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MANAGEMENT CHALLENGES IN THE IT SECTOR IN CENTRAL EASTERN EUROPE (CEE) IN 2024

This article aims to demonstrate the research outcomes and concrete recommendations for managers on what can be done to deal with challenges that the IT sector faces in the CEE region in 2024 due to the global IT industry crisis. Obtained scientific results are based on general scientific and special methods that include logical and theoretical generalization, analysis, and deduction. The situation in the IT sector is viewed from different angles: global trends, economic situation, financial regulation by government institutions, declining demand, and intensified competition from cheaper labor in Asian countries, particularly India. The Ukrainian IT industry, in particular, is undergoing severe trials due to the full-scale Russian invasion, and decreasing demand for services. One of the most visible indicators of this decline is the reduction in workforce within the largest Ukrainian companies, such as EPAM Ukraine, SoftServe, GlobalLogic, Luxoft, and Ciklum. Key contributing factors include rising capital costs driven by increased interest rates in the US and other leading economies, which have restricted IT companies' access to affordable external financing, making it difficult to invest in innovation and growth. Additionally, the full-scale war in Ukraine has brought unprecedented challenges, particularly for IT management, requiring swift and effective decision-making to address issues such as power outages, staff mobilization, and increased managerial burdens due to workforce reductions. The article focuses on researching the details of CEE IT sector, strategic management choices, and tactical techniques to enhance managerial efficiency. Emphasis is placed on whether note-taking can be recommended as a fundamental tool for improving management effectiveness. The research examines the impact of global economic factors, workforce optimization, and cross-cultural communication, with the goal of identifying resilient and innovative management practices that can support sustainability and growth within the region's IT industry amidst ongoing challenges.

Keywords: IT crisis, IT industry, IT outsourcing, effective management, cross-cultural communication, cross-cultural differences, workforce optimization, innovative management, challenges in IT in 2024, note-taking.

Formulation of the problem. The primary problem addressed in this research is the current state of the IT outsourcing industry in the CEE region which led to the increased demand for higher managerial efficiency amid an economic downturn, global competition, and regional instability. Managers in IT companies face heightened pressures from several converging crises: the global economic environment with rising interest rates, increased competition from low-cost labor markets, and the destabilizing impact of the war in Ukraine. This research investigates how IT managers can maintain and potentially enhance their efficiency and effectiveness to deal with these challenges as well as which strategic choices were made by companies top management. Given the rapid shifts in labor markets, financial constraints, and operational disruptions, managers are required to adapt quickly, process large volumes of information accurately, and make timely decisions. Given the heightened pressures IT managers face in times of crisis, effective information management becomes crucial. Note-taking is explored in this article as a potential tool for improving managerial efficiency under challenging conditions. By organizing and capturing essential information, managers can enhance memory retention, streamline decision-making, and maintain focus on high-priority tasks. This approach aims to alleviate the cognitive load that comes with managing complex projects in uncertain environments, ultimately supporting more effective responses and decision-making processes.

Purpose of the article. The purpose of this article is to analyze and evaluate the challenges that the IT outsourcing industry in the CEE region is facing in 2024 and the efficacy of management decisions. Ultimately, the article aspires to offer recommendations for IT managers to optimize their effectiveness and make the right decisions while dealing with the challenges described in the article.

Analysis of recent research and publications. The analysis of recent publications on the subject of the study shows that many IT companies are open about their actions towards Business Continuation Plan execution due to the war in Ukraine. It manifests itself by public announcements of milestones such as acquiring another company. However, scientists concluded [1] that the number of publications regarding the IT industry, particularly in Ukraine, is declining. Scientists have not been focused on creating comprehensive research on the IT industry, particularly the outsourcing IT industry in the CEE region where the biggest IT outsourcers are Ukraine and Poland [2]. Within the context of the CEE IT sector, research by the IT Ukraine Association [3] highlights challenges unique to the region, such as disruptions caused by military actions and workforce mobilization. These studies reveal that maintaining productivity and decision-making efficiency under such circumstances requires adaptive management strategies, including efficient information processing and rapid task prioritization.

Studies on learning, academic performance, and memory emphasize the critical role of organizational tools, such as note-taking, in supporting managerial focus, decision-making, and resilience (Salame et al., 2024) [4]. Research by Piolat, Olive, and Kellogg (2004) demonstrated that note-taking enhances cognitive processing and memory retention, allowing managers to better integrate and recall information, which is essential for managing high-stress environments [5]. The interplay of these factors has led to increasing attention on note-taking as a flexible, low-cost method to enhance management efficacy, particularly in regions facing socio-political and economic disruptions. This article builds on recent findings to investigate whether note-taking can serve as a key tool for managers, helping them navigate these complex challenges and maintain productivity and resilience.

Presentation of the main research material. The study addresses critical challenges faced by the CEE IT sectors in the face of both global economic shifts and regional instability because of Russia's full-scale invasion of Ukraine. During the COVID-19 pandemic, demand for digital products and services surged as people worldwide were compelled to work, study, and entertain themselves from home. This led many tech companies to actively hire new employees to meet the growing demand. For example, video conferencing services like Zoom (+50%) [6] and remote collaboration platforms such as Microsoft Teams (+70%) [7] and Slack (+80%) [8] saw unprecedented user growth. E-commerce ecosystems, including Amazon (+40%) [9] and Shopify (+47%) [10], also benefited from the rise in online shopping. In response, companies expanded their teams, invested in infrastructure, and launched new projects, expecting the trend to continue. However, by 2022, the situation began to shift. With pandemic restrictions easing, people spent more time outside their homes, returned to offices, and traditional businesses resumed their operations. Demand for some digital services stabilized or even began to decline. Companies that had based their forecasts on the continuation of pandemic trends found themselves needing to reassess their strategies.

Over the past years, the IT industry in CEE has been pressured by several factors, including high interest rates, and inflationary and intense competition from countries with lower labor costs like India. An increase in interest rates by the Federal Reserve [11] and other central banks raised the cost of capital. For IT firms relying on external financing, this trend has limited their ability to fund new projects and expand operations. Investors have less money and they choose more carefully where to invest which reduces the demand for IT services. IT companies across CEE faced increased financial constraints, limiting growth opportunities and investment in innovation. This manifested itself in many companies doing huge layoffs. FAANG companies (Facebook (Meta), Amazon, Apple, Netflix, Google (Alphabet)) also were affected by the crisis:

- in June 2022, Meta (Facebook) announced a layoff of more than 11000 employees which was 13% of entire workforce [12]. It was a reaction for lowering revenues and not materialized investments in Metaverse;
- in December 2022, Amazon began a layoff process affecting around 18,000 employees by early 2023. The primary reasons were the slowdown in online sales growth and the need to optimize costs [13];
- while Apple avoided mass layoffs, the company implemented a hiring freeze across most divisions and focused on cutting costs due to a slowdown in demand for its products [14];
- following its first subscriber loss in a decade, Netflix laid off around 450 employees in May and June 2022 to reduce costs and adapt to new market conditions [15];
- in January 2023, Alphabet (Google) announced a reduction of 12,000 jobs, accounting for approximately 6% of its global workforce, due to a slowdown in revenue growth and the need to improve efficiency [16];

Research shows that IT outsourcing companies in CEE are not announcing layoffs but based on the publications where the number of employees is declining we conclude that IT outsourcing companies also had to lay off personnel. In Ukraine the layoff situation is worse than other CEE countries because of the ongoing war. See examples below:

– EPAM is one of the largest IT companies in Ukraine, with offices in many cities, including Kyiv, Lviv, Dnipro, Odesa, and others. In January 2023, the company's workforce decreased by 1,225 people, nearly 11% of the total headcount. As of January 2023, EPAM employed 10,405 people, reflecting a reduction compared to the previous year, while a large number of employees were relocated to other countries, particularly in the EU. The company is currently opening new offices in Poland and Romania to offset losses in the Ukrainian market and as part of its customer support policy [17];

– another leading Ukrainian IT company, SoftServe, reduced its workforce by 1,468 employees, representing approximately 22% of its total staff. In January 2023, the company had 7,393 employees compared to 9,450 at the start of the year. These reductions are due to decreased demand for IT services as clients relocate and business operations are optimized in response to the crisis. Meanwhile, the company has optimized its operations in Ukraine and is opening offices in Mexico, Colombia, and Romania [18];

– GlobalLogic also faced losses, reducing its workforce by 444 employees, around 7% of its staff. At the beginning of 2023, the company had 6,467 employees. This decrease is attributed to changing economic conditions and the relocation of a significant portion of employees to other countries. The company continues to expand in Europe, opening new positions and offices, notably acquiring the Romanian IT company Fortech at the end of 2022 [19];

CEE IT companies

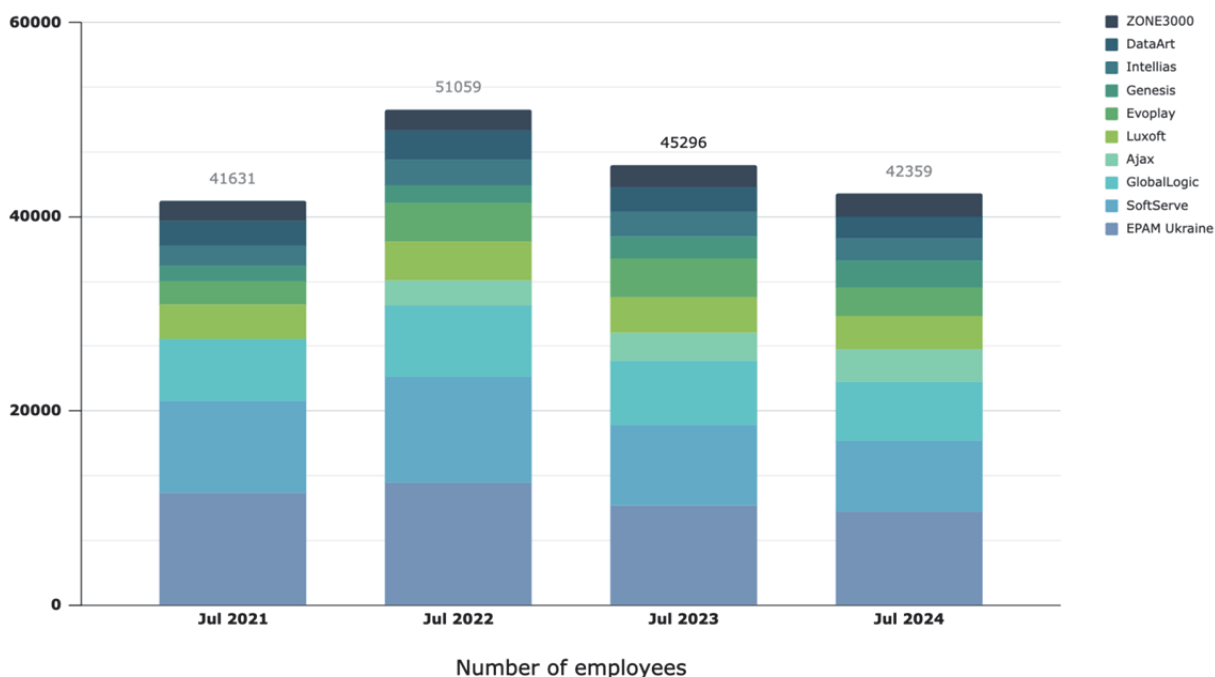


Figure 1. Number of employees in top 10 IT companies in Ukraine over the years.
The author's own work is based on publicly available reports

In Figure 1 we can see how the number of employees peaked in 2022 and has been declining since then up until July 2024 (latest data from the source [20]).

The research also shows that CEE companies have started actively seeking opportunities for collaboration with Indian subsidiaries and affiliated companies, maintaining their competitiveness by combining the high expertise of CEE developers with the more affordable workforce available in India. Specifically, EPAM [21] has offices in cities such as Hyderabad, Pune, and Bengaluru. Indian branches offer services in software development, data analytics, cloud solutions, and cybersecurity. Luxoft has established offices in Bengaluru [22], specializing in solutions for the automotive, financial services, and technology sectors. SoftServe operates an office in Bengaluru focused on data analytics, cloud solutions,

and artificial intelligence. GlobalLogic is actively working in India, with offices in Bengaluru, Gurgaon, Pune, and Noida [23]. Ciklum has affiliated offices in Chennai [24], working on projects for the retail, healthcare, and financial sectors. DataArt [25] has branches in Bengaluru and Pune, handling projects for the healthcare, financial, and travel industries. Collaboration with «lower-cost» locations allows companies to reduce overall project development expenses by employing Indian specialists but increases managerial workload because of new day-to-day issues appear such as cross-cultural difference.

Since 2022, the war in Ukraine has significantly disrupted the operational landscape for Ukrainian IT firms. Key challenges include unstable power supplies, staff mobilization, and the increased need for managerial agility. Companies encountered unprecedented logistical difficulties, often requiring immediate relocation of employees to safer regions or even abroad. Additionally, frequent power outages due to attacks on infrastructure compelled firms to invest in backup energy solutions, directly impacting their operational budgets. The mobilization of Ukrainian male workers, who form a considerable portion of the IT workforce, has led to a notable decrease in available talent, increasing the pressure on the remaining staff. Management teams, often impacted by these mobilizations, have had to adjust rapidly, with fewer managers overseeing larger teams or additional projects. Sometimes managers have to start working with the team three times bigger, for example, instead of handling one project for 50 engineers managers have to start handling 3 projects for 160 engineers. This has created a demand for team flexibility and resilience, with companies investing in alternative staffing arrangements, training existing staff for management roles, and relying on cross-functional collaboration to maintain project continuity.

Conclusions. The CEE IT industry overview presented in the research outlines how the work conditions for managers have changed over the past few years. The environment has become more demanding and the need for efficient management has grown. Challenges for managers in Ukraine are exceptional, maybe even unprecedented. Tightening cooperation with Asian countries such as India brings new issues to deal with such as cross-cultural differences. Work in such conditions requires creative out-of-box thinking as well as efficient execution of tactical tasks. To handle increased workload there is a need to have proper tracking of what has to be done and execution progress. According to studies [5], note-taking is a highly effective technique to deal with large quantities of information but the process or mastering note-taking also has its learning curve. The study actualizes the need for further in-depth research of the topic of managerial efficiency and note-taking as an instrument for achieving it.

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Volokh D. S. MANAGEMENT CHALLENGES IN THE IT SECTOR IN CENTRAL EASTERN EUROPE (CEE) IN 2024

Ця стаття має на меті продемонструвати результати дослідження та конкретні рекомендації для менеджерів щодо того, що можна зробити для подолання викликів, з якими стикається ІТ-сектор у регіоні Центральної та Східної Європи у 2024 році через глобальну кризу ІТ-індустрії. Отримані наукові результати базуються на загальнонаукових і спеціальних методах, що включають логічне та теоретичне узагальнення, аналіз і дедукцію. Ситуація в ІТ-секторі розглядається з різних кутів: глобальні тренди, економічна ситуація, фінансове регулювання державними установами, зниження попиту та посилення конкуренції з боку дешевшої робочої сили в азійських країнах, зокрема Індії. Українська ІТ-індустрія, зокрема, проходить важкі випробування через повномасштабне російське вторгнення та зменшення попиту на послуги. Одним із найбільш видимих показників цього спаду є скорочення робочої сили в найбільших українських компаніях, таких як EPAM Ukraine, SoftServe, GlobalLogic, Luxoft і Ciklum. Основними факторами, що сприяють цьому, є зростання вартості капіталу внаслідок підвищення відсоткових ставок у США та інших провідних економіках, що обмежує доступ ІТ-компаній до доступного зовнішнього фінансування, ускладнюючи інвестиції в інновації та розвиток. Крім того, повномасштабна війна в Україні принесла безпрецедентні виклики, особливо для управління в ІТ, що вимагає швидких та ефективних рішень для розв'язання таких проблем, як відключення електроенергії, мобілізація персоналу та збільшення навантаження на менеджерів через скорочення робочої сили. У статті акцентовано увагу на дослідженні

деталей ІТ-сектора в Центральній та Східній Європі, стратегічних управлінських рішеннях і тактичних практик для підвищення ефективності управління. Особливий наголос робиться на тому, чи можна рекомендувати ведення нотаток як основний інструмент для підвищення ефективності управління. Дослідження аналізує вплив глобальних економічних факторів, оптимізацію робочої сили та міжкультурну комунікацію з метою виявлення стійких та інноваційних управлінських практик, які можуть підтримати стійкість та зростання ІТ-індустрії регіону в умовах постійних викликів.

Ключові слова. ІТ-криза, ІТ-індустрія, ІТ-аутсорсинг, ефективне управління, міжкультурна комунікація, міжкультурні відмінності, оптимізація робочої сили, інноваційне управління, виклики в ІТ у 2024 році, ведення нотаток.