INFORMATION TECHNOLOGY & IMPLEMENTATION (SATELLITE)

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This book includes abstracts of the 11th International Conference "Information Technology and Implementation (Satellite) – 2024". Philosophical, theoretical and applied aspects which describe the results, problems and prospects of the creation and use of intelligent computing methods and creating of information systems and technology on their basis are reviewing.

Main tracks of the conference are: Artificial Intelligence Technologies and Data Science, Cyberspace Protection Technologies, E-government, E-commerce and E-learning Technologies, Network, Internet and Smart Technologies, Software Engineering, Data Structures and Computing.

До цієї збірки увійшли тези доповідей 11-ї Міжнародної конференції «Інформаційні технології та впровадження (сателітної) – 2024». Розглядаються філософські, теоретичні та прикладні аспекти, які описують результати, проблеми та перспективи створення і використання інтелектуальних обчислювальних методів та створення на їх основі інформаційних систем і технологій.

Основні напрямки конференції: Технології штучного інтелекту та Наука про дані, Технології захисту кіберпростору, Електронне урядування, електронна комерція та Технології електронного навчання, Мережеві та Інтернет-технології, Розумні технології, Розробка програмного забезпечення, Структури даних та Обчислення.

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SECTION 5: SOFTWARE ENGINEERING, DATA STRUCTURES, AND COMPUTING

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JUSTIFICATION OF THE NEED TO CREATE AN INFORMATION SYSTEM FOR RISK MANAGEMENT OF IT PROJECTS

Abstract. This paper argues for the necessity of developing an information system specifically designed for risk assessment and management in any project's initiation phase, with a particular emphasis on addressing human-induced risks. Traditional risk management approaches often overlook or underestimate the significant impact of human factors on project outcomes. This paper highlights the unique challenges posed by human errors, biases, and behavioural patterns in the context of IT projects. It explores how an information system can provide a structured framework for identifying, assessing, and mitigating these risks by incorporating features.

Keywords: Risk management, human factors, human error, cognitive bias, information systems, risk assessment.

The development of a full digital system that can calculate the complex risk of a project is essential. Generally, such elicitations and calculations held manually. These operations include a human factor, leading to possible data or factor lost. The implementation of such system will limit the human factor by suggesting every possible risk factor to a project manager, will reduce the time spent on project analysis phase and will optimize resource usage.

The human factor is absolutely crucial in risk calculations within projects for several key reasons [1, 2]:

Subjectivity in Estimation: People estimate probabilities and impacts of risks differently based on their experience, biases, and risk appetite. This subjectivity can lead to inconsistencies and inaccuracies in risk assessments.

Behavioral Biases: Cognitive biases like optimism bias (underestimating the likelihood of negative events) or confirmation bias (favoring information that confirms existing beliefs) can skew risk perception and decision-making.

Skill and Competence: The knowledge, skills, and experience of the project team directly influence the likelihood and impact of risks. A less experienced team might be more prone to errors or have a harder time handling unexpected situations.

As we emphasize on the importance of the human risk [3], we also remember and outline the next major risks:

- Finance risk: one of the biggest risks possible is to lose financing of the project, which means absence of money to pay for human resources, hardware, licenses for software, office accommodation and at least 40% extra of the project's whole budget for unexpected circumstances;
- Operational risks: another set of risks that is mandatory to identify at the start of a project. Unfortunately, no one is safe from any technology failures that is why developing a recovery plan is essential in case of an emergency. There also

could be bottleneck processes as possible inefficient workflows, unclear responsibilities and dependences. Management issues might also appear unexpectedly, as, basically, the scope of work might simply be changed. As we speak about an IT system, it has a data management component and many monitoring dashboards and control tools, which is recommended to include in the risk calculation process.

- Deployment risks: these risks can disrupt the transition, impact user adoption, and hinder the realization of project benefits. We consider the next deployment risks: technical issues (bugs, compatibility problems, performance issues, integration issues), data migration, user resistance, possible downtimes and maintenance mode.

First versions of the future IT system will conduct calculations regarding human risks based on the information provided by the assessor. These calculations will provide a decimal score with minimal 0 and maximum 10 based. The system will operate receiving minimal required information, as:

- Projects parameters – timelines and milestones.
- Employees – number of experts, their skillset, and level of engagement.

This means that the system must be connected to a user database that contains mentioned above user data; additionally, people often tend to suppress another activity done outside the company.

Later the system will also include other risk factors and financial, operational and deployment risks, however as we consider human risk as the most considerable, the system will first operate with this type of factor. The «survey» will also include other 3rd party factors like ongoing war and emergencies, however we consider beginning with calculation of those risks, that can be defined in the within of the project's team, as the factors like war is a complex risk, that consists of many other options.

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