

INFORMATION TECHNOLOGY & IMPLEMENTATION (SATELLITE)



INFORMATION TECHNOLOGY & IMPLEMENTATION (SATELLITE)

21 November, 2024
Kyiv, Ukraine



9 789608 018709

TARAS SHEVCHENKO NATIONAL UNIVERSITY OF KYIV
(FACULTY OF INFORMATION TECHNOLOGY,
FACULTY OF COMPUTER SCIENCE AND CYBERNETICS)
NATIONAL TECHNICAL UNIVERSITY OF UKRAINE
“IGOR SIKORSKY KYIV POLYTECHNIC INSTITUTE”
VIKTOR GLUSHKOV INSTITUTE OF CYBERNETICS OF THE NAS OF UKRAINE
INSTITUTE FOR INFORMATION RECORDING OF THE NAS OF UKRAINE
INSTITUTE OF SOFTWARE SYSTEMS OF THE NAS OF UKRAINE
THE COUNCIL OF YOUNG SCIENTISTS OF THE FACULTY OF COMPUTER SCIENCE AND
CYBERNETICS AND THE FACULTY OF INFORMATION TECHNOLOGY OF
TARAS SHEVCHENKO NATIONAL UNIVERSITY OF KYIV
PUBLIC ASSOCIATION «COGNITIVE RESEARCH»

XI INTERNATIONAL CONFERENCE

Information Technology and Implementation (Satellite)

21 November, 2024

Conference Proceedings

Kyiv

2024

UDC 004.9
I-74

Volume editor: Vitaliy Snytyuk, Dr.Sc., Prof.

Program Committee: Aldrich Chris, Andreas Pester, Frederic Mallet, Iurii Krak, Nickolas Cogan, Oleg Chertov, Oleksandr Marchenko, Sándor Bozóki, Tom Needham, Vitaliy Tsyganok, Vladimir Vovk

Organizing Committee: Anatoly Anisimov, Vitaliy Snytyuk, Oleksii Bychkov, Oleh Ilarionov, Yurii Kravchenko, Iurii Krak, Volodymyr Druzhynin, Oleksandr Marchenko, Viktor Morozov, Taras Panchenko, Anatolii Pashko, Valentyna Pleskach, Yurii Samokhvalov, Oleksii Tkachenko, Serhii Toliupa.

Conference Secretary: Hryhorii Hnatiienko.

I-74 Information Technology and Implementation (Satellite): Conference Proceedings, November 21, 2024, Kyiv, Ukraine / Ministry of Education and Science of Ukraine, Taras Shevchenko National University of Kyiv and [etc]; Vitaliy Snytyuk (Editor). – Kyiv: Publishing House «Caravela», 2024. 275 p.

ISBN 978-960-801-870-9

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.

UDC 004.9

ISBN 978-960-801-870-9

© Authors of abstracts, 2024

<i>Oleksandr Milyutin, Stanislav Taraduda, Nataliia Serdyuk. Security automation in cloud environments: modern methods and benefits of ai and ml for threat detection</i>	130
<i>Volodymyr Nakonechnyi, Vladyslav Lutsenko. Leveraging blockchain technology to safeguard digital financial transactions</i>	132
<i>Yurii Shcheblanin, Taras Bilokin. Analysis of vulnerabilities of smart contracts in blockchain technologies</i>	134
<i>Yurii Shcheblanin, Artem Kyrlytsia. Risks of artificial intelligence models used for malicious intensions</i>	137
<i>Yurii Shcheblanin, Dmytro Onatskyi. Detection of information system vulnerabilities based on the analysis of windows system registry using machine learning methods</i>	139
<i>Yurii Shcheblanin, Nazar Tkachuk. Vulnerrabilities of user authentication systems based on one-time passwords</i>	141
<i>Andrii Shpilkin, Yelyzaveta Kazora, Sergii Tolupa. Leveraging machine learning for enhanced register analysis</i>	143
<i>Ihor Shylenko, Volodymyr Sanchenko, Ivan Parhomenko. Methods of Malicious Software Identification Using Machine Learning</i>	145
<i>Ivan Sofiyenko, Oleksandr Malykhin, Oleksandr Lavryk. Features of web application security</i>	147
<i>Andrii Staroselskyi, Volodymyr Nakonechnyi. The evolution of cyber diplomacy: definition, development path, and challenges</i>	149
<i>Serhii Timofieiev, Serhii Toliupa. Detecting malicious ip addresses based on connection number</i>	153
<i>Serhii Toliupa, Anatoliy Lininchuk. Data protection based on an algorithm with public key algorithm</i>	155
<i>Anton Zahynei, Yurii Shcheblanin, Anna Khomenko. Peculiarities of pam application in distributed information systems of fog computing</i>	157
TRACK 3: E-GOVERNMENT, E-COMMERCE, AND E-LEARNING TECHNOLOGIES	160
<i>Dmytro Bredikhin, Sergiy Sopov, Vadym Ziuziun. Competences of technical and digital higher education in project management</i>	161
<i>Vladyslav Dehtiarov, Valentyna Borovyk. The incorporation of artificial intelligence into the process of adapting educational content: challenges and prospects</i>	163
<i>Andrii Horoshko, Andrii Khlevnyi. UI design for E-commerce websites: factors to improve sales</i>	166

SECTION 3: E-GOVERNMENT, E-COMMERCE, AND E-LEARNING TECHNOLOGIES

Dmytro Bredikhin

Master's degree student of the Department of Technologies Management

Sergiy Sopov

Master's degree student of the Department of Technologies Management

Vadym Ziuziun

PhD, Associate Professor of the Department of Technologies Management

Taras Shevchenko National University of Kyiv

COMPETENCES OF TECHNICAL AND DIGITAL HIGHER EDUCATION IN PROJECT MANAGEMENT

Abstract: The article examines the competencies that develop in technical and digital higher education and their significance for project management in the IT sphere. Modern teaching methods that form both technical and soft skills are analyzed.

Keywords: Project management, technical education, digital competences, IT sphere, systems thinking, soft skills, project-based learning.

The modern IT sphere requires specialists to have in-depth technical knowledge and the ability to manage projects in conditions of rapid technological changes. A successful career in project management requires a combination of technical and soft skills such as analytical skills, leadership and communication. Technical and digital education contributes to the formation of such competencies [1].

The purpose of the work is to investigate the phenomenon of how technical education without formal training in project management can prepare specialists for successful work in the IT field, as well as to develop recommendations for integrating the necessary managerial competencies into educational programs. The tasks of the research were chosen to investigate what technical and soft skills are necessary for effective project management in the IT sphere and how they develop within the framework of technical education [2].

The study shows that 70% of projects fail due to lack of clear objectives and budget overruns (37% and 55% respectively). Professionals with a technical background often have deep specialized knowledge, but managerial skills are critical to successful project management. People with an education in project management have a higher success rate of projects (89% versus 34%). According to research, projects where project management practices are implemented are 2.5 times more successful [3]. This is due to the fact that such practices help to better plan, manage resources and minimize risks.

A mathematical model was created to compare the work efficiency of persons with specialized education in project management (PM) and persons with technical education (Fig. 1). This model allows you to evaluate and compare the effectiveness of two groups of agents based on key performance indicators.

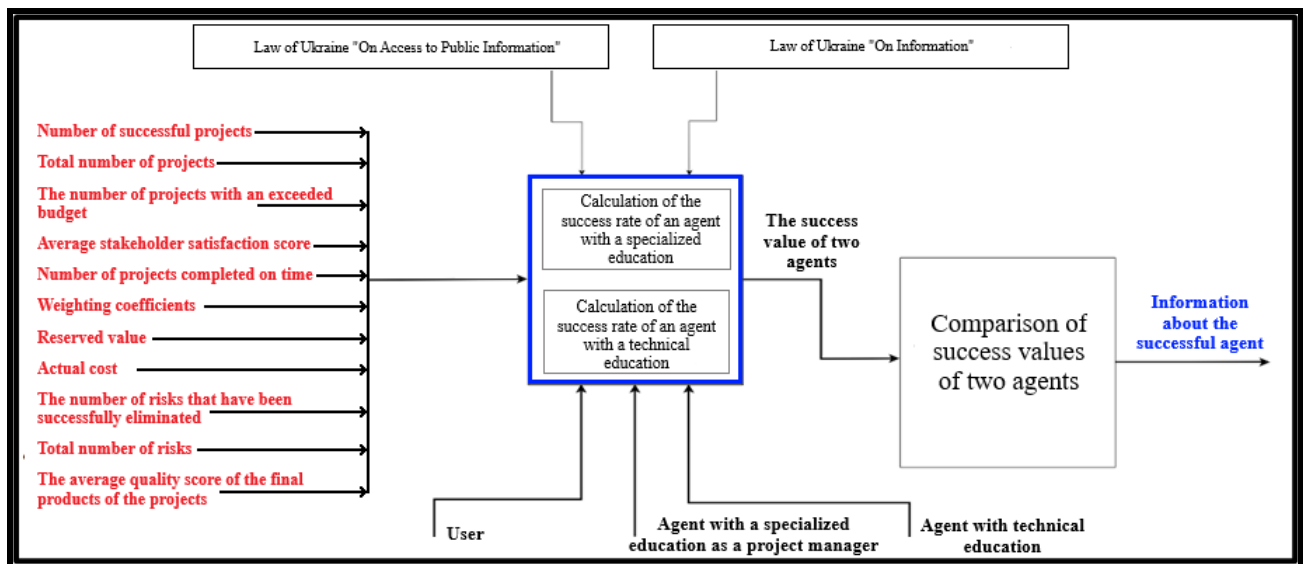


Figure 1 – Conceptual model of the comparison of two agents: with technical and professional education

$$E_{tech.} = w_1 * P_{success,tech} + w_2 * (1 - B_{over,tech}) + w_3 * T_{onTime,tech} + w_4 * C_{costEff,tech} + w_5 * S_{stakeholder,tech} + w_6 * R_{riskMngmt,tech} + w_7 * Q_{quality,tech} \quad (1)$$

$$E_{pm.} = w_1 * P_{success,pm} + w_2 * (1 - B_{over,pm}) + w_3 * T_{onTime,pm} + w_4 * C_{costEff,pm} + w_5 * S_{stakeholder,pm} + w_6 * R_{riskMngmt,pm} + w_7 * Q_{quality,pm} \quad (2)$$

Where $P_{success,pm}$ is the percentage of successfully completed projects; B_{over} – the number of projects with an exceeded budget; T_{onTime} – percentage of projects completed on time; $C_{costEff}$ – coefficient of efficiency of use of funds; $S_{stakeholder}$ – level of satisfaction of interested parties; $R_{riskMngmt}$ – effectiveness of risk management; $Q_{quality}$ – the quality of final project products; w_i – weighting factors determining the importance of each component.

Today's project managers need both technical and soft skills, such as analytical skills, relationship management and communication, which are critical to successfully managing teams in the digital age. Project-based learning helps develop digital competencies and creative abilities. Engineering training programs combine management and technical skills, allowing professionals to gain hands-on experience in real projects, particularly in IT.

References:

1. A. Biloshchytskyi, S. Omirbayev, A. Mukhatayev, A. Faizullin, S. Toxanov and K. Kassenov, "Research on the Formation Level of Methodological Competence of it Disciplines Teachers," 2020 IEEE 2nd International Conference on Advanced Trends in Information Theory (ATIT), Kyiv, Ukraine, 2020, pp. 242-245, doi: 10.1109/ATIT50783.2020.9349337.
2. Ziuziun V. Importance of personnel selection in personnel management of an IT organization. 2nd International Scientific and Practical Internet Conference «Global Society in Formation of New Security System and World Order», July 27-28, 2023. P.41-42.
3. TeamStage, «Project Management Statistics». URL: <https://teamstage.io/project-management-statistics/>. Access date: 23.10.2024