

**BUCHAREST UNIVERSITY OF ECONOMIC STUDIES**

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**POSSIBILITIES FOR CONTROLLING RISKS IN THE  
ORGANIZATION'S INNOVATION PROCESSES IN THE CONTEXT  
OF SUSTAINABLE DEVELOPMENT AND DIGITALIZATION**

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**Keywords:** innovation, innovation processes, innovation management, risks, risk assessment, risk management, sustainable development, digitalization

## Synthesis

Global risks have become more frequent and more various and put a major pressure on the business environment, from an economic point of view. In the dynamic and competitive environment of the modern economy, innovation is the engine of growth and differentiation, but it comes with a complex set of risks that, if not managed effectively, can compromise the efforts and resources invested. In turn, risk management cannot work in isolation, but must be integrated into innovation processes to support sustainable development.

In order to obtain an overall perspective, the research started from the analysis of the specialized literature to identify the current approaches regarding innovation processes in the context of sustainable development and global risks. The research continued with studies on innovation and risk management in relation to business continuity management. The "Strategic Success Triangle" model combines these three elements to provide a solid foundation and enable organizations to thrive in a complex and ever-changing business environment.

In the innovation and risk research, the articles containing the words "risk", "innovation" and "control" in the title were identified in the Web of Science database. The result includes only 24 articles and highlights a lack of solutions for risk control in innovation processes. Thus, doctoral research acquires special importance and supports organizations with clear proposals for achieving organizational progress.

In the last part of the specialized literature study, was carried out a research regarding the concerns of organizational innovation in relation to the digitalization of business, at the European and national level, and the tool used by the European Union to monitor the digital transformation was presented - the Digital Economy and Society Index (DESI).

As part of the research on business models in relation to the innovation processes of organizations in the context of digitalization, a comparative analysis was carried out between traditional and digital business models, in general, and a comparative analysis regarding digital transformation through innovation, on global organizations.

The research continued with the examination of similar research papers in the specialized literature on sustainable entrepreneurship from which approximately one hundred opinions of some authors were identified. From these, the fifteen most relevant opinions were selected to

identify the business area with the greatest potential for sustainability improvement. The conclusion was that the electricity, gas, steam and air conditioning business area has the greatest potential to implement activities with a positive impact on sustainable development.

Considering the analysis of the specialized literature and the author's experience, a model for the continuous improvement of the logistics chain based on the integration of the PDCA cycle, sustainability tools as ISO 9001, ISO 14001 and the GRI standards, was developed within the research. The proposed model for continuous improvement of the sustainable logistics chain marks the interaction between customer requirements and their satisfaction through different processes and stages.

In the study on the innovation processes of the organization in the context of sustainable development, using the digital tool VOSviewer, an analysis of articles published in the Web of Science database in the categories of business, management, and economics, which include the terms "innovation" and "sustainable development" to keywords was carried out. Thus, the coincidence of keywords frequently used together and the relationships between them were identified. Based on them, financial, for internal processes and related to sustainable development indicators for measuring the performance of innovation processes were identified in the specialized literature.

The doctoral research continued with the definition and application of a method for controlling the risks in the organization's innovation processes in the context of digitalization, by integrating the risk assessment in the stages of selecting innovation proposals and developing innovation. The novelty of the method consists in evaluating each innovation proposal from the point of view of the following risks: the proposal is not feasible from a technical, financial, human resources point of view, the benefit brought by the implementation of the proposal is small compared to the effort put in, employees show resistance to change for this proposal. Fibonacci numbers are used to quantify the impact and probability of risk occurrence. In the innovation development stage, potential risks are identified and assessed, and for their efficient management, contingency plans are drawn up. After the implementation of the innovation, the monitoring and continuous improvement of the process is aimed at. In the framework of the research, the method for controlling the risks in the innovation processes was applied in an organization with an annual average of thirty employees, specialized in technical testing and analysis services. The effects of the application of the proposed method were evaluated after a year and a half since its implementation, by comparing the values of the average number of hours worked per day and the labor productivity since the beginning of the pandemic and the values a year and a half after the implementation of the innovation. The comparison highlighted significant increases in labor productivity.

At the end of the doctoral research, proposals were submitted regarding the improvement of controlling risks in the organization's innovation processes by implementing a business continuity plan. For the benefits identified in the specialized literature in the first part of the doctoral research, a questionnaire was created to evaluate the perception of the organization's management regarding the benefits of implementing business continuity plans. As a result of the respondents' confirmation of the benefits of business continuity plans, the research continued with the definition of a business continuity plan for keeping risks under control in innovation processes, which can be applied by any organization, regardless of size or field of activity. For this, ISO standards related to quality, environment, business continuity, information security, occupational health and safety, innovation and risk management were analyzed. The plan defined in this research includes four stages that provide requirements related to the organizational context, leadership and planning, requirements for resources, support activities and operational processes, performance evaluation requirements and requirements for continuous improvement. For each stage, the actions to be carried out were determined, and for each requirement checklists were developed to facilitate the implementation of the plan. After definition, the plan was applied within the same organization to which the method controlling risks in innovation processes, presented previously, was applied. To establish the performance of the developed platform, it was decided to test it in a hypothetical large-scale cyber crisis environment. For each stage, the actions defined in the plan were carried out and the checklists were completed. By applying the business continuity plan for controlling risks in the innovation processes, the ability of the integrated digital platform to resist cyber attacks and quickly restore functionality, ensuring operational continuity in any context, has been demonstrated.

The results obtained in the doctoral research can be a starting point for future research regarding the application of the method and the plan in organizations from other fields of activity, with the aim of validating the proposed methods or for defining a good practice guide for controlling risks in the organization's innovation processes in the context of sustainable development and digitalization.