MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
UKRAINIAN-AMERICAN CONCORDIA UNIVERSITY

Faculty of Management and Business
Department of International Economic Relations, Business & Management

Bachelor's Qualification Work

Cloud infrastructures in business management

(based on HedgeHog Agency case)

Bachelor student in the 4th year of study
Field of Study 07 – Management and Administration
Specialty 073 – Management
Educ. program – IT Management

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Research supervisor

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Ph.D. in Economics

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Abstract.

The work focuses on the use of cloud infrastructures in business management, especially in recruiting companies. It is shown that the use of cloud technologies has a positive effect on the efficiency and effectiveness of the activities of recruiting companies, accelerates the flow of information, increases the efficiency of business process management, and provides new opportunities for the development and improvement of the system for working with clients. Otherwise, the disadvantages of the use and performance of cloud services are also considered: the threat of data security, information confidentiality, limitations in integration with other systems, and the impact on productivity due to Internet factors.

When making the research, the materials of the HedgeHog Agency, namely, the economic indicators of the company, the impact of the use of cloud technologies on the selection process and the search for potential employees, the data on the cost of using resources and their effectiveness were analyzed, and the role of cloud technologies in improving development strategies was also highlighted. The work draws conclusions about the overall positive impact of cloud infrastructures on business management and provides recommendations for improving the conditions of practical use, considers the issue of optimal solutions for business in conditions of digitalization.

Keywords: cloud infrastructures, IT infrastructure, recruiting companies, optimization of work processes, and integration.

Анотація.

Робота зосереджується на використанні хмарних інфраструктур в бізнес менеджменті, а особливо в рекрутингових компаніях. Показано, що застосування хмарних технологій має позитивний вплив на ефективність і результативність діяльності рекрутингових компаній, прискорює потік інформації, підвищує ефективність в управління бізнес процесами, забезпечує новими можливостями розвитку та вдосконалення системи по роботі з клієнтами. Також розглянуто недоліки застосування та впровадження хмарних сервісів: загроза безпеки даних, конфіденційності інформації, обмеження в інтеграції з іншими системами, і вплив на продуктивність через інтернет фактори.

При написані роботи було використано матеріали “HedgeHog Agency”, а саме досліджено економічні показники компанії, вплив використання хмарних технологій на процес відбору та пошук потенційних співробітників, проаналізовано дані щодо вартості використання ресурсів та їх ефективність, а також висвітлено роль хмарних технологій у покращенні стратегій розвитку бізнесу. У роботі зроблено висновки про в цілому позитивний вплив хмарних інфраструктур на бізнес менеджмент та наведено рекомендації щодо покращення умов використання, розглянуто питання оптимальних рішень для бізнесу в умовах диджиталізації.

Ключові слова: хмарні інфраструктури, IT-інфраструктура, рекрутингові компанії, оптимізація робочих процесів та інтеграція.

PHEE-institute «Ukrainian-American Concordia University»

Faculty of Management and Business
Department of International Economic Relations, Business and Management

Educational level: **Bachelor degree**
Specialty **073 "Management"**
Educational program **"IT Management"**

APPROVED
Head of Department_____

__Prof. Zharova L.V._____
May 12, 2024

TASK
FOR BACHELOR'S QUALIFICATION WORK OF STUDENT

Koval Oleksandra

1. Topic of the bachelor's qualification work
Cloud infrastructures in business management (based on HedgeHog Agency case)

Supervisor of the bachelor's qualification work **Ruslana V. Selezniova**
Ph.D. in Technical Sciences, Associate Professor at the Department of Information Technologies & Innovations

Which approved by Order of University from ***"25" September 2023*** № 25-09/2023-4к

2. Deadline for bachelor's qualification work submission ***"12" May 2024.***
3. Data-out to the bachelor's qualification work _____

4. Contents of the explanatory note (list of issues to be developed)
   1. Analysis of the impact of cloud infrastructures on companies' business processes.
   2. Classification of cloud systems, their advantages and disadvantages.
   3. Implementation of cloud systems at HedgeHog Agency and the issues they are struggling with.
   4. Analysis of the economic situation of HedgeHog Agency.
   5. External and internal factors influence cloud infrastructures
   6. Strategies for optimizing resources operating cloud systems.

5. List of graphic material (with exact indication of any mandatory drawings
The work consist of 63 pages, including 40 literature sources, 6 tables and 3 figures.

6. Date of issue of the assignment

Time Schedule

№	The title of the parts of the qualification paper (work)	Deadlines	Notes
1.	I part of bachelor thesis	*10.12.2023*	
2.	II part of bachelor thesis	*27.02.2024*	
3.	Introduction, conclusions, summary	*25.04.2024*	
4.	Pre-defense of the thesis	*03.05.2024*	

Student

Supervisor____ _____
(signature)

Conclusions (*general description of the work; participation in scientific conferences/ prepared scientific article; what grade does the student deserve*)
The student's work was done qualitatively and meets all requirements. The student positively explored the topic of the thesis and highlighted important details of the work. Overall, the student's work deserves a positive review.

Supervisor__ _____
(signature)

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INTRODUCTION

Modern technologies are developing exponentially from year to year. Digitalization, online advertising, artificial intelligence, virtual reality, and robotics contain complex coding and execution methods. Storing and maintaining these systems uses terabytes of cloud storage. Cloud technologies allow you to quickly and efficiently search for the necessary data, provide high scalability and flexibility in managing computing resources, and allow users to save and exchange information, develop virtual business areas, and create online opportunities for partnerships and work. Cloud technologies enable businesses to store and process vast amounts of data without their physical infrastructure. In a dynamic business environment, cloud technologies provide high availability of data and applications, allowing employees to work remotely and collaboratively on projects, improving business processes efficiency, and ensuring rapid decision-making.

In this bachelor's thesis, I would like to analyze cloud infrastructure from theoretical and practical aspects, focusing on processes in recruiting. In my research on this topic, I plan to address issues such as data security, cost analysis and optimization options, inefficient data use, automation, etc. BQW will be based on the knowledge and data from the company where I completed my internship - HedgeHog Agency. Analyzing the data taken into account will demonstrate the current situation within the company and at a large-scale level, involving global markets and customers. This area has gained particular importance and significance over the past decade as we use the resources of cloud infrastructures every day. This impact extends to both ordinary users and government and global organizations. The purpose of my report for my bachelor's work is to conduct research and determine the effectiveness and appropriateness of these systems, how they affect the processes in recruiting companies, as well as the nuances and features of using cloud infrastructures.

The bachelor's qualification work **aims** to analyze the impact of cloud infrastructures in modern business environments, identify the difficulties and advantages associated with adopting and managing cloud infrastructures, and study examples in various areas of the business environment.

The **methods** that I will use in this work are analysis, research based on statistical data, study of articles, books, and works related to the topic of cloud computing, comparative analysis, as well as real-life examples. Also, the main method of final qualifying work on the study of this topic will be knowledge obtained during my internship.

The **assignments** for the period of bachelor's work are self-study, developing the skill of analyzing and comparing facts, acquiring the skill of collecting and searching for the necessary information, in-depth study of business concepts and principles, and preparing structured and information work. In the process of researching, I plan to explore areas such as the security of use and compliance with the requirements by recruiting companies, cost analysis, resource management, risk analysis, adaptability, scalability, and flexibility of systems, as well as employee and customer satisfaction. The topic under study not only concerns businesses but also the economic situation in the country and the world—for example, business transformation and digitalization of public services in Ukraine. One of the best examples of the use of cloud technologies and digitalization is the Diya application, where passport data, tax invoices, and documents of Ukrainian citizens are stored. Also, this application is officially considered equivalent to paper documents. Therefore, these systems and their use develop innovation within the country, thereby supporting economic growth and profit.

By the end of writing my BQW, I expect to have identified the best strategies for using cloud technologies in the recruiting industry, clearly understand the main pros and cons of using them, and developed recommendations for effective use based on the research findings.

CHAPTER 1: Theoretical concepts of using cloud infrastructures in business management

1.1 Introduction cloud infrastructures in recruiting company and its concepts

The term "cloud infrastructure" refers to the hardware and software elements that support the computational requirements of a cloud computing environment. These elements include servers, storage, networking, virtualization software, services, and management tools. Using these technologies has become routine for us because we interact with them several times a day. For instance, our accounts on social networks, photos, videos, emails on the server, documents, etc., are stored on servers maintained by companies like Amazon, Microsoft, or Google. To better understand the difference between them, the method, and the purpose of use, it's necessary to consider the main types and their characteristics.

Before exploring this topic, it is essential to gain a better understanding of the purpose of creating cloud technologies, the needs they cover, and the working processes involved. Therefore, knowing the history of the development of these systems is crucial. The younger generation believes that cloud infrastructure has appeared relatively recently. But in fact, its development and creation began back in 1963 in the USA. The Advanced Research Projects Agency (DARPA), acting in the interests of the US Department of Defense, granted two million dollars to the Massachusetts Institute of Technology for an intriguing project known as the Project on Mathematics and Computation. The group led by cybernetics scientists Robert M. Fano and Fernando Jose Corbato aimed to develop a fundamentally new time-sharing system designed to organize shared access to computer resources among multiple remote users. The motivation was the visible fact that computers in those days were expensive and relatively scarce, while the demand for computing was growing rapidly.

Project MAC was based on the experimental Corbato Compatible Time-Sharing System (CTSS), created several years earlier by Fernando José Corbato. This system allowed users of multiple terminals connected to a computer to access the same program running on a machine. There almost 200 users in ten different MIT labs were

able to connect to one computer and run programs on it centrally. This event can be considered the starting point of the development of cloud technologies.

In a later stage, Multics (Multiplexed Information and Computing Service) was created in 1969 by improving the earlier CTSS version. In addition to organizing access to applications, Multics provided file sharing, security functions, and data protection from accidental damage. It laid the foundation for the next step in November 1971, Ken Thompson created the first version of UNIX. Over the years, it has become the most popular multi-user operating system in the world. UNIX made it possible to fully work with files, file systems, and devices, regardless of the physical location of the computer connected to the network. This operating system modified the entire computer network into one global multi-user computing system with shared resources, access to which was carried out on demand and by user rights. This version served as a precursor to the modern concept of the 'cloud.'

It is understandable why cloud infrastructures are in high demand since their use has many advantages. One of the main benefits is cost savings. Large corporations and governments need to store and transmit data in huge quantities. Their collection, storage, and integrity are completely managed by cloud systems. If these large organizations were serviced independently, they would spend considerably more expenses for maintenance, service supervision, payment of specialized workers, and so on. At that time, cloud technologies cover all these aspects through the services they provide, including data security, updates, scalability, and availability. Despite the rather large list of advantages, it needs to consider some disadvantages when working with cloud systems. One of the main disadvantages is data security. There is always a risk of leakage or loss of information, so the main effort is to eliminate defects in this area. Other factors include note network delays, dependence on suppliers, and opacity in the use of storage resources.

Exploring more deeply into the topic of cloud infrastructures, it's essential to study their classification, types, and methods of use. Organizations or individual users select the most suitable type based on the task the cloud system needs to handle, and the process of performing functions for various categories of users. Three primary service

models of cloud infrastructures include IaaS, PaaS, and SaaS. Each type of cloud service and deployment method provides its level of control, flexibility, and manageability. Each model represents a separate layer of computing resources.

The most widely used model is SaaS, Software as a Service. Users employing this model access software over the Internet, sometimes requiring the download of specific programs or applications. Instead of installing and maintaining the application on their computer or server, users can access it through a web browser. The users that employ this model are End Users who apply SaaS as business applications, a method of communication, and data storage and processing. In this model, the vendor manages the system. This system uses a 'Pay per use' approach, paying for specific programs or allocated memory based on their usage, for example, for certain programs, or the amount of memory allocated and used only for him.

The second model is PaaS, namely Platform as a Service. The difference from the previous one is that the user has more access to the capabilities of the system, for example to the database, programming language tools, web server, and operating system. This model is also managed by the vendor, and the user doesn't have the ability to change the cloud structure, only create his projects. Developers mainly use PaaS, which simplifies the development and management of applications by providing ready-made infrastructure and services necessary to create modern and efficient applications. Other applications include integration with other services and managing application security.

The third model, Infrastructure as a Service (IaaS), is the least used compared to the other two. This type provides the greatest amount of access to its users, such as data storage, virtualization, servers, and networking. Users, often SysAdmins, create and manage their virtual infrastructure without the need to own and maintain physical hardware. They are also responsible for resources such as applications, data, runtime, and middleware. While users of IaaS can develop and test applications, store and process data, backup and restore, and scale applications, their primary task is managing the infrastructure, as well as equipment and maintenance.

The second category of cloud infrastructure is deployment models. They define how organizations deploy their computing resources, store data, and use other services from cloud providers. This category encompasses public, private, and hybrid cloud infrastructures.

The first type is the private cloud. A private cloud is provided exclusively to one organization and can be deployed on its servers or from a third-party provider that specializes in private clouds. Only employees within the company have access to data and resources stored on this cloud. The organization itself and its specialists control resources and infrastructure, data security, and volumes of use. Typically, such infrastructures are used by organizations with high security and control requirements, as well as areas of activity with strict enforcement laws or regulations. They require allocations of space, hardware, and environmental controls. One of the advantages is flexibility, which makes it possible to customize the infrastructure to the requirements and requests of the organization. Also, own resources that are controlled exclusively by the organization. The main disadvantage is the high cost of maintaining and maintaining processes in the cloud since this includes maintenance personnel, resource costs, and training.

The second type is the public cloud. A public cloud is provided by a third-party cloud service provider and is available to the general public via the Internet. Public cloud is accessible to the public, so there is no limit to the number of users. An example would be when a single user registers on the YouTube platform and uses these resources for a certain fee, which is calculated by the time spent on this platform. Also, organizations can “rent” space and resources for the needs of the company, and pay only for a specially designated space only for this organization. In this case, the public cloud is hosted by the service provider itself. It runs on remote servers that the provider manages. This type of cloud is best used if there is a high potential of an increase in scale, or you don’t need to pay for all the software, hardware, and other infrastructure, because they are owned by the cloud provider itself. The disadvantages are data security and lack of complete data control, which can lead to leakage, loss, or distribution.

The third type is a hybrid cloud. A hybrid cloud is a combination of a public and private cloud, where some of the components are owned by the cloud service provider and the rest of them by the organization itself. Sensitive data is securely stored and not accessible to the public, whereas user interfaces are. Therefore, information can easily move from public to private access. For instance, government organizations may use hybrid models to secretly store particularly important documents for individuals while maintaining a public channel for spreading other information. The advantages of the hybrid model are that it provides a choice of where to place specific workloads depending on requirements and efficient use of resources, which allows optimizing costs. The disadvantages include the complexity of management, especially in terms of compatibility, when integrating between clouds and may require additional resources.

Emerging trends in the cloud infrastructure space are being successfully adopted by companies, underscoring the effectiveness and importance of this technology. Several recent trends have gained a foothold in the market and are already widely used:

1. Cloud Security and Resilience. When using cloud infrastructure, companies pay increased attention to security and sustainability. Therefore, cloud service providers invest heavily in features such as data encryption, access control, and disaster recovery, prioritizing the protection of customer data.

2. Cloud Cost Optimization. The increasing user base in the cloud has optimized cost control and prompted cloud providers to invest in creating innovative tools and services. These offerings encompass cost monitoring, budgeting tools, and recommendations for instance sizing, and enabling users to optimize their spending efficiently.

3. Competition. The primary trend in cloud computing for 2024 is heightened competition among major players, including AWS, Microsoft Azure, and Google Cloud Platform, manifesting in three key aspects: pricing and financial incentives, reliability, and the rise of other vendors. AWS is poised to lead by introducing a consumption-based pricing model across all services, aiming to break down investment

barriers and expecting other cloud providers to follow suit with transparent tools displaying resource usage and per-byte costs.

Despite receiving numerous positive reviews from employers, clients, and employees, companies implementing cloud technologies face challenges. These challenges include compliance with laws and regulations, ensuring the reliability and availability of services, addressing limitations on cloud scalability, and managing risks.

Cloud infrastructures and their widespread presence became especially important during the war in Ukraine. Many businesses transitioned to operating exclusively online because this was the only solution to avoid losing profits and customers. The most significant increase in the use of cloud technologies was observed in the following sectors of Ukrainian business:

Agriculture, forestry, and fisheries: +183%

Real estate transactions: +133%

Information and telecommunications: +115%

Wholesale and retail trade; vehicle repair: +74%

Construction: +63%

Processing industry: +56%

Financial and insurance industry: +55%"

1.2 Theoretical application of cloud technologies in business and perspectives for HedgeHog Agency

The current business environment is faced with an urgent need to develop effective software to optimize the infrastructure of a B2B company. The purpose is to increase the fluidity, accuracy, and flexibility of work to staff more than once and to avoid declining sales and customer losses. Furthermore, an important part of the progress in business has occurred due to digitalization. Online services, advertising, and data storage greatly simplify the work of both businesses and customers. Cloud infrastructure is a key component of digitalization, offering benefits that extend to various segments, including recruiting. Cloud technologies clarify the recruiting process and handling of client and employee requests by promoting mobility and the ability to work with large amounts of data at a low cost. There are many benefits to adopting cloud-based systems for client interactions and recruiting new employees. These are like:

1. Constant, easy, and fast access to data
2. Reducing costs for ownership, maintenance, and management of IT infrastructure
3. Directly for innovation and development
4. Integration with other IT systems

Cloud technologies can bring about significant changes in the development and optimization of recruiting processes, providing greater efficiency and competitiveness to the company. Usually, recruiting companies use cloud technologies of SaaS systems. This model for the cloud operation of the enterprise is implemented online using the best market practices, the latest technologies, and developments. Recruiting organizations apply SaaS because it involves accessing a server through remote use, with technical support provided online. This is an excellent option for small or medium-sized organizations that don't have the benefit of maintaining their infrastructure, but have a large customer base and a flood of data that needs to be stored and processed. SaaS is any software, application, or website used by recruiters.

While PaaS or IaaS are rarely used by recruiting companies. Excludes cases where IaaS is used to create backups, data security, and storage and management. These changes are made at the virtual infrastructure level over the Internet. They can manage those resources, including creating, configuring, and deleting virtual machines, data stores, network components, and other infrastructure elements. Additionally, PaaS is used for application development or integration with various application programming interfaces. This is particularly useful for the interaction of platforms, social networks, and other resources for automation, collecting information about candidates, and advanced searches according to the required criteria. HedgeHog Agency also applies cloud infrastructure services.

Cloud infrastructures are utilized in various processes within HedgeHog Agency, including recruiting and employee training, as well as across different departments such as accounting, sales, administration, and HR. The key functions that cloud infrastructures perform at HedgeHog Agency include:

1. Integration and data exchange. That makes it easy to communicate with different employees, departments, and clients at any time. This solves the issue of mobility, increases efficiency, and optimizes processes. The most commonly used SaaS model in our company is Gmail, as well as various Google platform additional tools on the accounts of our employees. Integration with different applications, for example, Zoom, One Drive, and Google Apps simplifies data exchange between these systems, ensuring a consistent approach to information processing, and providing access to a broader number of resources.

2. Tracking candidates and progress. Cloud systems serve as a tracking system for candidates, managing their progress, requests, and employer requirements. The use of analytics tools and artificial intelligence applications allows recruiters to more effectively analyze candidate profiles and select responsible applicants. Automated settings and filters save time, expedite strategic decision-making on candidates, and optimize performance Recruiters also conduct interviews, maintain communication, and receive high-quality feedback on online platforms, which has a positive effect on the company’s image.

According to statistics, companies that use cloud-based interview platforms have a 25% improvement in candidate satisfaction and a 20% increase in employer ratings. Additionally, the number of unnecessary interviews is reduced by half, leading to an increased expansion of candidate count for vacancies.

3. Optimization of time and resources. The use of cloud infrastructures reduces the time recruiters spend from posting vacancies to official employment, resulting in quick closures of positions and increased productivity. At HedgeHog Agency, using cloud platforms for interviews has led to a 1.5 times reduction in interview time and improved feedback quality. The saved time aimed at quality feedback, processing more candidates, and developing new search methods.

HedgeHog Agency, with over 15 years in the recruiting industry, has managed to test a considerable number of cloud systems that simplify daily processes. There are several of the most successful SaaS programs that HedgeHog uses. For example, this is JobScore. This software manages the full cycle of recruiter tasks, offering tools such as creating tables, saving your favorite applications, storing candidate data, and interacting with other useful software on this platform. JobScore's benefits include ease of use, analytics, recruitment through job sites, and portability. This application also interacts with SaaS platforms such as Zoom, Google tools, DocuSign, and Linkedin. Additionally, it includes a time-saving feature that allows recruiters to post vacancies on multiple online platforms to reach suitable candidates.

Another useful cloud application is Jobvite. HedgeHog applies an applicant tracking system to attract and manage candidates. The difference from previous software is that this one is focused on the convenience of candidates, rather than recruiters. It facilitates candidate search and attraction through social networks, talent search sites, and various advertising media. Moreover, it has automated analytics, statistics processes, and increases brand awareness, and optimizes recruitment marketing.

1.3 Legal and regulatory framework for cloud infrastructures

The regulatory framework for cloud infrastructures establishes the framework within which the powers and rules for the use of cloud infrastructures are regulated at the legislative level. The guidelines may vary by country, region, and usage model. CISPE (Association of European Cloud Service Providers) is a coalition of cloud computing leaders serving millions of customers across Europe. The CISPE Code of Conduct on Data Protection (CISPE Code) is the first pan-European code of conduct on data protection for cloud infrastructure service providers. It was adopted by Article 40 of the EU General Data Protection Regulation (GDPR). The CISPE Code ensures organizations that and their cloud infrastructure service providers comply with data processing requirements under the GDPR. This gives cloud customers additional confidence that they can select services that have been independently verified to comply with GDPR requirements. (CISPE, 2021)

The requirements formed by the GDPP include:

1. Principles of transparency, fairness, and legality. Personal data must be obtained through legal and fair methods, with the consent of the data subject.

2. Limitation of purpose. The purpose for collecting data must be stated at the time of collection, and the data must not be used for anything other than the original intent.

3. Storage insurance. Data should be stored in a form that the user can be identified no longer than is necessary to achieve the processing purposes.

4. Integrity and confidentiality. Personal data must be protected by security measures against risks such as loss, unauthorized access, destruction, use, modification, or disclosure of data, etc. (UNHCR, 2024)

These are key points that a SaaS system must create and support to be successfully marketed and accessible to users.

Ukraine is also monitoring trends in the European Union and is gradually modifying its legislation by global standards in the field of data protection. The main criteria at the moment for the implementation and use of cloud systems are consent to

data processing, security, and the rights of data subjects, which allows the subject to access, change, delete, and transfer their data.

However, despite the high requirements and careful supervision of compliance, there are still risks faced by users and distributors in Ukraine. Among them are:

1. Since each cloud deployment model requires specific contracts, there are no template contracts between the user and the service provider.

2. The role and boundaries of how exactly state executive authorities can interface in the processes of organizing the functioning of cloud technologies have not been defined.

3. Issues related to the security of storing, processing, and transmitting information outside of one's information system.

According to the law of Ukraine on cloud services, during the war on the territory of our country, additional requirements were introduced regarding cloud systems and access to this data. It is prohibited to process information using cloud resources or data centers located abroad or in the temporarily occupied territories of Ukraine, or widely owned by the Russian Federation sanctioned individuals and legal entities under sanctions. This applies to state secrets, information relating to the office, and information from the state and unified registers, which are created, maintained, and operated by the legislation of Ukraine. According to Resolution No. 263 of the Cabinet of Ministers of Ukraine, dated 12 March 2022, public authorities were allowed, among other things, to locate public information resources and public e-registers as well as their encrypted reserve copies on the cloud resources or data centers outside Ukraine.

CHAPTER 2: Economic analytical and research area, processes observed in the organization using cloud infrastructures, and cloud technology adoption

2.1 Evaluating the economic activities of the enterprise, setting the objectives of the analytical research

Applying the provided data and characteristics, in this section, we will delve into research closely related to the topic of cloud technologies. Using these studies as an example, I will analyze the HedgeHog Agency company, the impact of cloud technologies on the company's activities, and recruiting in general, and also, based on statistics, we will identify strengths and weaknesses.

HedgeHog Agency is a recruiting company specializing in personnel recruitment for Ukrainian and international clients in countries such as the USA, Mexico, and Europe. The main branch of the company is official employment, training, and staff selection according to client criteria. HedgeHog has been on the market for about 15 years, employing approximately 5000 staff members and having offices throughout Ukraine, with the main office located in Kyiv. The main areas that employers focus on when searching for candidates are IT and logistics. These industries are in demand now, so the organization is seeing an increase in requests for their services.

Regarding the demand for recruiting services, the unemployment rate in Ukraine in 2022 stands at 21.2%, which is 2.2% higher than the previous year. The coronavirus and the full-scale invasion have caused significant damage to the Ukrainian economy, reducing the number of jobs and losing qualified specialists. Therefore, recruiting services are crucial for maintaining stability in the country at an economic level, ensuring employment, and expanding business partnerships between countries.

For a successful and in-depth analysis of HedgeHog Agency and its aspect of cloud infrastructures, we will analyze the company's economic condition, the development and costs in the IT sector in recent years, and the general state of the market. The company's annual profit ranges from 4 to 5.5 million hryvnias. The company's main sources of income are recruitment services (65%), training and education of new personnel (15%), marketing income (12%) and consulting (8%). The

company's core activity involves recruiting personnel for both Ukrainian and foreign clients in the fields of logistics and information technology, along with their training and official employment. The main sources of income are diverse and focused on different areas of activity, reducing risks and dependency on a single direction.

	Annual Profit (UAH)	Net Profit (UAH)	Cost of Services (UAH)	Percentage of closed vacancies	Customer satisfaction level
2018	4.7 mln	710.000	2.85 mln	67%	4.5/5
2019	4.4 mln	680.000	2.7 mln	60%	4.2/5
2020	4.9 mln	785.000	3.05 mln	70%	4.6/5
2021	4.7 mln	765.000	2.6 mln	71%	4.5/5
2022	5.1 mln	810.000	3.4 mln	78%	4.8/5
2023	4.8 mln	690.000	3.0 mln	72%	4.65/5

Table 2.1 Describes the general economic situation in the company over the past few years, data taken from accounting records of HedgeHog Agency

However, over the past few years, HedgeHog Agency has experienced minor financial fluctuations. These changes, around 5-7%, indicate an unstable financial situation influenced by several factors. Firstly, the military situation in Ukraine has shaken the country's economy, redirecting resources and finances towards military needs. Secondly, the reduction in job opportunities, job loss, and a decrease in people's incomes not only contribute to an increase in unemployment but also have a significant impact on society as a whole. One of the key consequences of such changes is the increase in poverty levels among the population. Many people find themselves in difficult economic situations, facing a lack of means to meet basic needs such as food, housing, and healthcare. Thirdly, this has led to a decrease in the influx of foreign

investment. Economic instability and low levels of consumer demand can create an unfavorable investment environment that discourages foreign investors. Since HedgeHog Agency is aimed at a foreign market, it was important not to lose clients and continue to provide effective service. Despite the difficulties, the company continues to efficiently perform tasks, attracting new clients to maintain stability within the organization.

The economic situation at HedgeHog Agency over the past 6 years is presented in Table 2.1. Based on indicators such as annual profit, net profit, costs, and the effectiveness of recruiting services, it can be concluded that the organization is managing the economic situation both internally and in the market effectively, adapting to changes.

The company's overall profit during this period fluctuated within small limits, but more often showed a positive trend, indicating the success of its business model and the effectiveness of its management strategies. A key success factor is also the skillful management of business relationships with clients and the constant expansion of services.

HedgeHog Agency's net income is directly related to the company's annual total profit. As this indicator changed, a direct proportionality towards a more positive trend can be observed. This suggests that the company effectively manages its expenses, maintains the efficiency of business processes, and ensures financial stability. Also, important facts mentioned in the table are the level of customer satisfaction and the percentage of closed vacancies for the year. High ratings ranging from 4.5 to 5 demonstrate a high customer orientation. Key factors for success in this area include prompt feedback, regular service quality reviews, and adapting approaches to meet changing customer needs.

Cloud technologies have become an integral part of HedgeHog Agency's operations, having a significant impact on all processes and departments within the organization. With this digitalization at 90%, the company has successfully integrated cloud infrastructures into its daily operations, which has significantly improved the efficiency of business processes.

The company uses various SaaS and PaaS platforms for analyzing and storing data, posting vacancies monitoring the labor market, the hiring process, and finding the right employee, as well as communicating with clients.

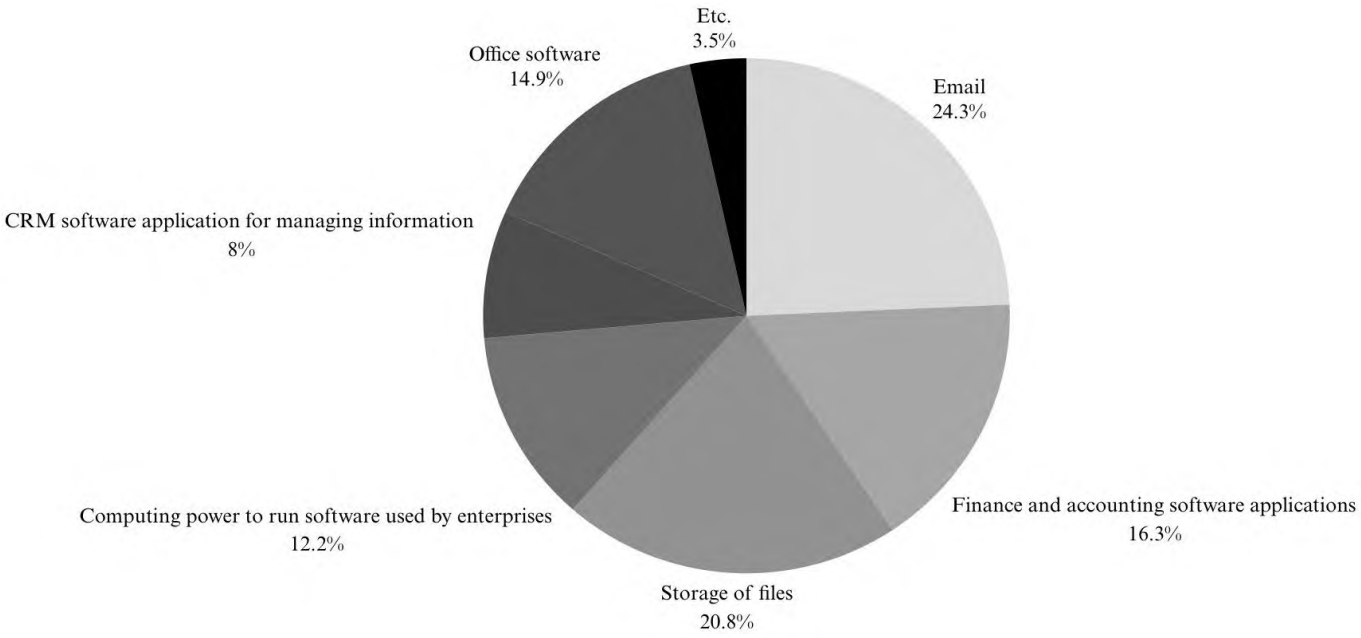

Table 2.2 Demonstrate the ratio of the use of cloud structures for various company purposes (Department, 2023)

Table 2.2 outlines the primary areas of cloud infrastructure usage. The most widely used direction is Email since employees use this tool for communication within the team and between departments. Also, communication with potential clients and employees in the early stages of cooperation is carried out using Google Email and Google Meetings. Effective use of email and video conferencing simplifies the processes of approval, information exchange, and meetings. However, over the past year, the team has initiated a project to develop its communication system with tracking elements to monitor data processing by employees and enhance efficiency.

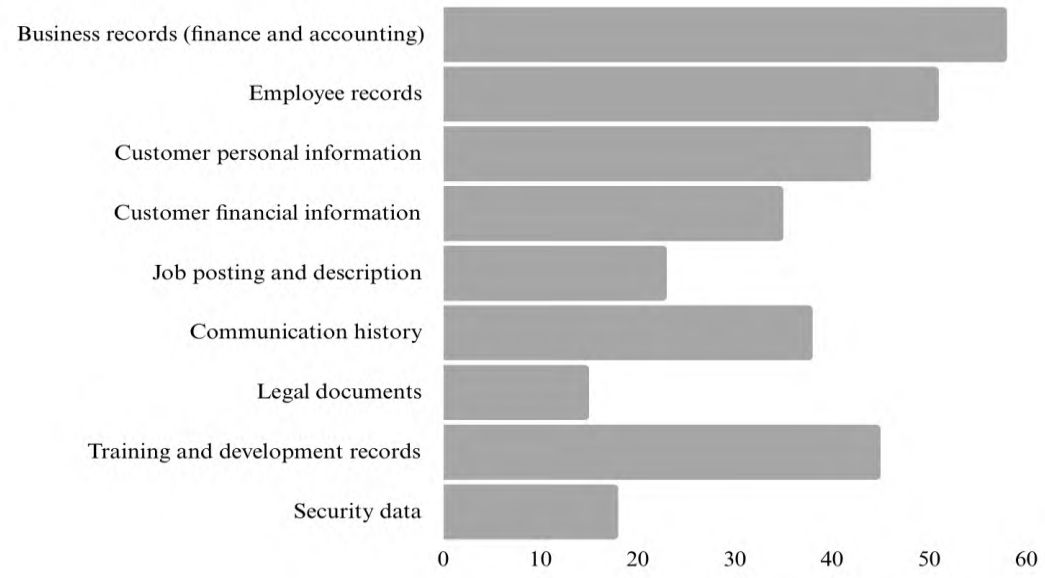

Table 2.3 Description of the distribution of memory capacity of cloud infrastructures in the company (Slingerland, 2023)

Table 2.3 The second most crucial function is data storage. Table 2.3 highlights the areas of utilizing these tools and their specialized functions. The main aspects include personnel selection directions and the processing of their data. The majority is occupied by materials for training new employees, ATS programs for tracking the success and productivity of employees, posting vacancies on platforms, and the hiring and selection process. The use of cloud storage infrastructures ensures secure and efficient management of candidate information. Round-the-clock access to data via a secure channel ensures confidentiality and data integrity, which is extremely important when working with the personal information of applicants. The data was provided by the IT and Innovation Projects department for a statistical understanding of server memory use, their resource capacity, and the most costly processes in the company.

And the third direction of using cloud infrastructures is finance software applications. HedgeHog Agency allocates significant resources, approximately 20% of its cloud infrastructure, to financial data processing, analytics, and strategy development. The main functions of these systems are control and management of financial data, strategic planning, assessment and control of risks related to the

financial side of the company, and analytics and reporting. The tools that HedgeHog Agency uses for financial reporting are Microsoft Office applications, Paychex Flex, and Workday.

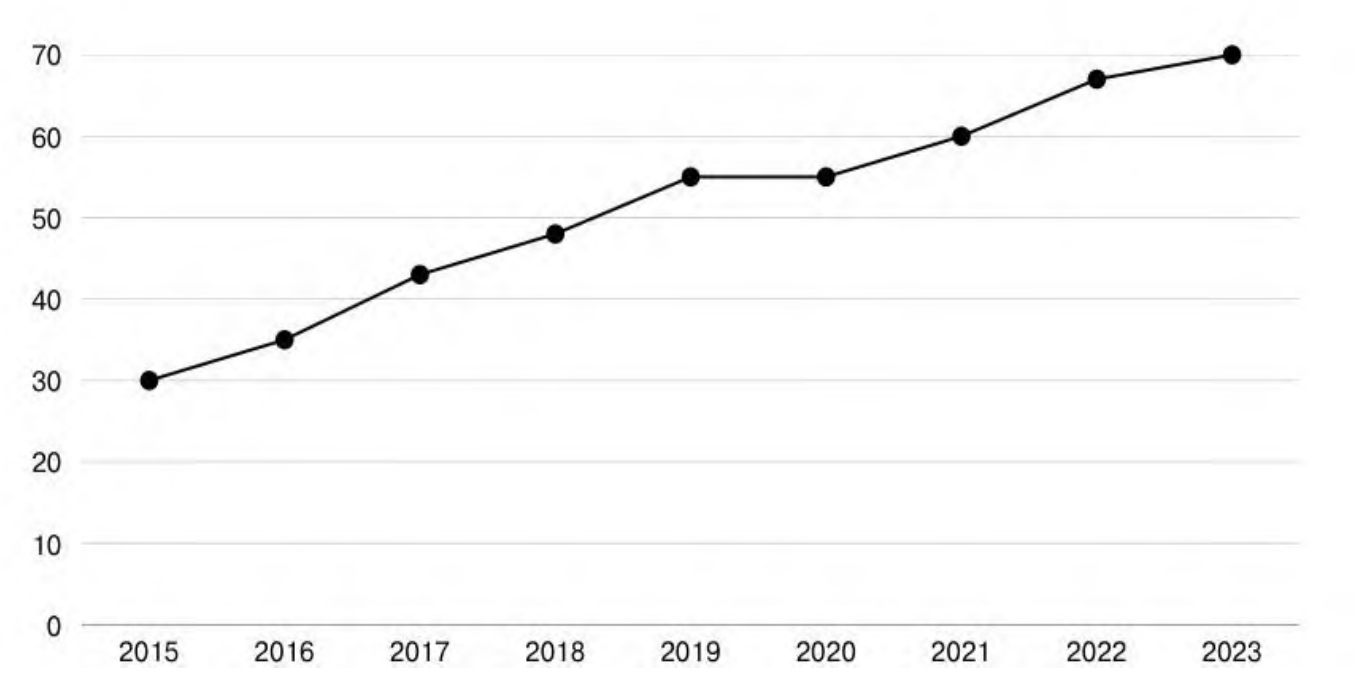

Table 2.4 Overall percentage utilization of cloud infrastructures in HedgeHog Agency

Overall, the company shows positive dynamics in the demand for and application of cloud infrastructures. Each year, the need for expansion is 5-10% of previous indicators, which demonstrates stable and sustainable growth. This may also suggest that HedgeHog Agency continues to see the value and efficiency in using cloud technologies, contributing to business development. Table 2.4 shows the general growth rate of demand for the use of cloud systems throughout the company. The main users include the marketing and sales department (15% of the total), the IT department (12%), the HR and recruiting department (20%), and the finance department (15%).

The growing trend in the graph indicates that the company is not only aware of the benefits of cloud technologies but is also actively integrating them into its business environment. This provides the opportunity to increase productivity, improve communication between departments, and ensure more flexible and innovative functioning overall. Looking ahead to the next 5 years, the company also plans to focus

on two industries within the organization. The first is improving security for reliable management of cloud infrastructure.

The implementation will be carried out through the following points:

1. Integration of existing systems
2. Application of artificial intelligence and deep analysis
3. Security monitoring

The second industry is an aspect that will help expand the client base, attract new specialists, increase profits, and also implement new projects. The company plans to focus on marketing strategies, analytics, customer experience management, and sales automation.

2.2 Analysis of organizational activity, progress, and statistical indicators

In this part of the thesis, I would like to highlight research closely related to cloud infrastructures in recruiting companies. Additionally, I aim to analyze HedgeHog Agency's performance for in-depth analysis and the development of future strategies. The research's goal is to analyze how the website interface impacts candidates' interests and how the description of posted vacancies influences the search for the most suitable candidates. The methods I will use include statistical data analysis, competitiveness analysis, marketing nuances and research, and examples of cloud solutions for system optimization.

The impact of the website interface on candidate interest in a recruiting company can be significant. A well-designed and user-friendly interface can improve potential candidates' perception of a company, increase their satisfaction levels, and therefore attract more qualified applicants. This analysis is important for the company's future strategies because it reflects the user's opinion, and costs for website and mobile application development and maintenance, provides user feedback, and ensures continuous monitoring of website effectiveness.

To better understand the situation and advantages of HedgeHog Agency, it is worth comparing key indicators. The company's official website is easily found in a search engine by simply writing off the name. When a user enters it, the first thing they see is a bright company logo and two main functional buttons, these are “Find an employee” and “Find a job”. After clicking on them, the user can fill out a form and view a list of general and current vacancies. Below, there is information for candidates, HR managers, and Business services, with detailed information for each category. For example, vacancies, job descriptions, contact information, a link to contact the user in the future, etc. Below is some brief information about the company:

- 30+ Regular business clients
- 3000+ Employed candidates
- 50+ Recruiting experts on our team

Next, the user can see the values and how the company sees its future. Based on these aspects, a candidate or client can already conclude whether he will cooperate with HedgeHog Agency and whether the company's policy and vision align with their own. This is a great way to filter out unsuitable candidates. The main values of the company are diversity, equality and unity, excellent service in every interaction, moving forward, focus on development, balance of professional and personal life, etc. Following this, users can find information about the main partners and clients of the recruiting company and contact details.

From the perspective of the interface and design of the site, HedgeHog Agency has highlighted all the advantages of the company, showing its position in the market and outlining the main directions for the company to attract like-minded people. The site features bright accents in blue colors that attract attention, making it easy to find the necessary information. Another advantage is many options for communication with company representatives, for example, questionnaires, phone numbers, emails, a function to contact you, etc. It is easy to track the main partners of HedgeHog Agency and learn more about the recruiting company. Also, having job descriptions on the site saves users time without the need to visit another platform for this information.

According to the data provided by our recruiters, the arrival of clients and candidates from the site is 35%, the rest is social networks, advertising, search platforms, and reviews. After interviews, training, and internships, approximately 60 to 70% of candidates continue to cooperate with clients. Likewise, there are cases where users, after filling out a questionnaire or submitting a request for further cooperation, decline before the interview stage. This portion of users, as indicated by the data, ranges from 5 to 12 percent.

It is also worth paying attention to the recruiting market and analyzing the main competitors of HedgeHog Agency, the features of their sites, and their disadvantages. As examples, I chose two companies: Work.UA and Smart Solutions. These are platforms that successfully cooperate in Ukraine, providing services for both Ukrainian and international clients. I have analyzed all three companies based on key indicators related to their websites.

	HEDGEHOG AGENCY	WORK.UA	SMART SOLUTIONS
Time spent on the site	1-4 MIN	7-12MIN	1-5MIN
Element clickability	4/5	5/5	4/5
Percentage of transitions to a website from social networks	20-30%	15-20%	20-25%
Click-through rate on buttons for feedback or communication	30-35%	50-60%	30-40%
The most often visited pages	CURRENT VACANCIES, BUSINESS, MAIN PARTNERS	VACANCIES, MY PROFILE, RECENTLY ADDED VACANCY	CURRENT VACANCIES, IT OUTSOURCING, REVIEW OF MARKET SALARIES
Failure rate	65-70%	40-55%	70-75%

Table 2.5 Comparative table with the main competitor's of HedgeHog Agency, and their indicators

Work.ua is a platform that publishes vacancies on its website and provides the role of a distributor between employers and job seekers. The site allows employers to post vacancies, search for suitable candidates, and evaluate their profiles. At the same time, job seekers can use the platform to search for jobs of interest, create profiles, apply for jobs, and interact with potential employers.

Smart Solutions is a recruiting company that searches for candidates in the IT field for Ukrainian and foreign clients. It is a provider of HR services and business process outsourcing services in Ukraine, Kazakhstan, Uzbekistan, Kyrgyzstan, the Czech Republic, and Poland. This company has the same type of business as HedgeHog.

The table displays key indicators and data to effectively assess the performance of the recruitment website of the companies, their significance, and effectiveness.

1. Time spent on the site. This indicator demonstrates the interest of users in the information presented on the site, reflecting their general interest in the company's offerings and readiness for collaboration. HedgeHog Agency and Smart Solutions have lower indicators because they provide vacancies only in one direction, for a narrow target audience. While Work.UA is a platform with a variety of options and areas of employment, which allows users to choose a direction and select the most suitable options, which in turn takes more time.

2. Element click-ability. This indicator measures how often a user opens and views site tabs. The indicators for the three companies are approximately the same, 4/5 for HedgeHog Agency and Smart Solutions, and 5/5 for Work. UA. They differ due to the fact that the second site has more information and a variety of information that may be of interest to users who are actively searching for a job or want to change their field of activity.

3. Percentage of transitions to a website from social networks. These indicators demonstrate the arrival and activity of users who visited the site from links on social networks. This could be targeted advertising or subscribers. These companies use social platforms such as Instagram, TikTok, Facebook, and Telegram. In the case of HedgeHog Agency, ensure a 10-15% interaction rate on social media.

4. Click-through rate on buttons for feedback or communication. This indicator determines the user’s interest in the proposed vacancies and the company as a whole, and also determines the correctness of the information posted on the site, to attract more clients. Work.UA has the majority of responses because it has a larger selection of offers and a simplified search system.

5. The most often visited pages.

6. Failure rate. This indicator measures the frequency of failures or rejections in a system, process, product, or service. It includes both candidate rejections and company refusals. This is also the percentage of failed interviews or incorrectly completed applications from users. To reduce these indicators, it is advisable to review

the requirements for the vacancy, improve working conditions, optimize selection methods, and actively manage the company's reputation in the labor market. However, this is not critical because there are human factors involved. Potential candidates may change their minds after the interview, reconsider job conditions (as the company operates in the international market, differences in time zones, candidate requirements, and work nuances may not align), etc. On the other hand, positive indicators, such as closed vacancies in our company, show that the client always receives the needed employees within the specified timeframes.

The reference study I have chosen focuses aimed at analyzing job descriptions in different cultures and business areas, as well as the impact of a website on the overall perception of the company. The purpose of this study was to analyze online recruiting as a more effective method of finding candidates. Apart from the benefit of lower costs, the Internet is transforming the entire recruitment process. This includes promotional activities, candidate identification, and tracking, communication and screening, and finally selection and preparation of new staff. Through online programs and platforms where job vacancies are posted, one can analyze candidate queries, track the influx of new users, monitor market trends, and maintain the competitiveness of the company.

The main assumption is that today's leading resources are information, knowledge, and expertise. Additionally, the process of searching for candidates depends directly on the competitive strategies and management style that is present in the company, as well as the field of activity. It depends on what qualities of the candidate are emphasized and what factors are decisive for hiring. In an area such as recruiting, a vital part of the marketing and competitive strategy is the ability to quickly respond to market changes, a team that is skilled and adaptable, as well as the utilization of online platforms.

As HedgeHog Agency's clients are primarily from the international market, mainly the United States, it is crucial for us to understand their hiring structure, what personal and professional qualities they emphasize, what is valued more in a candidate, and what selection methods they prefer. Also, this is done to deeply understand the client's needs and adopt new structures and methods of personnel selection.

The assumption is that hiring is a complex process and a variety of techniques must be used to capture potential employees' patterns of behavior, strengths, and weaknesses. Behavioral interviewing, employee profiling, job analysis, and realistic job previews are some of the techniques that have been used by human resources departments to systematically screen and match managerial candidates to important positions. (Bretz and Judge 1998; Jiang, Klein, et al. 1998; Phillips 1998; Robinson 1998).

According to the data provided in this article, two categories were presented to evaluate candidates during the selection and interview stages. The goal was to determine whether the candidate fits the company's requirements and how closely they align with the company's strategy and policies. Three countries were chosen for the experiment: The United States, the United Kingdom, and Japan. The first category is high managerial capability including the ability to lead, boost revenues, manage teams, motivate staff, market services, and set strategy.

Also, examples of these requirements:

- have communication skills
- should be flexible
- should be innovative
- should be a self-learner
- be a good problem solver
- should be able to motivate staff
- should provide strong leadership
- should generate revenue increases

For cross-functional focus, an independent evaluator graded the advertised position for the extent to which it required some knowledge of the service, marketing, technical, or strategic functions.

Other examples of requirements are:

- knows standard software
- knows a foreign language
- know how to process forms

- research the market
- interact with customers

Based on these requirements, the points were calculated and distributed among the candidates according to the country where they would like to work. Their scores were evaluated through the lens of the requirements of each of the three countries. Each country had different indicators as they have different selection criteria and values that are important to them in candidates.

After analyzing the indicators, the experts came to the following conclusion, which they described in the tables. This choice was made because these countries are different in their direction in the search for employees, with different values and approaches.

Table 2: Comparison of Means for 3 Countries (Anova)

	U.S.	U.K.	U.S.	Japan	Japan	U.K.
1. External performance conditions	1.96	1.82 +	1.96	2.19 *	2.19	1.82 **
	(.74)	(1.04)	(.74)	(.98)	(.98)	(1.04)
2. Human resource oriented web site	5.39	4.44***	3.92 ***		3.92	4.44 **
	(1.40)	(1.64)	(.82)		(.82)	(1.64)
3. Core performance skills	2.69	2.47 +	2.69	1.31 ***	1.31	2.47 ***
	(1.35)		(1.03)		(1.35)	
4. Core performance traits	3.17	3.00 +	3.17	.25 ***	.25	3.00 ***
	(2.08)		(.59)		(.59)	(2.08)
5. Core performance job tasks	3.59	3.37 +	3.59	1.11 ***	1.11	3.37 ***
	(1.88)		(1.08)		(1.88)	
6. High managerial capabilities	4.58	3.91 ***	4.58	1.40 ***		3.91 ***
	(2.36)	(2.43)	(2.36)	(1.12)	(2.43)	
7. Multi-functional oriented position	16.08	15.62 +	16.08	1.40 ***	1.40	15.62 ***
	(4.50)	(4.27)	(4.50)	(1.12)	(1.12)	(4.27)
(A) # of position advertisements	239	212	239	100	100	212

According to the results, in the case of the USA and the UK, companies are more focused on the professional part, whether an employee can be competitive, maintain the pace of company growth and development, bring in new ideas, and increase profits through special skills. Meanwhile, Japan places more emphasis on the personal qualities of the employee, their ability to adapt to a new environment, be part of a team, find a common language with colleagues and clients, and be part of the company's society. The two theoretical perspectives that capture the major tendencies in recruitment strategies in the U.S. are (a) performance and behavioral screening and (b)

resource and knowledge management. These two approaches directly or indirectly help to explain the behavioral and competence preferences of American firms.

Regarding the company's expectations from future employees, managers for American and British companies must have a wide range of skills, namely to be excellent managers, have a good understanding of marketing, motivate the team, be knowledgeable about each department, their functions, and changes, and also offer options to increase the organization's profits. In Japan, companies have lower expectations for managers, requiring only basic knowledge and task execution without involving them in the processes of other departments. Managers focus only on their team and the functions they are responsible for.

Table 5: Comparative View of Expected Managerial Capabilities
Means (standard deviations)

Desired Managerial Capabilities	American	British	Japanese
1. Be able to motivate staff	.54 (.50)	.42 (.50)	.13 (.34)
2. Provide strong leadership	.67 (.47)	.58 (.49)	.18 (.39)
3. Generate revenue increase	.37 (.48)	.39 (.49)	.18 (.39)
4. Manage teams well	.58 (.49)	.54 (.50)	.12 (.33)
5. Market the firm's products	.45 (.50)	.39 (.49)	.24 (.43)
6. Understand HR issues	.34 (.47)	.22 (.41)	.17 (.38)
7. Know business models	.64 (.49)	.55 (.50)	.04 (.20)
8. Set department strategy	.65 (.48)	.51 (.50)	.11 (.33)
9. Understand/set co. strategy	.34 (.48)	.31 (.46)	.23 (.42

Analyzing this study, I have come to the conclusion that culture and the external environment strongly influence organizations, their approach to employees, and the attitude they convey within the company. From the above data, Ukrainian organizations should adopt several points that were revealed in this study.

1. Promote cultural values, company views, and an emphasis on the social skills of employees. Ukraine should focus not only on the professional skills and hard skills of employees but also introduce the value of the cultural aspect and social skills. This will help strengthen internal relationships within the team and maintain a positive atmosphere in the company.

2. Testing future employees in different areas of the company. This is an excellent option when the company has several open vacancies and the future employee can take

a short test to determine special skills for each area. This will help optimize the hiring process, select specialists with an existing knowledge base and necessary requirements, and most likely the employee will be more effective and useful in this area.

3. Use of technology in recruitment processes. American companies often integrate modern technologies such as data analytics, artificial intelligence, and automation programs into their hiring processes. Although some companies have begun the process of digitalization, we still do not fully use modern technologies. In Ukraine, the use of such innovations can improve the efficiency and accuracy of candidate selection. (Simeon, 2011)

2.3 Assessments of the factors influencing positive and negative the systems

HedgeHog Agency is approximately 80% digitized, actively utilizing cloud space for storing, processing, editing, and analyzing data. The company does not have local servers but uses exclusively cloud resources. Software plays a crucial role in simplifying the hiring process, employee training, and data collection from candidates and clients.

One of the frequently used software is AppliView. The purpose of the software is to improve the efficiency of candidate search, assessing and hiring candidates, as well as simplifying job vacancy and database management. AppliView is a program that simplifies the selection, search, and sorting of the most suitable candidates according to specified criteria, and also has additional functions that replace several resources at once. AppliView integrates multiple platforms such as email, calendars, and video interview platforms, making the recruitment workflow more convenient and effective. Instead of using multiple tools to organize and track the recruiting tasks, AppliView provides all necessary functions in one place. This creates a centralized and easily accessible environment for managing all stages of the hiring process.

AppliView software features and characteristics:

- Automated recruiting process. The system automates recruiter processes from creating vacancies to the hiring process. It interacts with various job posting sites, expands the search area, analyzes candidate resumes, and uses artificial intelligence for data analysis and collection.
- Rapid alerts. Rapid alerts provide instant notifications about important changes in the process, facilitating prompt decision-making.
- Video chat and text messaging function. AppliView offers video chat functionality for more direct communication with candidates during interviews, replacing some additional programs such as Zoom.
- Installation and usege. Company employees can choose how they want to use the application—install it on their computers or use it online without downloading it.

- Content analysis. The software uses content analysis methods for comparative analysis of candidate features, selected job posting platforms, and employer requirements.
- Candidate tracking. The applicant tracking system monitors candidate statuses at various selection stages and notifies about changes, enabling quick responsiveness.

HedgeHog Agency has been using this cloud-based system for several years, demonstrating excellent results in satisfaction of employees who use it. The data collected and analyzed by this software provides valuable insights for optimizing recruitment processes and making more informed human resource management decisions. AppliView provides statistics on the time spent at each hiring stage, from candidate search to signing a contract. The system collects data on where candidates come from, allowing the company to measure the effectiveness of various recruitment sources, such as websites, social networks, and advertising campaigns. Additionally, candidate quality assessment statistics include data analysis on successful interviews, employee tenure after hiring, and other key performance indicators.

AppliView uses several data collection methods to improve program performance and help measure employee engagement and feedback:

- Automated reports. Based on key indicators, as well as personally entered personal data, individual statistics are generated within the system.
- Integrations with analytical tools. Integration with resources such as Google Analytics, IBM Cognos Analytics, or Microsoft Power BI demonstrates deeper data analysis and creates custom reports.
- Feedback. The system of feedback and reviews from employees, clients, and, in part, candidates provide an understanding of the complete system landscape.

According to the data, the use of AppliView software has reduced the time spent processing a single request by 30-40%, enabling departments to increase efficiency and handle a larger workload within the same timeframe. Employee feedback was considered for potential enhancements and additional features. Survey results indicate that 75% of employees are fully satisfied with the system, 20% would like to make

minor functional changes, and 5% prefer to switch to alternative software. The last category proposed options within the same price range, with similar functions and slight differences. AppliView charges $40 per user per month, providing access to the full package of services. The coverage of this program constitutes around 20% of the total IT expenses at HedgeHog Agency.

The company also considered alternative programs with similar functionality, such as iCIMS Recruit, JazzHR, SmartRecruiters, or BambooHR. However, after analyzing reviews, user ratings (85-90% recommendations for use), and software statistics, HedgeHog Agency decided in favor of AppliView due to specific criteria. Advantages included support for inclusive recruiting, allowing the program to be used in different directions, as well as video interviews and online assessments during interviews. In turn, it would be possible to remove unnecessary data, deleting outdated or irrelevant records could reduce redundancy of information and clear memory.

Strengths	**Weaknesses**
• Cost-effective • Flexible and innovative • Faster provisioning of systems and applications • Better control of the resources • Independence of time and location • Expandability	• Increased dependency • High-speed Internet connection requirement • Lack of commitment to the high quality of service and availability guarantees • Privacy risks • Bias in algorithmic decision-making
Opportunities	**Threat**
• Adaptive to future needs • Standardized process • Quick solution to the problem • High-tech work environment • Offering modern information solutions according to the latest technology • Company enhancement in terms of innovation, functionality, and price	• Security concern • Difficulty in migration from one to another platform • Chance of facing pushback from established industry players • Hidden cost

Table 2.6 SWOT analysis of the AppliView cloud system in the use of recruiting companies

SWOT analysis of the AppliView software, based on data and information collected through employee surveys, comparisons with alternative programs, and data gathered and stored by AppliView itself, analyzing the effectiveness of AI-driven candidate selection and the level of candidates accepted for posted vacancies.

Analyzing the strengths and weaknesses of the application, as well as future opportunities for the company and threats, several features can be noted. The first part, on the strengths side, highlights the main advantages of AppliView that were essential for the company. They became one of the components of choosing software among analogs. Since HedgeHog Agency is a young, innovative, and developing company, aspects such as flexibility, expandability, and independence of time and location are important for fast, result-oriented, and effective work in such a business as recruiting. AppliView allows adapting recruitment processes to the unique needs of the company. This is important for effective interaction with different clients, each of whom may have its peculiarities and requirements for staff hiring. Also, for companies that often face the need to stay ahead of competitors, independence from time and location is crucial. AppliView allows remote work, conducts online interviews, and effectively manages recruiting processes across multiple time zones, providing a more flexible and adaptive work environment.

The goals and future vision of the program in the context of the company can be observed in the opportunity table. The company is highlighting several areas for development that will take it to a new level of profit and client market. Use cost efficiency to create more attractive price offers for customers, which contributes to attracting new customers and strengthening positions in the market. Also, developing personalized solutions adapted to customer needs helps retain and attract new business partners. Standardizing processes and creating flexible working conditions will attract highly qualified specialists and increase the level of team efficiency. Currently, HedgeHog Agency is focusing on these aspects, which, according to their calculations, will increase interest in the company and its services by 12%, increase brand awareness by 6-8%, increase employee satisfaction due to new projects, and expand the company's market demand.

By considering weaknesses and threats, a trend can be traced related to data storage and security, and the threat of strong dependence of the work process on software, especially in moments of failures or malfunctions. Weaknesses such as high-speed Internet and guarantees of automated saving of changes in the system affect the efficiency of the process. In organizations in our country, threats such as power outages and unstable mobile communications are not uncommon. These factors can have a significant impact on the performance of software, including recruiting systems such as AppliView.

To mitigate such threats, HedgeHog Agency considers power backup options, regular data backups, and disaster recovery plans. The company actively implements security measures such as regular data encryption, access control, and system monitoring to prevent data loss or theft. It is also worth introducing a constant update of security systems and developing a data migration plan to reduce the complexity of switching to other platforms, delegate information, and minimize risks in case of failures.

Algorithm for using AppliView software for HR department employees in the recruiting company HedgeHog Agency when posting a vacancy and searching for a suitable candidate:

1. HR employees log into the AppliView system using their credentials.

2. Create a vacancy. Go to the "Vacancy Management" section and create a new vacancy, indicating the requirements for candidates, responsibilities, and other details that are important for the employer and client.

3. AppliView automatically posts the vacancy on various web platforms, social networks, and job sites, minimizing manual work for employees and saving time.

4. The system starts tracking the influx of candidates, creating profiles, and updating their statuses in real-time.

5. Analysis of resumes. HR specialists review candidate resumes using the "Browse CVs" function to analyze qualifications, work experience, and skills.

6. Using the “manage job requirements” and “jobs management and e-recruitment” functions, they revise the vacancy requirements and make adjustments if necessary.

7. If a candidate is interested, HR staff use the video chat or text messaging functions to conduct a personal interview and clarify the details of interest for both interested parties, enhancing interaction and gaining a more comprehensive understanding of the candidate.

8. The program automatically notifies of any changes in the candidate’s resume, ensuring a prompt response to current data. AppliView also has the function of saving a candidate’s CV, without involving additional systems.

9. HR specialists analyze decisions made by software algorithms, ensuring objectivity in the selection process. Based on artificial intelligence, the program generates a rating of the most suitable candidate, simplifying and speeding up the decision-making process.

10. Completion of the selection process. In the case of selecting a suitable candidate, HR employees conclude the selection process by offering the candidate the position and initiating the official documentation process.

2.4 Internal and external tendencies of cloud infrastructure area and its progress

Concluding the previous points, HedgeHog Agency is a progressive company that is closely interconnected with cloud systems and recognizes the importance of their selection and criteria for choosing them. In recent years, this field has been rapidly advancing, creating new opportunities for clients to optimize processes and improve systems to develop the recruitment industry.

In a competitive environment like recruiting, where every candidate is important and valuable, companies must keep up with changes and embrace trends in cloud infrastructures. Therefore, in this part, we will analyze internal and external trends in cloud systems, their advantages and disadvantages, and data for a statistical understanding of the situation.

External trends in cloud infrastructures:

1. Hybrid models of cloud infrastructures. A hybrid cloud is an IT infrastructure structure that combines a company's internal IT resources with the infrastructure and services from third-party cloud service providers. This technology involves using cloud systems of different types, including those from different providers, to leverage the benefits of both private and public models.

The advantages of this system are:

- Efficient use of resources, allowing users to employ cloud space for temporary tasks and projects while using local infrastructure permanently for daily plans.
- Reduced dependence on one supplier. This advantage reduces the risk of failures and allows users to choose the most suitable option for the organization if the provider changes the terms of use.
- Increased availability and reliability. Distributing data and workloads between the cloud and local servers helps optimize costs and reduce risks.
- Adaptability and scalability are criteria that are important for modern companies. This model provides the opportunity to allocate resources depending on

current needs, which is important for recruiting companies with a changing volume of work.

This is a great option for organizations like LinkedIn or Indeed because it's large organizations that operate globally and have more than 500 million users. Organizations must have their own on-premises data storage use infrastructure, as well as backup space such as Amazon Web Services (AWS), Microsoft Azure, or Google Cloud Platform (GCP) for temporary data storage, and processing.

According to statistics, 50% to 70% of large organizations currently have decided to switch to a hybrid cloud infrastructure model due to business sustainability and more secure data storage. This type of cloud system is not suitable for HedgeHog Agency, because the company does not require local infrastructure, since it has up to hundreds of clients and several thousand candidates. On average, the number of candidates increases by 4-7% annually. Therefore, the company uses only cloud infrastructure from the provider, covering all data storage needs, as well as saving maintenance costs.

2. Real-time cloud infrastructure. This refers to a set of computing resources, data storage, and network capabilities designed to process data and provide information in real time. This trend is worth adopting for HedgeHog Agency since this is highly beneficial for recruitment processes. This feature offers real-time resume processing systems to highlight key candidate skills, instant notifications of application status and process changes, the use of chatbots to answer candidate questions, and linking candidate data to HR systems.

For recruiting companies, this is one of the key functions because quickly updating the status of candidates, notifying them about changes, and processing and loading information into databases affect the efficiency of the hiring process and finding suitable candidates. Given the high level of competition in this area, quick response and instant adaptation to changes in market conditions are significant.

As for the disadvantages of this system, these are:

- High network costs, for powerful servers and other resources.
- Security issues due to fast exchanges can be the target of attacks.

- Network dependency. Effective real-time operation requires a stable and high-speed network. Limited bandwidth or unstable connections can reduce efficiency.
- Difficulties in data management, which can lead to e can lead to errors and loss of information.

3. Privacy in the cloud. This is the concept for ensuring the security and protection of sensitive data stored and processed in cloud computing environments. In the context of recruiting, this concerns the personal data of candidates such as resumes, contact information, and other sensitive information.

This practice is not new in the recruiting field with the use of cloud infrastructures, as it is a crucial aspect of building trust with potential employees. It is implemented through cybersecurity measures, employing modern encryption methods, strict access policies, and anonymization of data. HedgeHog Agency also studies and uses data protection methods to maintain the anonymity and privacy of clients, candidates, and employees. New methods include the use of authorization tools, two-factor authentication, session keys and tokens, and training and awareness programs for staff to ensure control over access to candidates' personal data. This is important because candidates provide personal information with the expectation of confidentiality. Violation of this trust can negatively affect the image of the recruiting company. According to statistics, Cloud Security is the top concern in cloud computing for 83% of organizations. 42% of enterprises face the greatest challenges with data privacy and security. For 31% of large businesses, securing cloud assets and resources is a major challenge. The lack of cloud security skills and expertise is a significant challenge for 30% of enterprises.

Internal trends in cloud infrastructures:

1. Increased use of artificial intelligence. In the context of recruiting, artificial intelligence can be used to automate various stages of the hiring process, analyze data, and decision making. HedgeHog Agency uses several AI-powered software programs, such as Findem and HireEZ. These services are used for finding the right candidate, utilizing specialized selection and generation tools to identify the best fit through AI. The platform supports external talent pools, simplifying employers' search,

communication, and hiring of qualified candidates. It improves productivity through the use of intelligent automation, eliminating the need for heavy CRM. They also seamlessly connect with existing ATS systems to track potential candidates. AI-powered programs automate daily tasks, analyze more data, reduce hiring and candidate search times, and serve as an auxiliary tool for recruiters by providing analytics, predictions, and recommendations.

2. Resilience to cyber-attacks. Considering the facts brought up in external trends, the aspect of cybersecurity is important for all structures that deal with the processing and storage of personal data. At the legislative level, organizations are required to strictly regulate customer personal information and take care of its preservation and confidentiality. HedgeHog Agency also takes measures to prevent system hacking and the loss or theft of data. This includes data encryption, strict access control, and protection of databases from unauthorized access. Both employees and clients must adhere to these principles. Resilience to cyber-attacks helps maintain a company's reputation and demonstrates its commitment to data security. According to statistics, in Ukraine, over 1.1 million attacks of various types on state information resources were blocked in six months, along with over 250 DDoS attacks. Since the beginning of the war, the number of cyber-attacks has increased by 400% compared to previous annual figures. As for HedgeHog Agency, the company is not frequently subjected to cyber-attacks. Most of our challenges stem from an unstable network, causing system failures and delays in all workflow processes.

3. Green cloud infrastructures. This trend relates to both internal and external changes. However, since each organization independently resolves such issues as environmental concerns, changes in the structure of cloud infrastructures, etc., I categorize this trend as an internal aspect of the company.

Green cloud solutions aim to reduce negative environmental impacts, for example through energy efficiency and carbon footprint reduction. This trend is more relevant to enterprises with an active position in protecting nature, of which the number has been increasing over the past few years. This method involves reducing overall power consumption, choosing cloud providers with energy-efficient infrastructure,

efficiently using old equipment or recycling it taking into account safety and environmental standards, using solar panels, etc.

HedgeHog Agency could change this trend by introducing small changes in the process of using cloud technologies. For example, remote work or virtual offices, choosing green cloud providers, using energy-efficient sources in offices, etc. However, these measures mainly concern those organizations that are larger and use local and cloud systems.

CHAPTER 3. Strategic management approaches and recommendations for implementation

3.1 Relation to theoretical positions and analytical findings of using cloud infrastructures, and key areas for improvement and development

The third part of my work focuses on finalizing the data and drawing conclusions regarding the use of cloud technologies in a business environment. After examining the impact of modern technologies on business management, we can identify three main aspects that are most susceptible to the influence of cloud infrastructures. When introducing new ideas into company management, it's crucial to consider many external and internal factors. This could be saving time, increasing staff productivity, increasing production speed, integrating with other software for easier data exchange, network structure between departments, and so on. Through consistent analysis of the impact of cloud technologies on business development, we can identify new opportunities for optimizing processes and increasing the efficiency of the company. Regular analysis allows us to evaluate the results achieved and identify areas requiring further improvement or change.

Therefore, it is crucial to consider more deeply the consequences of introducing cloud services into the work process of companies, exploring both the benefits and statistical data, to clearly understand the value of this decision.

Firstly, there is an economic aspect. These indicators provide a clear insight into the economic progress and financial conservation of organizations that use them. Companies using cloud computing typically save up to 20% annually on infrastructure costs. The introduction of cloud services can significantly reduce a company’s operating costs due to several factors.

- Reduced capital costs for IT infrastructure. Around 84% of businesses adopting cloud solutions report decreased computing expenses. This efficiency allows organizations to allocate resources more effectively, whether towards additional online advertising or increased production capacity. Likewise, other reasons are eliminating the need for large investments in hardware by using services from providers that cover the significant costs of maintaining the network

connection. The "Pay-as-you-go" model only for the resources used and storage space, further optimizes the budget without overpaying for the non-use of the service. Moreover, the advantage of cloud technologies is the ability to scale without large investments by business needs, without additional investments in equipment and hiring specialized personnel. For example, hybrid cloud users save the cost of purchasing new hardware by 37%.

- Increased productivity and competitiveness. At this point, several factors arise when effectively implementing cloud infrastructures. Firstly, it improves the level of customer service. In the modern approach to business, the quality of the product or service provided is as important as customer focus. Buyers expect to receive quality service and timely assistance. That is why cloud systems are the best solution for companies that have already earned preference for the quality of their products and are seeking to increase brand loyalty. Cloud systems provide the ability to access data in real-time. This allows employees to quickly obtain information about customers, their orders, interaction history, and previous requests. Moreover, cloud technologies simplify integration between different systems allowing the company to create a single system for coordination between departments. Secondly, speeding up business processes and increasing productivity. By leveraging cloud resources, organizations can efficiently allocate and reallocate resources, optimize team efficiency, and reduce task completion times. According to statistics, companies with 100 employees can save up to 15% on support costs by transitioning to a cloud-based system.

Secondly, let's consider the safety aspect, which is essential when dealing with confidential customer data and project information that might be of interest to competitors. Ensuring the security of this information is crucial for maintaining the company's reputation and stability. Therefore, organizations use several levels of data protection to ensure the safety and security of information. Here are some examples of data security practices:

- DLP. Data loss prevention technologies are a method of protecting data from leaks. This system allows tracking, controlling, and preventing unauthorized

access or transmission of sensitive data such as confidential customer information or intellectual property.

- AI. Artificial intelligence has long been widely used in both everyday usage and large-scale corporate projects. In terms of security, Al can be used to identify anomalies or increased data traffic, which helps detect potential security threats. This is particularly used for large volumes of data that are problematic to control using traditional methods. By analyzing data using machine learning and other AI techniques, organizations can identify suspicious patterns that may indicate security threats. For example, AI can detect anomalous user behavior, unauthorized attempts to access data, attacks on network infrastructure, and other similar events.
- Blockchain technologies. This technology is not used as often as previous ones in larger organizations. This system allows for an unbroken chain of transactions and changes to be created, making them impossible to tamper with or alter. Data is redirected and changed to create unique combinations.

And thirdly, these are performance indicators of cloud infrastructures. Cloud infrastructure performance metrics play a key role in determining the efficiency and reliability of cloud services. This includes understanding how the application behaves under different load conditions, responsiveness, and capacity to handle traffic and data processing. It also demonstrates how effective the system is, whether it can perform its functions according to customer expectations, and determines the risks in data processing and their errors. There are several methods for evaluating performance metrics:

- Load testing: This test evaluates the application’s performance under expected normal and peak load conditions. It provides insights into the system's behavior under typical user traffic scenarios.
- Stress testing: Focuses on how the application performs under extreme conditions and heavy loads that exceed normal operational boundaries. The goal is to identify the breaking point of the application.

- Targeted infrastructure testing: Involves isolating and testing each layer or component of the application architecture. This test identifies performance issues in specific areas of the infrastructure.
- Capacity testing: Determines the maximum number of users or transactions the application can handle before its performance starts to degrade. This test helps in planning for scalability and resource allocation.
- Soak testing: Assess how the application handles a high load over an extended period. This is important for identifying potential issues like memory leaks or resource depletion that may arise over time. []

To evaluate the performance of cloud technologies, the same standards are applied to all test subjects. This determines the error range and displays the parameters with the most vulnerability.

For instance,

- response time/latency within acceptable limits is 0.5 seconds for interactions
- throughput should not fall below 80% of expected during peak loads
- the error level is allowed within 1-5%, but it is also worth avoiding critical indicators and minimizing errors

Programs that are used to evaluate the effectiveness of a cloud system are Azure Load Testing, AWS CloudWatch, LoadStorm, and Jmeter. []

3.2 Optimization of cloud resources: strategies to reduce costs and improve efficiency

In the final part, I would like to analyze the most commonly used cloud services, their advantages and disadvantages, as well as strategies for reducing IT costs in organizations. In this context, comparing subscriptions to cloud platforms becomes an important step for businesses seeking to optimize costs and improve the quality of services. The recruiting industry, characterized by high dynamics and competition, is particularly interested in the effective use of technology to attract, evaluate, and manage talent. Therefore, the purpose of this study is to compare subscriptions to several leading cloud platforms, propose cost-saving strategies specifically targeted to the needs of the recruiting business, and analyze the effectiveness of cloud services and their availability.

Research methods include analysis of data from official websites, as well as articles on optimal solutions for recruiting companies, and financial indicators of companies using these systems.

AWS: Amazon Web Services is the world’s most comprehensive and broadly adopted cloud system, offering over 200 fully featured services from data centers globally. AWS is a subsidiary of Amazon.com, which was founded in 2006. Previously, the company used software written in JavaScript and now has switched to its analogs in Rust. (Wikipedia, 2024)

Azure: Microsoft Azure is another one of the most recognizable cloud infrastructures that was developed by Microsoft. Azure was first introduced at the Professional Developers Conference (PDC) in October 2008 under the codename "Project Red Dog". It was officially launched as Windows Azure in February 2010 and later renamed to Microsoft Azure on March 25, 2014. (Tharakan, Anya George and Dastin, Jeffery (October 20, 2016). "Microsoft shares hit high as cloud business flies above estimates". (Thomson Reuters. October 21, 2016.) It also provides a range of capabilities, including software as a service (SaaS), platform as a service (PaaS), and infrastructure as a service (IaaS). Microsoft Azure supports many programming

languages, tools, and frameworks, including Microsoft-specific and third-party software and systems. (Wikipedia, Microsoft Azure, 2024)

GCP: Google Cloud Platform, offered by Google, is a platform that includes a range of hosted services for computing, storage, and application development that run on Google hardware. In April 2008, the organization launched a platform for developing and hosting web applications in Google-managed data centers, which was the first cloud computing service from the company. It is written in several languages such as C++, JavaScript, and Python. (Wikipedia, Google Cloud Platform, 2024)

	AWS	**Azure**	**GCP**
Launch	2006	2010	2008
Market share	32 %	22 %	11 %
Availability	32 regions	60+ regions	39 regions
Networking	Virtual Private Cloud (VPC)	Virtual Network (VNET)	Virtual Private Cloud (VPC)
Services	200+ services	200+ services	100+ services

Table 3.1 Comparison table for cloud infrastructures (Andriy Varusha, n.d.)

This table provides a comparative analysis of key success indicators for cloud services, including service variety and availability. According to the data, AWS occupies a leading position in the IT market, with 32% of the market share, indicating its strong presence and widespread adoption in the cloud computing industry. Azure is in second place, occupying 22% of the market. The slight difference is possible due to the variations in their inception timelines and international market penetration as pioneering entities. But on the other hand, Azure has almost twice as many regions covered, which shows user engagement in Microsoft systems. This shows the company's focus on global accessibility and meeting the needs of customers in different parts of the world, thereby increasing trust and confidence in products and services. While AWS and Google Cloud have similar availability coverages, this shows them as companies that are committed to the global availability of their products and also reflects the competitive nature of the industry, where it is important to provide levels

of availability and performance that meet the needs of global businesses, and the technology community for sustainable development and growth. In terms of service availability, AWS and Azure are demonstrating their comprehensive portfolios covering a wide range of computing, storage, networking, AI, and analytics capabilities. This allows one to choose these cloud systems regardless of the company's business objectives, security, and scalability requirements. GCP focuses more on data analytics, machine learning, and developer tools, catering to organizations looking for advanced data-driven solutions.

Assessing the cost of subscription to cloud systems and the services they offer to make an informed choice of the appropriate option.

AWS: All paid AWS Support plans are billed monthly, with no long-term contracts. Monthly fees for the Developer, Business, and Enterprise Support plans are calculated based on each month's gross AWS charges (before any discounts or credits are applied). Charges for certain AWS Services, including the following, are not included in the AWS Support fee. For example,

- The developer will pay a minimum of 29.00 USD or 3% of the cost of using AWS services per month
- The Business Package will cost a minimum of $110.00 or from 3% to 10%, depending on the cost of using AWS services per month in various profit ranges. The percentage decreases according to the range.
- Enterprise costs from 15,000 USD for AWS monthly fee up to 150 thousand USD. (AWS Support Plan Pricing)

For the HedgeHog Agency company, the “For Business” option will be the most suitable. The AWS offers the ability to choose services that suit the company's purposes and pay only for the services used. Service options: Amazon Chime (meetings, video conferencing, and chat), Amazon CloudWatch (resource and application monitoring), Amazon DocumentDB (fully managed document database), Amazon ElastiCache (in-memory caching service), and Amazon Lightsail (private virtual services and management)).

Advantages:

- flexible pricing depending on the usage of resources
- possibility of integration with third-party services

Disadvantages:

- proficiency in technical skills is typically necessary for effectively utilizing most AWS services.
- costs can increase substantially as you expand in scale.

The pricing policy of Microsoft Azure is quite flexible and includes such a range as paid subscriptions, a Pay-as-you-go system, many free services, and special offers for narrow areas. The more a user uses Microsoft Azure, the more they save on its resources.

• Storage pricing (Pay-as-you-go): Payment depends on the amount of memory used and its volume. The price ranges from $0.00099 per GB to $0.15 per GB depending on the tariff.

• Azure App Service(Tom rete cloud apps for web and mobile): Basic plan - 10 GB and $0.075/hour, Premium plan - 250 GB storage and from 0.120 USD per hour till 0.162 USD per hour, depending on year reserved.

• Azure Database Migration Service: for most small- to medium-business workloads - free, and for large or business-critical workloads - 0.37 USD per hour. (Azure Database Migration Service (classic) pricing)

Advantages:

- suitable for all companies, regardless of their size
- flexible pricing policy
- minimal technical support is included in the cost of services

Disadvantages:

- difficulty in setting up and scaling cloud computing, although access is easy
- high data transfer costs

GCP: Google Cloud provides a pay-as-you-go on-demand pricing model. However, if the user plans on long-term use of services, users can achieve significant cost savings. Google provides long-term pricing terms with upfront obligations of one year or three years.

Google Cloud Platform pricing policy and its tariffs:

• Cloud Standard Storage pricing: from 0.020 to 0.023 GB per Month depending on the US state.

• Speech-to-Text: over 60 Minutes/Month from 0.016 to 0.078 USD per minute, with increasing minutes, payment per minute decreases, down to 0.004 USD/minute.

• GPU (for machine learning, scientific computing, and 3D visualization): depending on the model from 0.35 USD to 2.68 USD per GPU.

There are also free services such as Cloud Build (120 build-minutes per day), Cloud Run (2 million requests per month), Cloud Source Repositories (up to 5 users, 50 GB of storage, and 50 GB of outbound data transfer), and Firestore (1 GB storage per project). (Free cloud features and trial offer)

Advantages :

- excellent data analysis and storage capabilities
- easy integration with various Google services, which have a wide variety
- great savings on the use of services in the long-term perspectives

Disadvantages:

- difficult switching to other platforms
- limited data storage
- no IaaS features

The selection of cloud infrastructure and subscription models directly depends on the company's goals and strategy. For HedgeHog, given its current priorities of entering new markets, expanding opportunities for candidates, attracting new clients, and increasing technical efficiency. Therefore, for a middle-size recruiting company such as HedgeHog Agency, the best option would be the Microsoft Azure cloud

infrastructure. Based on the analysis and data obtained, I can highlight several advantages of this system specifically for recruiting purposes with minimal costs and optimization of already used systems.

1. Integration with the Microsoft system. HedgeHog already uses Microsoft services such as Windows, Microsoft Office, and Linkedin, this will simplify the interaction between systems and increase the efficiency of working with data. For example, integration with Microsoft Office will automate document processing, while LinkedIn integration improves the process of searching and interacting with professionals.

2. Analytics and AI tools. Data analytics tools help identify the key requirements of candidates, and are also used to analyze the text of a resume or conduct interviews according to plan. Likewise, this improves the quality of personnel selection and reduces time for routine processes.

3. Security. Microsoft Azure offers security capabilities such as authentication and access control, backup and recovery, incident monitoring, and detection. Azure provides a different range of subscriptions, free options like - Azure AD Free or Azure Security Center Free Tier, as well as paid Azure Security Center and Azure Sentinel.

4. A wide variety of services and the opportunity to cooperate with them. The cloud system provides a choice of services such as Azure API Management (a service for creating, managing, and protecting APIs), Azure Logic Apps (automation of business processes), Azure SQL Database (storing and managing data about candidates, clients, and vacancies), and Azure Blob Storage (storage and management of files, documents, and media content). These services operate using the Pay-as-you-go system, ensuring cost-effectiveness by charging only for resources used.

Optimizing HedgeHog's cloud resource costs through Microsoft Azure involves implementing several ongoing services. Firstly, Azure Cost Management enables analyzing resource usage and defining optimal settings. Secondly, Azure Automation significantly simplifies the company’s business processes and saves resources. Azure Monitor is used to track resource usage identify bottlenecks and take optimization measures to develop an effective company development strategy. With the introduction of these services, the company will be able to more transparently manage costs,

increase data availability, and reduce costs through discounts and special offers from Microsoft Azure.

3.3 Proposals for efficient use of cloud systems in HedgeHod Agency

Cloud technologies greatly simplify the process of hiring staff, training and assessing them, conducting interviews, and communicating with candidates. HedgeHog Agency uses cloud services to the fullest extent, integrating all processes into the cloud and working with its services. Also, the company has adapted to many internal and external changes associated with this system and delegates time and resources to ensure operational work in the organization.

Analyzing the impact of cloud infrastructures on HedgeHog Agency reveals several aspects and benefits that significantly improve an agency's operational efficiency and competitiveness. However, it is also crucial to address shortcomings and weaknesses to develop strategies for risk reduction and improve working conditions.

The impact of cloud services on work processes within a recruiting company like HedgeHog Agency includes:

1. Straightening up the level of customer service. Cloud technologies enable quick responses to client and candidate requests, along with easy access to information, increasing the service level by up to 35%.

2. Error reduction. The adoption of cloud-based techniques of modern CRM systems reduces the number of errors by half due to the automation and standardization of daily work processes.

3. Tme efficiency. Cloud systems systematize work processes such as sending notifications, scheduling meetings, and managing documents.

4. Expanding influence on the market. This will allow recruiting companies to more easily enter new markets and expand their client base. According to statistics, companies are 25% more adaptable to external and internal changes by using and implementing cloud technologies.

5. Enhanced communication within the team. Cloud tools allow for more transparent and effective communication within the team, resulting in the rapid transfer of information and problem-solving in real time.

I propose to enhance the utilization and integration of cloud systems at HedgeHog Agency and facilitate the execution of tasks to introduce software such as Slack into the work systems. Slack is a SaaS cloud service developed in JavaScript programming language and released to the market in 2014. This application supports operating systems such as Windows, macOS, iOS, Android, and Linux. This application is designed for communication in thematic channels based on projects or teams, offering a simplified approach to optimize implementation and integration within a single program. Additionally, Slack integrates with many other tools and platforms, making it a central system for business operations. On its first day of testing, 8 thousand companies registered, highlighting its immediate popularity. By June 2015, Slack had 1.1 million daily users. Slack has become the fastest-growing business app in history.

Slack software features:

1. Various communication in the form of group chats, video calls, and voice messages. It is also possible to send media files and documents. Since HedgeHod Agency uses various resources for communication within the organization, such as Telegram, Gmail, and WhatsApp, this is an excellent option for reducing resources and making it easier to find and exchange the necessary information.

2. Integration with other services such as Dropbox, Google Drive, GitHub, Google Docs, Google Hangouts, and Twitter.

3. Easy delegation of projects and their teams, due to the ability to divide into working groups.

4. The ability to create and easily manage chats, customizing them to their purpose, workers can create thematic channels for all the different tasks, departments, and projects they are working on. People can be a part of several channels at the same time.

5. The mobile version of the Slack app allows teams to stay connected anytime and anywhere, with mobile and desktop app options available for quick collaboration across devices and locations. There's a mobile version of the tool, a mobile app, and, of course, the desktop app.

Also, Slack is positioned as a "Skype and internal corporate email killer" because it completely replaces them and saves storage and resources.

In a recruiting company with access to vast amounts of data, proper organization and management are crucial. This involves discussing projects, sharing the latest news and work details, regular meetings to discuss development strategies and plans for current tasks, and introducing trends into the work process. Let me highlight the main advantages and disadvantages of this system.

Slack benefits:

- Ease of use
- Communication 24/7
- Possibility of integration with other systems
- Cloud storage savings
- Multifunctionality
- Teamwork and project collaboration
- Data security
- Convenient organization of work process in groups

The disadvantages can be identified as follows:

- Limit on uploaded file size
- Suitable for small teams only
- Possibility of information overload
- The need to use additional systems for exchanging files and documents

It is expected that the adoption of this cloud system at HedgeHod Agency will lead to a 30% increase in work efficiency through the use of automated notifications, which allows employees to quickly give feedback at any time. Likewise, improved communication within the team is expected, which directs to increased productivity and reduced time to complete tasks. Moreover, it can be integrated with lots of different

third-party applications. The company can boost its productivity by integrating Slack with other web services used in your business workflows.

CONCLUSION

Cloud infrastructures are a huge area for research and discussion due to their impact on businesses. In today's digital era, their adoption is a measure of necessity, since digitalization has affected all areas of business management. Cloud technologies in modern business are a crucial tool for increasing the efficiency and competitiveness of companies. It is essential for growing modern businesses, giving companies access to unlimited opportunities, and ensuring they succeed in the digital generation. Moreover, it allows business managers to turn ideas into reality faster and more efficiently, providing a competitive advantage in the market.

The main goal of the work was to identify the potential of cloud solutions for optimizing business management and personnel management processes. Also, identify the advantages and limitations of using cloud technologies in these areas. As part of the study, an analysis of existing cloud solutions and their applicability for solving business and personnel management problems was carried out.

Recruiting companies also use cloud services to attract new clients and potential candidates. This is an outstanding solution for increasing productivity and company profit. In the context of recruiting, cloud technologies can significantly simplify the process of searching, analyzing and selecting personnel. The use of cloud data storage and specialized analytics systems allows us to quickly and efficiently find candidates who meet the requirements of vacancies, as well as assess their professional skills and potential for development. Also, some limitations and risks associated with the use of cloud technologies were identified, such as data security, service reliability and personnel training costs. Nevertheless, modern cloud platforms offer a wide range of tools to solve these problems, making their use more attractive for companies.

Cloud technologies will shortly expand in completely new areas, pushing the boundaries of possibilities and enhancing digital transformation in various industries. Additionally, the rise of cloud solutions will enable smarter and more connected devices, enabling greater automation and user experience, from smart cities and infrastructure to manufacturing processes and home devices.

Consequently, the development of cloud technologies will play a key role in the digital transformation of various sectors of the economy and society as a whole, contributing to the creation of a more intelligent and connected world, where data and resources are accessible and used more efficiently.

REFERENCES

1. Andriy Varusha, H. o. (n.d.). *AWS vs Azure vs GCP: comparing the big 3*. Retrieved from https://www.n-ix.com/comparing-big-3-aws-azure-gcp/
2. *AWS Support Plan Pricing*. (n.d.). Retrieved from AWS: https://aws.amazon.com/premiumsupport/pricing/?nc2=h_mo-lang
3. *Azure Database Migration Service (classic) pricing*. (n.d.). Retrieved from Microsoft Azure : https://azure.microsoft.com/en-us/pricing/details/database-migration/
4. CISPE. (2021). *CISPE Code Of Conduct*. Retrieved from https://cispe.cloud/code-of-conduct/
5. Department, S. R. (2023). *Share of business enterprises buying cloud computing services in Ukraine 2021, by type*. Retrieved from https://www.statista.com/statistics/1271370/share-of-enterprises-purchasing-cloud-computing-services-ukraine/
6. Google. (n.d.). *Free cloud features and trial offer*. Retrieved from Google Cloud: https://cloud.google.com/free/docs/free-cloud-features#free-tier-usage-limits
7. Simeon, R. (2011). *Comparative Analysis of Online Recruitment and Managerial Capabilities*. Retrieved from ResearchGate: https://www.researchgate.net/publication/266605786_Comparative_Analysis_Of_Online_Recruitment_And_Managerial_Capabilities
8. Slingerland, C. (2023). *101+ Cloud Computing Statistics That Will Blow Your Mind (Updated 2024)*. Retrieved from CLOUDZERO: https://www.cloudzero.com/blog/cloud-computing-statistics/
9. UNHCR. (2024). *Data protection*. Retrieved from https://www.unhcr.org/what-we-do/reports-and-publications/data-and-statistics/data-protection

10. Wikipedia. (2024, May). *Amazon Web Services*. Retrieved from Wikipedia: https://en.wikipedia.org/wiki/Amazon_Web_Services
11. Wikipedia. (2024, April). *Google Cloud Platform*. Retrieved from Wikipedia : https://en.wikipedia.org/wiki/Google_Cloud_Platform
12. Wikipedia. (2024, May). *Microsoft Azure*. Retrieved from Wikipedia: https://en.wikipedia.org/wiki/Microsoft_Azure
13. Dataversity. The history of Cloud Computing Technologies https://www.dataversity.net/brief-history-cloud-computing/
14. SympliLearn. Types of Cloud Computing https://www.simplilearn.com/trends-in-cloud-computing-article
15. BidID. (June, 2023). Cloud Migration Trends. Current Trends in Cloud Adoptions and Statistical Data https://bigid.com/blog/cloud-migration-trends-and-statistics-2023/
16. Josh McAllister. (April, 2017). Why Cloud Computing matters for recruiting https://recruitmentjuice.com/blog/why-cloud-computing-matters-for-recruiting/
17. Appviser. (December, 2021). Top Best Cloud Recruitments Software in 2022 https://www.appvizer.com/magazine/hr/recruiting/cloud-recruitment
18. Koichumanov Erkinbek. (September, 2023). Transforming Hiring Decisions: Integrating Talent Cloud into AI Talent Analytics https://recruitingdaily.com/transforming-hiring-decisions-integrating-talent-cloud-into-ai-talent-analytics/
19. Oleg Klymchuk. (April, 2022). Cloud technologies and data centers: New regulations in Ukraine https://sk.ua/cloud-technologies-and-data-centres-new-regulation-in-ukraine/
20. Pierre Coyne. (April, 2023). 7 Regulatory and Compliance Frameworks with Broad Cloud Security Implications. How risk frameworks, controls and benchmarks can help. https://www.tenable.com/blog/7-regulatory-and-compliance-frameworks-with-broad-cloud-security-implications

21. ResearchGate. (October, 2019). Redesigning Human Resource Management System through Cloud Computing: A Strategic Approach https://www.researchgate.net/publication/342444222_Redesigning_Human_Resource_Management_System_through_Cloud_Computing_A_Strategic_Approach
22. Megha Bansal. (September, 2023). Public vs Private vs Hybrid Cloud: Cloud Models Compared https://www.knowledgehut.com/blog/cloud-computing/public-private-hybrid-cloud
23. OnHires. (June, 2023). HR and recruitment statistics in 2023: numbers, trends and insights. Job search and recruiting process https://www.onhires.com/blog-post/hr-and-recruitment-statistics-job-search-and-recruiting-process
24. Nasreen Ahmad. (2015). Cloud Computing, Human Resource Management https://www.researchgate.net/publication/285599136_Cloud_Computing_Human_Resource_Management
25. James Montgomery. (July, 2021). Cloud Computing https://www.techtarget.com/searchcloudcomputing/definition/cloud-infrastructure
26. Megha Bansal. (September, 2023). Public vs Private vs Hybrid Cloud: Cloud Models Compared https://www.knowledgehut.com/blog/cloud-computing/public-private-hybrid-cloud
27. Jannik Linder. (December, 2023). Must-Know Cloud Cost Savings Statistics https://gitnux.org/cloud-cost-savings-statistics/#:~:text=Companies
28. Cigniti. (March, 2020). What should be your strategies for Cloud Performance Testing https://www.cigniti.com/blog/strategy-for-the-performance-testing-in-cloud/
29. Anton Bodnar. (January, 2024). Cloud Performance testing: all you need to know

https://luxequality.com/blog/cloud-performance-testing/

30. Patrick. (January, 2024). Advantages and disadvantages of cloud computing for companies https://www.alexanderthamm.com/en/blog/advantages-and-disadvantages-of-cloud-computing-for-companies/
31. Michael Vizard. (January, 2012). How Cloudbusting “Rightsizes” the Data Center https://www.dice.com/career-advice/how-cloudbusting-right sizes-the-data-center
32. Ramesh Shurma. (March, 2023). The Hidden Costs Of Cloud Migration https://www.forbes.com/sites/forbestechcouncil/2023/03/08/the-hidden-costs-of-cloud-migration/?sh=7094d0328cc1
33. Rubesh Anand. (August, 2018). Identity and access management in cloud environment: Mechanisms and challenges https://www.sciencedirect.com/science/article/pii/S2215098617316750?via%3Dihub
34. McKinsey Quarterly. (February, 2021). Cloud’s trillion-dollar prize is up for grabs https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/clouds-trillion-dollar-prize-is-up-for-grabs
35. Amazon. What is cloud computing? https://aws.amazon.com/what-is-cloud-computing/
36. Winston Bumpus. (February, 2013). The Open Cloud: Management Standards Achieve Interoperability https://www.hpcwire.com/2013/02/01/the_open_cloud_management_standards_achieve_interoperability/
37. Ramesh Shurma. (2023). The Hidden Costs Of Cloud Migration https://www.forbes.com/sites/forbestechcouncil/2023/03/08/the-hidden-costs-of-cloud-migration/?sh=344014828cc1

38. Rainer Schmidt. (April, 2017). Customer Relationship Management in a Public Cloud environment
https://scholarspace.manoa.hawaii.edu/items/0e878c19-d9e4-4f5b-9095-096999b01a9e
39. Josh Fruhlinger. (2023). What is hybrid cloud computing? The benefits of mixing private and public cloud services
https://www.networkworld.com/article/964498/what-is-hybrid-cloud-computing.html
https://hedgehog-agency.com/en/
40. Chaowei Yang. (2016). Big Data and cloud computing: innovation opportunities and challenges
https://www.tandfonline.com/doi/full/10.1080/17538947.2016.1239771