

## Implementation of an Economic - Probabilistic Model to Risk Analysis of ERP Project in Technological Innovation Firms - A Case Study of ICT Industry in Iran

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**Abstract :** In a technological world, many countries have a tendency to fortifying their companies and technological infrastructures. Also, one of the most important requirements for developing technology is innovation, and then, all companies are struggling to consider innovation as a basic principle. Since, the expansion of a product need to combine different technologies, therefore, different innovative projects would be run in the firms as a base of technology development. In such an environment, enterprise resource planning (ERP) has special significance in order to develop and strengthen of innovations. In this article, an economic-probabilistic analysis was provided to perform an implementation project of ERP in the technological innovation (TI) based firms. The used model in this article assesses simultaneously both risk and economic analysis in view of the probability of each event that is jointly between economical approach and risk investigation approach. To provide an economic-probabilistic analysis of risk of the project, activities and milestones in the cash flow were extracted. Also, probability of occurrence of each of them was assessed. Since, Resources planning in an innovative firm is the object of this project. Therefore, we extracted various risks that are in relation with innovative project and then they were evaluated in the form of cash flow. This model, by considering risks affecting the project and the probability of each of them and assign them to the project's cash flow categories, presents an adjusted cash flow based on Net Present Value (NPV) and with probabilistic simulation approach. Indeed, this model presented economic analysis of the project based on risks-adjusted. Then, it measures NPV of the project, by concerning that these risks which have the most effect on technological innovation projects, and in the following measures probability associated with the NPV for each category. As a result of application of presented model in the information and communication technology (ICT) industry, provided an appropriate analysis of feasibility of the project from the point of view of cash flow based on risk impact on the project. Obtained results can be given to decision makers until they can practically have a systematically analysis of the possibility of the project with an economic approach and as moderated.

**Keywords :** cash flow categorization, economic evaluation, probabilistic, risk assessment, technological innovation

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