PECULIARITIES OF EMPLOYMENT IN THE IT SECTOR DURING THE WAR

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The article analyzes the current situation with employment in the IT sector, which has occurred since the beginning of the full-scale war in Ukraine. Statistical data on the job market overload are presented and the consequences of this problem are emphasized. Various IT experts explain the main reasons for the high competition among junior specialists. The experts criticize the approaches to the educational process in private educational institutions that do not provide graduates with the work experience on real projects and teamwork that IT companies are looking for. Based on the existing experience of cooperation between Ukrainian IT clusters and universities, the author proposes a promising solution that has already shown its effectiveness in the international arena. It would allow students of private IT schools to work on live cases in a team, demonstrate and improve their professional skills, develop a network of connections, compete for the main prize and present themselves to recruiters of various IT companies. The article summarizes the dynamics of organized hackathons in Ukraine over the past 7 years.

ОСОБЛИВОСТІ ПРАЦЕВЛАШТУВАННЯ В ІТ СФЕРІ В УМОВАХ ВІЙНИ

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ринок праці, хакатон

У статті розглянута поточна ситуація щодо працевлаштування в ІТ сфері, яка склалась від початку повномасштабної війни в Україні. Наведено статистичні дані щодо перевантаженості ринку праці, а також підкреслено наслідки цієї проблеми. Приводиться пояснення основних причин високої конкуренції серед молодих спеціалістів різноманітними експертами з ІТ сфери. В статті критикуються підходи до навчального процесу в приватних навчальних закладах, які не надають випускникам досвіду роботи на реальних проєктах та роботи в команді, які ціняться ІТ компаніями. На основі вже існуючого досвіду кооперації українських ІТ кластерів та ВНЗ, пропонується перспективне рішення, що вже показало свою ефективність на міжнародній арені. Воно б дозволило студентам приватних ІТ-шкіл попрацювати над живими кейсами в команді, продемонструвати та підвищити свої професійні навички, розвинути мережу зв'язків, позмагатись за головний приз і зарекомендувати себе рекрутерам різноманітних ІТ компаній. У підсумку наведено динаміку організованих хакатонів в Україні за останні 7 років.

Statement of the problem

In recent years, the share of IT services exports to the global market has increased significantly and this area has become appealing to many Ukrainians. In general, until 2022, the IT sector showed predictable dynamics in the number of vacancies and could meet the growing demand of employees but the picture has changed dramatically since the outbreak of war. The labor market is in a severe crisis and competition between job seekers has risen to a new level. This is especially noticeable for junior specialists with no or minimal work experience, who are unable to find a job in IT companies. Currently, even taking specialized courses in IT training centers does not guarantee that a graduate will receive a long-awaited job offer. That is why there is a need to analyze and find new methods and approaches in education, which would allow a newcomer to increase their competitiveness in the

national and international labor markets and get a job in an IT company.

Analysis of recent studies and publications

Prominent Ukrainian scientists, including A. Kolot, L. Lisogor, V. Petiukh, L. Shevchenko, V. Blyzniuk, I. Bondar, M. Vedernikova, O. Pishchulina and others, have studied the problems of various aspects of the labor market in Ukraine. However, the described approaches for stabilizing the situation on the labor market do not take into consideration the current realities, namely the introduction of martial law in Ukraine. Hence, this issue requires additional analysis and research, given the current labor market conditions.

Objectives of the article

The purpose of the study is to analyze current approaches in the training of IT specialists and to propose ways to improve the competitiveness of job seekers in the Ukrainian and international labor markets.

The main material of the research

As a result of the full-scale war started by the aggressor country, a huge number of Ukrainians lost their jobs. Some were able to find work elsewhere; some were forced to change their field of activity; many left the country in search of safety. According to a new report by the International Labor Organization (ILO), about 4.8 million jobs have been lost in Ukraine since the beginning of the Russian aggression [1].

Thus, the number of candidates for one position has overwhelm the labor market. This affected not only the IT sector, but also other fields (Fig. 1) but the IT industry is the leader. This was quite natural as people were looking for security in different parts of the world and the IT sector offered the possibility of remote work [2]. In addition, the information technology sector remained almost the only industry that maintained its economic position despite the war [3].

Naturally, as the number of unemployed Ukrainians has increased so has the demand for IT courses. However, there is a problem here: increased competition. There are dozens or even hundreds of candidates applying for the same position. This fact is confirmed by various studies and statistical reports of job search sites as "Work.ua", "Jobs.dou.ua" and "Djinni.co" (Fig. 2) [2].

As we can see from the data above, the gap in the number of vacancies and resumes has been noticeable since the beginning of the war. Until February 2022, this index was at the level of ~65 % and since April of the same year it has fallen to ~12 %. Only a year later, in March 2023, the index recovered to ~30 % and has remained relatively stable.

As mentioned earlier, the situation is the worst for young specialists. Intetics says that the crisis in the market has the most painful effect on beginners in IT: the number
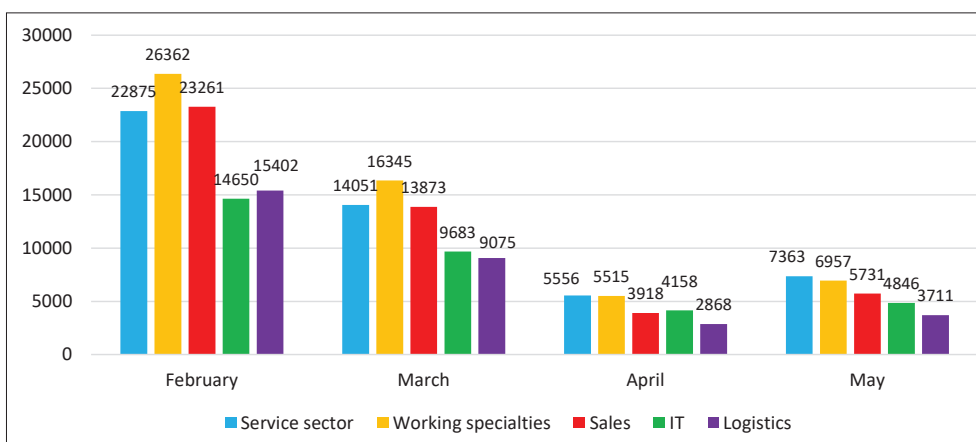

Figure 1 – Dynamics of the number of job vacancies in different categories, 2022
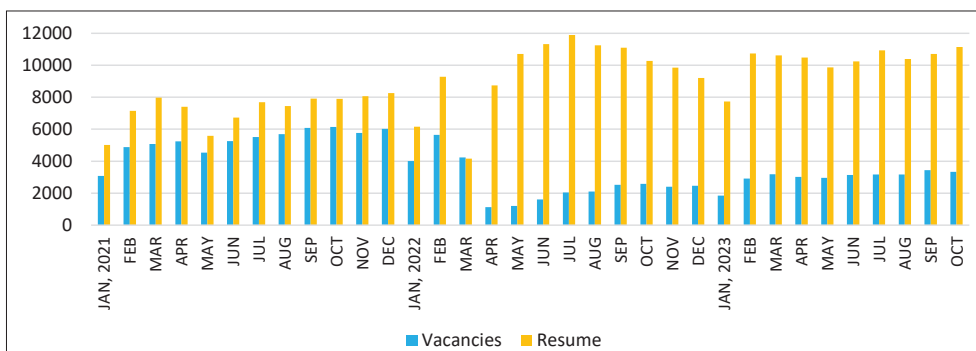

Figure 2 – The correlation between the number of vacancies and resumes
in the field of "IT, computers, Internet" on the website "Work.ua"

of junior candidates is growing steadily, which we cannot say about the number of job offers [4]. If you look at the dynamics of the number of responses to one vacancy with less than 1 year of work experience, you will notice that this index has increased 3–4 times (Fig. 3) as evidenced by statistics from the website "Jobs.dou.ua" [5].
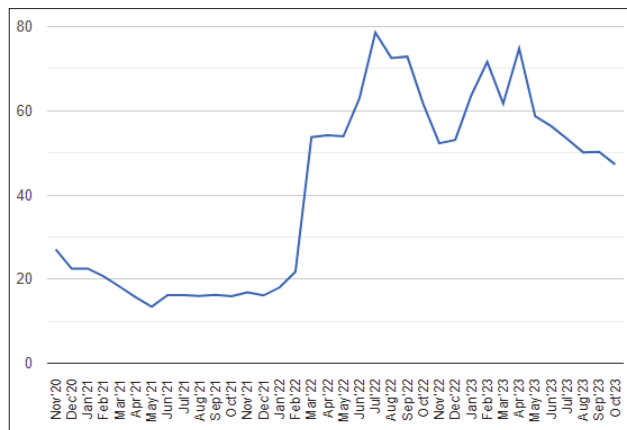

Figure 3 – Dynamics of the number
of responses per vacancy

Sigma Software notes that the market is slightly oversaturated but not even with Junior-level specialists, but rather with Trainees, i.e. people who have just graduated from courses and have minimal (several months) experience or no experience working on commercial projects at all [4].

Because of this, it can take more than a week from the moment you submit your resume to the moment you receive an invitation to the first interview. According to Olena Melnyk, Deputy Director of the Employment Policy Implementation Department of the State Employment Center, the average job search now takes almost three months [6]. According to experts who have managed to find a job in an IT company during this period, it is quite common to go through 10–20 interviews before finding a first job in IT.

The main consequences of the labor market overload with young specialists include the following [4]:

– cheaper labor. Due to the high competition, novice specialists, even if they have good skills and experience, may accept lower compensation just to avoid being unemployed, Intetics suggests;

– additional risk and financial burden on the employing company when hiring a specialist without experience. But on the positive side, bootcamps, hackathons and internships organized by companies help junior specialists gain their first real experience, according to AllSTARSIT;

– difficulties in the full adaptation of a new specialist. Companies need to "build up the experience" of training newcomers by creating educational programs with a practical component (internships, workshops, schools, internships and trainings). Candidates without experience should also try to gain this experience, even by joining professional communities in their specialty or by joining a real-life case or project.

So, we can say with confidence that there is a problem in the labor market. Competition for vacancies is greater than in 2014 and 2019 and the question arises of increasing the competitiveness of candidates not only in the national but also in the international labor market.

In order for customers, investments and new projects to return to Ukraine, first, we need to win and stabilize the economy. Second, we need to improve the quality of training for young specialists both at corporate training centers and at universities and private educational institutions. Thus, education remains the key factor that will affect both the professionalism of teams in companies and the ability of newcomers to get a job.

SoftServe, for example, continues developing both its corporate training solutions and collaborative projects with universities. For example, this year the company expanded the number of dual programs with universities from four in Lviv to nine across Ukraine, covering Kyiv, Dnipro, and Kharkiv for the first time. Moreover, the Lviv IT Cluster has additionally focused on vocational education in Ukraine. It is considered another link that can provide companies with experienced Junior or Strong-Junior specialists [4].

Currently, the process of studying in private educational institutions in the IT sector has changed a bit. Looking at this situation a few years ago, there is a certain difference in approaches to education. Earlier it was enough for a company to provide basic theory, experience in solving problems and working on their own pet project so that a specialist was ready to write a resume and get a job in an IT company. Now in order to remain competitive in the market the approaches of training centers have changed and they focus on job guarantees without improving the quality of education.

For example, ProgAcademy and MateAcademy emphasize in their course programs that they will refund your money if you fail to get a job in the company within 12 weeks after submitting your first resume, under certain conditions.

Other companies, such as NeoGoIt, are focused on entering the international market and offer a close-to-the-academic training (online master's degree), lasting two years with a certain number of ECTS credits and an international certificate of completion, which is valid in more than 50 countries.

In addition, the above-mentioned MateAcademy and also BetrootAcademy, Training center by Freshcode offer students consultations on employment in IT companies (resume writing, mock interviews) to increase their chances of getting a first job offer.

The previously mentioned company "Training center by Freshcode" offers students to be employed in their IT company under a number of specific conditions:

– successful completion of practical tasks and passing the exam project with a high score;

– personal recommendation of the mentor for employment;

– availability of a vacant position in the parent IT company.

However, the training center should be commended for using such approaches even before the war began, as

it was created based on an existing IT company and what was its competitive feature back then has become almost a necessity today.

However, these adaptations are more likely to be focused on meeting the company's own needs and maintaining a competitive position in the market. There have been no fundamental changes in the process of teaching. Specialists are still limited by their industry experience and are lacking the skills to work with commercial projects and working in a team, which are most valued in IT companies.

In my opinion, a simple but elegant solution to this problem is to organize relevant events that allow students of training centers to work in teams in solving a number of tasks and implementing a specific project.

Today, many higher education institutions are introducing the practice of teamwork in the educational process to address topical issues. Moreover, this trend is popular outside of universities and is practiced all over the world.

The so-called hackathons are organized events during which specialists of the same specialty (but not necessarily) form teams and solve a specific task or develop an effective solution during a limited time (usually 24 hours). Experienced mentors support teams by answering questions and giving advice. All teams present their ideas to the jury at a pitching session. The winners usually receive valuable prizes as well as various kinds of support to bring the project to life (from advice and mentoring to financial assistance) [7].

Among the popular hackathons held for students and interns in Ukraine are the following:
– hackathon for Metinvest interns;
– students' hackathon from the MHP agricultural complex;
– Int20h hackathon and others.

Hackathons often solve problems not just for specific companies or industries but also for the whole society. For example, at the medical hackathon organized by the Massachusetts Institute of Technology, a 3D printing technology for prostheses was developed [7]. In addition, at the NATO TIDE hackathon, the Ukrainian team won by developing an algorithm for automatically determining the geolocation of devices based on received IP addresses to reconnoiter enemy positions [8]. Many world-famous startups, such as Twitter, Facebook, and Zapier were created at hackathons and later grew into multi-billion dollar products [9].

In other words, by participating in such events students can gain a number of benefits:
– professional development. Specialists can test their capabilities, exchange ideas, see how others work and thus invest in their development as professionals;
– career opportunities. Such events will bring together great professionals in one place and enable recruiters to find talented staff as well as allow students to showcase their capabilities;
– networking. An additional advantage is a lot of quality communication and new acquaintances. Each contact with mentors, juries or organizers can result in a benefit – a joint project, job offer, investment or expert advice;
– valuable prizes. It all depends on the specific hackathon but usually the winners receive gifts from the organizers, partners or sponsors of the event.

The popularity of hackathons is confirmed by statistics (Fig. 4). From 2017 to 2019, there was an increase in the organization of such events but since 2020 the number of hackathons in Ukraine has decreased due to the pandemic and war [10].

Of course, these events are designed to be volunteer activities (without payment), but they solve the problems described above with limited practical experience of a newcomer and teamwork. In addition, they provide students the opportunity to build connections in the IT environment and find like-minded people. Participation or especially victory in such events will definitely increase your chances of being selected for a specific position in an IT company among other candidates.

In addition, in 2023, a startup was launched based on the concept of teamwork and solving various problems for specialists without work experience (similar to a hackathon). Of course, students of IT courses are engaged in the development of pet projects that visualize their skills but they do not give them the experience of real teamwork.
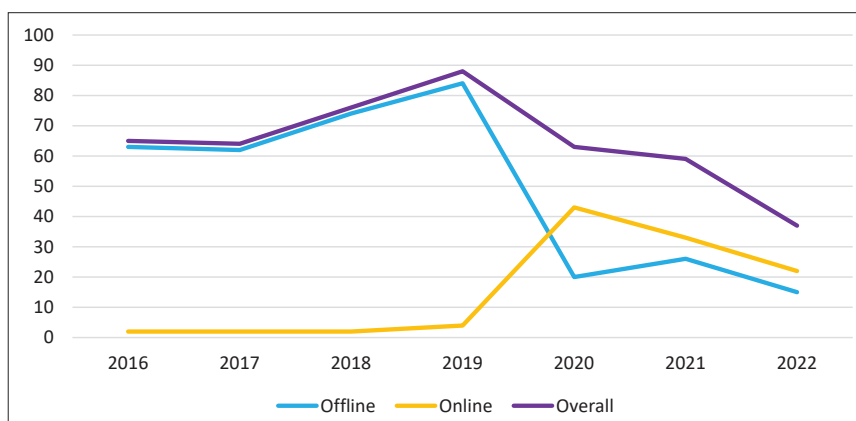

Figure 4 – Number of hackathons held in Ukraine, by year

Therefore, in order to enable specialists from different fields to interact in a team and create their own product the "Team challenge" was created [11].

And I am glad that progress is being made in this direction, because thanks to such services, people will be able to improve their skills and work in a team environment with diverse specialists remotely (allegedly to adopt commercial experience in product development), even without being students.

The main problem is the lack of project experience and lack of teamwork.

The implementation of the described approaches, based on hackathons and the "Team challenge" product concept, helps to build networking, search for talent, potential employment, etc. People will get free but valuable experience working on real projects and gain teamwork skills.

Private educational institutions in cooperation with IT companies should learn from the experience of Ukrainian IT clusters that have been holding such events for a long time and have demonstrated their effectiveness. As a result, this will increase the competitiveness of Trainee and Junior specialists in the national and international labor markets as well as provide an additional powerful boost to the Ukrainian economy.

Conclusions

Therefore, I think the problem of competitiveness in the labor market for young professionals is quite relevant. Educational institutions cannot fully meet the requirements for candidates to be hired in IT companies.

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