessary use of the potential of the human capital of the project participants to achieve the main objective and the project residual objectives,
 - development of terms and conditions of cooperation within the consortium and division of tasks for consortium members.
2. Analytical:
- development of the initial project management assumption,
 - development of the initial stage of administrative and legal activities as formal and legal instrumentation of the project,
 - identification of the primary objective and milestone objectives and their preliminary personal allocation to the project staff (job descriptions, scopes of duties) - on this basis development of personal tasks.
3. Financial:
- thorough analysis of the project budget, including: expenses, eligible costs,
 - analysis of the possibility of obtaining additional income on the basis of using the available financial instruments - analysis of additional sources of financing,
 - preliminary financial, formal and legal analyses, which were related to optimisation of the implementation of tasks resulting from the Project,
 - development of a plan for appropriate allocation of resources,
 - development of a time plan for each work stage based on harmonisation of activities and project costs and standardization,
 - ongoing analysis of economic and business indicators,
 - creation of a preliminary material and financial schedule based on the expectations of all project stakeholders.

To sum, the risk of the implementation of an innovative project, is the possibility of the occurrence of a certain type of risk with the implication of the incurred damage (loss), as well as the occurrence of a positively valued state (profit, benefit), understood as effectively achieving its objectives, which is associated with the decisions taken in relation to the future. Formally, decisions made under risk conditions in the implementation of a high-risk innovative project are referred to as a class of decision problems reflecting market challenge, customer, knowledge diffusion and market opportunity (Gędek, 2018). In this situation, the intended objectives of the activities, which are implemented in the decision-making process, should take into account the realised strategy for the situation of their destruction in a certain risk tolerance band.

Therefore, according to the learning experience, the basic issue in the so-called risk intelligence is to determine the difference between our degree of understanding of a given risk and the degree of understanding by others, which is mainly due to our awareness and our predisposition (Ficoń, 2007). Understanding risk requires two conditions. First, in order to fully comprehend risk, it is necessary to identify possible solutions to the problems created by the risks, as well as the factors that determine them. Secondly, understanding risk requires experience that allows us to recognise which of the solutions presented may be effective, which are flawed, and whether we need more information (Ciborowski, 2018).

When we talk about risk intelligence, we should have in mind this experience that we have already gained, are gaining or will gain in the future. This means that the concept of risk refers precisely to the second determinant of risk intelligence (Apgar, 2006). Accordingly, (non-risk) risk intelligence is, on the basis of decision-making, the ability to select the right type of risk by applying risk intelligence rules that identify and describe those risks that can be known and understood. additionally, it is the planning of the implementation of risky ventures that would enable optimal exploitation. The development of risk management skills must also include building a network of partners to manage all risks. Through subjective individual or collective experience (key skills), it will become possible to manage it effectively, Thus 'risk intelligence' refers to the ability to choose the right type of risk by applying the rules of risk intelligence, which we will be able to manage effectively through our experience. However, we must keep in mind the measure of uncertainty (value at risk) - this is the definition of the upper limit of expected losses.

When talking about risk intelligence, it is also important to bear in mind the presence of risk determinants. The determination of risk, which can be known as the rule of thumb for risk intelligence, is the degree to which we understand a given risk and select it for effective management, which we do in our decision-making process. In this situation, it is legitimate to explore areas of awareness of human innovative activity including, but not limited to: the subjective sensibility of the decision-making process vis-à-vis the praxeological significance of the proposed innovative solution, the unquestionability of the representability of the narrative or the present-day inconclusiveness and non-algorithmicity of human thinking (Walasek-Jarosz, 2013).

The rationale for this author's proposal stems from the fact that if the potential of our knowledge of risk, which comes from the power of science, is shaped by the methodological correctness of the research and analysis carried out, the application of which stems from a certain area of consciousness, then the reconciliation of the presented analytical results and their interpretation becomes a fundamental problem (Zulicki, 2018). In the area of awareness, the individual learning history of the subject (decision-maker) through consequences (experience) and its behaviour becomes essential. This behaviour should be understood as a deliberately directed reaction to benefit by achieving a goal on the basis of the actions performed. They are the result of the exploration of formed cognitive processes (cognitive

psychology) and task-oriented, achievement of specific goals on the basis of messages that remain in feedback (systemic psychology). This means a conscious action that justifies the expected reactions from a specific subject, on the basis of external information. All of this is aimed at stabilising events in accordance with planned predictions and always results from an elaborated structure of the decision-making process, which is based on either individual or collective cognitive architecture (Koch, 2008).

In this situation, it becomes essential, already mentioned, to have the necessary knowledge, understood as the ability to understand the relationship between cognition and reality, on the basis of which justified belief becomes possible (Wolenski, 2014). Therefore, from the point of view of the topic of the study, it is necessary to define the difference between the risk we expect in a given innovative endeavour and the actual risk we will be confronted with. The fundamental problem is whether we can understand the risk sufficiently to value the decision-making process positively in the data under conditions of innovative unpredictability (Apgar, 2006).

According to the literature, the occurrence of risk-related factors based on subjective assessment of the relevance of the information possessed for their understanding and which may affect the given risk, takes place under conditions of acceptance of standards of one's own rationality ('theoretical blindness') and the occurrence of innovation problems. These occur outside of its content, where the objectives of the innovation activity, as points of reference, are defined on the basis of giving them their own results and their own adapted interpretative framework (Bolton et al., 2005). In addition, the area of consideration must also include the occurrence of cognitive errors (ignoring predictability), the erroneous weighting of decisions and the occurrence of so-called emotional intelligence in which the subjective tendency to overestimate the understanding of reality manifests itself. Thus, either individually or collectively, the presence of a lack of awareness of bounded rationality, which gives priority to the understanding of one's professional representativeness vis-à-vis the innovative issue, results in the reality of conditions in which experience and intellectual conservatism may deprive us of the ability to choose the right type of risk, which we will be able to manage effectively.

Conclusions

In this situation, the intended objectives of innovative design and implementation activities should be realised in a decision-making process that should take into account the strategy for the situation of its destruction. In the process of analysing and assessing the probability of negative events in such a process, the vulnerability of the existing security system, understood as the weakness of the system, its lack of resilience and ability to counteract negative impacts, should also be taken into account. Risk analysis and estimation in knowledge transfer requires

systematic consideration of the potential for harm. The results of this estimation help to determine appropriate management actions and set priorities for risk management and the introduction of broadly defined safeguards and solutions to protect against the identified risks of implementing innovative projects.

It is important to include in the risk analysis, the design and execution of periodic reviews of the risks relating to security and the safeguards in place so that:

- Take into account changes in innovation activity requirements and priorities.
- Identify new threats to knowledge transfer and assess vulnerabilities.
- Confirm that the safeguards in place continue to be effective and appropriate.

The analysis of risks carried out in the publication takes into account the realisation that, today, the unscientificisation of risk is becoming a scientific problem in its own right. In this situation, it is necessary to reveal the contradictions and difficulties that exist in the interrelationships between practice and disciplines in interdisciplinary innovation, which should take into account that:

- In high-tech innovative modernity, the production of occurring risks and hazards shows a dependence on knowledge as its product, based on standards of its own rationality.
- The dynamics of civilisational progress means that we cannot speak of the predictability of hazards and risks either.
- In the space of threats to the implementation of innovative projects and the risks involved, there is the so-called intelligence of risk, which has a fundamental influence on the theoretical content of risk, its proliferation and its content (extent, intensity, causation, damage).

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