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Ukrainian-American Concordia University
Department of International Economic Relations, Business & Management

Bachelor's Qualification Work

HUMAN RESOURCES MANAGEMENT FOR IT COMPANY IN THE
21ST CENTURY
(on the basis of sigma software company)

Bachelor's student of
Field of Study 07 – Management
and Administration
Specialty 073 – Management
Educ. program – IT Management

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Abstract:

The modern business world is multi-faceted and ever changing, bringing along new economic benefits and opportunities as well as risks and challenges. We currently live in an extremely globalized world, that has turned the global business model into one big interdependent system that allows close-knitted communication and international trade everywhere. Globalization has had a massive snowball effect on almost every area of our lives and, of course, it has also changed the business industry as well. All the accumulated and recent trends of economic globalization have established new ways of business development. This work deeply analyses globalization from a theoretical perspective, looks at ways economic globalization has impacted business development, studies company competitiveness and suggests ways of business enhancement in the framework of economic globalization.

Keywords: globalization, economic globalization, business development, business improvement.

Сучасний світ бізнесу багатогранний і постійно змінюється, він привносить нові економічні вигоди і можливості, але в той же час ризики і проблеми. В даний час ми живемо в надзвичайно глобалізованому світі, який перетворив глобальну бізнес-модель в одну велику взаємозалежних систему, яка забезпечує тісний зв'язок і міжнародну торгівлю всюди. Глобалізація зробила величезний вплив майже на всі сфери нашого життя і, звичайно ж, вона також змінила бізнес-індустрію. Всі накопичені і останні тенденції економічної глобалізації створили нові шляхи розвитку бізнесу. Ця робота глибоко аналізує глобалізацію з теоретичної точки зору, розглядає, як економічна глобалізація вплинула на розвиток бізнесу, вивчає конкурентоспроможність компаній і пропонує шляхи поліпшення бізнесу в рамках економічної глобалізації.

Ключові слова: глобалізація, економічна глобалізація, розвиток бізнесу, поліпшення бізнесу.

Современный мир бизнеса многогранен и постоянно меняется, принося новые экономические выгоды и возможности, но в то же время риски и проблемы. В настоящее время мы живем в чрезвычайно глобализированном мире, который превратил глобальную бизнес-модель в одну большую взаимозависимую систему, которая обеспечивает тесную связь и международную торговлю повсюду. Глобализация оказала огромное влияние почти на все сферы нашей жизни и, конечно же, она также изменила бизнес-индустрию. Все накопленные и последние тенденции экономической глобализации создали новые пути развития бизнеса. Эта работа глубоко анализирует глобализацию с теоретической точки зрения, рассматривает, как экономическая глобализация повлияла на развитие бизнеса, изучает конкурентоспособность компаний и предлагает пути улучшения бизнеса в рамках экономической глобализации.

Ключевые слова: глобализация, экономическая глобализация, развитие бизнеса, улучшение бизнеса.

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TASK
FOR BACHELOR’S QUALIFICATION WORK

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1. Topic of the work

HUMAN RESOURCES MANAGEMENT FOR IT COMPANY IN THE 21ST CENTURY

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4. Contents of the explanatory note (list of issues to be developed)

This work develops suggestions on improvement of HR management in a modern IT company. The Thesis is based on the analysis of the work of HR Department of a successful international IT company. The work has high external reliability as the suggestions it developed are generally applicable to any international IT company working in Ukraine.

5. List of graphic material (with exact indication of any mandatory drawings)

Picture 1.1: Main areas of management for staff development

Table 1.2: approaches to defining the concept of “Personnel Management”

Picture 1.2: Basic strategic approaches to personnel development management Picture 1.3: Algorithm of assessing the effectiveness of management system

Tables describing the operational activity of the company

6. Consultants for parts of the work

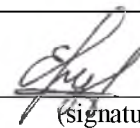
Part of the project	Surname, name, position	Signature, date	
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5.	Pre-defense	06.06.2022	On time

Student



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Supervisor

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Conclusions: This Thesis describes personnel management in an IT company rather well. The work provides thorough analysis of HR management in an IT company and makes good recommendation for its improvement. The recommendations have external validity as they are applicable to any international IT company working in Ukraine.

Supervisor: O. Verkhohlyad

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INTRODUCTION

Relevance of the topic. The IT sector in Ukraine is one of the most dynamically developing industries, and every year it is becoming an increasingly powerful driver of the country Ukrainian's economy, a sphere of strategic importance.

The basis of IT business is professional staff, so the labor market is constantly growing the need for qualified specialists in the field of information technology (consulting, software development, information protection, etc.). IT specialists are one of the highest paid employees, but at the same time it is difficult to find good specialists. In accordance with this, IT companies have an active need to find new mechanisms, personnel management tools to ensure its effective work, for professional development and retention of talented specialists.

In this regard, personnel management is of particular relevance for IT companies, organized in such a way as to ensure the effectiveness of the productive process in the organization with the lowest possible costs.

The aim of the work is to summarize the theoretical foundations and develop practical recommendations for improving the personnel management of the IT company.

According to the goal, we need to solve the following tasks:

- to reveal the essence of personnel management and strategic approaches to managing the development of personnel of an IT enterprise;
- consider methodological aspects of evaluation and analysis of the effectiveness of the functioning of the personnel management system of the enterprise
- to provide organizational and economic characteristics of the enterprise and the features of its development;
- identify features of personnel management in the field of IT technologies;
- to diagnose the personnel management system of the enterprise;

- evaluate the effectiveness of the personnel management system of the enterprise;
- determine strategies for improving the personnel management system of the enterprise;
- to substantiate the feasibility of implementing the proposed measures.

The object of research is the hr management process of Sigma Software LLC

The subject of the study is a set of theoretical, scientific, methodological and applied provisions aimed at improving the efficiency of personnel management of the enterprise.

The methodological and theoretical basis of the study was the scientific works of domestic and foreign authors on the economics of entrepreneurship, personnel management, competitiveness of management personnel, as well as legislative acts and regulatory documents; publications of scientific and practical conferences on the problem under study.

In the process of research, structural-functional and system analysis, methods and tools of scientific knowledge, generalization, formalization, comparisons and analogies, expert-analytical, statistical analysis, qualitative and quantitative analysis, as well as methods of grouping, economic and mathematical methods, table and graphic images were used.

The information base of the study is the works of domestic and foreign economists on this topic, as well as the normative legal acts of Ukraine, which determine the methodological basis for disclosing information on the status and activities of business entities in their financial statements, periodic and special literature on financial analysis and financial management, as well as statistical and financial statements of the enterprise under study.

SECTION 1 THEORETICAL FUNDAMENTALS OF MODERN PERSONNEL MANAGEMENT OF THE ENTERPRISE

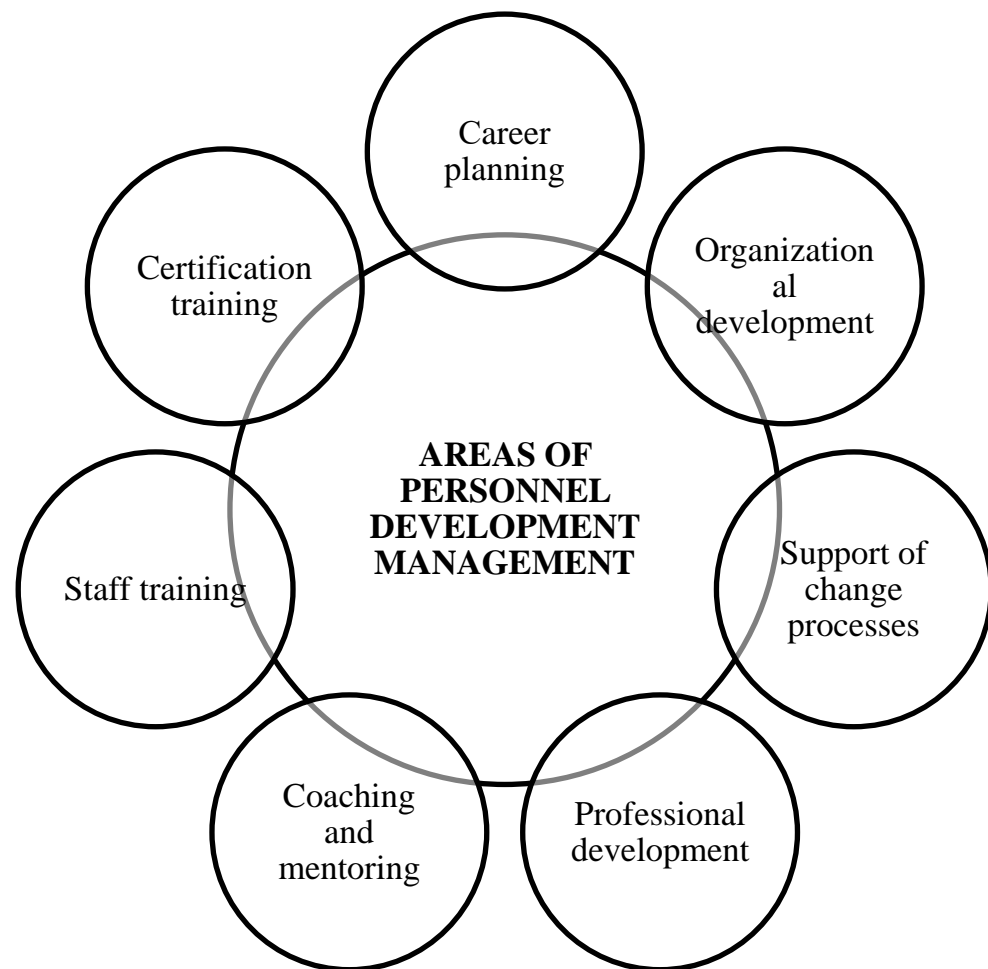
1.1 The essence of personnel management of the enterprise

In order to develop, make a profit and maintain a high level of competitiveness of the enterprise, the top management must constantly optimize the return on investment of any resources: material, financial and most importantly - human. The main tasks of personnel management structures are: planning the company's human resources needs, finding and selecting highly qualified employees, training and improving the knowledge of employees, managing work motivation, creating conditions to increase productivity, monitoring changes in employee status, legal issues labor relations.

Personnel development management is the development and implementation of measures aimed at achieving the required level of quality characteristics of employees (knowledge, skills, experience, motivation, etc. - competencies and competencies) in accordance with the development strategy of the organization. Regarding the main areas and measures for staff development as a basis for the effective use of labor potential, a single approach has not yet been developed in scientific circles or in practice. For example, Melnychuk DP, Krushelnytska AV believe that staff development, as a continuous complex process, includes professional training, career development and training [16].

Nikiforenko VG believes that measures aimed at staff development include: training, retraining, training in the school of management and leadership, retraining [22].

Taking into account the latest trends in the practice of personnel development and theoretical developments in this area, among the areas for personnel development management of organizations should be identified seven main (see Picture. 1.1). Consider them in more detail.



Picture. 1.1 Main areas of management for staff development [50]

The following approaches are defined in the system of organization of personnel management of the enterprise: technocratic, humanistic and systemic. Each approach characterizes the specific features of the process of personnel management of the enterprise.

In the technocratic approach, management decisions are subordinated, above all, to the interests of production; the number and composition of employees is determined based on the applied equipment, technology, distribution and cooperation of labor, the rhythm of the production process, etc. That is, the task of personnel management is subject to the process of production management and is reduced to the selection of personnel of a certain number and certain qualification characteristics [4].

The humanistic approach to personnel management involves the creation of such conditions and content of work that would reduce the level of alienation of

the employee from his work and other employees. According to this concept, the results of the enterprise depend not only on the compliance of quantitative and qualitative composition of employees with the needs of production technology, but also on the level of employee motivation, team building, "corporate spirit", unity of values and personal preferences. about the place of work in the system of life goals, etc. [4].

The systematic approach to personnel management and development at the enterprise level is as follows:

- interaction of all divisions of the personnel management system in order to achieve a synergistic effect;
- improving the organizational structure of the personnel management service on the basis of management standards;
- development of a functional-target model of the personnel management system with the development of a set of tasks for employees of the personnel management service in accordance with their functional responsibilities;
- motivation of work in the divisions of the personnel management system and in other production and management divisions;
- improving staff planning, forecasting and marketing, staff selection and accounting. [4]

In order to manage personnel well, and moreover, to evaluate its effectiveness, it is necessary to know the essence of the category of "personnel management" as an object of study, as well as to determine the objectives of this process. Note that personnel management is an activity of the enterprise aimed at the effective use of personnel to achieve the goals of both the enterprise and personal characteristics of personnel. The objectives of personnel management include: ensuring the social efficiency of personnel; formation of highly qualified personnel; staffing planning, etc.

Personnel management is a multifaceted and extremely complex process has its own specific properties and patterns and should be systemic in nature and complete on the basis of comprehensive solutions to personnel problems, the

introduction of new and improvement of existing forms and methods of work [1, p. 5]. To date, there are many approaches to the definition of "personnel management", where some authors operate on the purpose and methods by which to achieve this goal, ie focus on the organizational side of management, while others note the substantive part that reflects functional side of management [2]. Approaches to the definition of "personnel management" are given in table 1.1

Table 1.1

Approaches to defining the concept of "personnel management" [8; 11; 50]

Approach	The essence of the concept
Personnel management as a holistic system	Personnel management – activities (process) to provide the organization with the necessary number of employees the necessary competence, their motivation and effective use both economically and socially
Personnel management as an area (scope, function) of activities characteristic of the whole organization	Personnel management – determination of personnel needs, staff involvement, as well as structuring of work, remuneration and social services policy, success policy, personnel cost management, employee management
Personnel management in terms of acceptance Solutions	Personnel management is a system for the development and implementation of interrelated, carefully thought out at the level of organization decisions on the regulation of labor-employment relations
Personnel management from a methodological point of view (personnel management acts simultaneously as an organization system, as process and as a structure)	Personnel management is a set of mechanisms, principles, forms and methods of influencing the formation, development and use of personnel of the organization, implemented as a number of interrelated areas and activities.
Motivational approach	Personnel management – formation and direction of motivational attitudes of the employee in accordance with the tasks facing the organization

Systematic approach	Personnel management – accounting for the relationships between individual aspects of personnel management, which is expressed in the development of ultimate goals, determining ways to achieve them, creating an appropriate management mechanism, ensuring comprehensive planning, organization and stimulation of work with personnel
Integration approach	Personnel management – deepening the interaction and relationships between the components of the management system vertically - between the levels of management and units, and horizontally - at the stages of the life cycle of the organization, culture; degree of consistency of economic interests

Analyzing the approaches to defining the concept of personnel management, we can conclude that it is a purposeful activity of the company's management, units of personnel management system, including the development of concepts and strategies of personnel policy, principles and methods of personnel management to improve performance in the near future.

Summarizing basic research, we can distinguish the following basic concepts (schools) of personnel management science:

1. Use of labour resources. The provisions of this concept have been actively used in the practice of managerial activity from the end of the XIX century. In the '60s of the XX century. Proponents of this concept were theorists of the School of Scientific Management, which considered not a person engaged in production, but its primary function - work. Work, in turn, as a factor of production, was measured by two parameters: operating time costs and the amount of remuneration.

2. Personnel management. The concept developed in the 1930s. It was based on the theory of A. Fayol's bureaucratic organization. A person in the organization was perceived through his formal role - a position. Personnel management was carried out with the help of numerous administrative mechanisms (principles, methods, opportunities, functions).

3. Management of human resources. This direction regarded a person as a "non-renewable resource" - "an element of social organization in the unity of three

main components - labor function, social relations, the state of the employee" [20, p. 96].

4. Management of man. Proponents of this concept depart from the "resource approach in human perception." Not only does the person come to the fore in the organization's organization, but they begin to be considered a "special object of management" [20, p. 97].

5. Management of human capital. This direction is first formulated as a synthesis of the economic and social components in the organization's context. Subsequently, he developed into a whole-fledged concept, which considers "human capital" as a set of skills, knowledge, skills, the level of health, the environment of human life, etc. There was a transition to consideration of human capital as a significant factor in the competitiveness of the country's economy.

The analysis showed that the science of personnel management had undergone a great deal of evolution in its development. Currently, we can distinguish between classical and modern approaches to the main paradigms of personnel management and understand the nature and content of the personnel management system. The complete systematization of these approaches can be found in the work of VA. Singer [41] (Table 1.2).

Table 1.2

Paradigms of Personnel Management Science

Factors	Classic approach	Modern approach
Assets of the company	Physical and monetary capital	Physical and money capital, human resources
Staff costs	Running costs	Long-term investments
Staff engagement	Cash incentives	Active search, advertising, social pilges, individual approach
Tuition fees	Minimum	According to the criterion "costs - benefits" with taking into account perspective and social effect
Forms of training	Mainly in the workplace place, "narrow specialization"	All forms of education, including general education

Social infrastructure	Missing	Individual components of the infrastructure, when creating them, consider the effect of
Firm Style Guide	Mostly authoritarian	Humane, situational, on the basis of targeted management, the use of the achievements of science and individual Approach
Organization of labor	Based on understanding "Man is the appendage of the machine"	Flexible, taking into account individual professional and personal qualities
Regulation of the employee's actions	Tough	Different degrees of freedom , taking into account Specifics of work and individual
Motivation to work	Individual material incentives, the threat of punishment	Combination of group and individual economic and moral and psychological
Planning horizon for the developmentpersonal	Short-term plan	Up to the whole life path of the employee
Functions of personnel services	Mainly accounting	Integrated hr management system with a predominance of analytical, research and organizational functions
Relations with trade unions	Confrontational	Compromise

The development of scientific thought in personnel management took place in parallel with the formation of the general theory of control and overcoming the same vital stages. We can assume that the further development of the science of personnel management will proceed similarly. Suppose we start from the statement that at the present step, the development of general management theory is determined by such fundamental aspects as the application of MBO (Management By Objectives), MBQ (Management By Quality) and digital economy. In that case, we can assume that the introductory provisions of these concepts will hold the development of management staff. Today, many authors are paying attention to studying the relationship between human resources and the organization's quality.

Also, it is possible to formulate critical characteristics that describe modern approaches to personnel management in organizations (Table 1.3).

Currently, the theory of personnel management is based on the following principles of personnel management:

- Using the concept of "goal management". All elements and parts of the organizational structure of the organization, as well as each employee, should set

goals. In this case, employees must participate in the process of determining the goal. Therefore, achieving the stated goals depends on each workforce member [16].

Table 1.3

Personnel management in a modern organization

Criterion	Characteristic
Philosophy	The highest value of the organization is human resources, individualistic approach, unitary philosophy.
Target orientation	Unconditional achievement of the required level of quality of products (works, services) with the optimal cost
Assets	Human capital in a broad sense
Organizational policy	Based on employee impact
Structure	Flexible, result-oriented
Functions	In addition to traditional functions, knowledge management, ability management are coming to the fore
Mechanism	At the heart of the strategic approach, management is the function of line managers

Management is based on trust and self-control. At the heart of this principle is the Japanese approach to personnel management, in which the employee takes responsibility, and the manager can trust his employees to solve many issues [27].

- Management through the respect of all employees. According to this principle, it is necessary to abandon the status symbols. The latter is significant for forming a system of interpersonal relations in the enterprise—using tangible and intangible incentives.

- Concentrating only on one of the areas does not allow for an increase in employee productivity and performance quality. Only a comprehensive impact on all elements of the motivational core of the employee can lead to increased efficiency of its use.

- Focus on the continuous development of employees. All enterprise employees should be covered by advanced training, preparation and retraining. The

qualification guarantees employment, so employees should be provided with equal opportunities in this area [24, p. 17].

To coordinate the activities of staff in the process of functioning of the enterprise, the management exerts an influence based on specific methods (administrative, economic and socio-psychological).

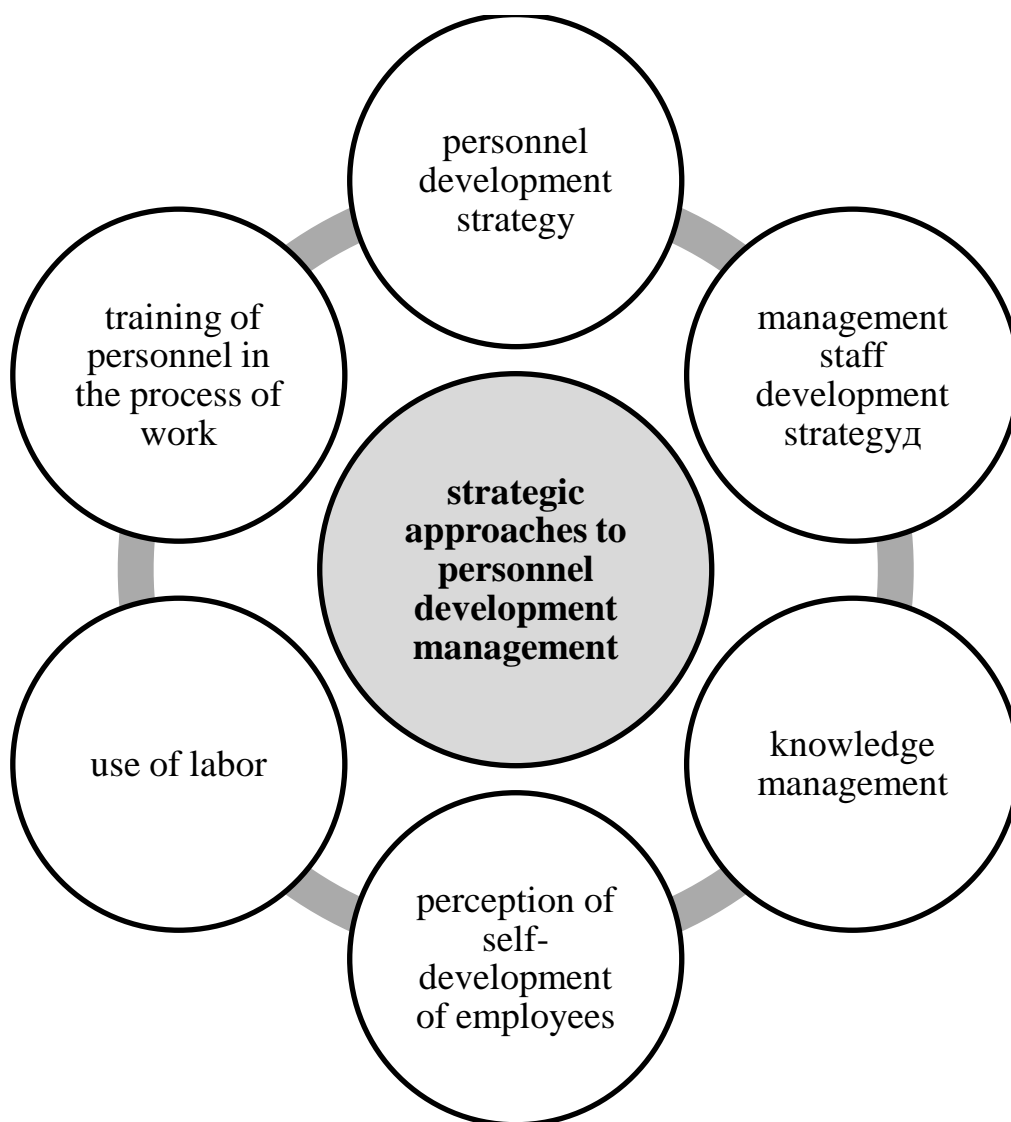
Thus, the study identified vital paradigms that describe modern approaches to personnel management in organizations, including the definition of the employee as the highest value of the organization, the use of "human capital" in its broadest sense, and strategic orientation in management decisions.

1.1. Strategic approaches to enterprise personnel management

Strategic management is understood as the process of establishing long-term direction of the organization, defining specific goals, developing a strategy to achieve them taking into account external and internal circumstances, as well as the means to implement the selected action plan [6, p. 311].

There must be a close relationship between the strategy of personnel development and the general strategy of the enterprise, which can be bilateral. In the first case, personnel development policy supports the implementation of corporate strategy and serves as a basis for the development of structured, based on the principles of development tactics. In the second case, personnel development processes determine and provide the basis for the formation of corporate strategy. In our opinion, the degree and strength of the relationship between the strategy of personnel development and the overall strategy of the enterprise determine the level of economic efficiency, flexibility and competitiveness of the entity.

Strategic aspects of personnel development are partially covered in the works of such domestic economists as: Bogoviz, AV, Vukovich, GG, Stroiteleva, TG etc. [5, p. 1429] Based on the developments of the above scientists and the results of our own research, we have identified several possible strategic approaches to personnel development management (see Picture. 1.2).



Picture. 1.2 Basic strategic approaches to personnel development management [4]

In our opinion, the strategy of continuous staff development meets the needs of the time to the greatest extent, as it implements the concept of continuous training of employees and provides an opportunity to create a favorable environment in which they would like to use their potential and improved abilities.

Some companies use a strategy aimed at developing individual efficiency and capacity only of management staff. The choice of this option of personnel development management is justified by the fact that the company's ability to effectively implement any strategy depends primarily on the level of development of skills of managers at all levels.

The problems of choosing an effective organizational structure for personnel development management deserve special attention. Today, sustainable and effective development of employees is possible only by creating specialized development and training centers on the basis of individual economic entities. However, small and medium-sized enterprises, due to their scale and limited resources, do not have the opportunity to create such structural units.

Also, the function of enterprise personnel development management can be assigned to human resources management and development departments (human resources departments), although they are often unable to provide quality services even when they face sufficiently specialized and limited tasks. Such departments are affected by structural and managerial barriers, which make them incapable of ensuring the high efficiency of staff development processes and the expected contribution to organizational efficiency.

1.2. Methodological aspects of evaluation and analysis of the effectiveness of the personnel management system of the enterprise

There are many theoretical views on the method of assessing and analyzing the effectiveness of the management system of personnel development of the enterprise. The attempt to define at the beginning of the research what is the object and subject of the research unites different points of view. The subject of evaluation is considered to be the enterprise, the object of evaluation is considered to be the personnel. Some scientists make management decisions about personnel management. For example, they can consider personnel decisions, activity of personnel management service and employees of this organization as objects of assessment in the field of personnel management.

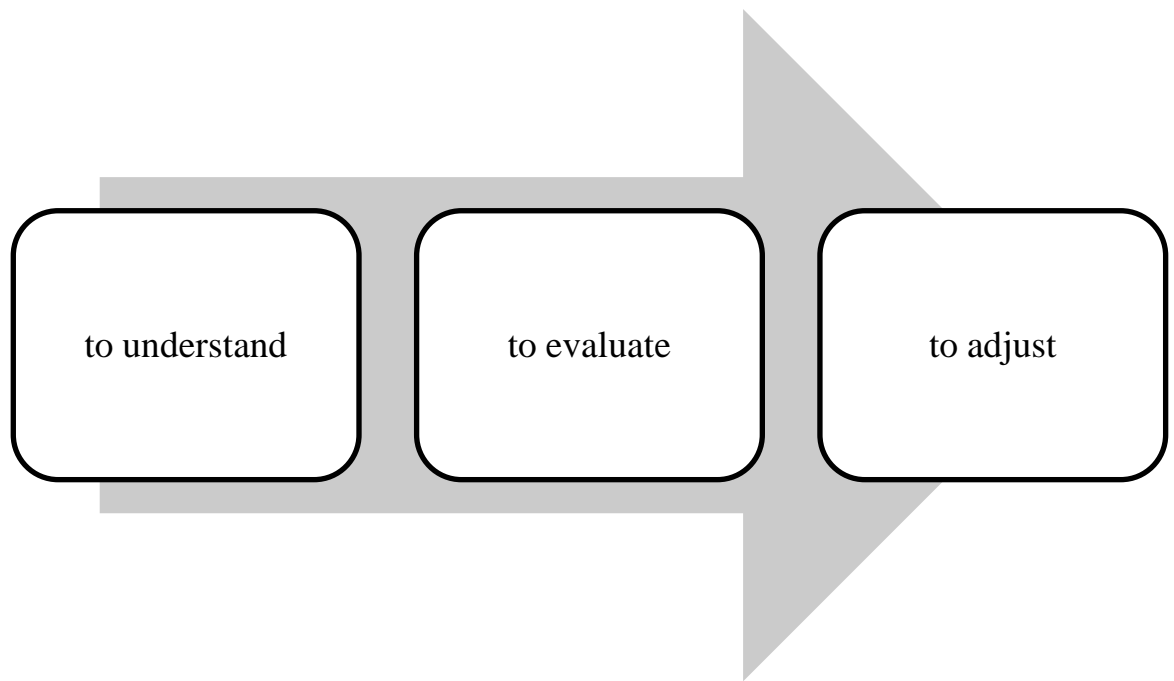
After determining the object and subject of the study, make a plan for future analysis, namely determine the stages, criteria and levels of research. There is also no unity of opinion. Each has its own set of quantitative and qualitative criteria.

The first stage is determined by the final results of production, so the criteria for the effectiveness of personnel management are the criteria of the enterprise (profit, output, sales, profitability, etc.).

In the second stage, the quality of labor, the complexity of living labor (the share of wages in the cost of production, the coefficient of complexity of work, the level of occupational injuries, the number of staff, etc.) are added to the productivity of the total employee.

The third stage covers the forms and methods of organizing the work of staff, work motivation, socio-psychological climate in the team. Criteria at this stage are the level of qualification, the share of violators of discipline, the reliability of staff. All measurements are performed at the level of employees of the enterprise.

Thus, we see: there is no unity of opinion. It cannot be a priori because different groups of scientists study the problem from different angles. If we try to generalize these approaches in order to adapt them to the work of personnel management in a particular enterprise or group of enterprises, ie to give these studies an applied character, we obtain the following conclusions. The algorithm of any estimation consists in the following (see Picture. 1.3).



Picture. 1.3 Algorithm for assessing the effectiveness of the management system of personnel development of the enterprise [35; 40]

By "Understand" is meant the awareness of the head of the company of the fact that ninety percent of the success of the company depends on the team of its employees, its further development. Personnel management work should be based on the idea that the company's staff is its main resource of development, its potential. The quality of management of these personnel will determine the work of the whole enterprise in terms of competition with the same manufacturers, at the industry level, the state.

The "Assess" stage involves understanding the current state of the enterprise, personnel characteristics and personnel management system. This evaluation is based on certain criteria and in a certain sequence by comparing the results with the standard, standard or position that the company wants to reach, or by comparing the results with previous or similar ones that the company has (for this purpose a database is formed and accumulated). .

"Adjust" means to bring in line with the coordinate system, the values that are inherent in the success of this company.

There are many methods of measuring the effectiveness of personnel management, many criteria, quantitative and qualitative indicators, which aim to

most accurately measure the quality of staff, the impact that the company has from staff. A summary of the methodological techniques used to assess the effectiveness of personnel management is given in Annex A.

Human resource management in the context of efficiency should be seen as a continuous process aimed at attracting highly competent employees and their consolidation in the company through the accumulation and use of their human capital to maximize returns, which affects the high end results. Theoretical and applied results of the study were obtained on the basis of a comprehensive systematic approach to the analysis of the effectiveness of personnel management using the following general and special methods:

- system analysis, abstraction and analogy, induction and deduction - to clarify the socio-economic nature of the effectiveness of personnel management;
- structural and logical analysis - to systematize methodological approaches to assessing the effectiveness of personnel management;
- comparative analysis - to identify problems in the field of effective personnel management. [18] .

It is worth noting that today, in the market conditions, a commercial organization exists in order to constantly increase its value, which is possible with the coordinated operation of all subsystems:

- finansova;
- commercial;
- production;
- Social.

Each element must function in optimal mode. And in this context, it is important, on the one hand, to determine the criterion of optimality, and on the other - to organizationally determine how to assess the optimality of functioning. In accordance with the "management cube", the implementation of this function is entrusted to control, accounting, analysis, since they are responsible for conducting

observations and checking the compliance of the process of functioning of the management object with the management decision made.

Considering the approaches to the evaluation system, it is necessary to take into account the target orientation and subjects (consumers of the results) of the assessment. From the standpoint of the goals and objectives that are solved in the process of researching the personnel management system, the key ones can be identified: identifying the strengths and weaknesses of personnel management; making management decisions in the field of personnel management, ensuring an interested partnership, etc. subjects are characterized by a degree of special training in the field of personnel management, as well as certain goals.

Currently, there are two fundamental directions in the assessment in the personnel management system: personnel assessment and assessment of the personnel management system. The problem is that very often in theory, and especially in the practice of personnel management, categories are replaced and, speaking about the assessment in the personnel management system, they mean only an assessment of the personnel themselves: their qualifications, labor results, potential. Sometimes they also add an assessment of personnel record keeping. However, such an assessment is not an assessment of the personnel management system, but only the object of personnel management in the enterprise. Evaluation of the system involves checking its compliance with the specified criteria. However, as a rule, when they talk about social systems, quantitative criteria for optimality are not set. However, as noted above, in the market conditions, even talking about social innovations, their effectiveness is assessed [55, p. 101].

So, from the point of view of all stakeholders (owner, manager, employees, etc.), the system should work in a certain optimal mode and the degree of optimality should be assessed. Thus, in the system of personnel management should be present three types of assessment:

- evaluation of personnel (its potential, results of its work, etc.), is carried out at three levels (single, periodic and current);

- assessment of personnel record keeping and documentation (for compliance with legal norms, requirements for the organization of document circulation at the enterprise, etc.);
- assessment of the state and operation of the personnel management system, that is, all its subsystems.

Based on the foregoing, the organization must use a methodology for assessing the state of the personnel management system, which would meet a number of requirements:

- timeliness and flexibility (the assessment should provide all the necessary information both on the basis of a certain period and in the current mode);
- transparency (evaluation system and, importantly, the results should be understood not only by the one who conducted it, but also to all potential consumers of the evaluation results);
- the system should not only establish causal relationships, but also give them quantitative assessment;
- the reliability of the result (it should be possible to verify the result);
- efficiency and simplicity (the system should not be overly time-consuming, it is desirable to use simple tools, with the use of modern information technologies and, most importantly, in the temporary absence of the employee responsible for the assessment should be able to
 - its replacement, that is, the evaluation system should be able to master not one, but several employees of the organization).

From a methodological point of position, these criteria are the main and most often put forward when choosing a methodology for analysis [1]. The most common type of assessment of the personnel management system in the enterprise acts as a personnel audit. In fact, personnel audit is a special analysis of the personnel condition of the organization, an assessment of the level of its staffing.

Audit in the field of personnel is carried out in the following areas:

assessment of the personnel potential of the organization, qualitative and quantitative characteristics of personnel. The most commonly used methods are such as an accession center, case interviews, sociological research;

diagnostics of personnel processes and management procedures, evaluation of their effectiveness, while analyzing documentation, questionnaires, structured interviews are used.

Sometimes personnel audit refers exclusively to the verification of personnel record keeping [14, p. 31].

Of course, personnel audit is an important tool not only for monitoring, but also for personnel management. Moreover, the existing numerous approaches to the philosophy and content of personnel audit allow us to interpret its essence quite variably. However, based on the tasks of personnel audit, which are formulated in most publications on this issue, his philosophy focuses on:

- identifying the compliance of the personnel potential of the enterprise with its goals and development strategy;
- research of the structure of the personnel management system in connection with the organizational structure of the organization;
- verification of compliance with regulatory acts of both local and higher level;
- study of the causes of labor conflicts and other problems of social and
- development of recommendations for their solution, prevention and reduction of negative impact.

Quite often, when disclosing the essence and importance of personnel audit, analogies are made with accounting audit as a form of financial control. We believe that this is the fundamental difference between personnel audit and other assessment methods.

That is, philosophy Evaluation System management staff must Show Her meaning Coming with Effective Development Enterprise (Figure.1.4). Into Basis Effective Development Organization Lies Score Efficiency Her Activity, what Allows formulate Reserves growth Efficiency, Profitability. And Main Factors

growth Efficiency with Positions Economy Enterprise Serving effectiveness use means Labor, Items Labor and Definitely, Labor Resources how Main Production Factors.

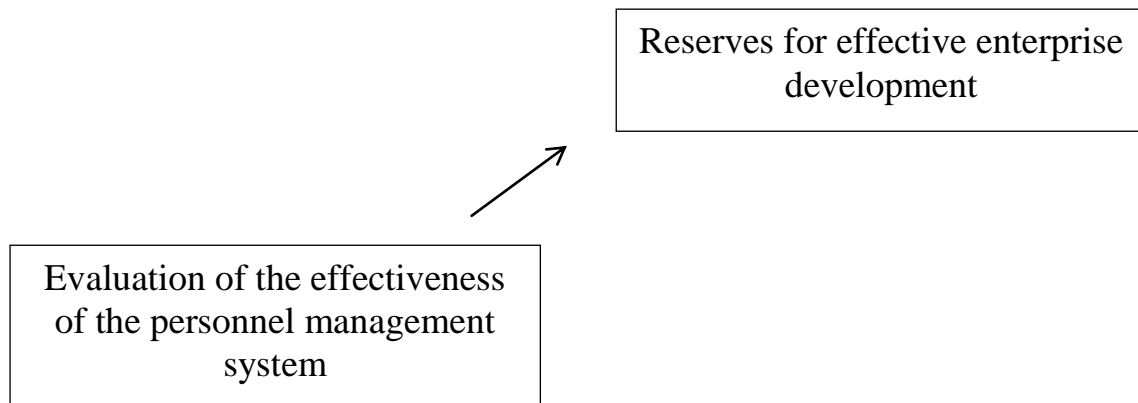


Figure. 1.4 Logical model of the enterprise development efficiency assessment system

Thus, it is the philosophy of personnel audit that formulates its target settings, determines the methodology of its implementation, and above all the tools that assess not so much efficiency as compliance with standards and regulations. Traditionally, the methodology of personnel audit uses: organizational and analytical methods, socio-psychological methods and economic methods [2, p. 19]. However, the main attention is paid to checking documentation, for example, through visual study, content analysis, etc. surveys, observations, surveys, testing and a number of other methods are also used.

One of the main problems that arises during the analysis of the personnel management system in the enterprise is the complexity of the quantitative description of the processes under consideration and objects. Currently, various methods for assessing the personnel management system at the enterprise are proposed.

The first approach is economic, during the use of which, attention is focused on the assessment of economic indicators. Thus, in the work "Economics and labor market" under the general editorship of A.S. Golovachov, a rather comprehensive

methodology for assessing the organization of labor at the enterprise is proposed [58]. There are seven groups of assessment indicators: the use of labor, the use of working time, the quality of labor, the intensity of work, working conditions, satisfaction with labor and the stability of the labor collective. The methodology is completely based on quantitative indicators, therefore it is quite objective. However, in our opinion, in order to conduct a comprehensive analysis of the personnel management system, taking into account the objective requirements of the time, it is advisable not only to consider the final results, but also to evaluate the processes and initially given characteristics. Thus, this technique can form the basis for the analysis of the personnel management system, provided that it is adapted to modern requirements.

Analysis of the use of personnel of the organization can be carried out using the methods proposed in the publications on the analysis and planning of economic activities [1, p. 36]. These methods differ in the depth of processing the possibilities of using factor analysis, which allows you to determine the causes of problems. A significant disadvantage of these methods is that they consider only some aspects: staff provision, social protection of labor collective members, the use of the working time fund, labor productivity, product labor intensity, staff efficiency and payroll.

The second approach is process, it involves concentration in the assessment of the personnel management system on processes. For example, in the work "Theory of measuring the management of economic activity of enterprises" O.A. Vysotsky proposed a methodology for diagnosing the personnel management system at the enterprise [11]. This technique proposes to consider the function of managing motivation in the enterprise (personnel management) as a general function of the influence of motives of an individual nature and social nature.

A special function of motivation management is considered by O.A. Vysotsky as functional, as a relationship of three elements: the subsystem of material stimulation, the subsystem of moral stimulation and the subsystem of personnel management of the enterprise.

The main parameters of the assessment of material stimulation are the system of labor rationing, the system of assessing labor results, the system of formation of basic wages, the bonus system and the system of depremision [43, p. 99].

The main elements of the system of intangible stimulation in accordance with this methodology are: the formation of a sense of pride in employees, the assessment and motivation of employees' capabilities, the assessment and formation of a sense of family in employees, the assessment and motivation of the need for work for employees of the organization, socio-psychological work with personnel, the assessment and formation of guarantees for employees.

The last component of the system of complex assessment of the level of control by the motivation function is, as mentioned above, the function of managing the motivation of work, which is evaluated by such parameters as the activities of the personnel department, the system of work with the personnel of the organization, etc.

In the process of diagnostics of the labor motivation management system, the following methods of collecting information are used: group questionnaire, individual questionnaire, survey, observation, study of documents. The advantage of this technique is its complexity. However, its focus on the exceptional application of expert evaluation methods does not allow to achieve a high level of objectivity of the results.

The third approach – functional – involves the assessment of personnel management functions. Thus, some authors do not consider a comprehensive assessment of the personnel management system, but affect only some of its elements. For example, in the work "Organizational behavior" J.V. Newstrom, C. Davis touch on the issues of assessing the level of satisfaction with labor, certification based on the results of activities [32]. V.A. Spivak focuses on attestation of workplaces, analysis of personnel potential [41]. It should be noted that the methods considered by the authors are quite relevant and, undoubtedly, should be used in the practice of economic activity of enterprises. However, they

represent only one of the aspects of the assessment of the personnel management system.

The fourth approach is comprehensive (based on performance assessment). According to M. Armstrong and A. Baron, the following indicators (parameters) of performance can be distinguished: financial indicators, performance, achievement of compliance with the standard ("impact"), judgments of third parties ("feedback"), time. There are also other approaches to structuring indicators that characterize performance, such as stakeholder satisfaction, the quality of process and strategy, the availability of abilities and competencies, the contribution of stakeholders (according to E. Neely and K. Adams). A distinctive feature of these approaches is their orientation to assess the achievement of the planned result and the use of several areas of assessment of the personnel management system. At the same time, supporters of this approach distinguish several methods (models) that allow measuring performance: the use of Watson White's Human Capital Index; the use of human capital monitoring by E. Mayo; implementation of the Sears Roebuck model; application of the model of investments in human capital "Genome"; the use of the system of balanced indicators of R. Kaplan and D. Norton; application of the EFQM quality model. If we evaluate these approaches from the point of view of their application, then, first of all, there is a problem of performance management, since not all activities allow this to be carried out. As a result, not all activities can objectively assess the effectiveness.

In fact, today organizations are in a situation where the technologies used by them (marketing, production, etc.) are ahead in their development, and most importantly, in the speed of this development, the approaches used in the implementation of a number of management functions. Domestic enterprises, on the one hand, are trying to introduce modern production technologies, and on the other hand, they are trying to "embed" them in the traditional organizational structure, in the traditional management system.

The intensive development of productive forces observed in the last few decades requires a change in approaches to the organization of their management

at all stages of social reproduction, including changes in approaches to personnel management [49, p. The solution to the above problems involves moving away from the classical perception of the personnel management system as a set of methods and methods for the formation of the labor collective and ensuring its effective use. Modern management is on the verge of large-scale changes. And above all, this is dictated by the transition to a new technological structure. The gradual transition to the use of global telecommunication information networks will lead to the formation of qualitatively new management systems. Already today there is an increase in the degree of automation of almost all processes (production, service, management).

The role of man in production and maintenance processes is gradually reduced to the implementation of the control function. Not only the requirements for the competencies of a modern employee are changing, the management system itself is being transformed. The use of clusters, outsourcing schemes requires radically different approaches, including the functioning of the personnel management system in the enterprise.

Most likely, the process of reforming management systems will assume the formation of virtual offices, the transition to fully electronic document management, the formation and use of cloud infrastructure.

1.3. Features of personnel management in the field of IT technologies

Professional development of personnel in the field of information technology, of course, should be a continuous and comprehensive process. Global IT companies among the main stages of staff development include:

- setting goals and defining methods in staff development;
- motivating employees to train;
- monitoring of acquired knowledge and skills during the learning process;
- determining the level of training efficiency [29, p.156].

The peculiarity of working with staff in the IT industry is that the main role in the development of the team and its individual members is played by the line manager, ie project manager (PM). PM systematically conducts retrospectives based on the results of the team's work; identifies bottlenecks and takes measures to eliminate them; gives feedback to developers; conducts a performance review and one-to-one meetings with all team members.

It is the project managers who have information on trends in the IT market of Ukraine and the world, changes in the requirements for teamwork, skills and knowledge that need to be developed among subordinates. That is why the decision on the need for staff training is a direct task of line managers. The training is usually organized by the company's HR department. Professional development of employees should be carried out at all levels of management, in particular in the organization as a whole, at the level of structural units, individually, and, of course, if there is a desire among staff to make efforts.

The main external factors that determine the need for staff training are the rapid development of technology and the level of competitiveness of the company in the world market [7, p.190-192]. Among the internal factors that motivate staff to self-development and training, the main is their internal motivation [46, p.45].

Professional trainings, master classes, foreign language courses, and other opportunities for individual and collective development have a positive impact on employees. Thus, all the above-mentioned staff development needs constitute a general view of the IT company's professional training program. The formation of the budget is no less important stage among those that make up the process of forming a program of professional development of staff.

The main factors influencing the size of the budget are the needs of the IT company in the professional training of its staff and the overall level of financial support. HR-department of the company, ie the personnel management team is directly responsible for the formation of specific goals of each such program based on the definition of professional training needs [20, p.277]. But it is important to

remember that the goal as a result is only the focus of the work, and therefore should be adjusted for any changes.

When planning the organization uses different methods of determining the goal. One of the most common and effective ways is to set "smart" (from the English. "Smart") goals, ie setting goals using SMART criteria. In 1954, Peter Drucker, in his book *The Practice of Management*, first proposed the use of SMART goal-setting criteria as part of the concept of Management by Objectives.

SMART goals should be specific, measurable, achievable, realistic (pragmatic) and time-bound [19, p.54]. Components of the analysis of strategic target priorities based on SMART criteria can be used in the process of setting goals in the strategic planning of IT companies. They allow you to set achievable and understandable goals as part of a more global development strategy, as well as ensure their achievement and continuity by staying in touch with the world through a well-built feedback system and a flexible response system to rapidly changing external conditions.

The next stage in the organization of personal development in an IT company is the choice of training methods. American educator K. Kerr identifies four "revolutions" in the field of teaching methods. The first is that teachers and parents have given way to professionals. The essence of the second is to replace the spoken word with a written one. The third revolution led to the introduction of the printed word in teaching, and the fourth, which we are witnessing, is aimed at partial automation and computerization of learning [49, p.175].

In pedagogy there are many definitions of "learning method". IP Podlasy understands methods as "a set of ways and means of achieving goals, solving educational problems." Yu. K. Babansky considers such methods "ways of interconnected activity of teachers and students, aimed at solving a set of tasks of the educational process." VI Andreev aptly noted that "teaching methods are, on the one hand, teaching methods, and on the other - teaching. [23, p.27].

In my opinion, the method of teaching is a way of streamlining the activities of the subject and object of the educational process, which is aimed at achieving

the goals of education, development and education. The method acts as a multidimensional phenomenon, as the core of the learning process. It serves as a mechanism for achieving the goals, largely determines the final results of the educational process.

Conventionally, all teaching methods can be divided into those that are used directly in the workplace and those that are used outside the workplace. Traditional methods of learning in the workplace include: instruction, rotation, the method of complex tasks, etc. [29, p.118]. But the most popular in the IT industry are methods of mentoring and apprenticeship. Such a phenomenon as "coaching" in the educational environment is a fundamentally innovative direction in pedagogical science and practice, which is based on setting and achieving goals as quickly as possible by mobilizing internal capacity, increasing the motivational component, mastering advanced strategies. Coaching acts as a powerful tool that promotes both personal and communicative development of staff [35, p.178].

In IT companies it is common practice to involve external consultants who have new, different from existing knowledge in the company, which will certainly help increase the competitiveness of employees and the company as a whole [36, p.266]. Quality control of material acquisition is carried out by using any form of knowledge control at the end of the knowledge exchange period, or directly in the process of fulfilling one's responsibilities and using the acquired knowledge in practice.

Also in IT companies it is no less important to take into account the following indicators: increase in total profit; introduction of new technologies and ideas for employee specialization; increase own productivity, etc. HR services of IT companies must perform a set of actions to create conditions for continuous staff training.

The first such stage is the formation of a staff development strategy. It is at this stage that the manager determines the list of results that need to be achieved by employees, what personal and professional qualities need to be acquired. Such strategies are usually situational, related to a specific business task.

This strategy of staff development is implemented through the introduction of external training. But among modern IT companies there is also a systematic approach to the formation of personnel development strategy, characterized by continuous training and development within the company. This strategy allows you to improve staff skills and apply them in practice without leaving the work process. HR managers need to plan the company's staffing needs.

For the analysis use the company's plans, staff training costs and salaries, staff turnover, etc. Determining the needs for the quality and number of staff is a very complex mathematical task, which is solved in particular by attracting experts; using high-level computer models.

Professionals who can move companies forward need to be educated. Identify promising staff, select training methods, allocate the budget - the responsibilities of management of IT companies and HR departments [43, p.74].

We must also not forget that all possible methods of training the staff of any company in the world are based on self-study. And here the tasks of motivation and support come to the fore. Self-training of employees of the organization should never be isolated from corporatism. It should take place exclusively under the guidance of the company's specialists. Among the ways to increase staff motivation, those who profess regular discussion of the experience gained by the whole team have gained wide popularity [25, p.250].

Thus, we can conclude that the proper implementation of the above stages of staff development in companies will have a positive impact on the efficiency of IT companies and their level of competitiveness in the context of internationalization. In general, the company's human capital is defined as the knowledge, skills, abilities, experience of individuals formed through investment, which are used to increase the efficiency of the company and the income of an individual employee.

Modern companies, especially in the field of IT, pay a lot of attention to the formation of personnel development management system, as it is one of the important factors influencing competitiveness. One of the functional elements of the personnel management system is the personnel development subsystem.

Personnel development is part of a set of interconnected elements (subsystems) that operate autonomously, but aimed at achieving one goal - effective and productive management [58, p.187].

Personnel development management subsystem is a set of organizational and economic measures of the personnel management service of the organization in the field of training, retraining and advanced training of personnel [41, p. 96]. These activities include issues of professional adaptation, evaluation of candidates for the vacant position, current periodic staff evaluation, business career planning and career development, work with the personnel reserve, inventive and innovative work in the organization.

The implementation of staff development measures is associated with certain costs, however, as experience shows, it contributes to the progressive transformation [6, p.73-75].

Scientist T. Garavan understands staff development as a purposeful set of informational, educational and job-specific elements that help improve the skills of employees in accordance with the goals of the company and the potential of employees [11, p.692].

Personnel development is one of the most important components of the overall improvement of the effective functioning of the company. In economically unstable periods, the problem of staff development was given insufficient attention, but it is during the crisis that staff development is one of the conditions for economic growth. Achieving high results is possible only when people have the knowledge, skills and determination.

Education and training of staff should be continuous and provide the necessary professional development. In modern conditions, the problem of staff development is becoming increasingly important. Today it can be argued that any organization thrives as much as it competently not only attracts and maintains, but also, most importantly, develops its human resources, its staff [5, p.41-43].

When forming the principles, goals and objectives of personnel development management in the personnel management system, companies must take into

account both the world experience of countries with developed economies and their own development strategies [31, p.205].

Personnel development processes will change the model of behavior of the staff itself, affecting each of the 6 elements: employees, staff, management, organization, behavior, results [5, p.73].

The staff development system must meet the needs of employees in obtaining and improving professional training throughout their work at all levels of qualification and responsibility.

The organization of the process of personnel development in the organization consists of the introduction of three main stages:

- planning - determining the need for development; definition of development goals;
- creation of a staff development plan; drawing up and distribution of the staff development budget;
- implementation - definition of development methods; development organization;
- conducting staff development activities;
- monitoring - testing of employees covered by development activities;
- comparison of development results with selected criteria / expected results [48, p.315].

The subject of the personnel development system are the company's employees, the object is professional qualifications, personal and important for the organization of personnel characteristics.

If the company has an effective system of staff development, it gives him a number of advantages:

- strengthening the commitment of employees to the goals of the organization;
- acquisition by staff of knowledge and professional skills necessary to ensure further effective operation of the organization;

- unlocking the potential of employees, the fullest use of their capabilities, aptitudes, knowledge and skills;
- facilitating the implementation of innovative changes; ensuring succession in management.

Personnel development management is the development and implementation of measures aimed at improving the quality characteristics of employees (skills, knowledge, motivation, competencies, etc.), which are necessary in accordance with the overall development strategy of the company.

Staff development should be carried out in three main areas:

1. personal development (formation of a system of values; psychological development; physiological development);
2. social development (raising social status; promotion);
3. professional development (acquisition of knowledge, skills, abilities; advanced training) [51, p.29].

Professional development of staff involves the following stages of inclusion of people in the organization: adaptation, integration of employees into the team, direct performance of duties, work and promotion. The formation of the personnel development system should be based on the principles of management with the use of specially developed tools for personnel development management.

Scientists have made many attempts to systematize the principles of staff development, but in the IT industry this topic is insufficiently studied, due to the novelty of the ecosystem and the pace of its integration into the internal market. Ambiguous interpretation of the basic principles makes effective management impossible, which in turn leads to the choice of wrong strategies. The principles of formation of the personnel development system allow the company to build a system of science-oriented management, which is based on the activities of the world's leading companies. The principles of personnel development must comply with the general principles of management, as well as, equally important, methods, goals, means, rules of action of the subjects and the object of personnel management.

In the field of information technology in the formation of personnel development system should adhere to the following principles: innovation, efficiency, continuity, adaptability, responsibility, complexity, scientific, multi-vector. Personnel development management contributes to the effective use of labor potential of the individual, increase its social and professional mobility, acts as a means of preventing mass unemployment, plays a significant role in training workers for structural and technological restructuring of the economy. This has a positive effect on increasing the volume and updating the range of products or services, improves the results of financial activities.

To develop employees, you need to be able to evaluate them, and then on the basis of this assessment you can build development plans. The professionalism of employees of IT companies is assessed in accordance with the SMM standard (Capability Maturity Model for Software).

In addition to process maturity, the following are also taken into account:

- ☐ productivity for the reporting period (estimated by the project manager);
- ☐ technical and "process" knowledge;
- ☐ personal qualities.

According to estimates, qualification levels are assigned:

- ☐ Junior;
- ☐ Middle;
- ☐ Senior;

Prin expert (Principal) [19].

It should be noted that if the performance of an IT employee is found to be unsatisfactory, it is set a probationary period (if performance is reduced due to factors or circumstances beyond the employee's control) or dismissed.

The process of development of IT company employees is also regulated by relevant industry standards, for example through the Competence Group Manager (CGM) model, so an IT company has a person whose functional responsibilities include managing specific competencies, defining competencies, planning activities for its development. companies, etc.). It provides "temporary work" for

professionals who are not currently employed in current projects, resulting in the assessment of technical knowledge of employees, improving the skills of specialists and the development of qualification standards of the competency group.

Taking into account the speed with which the field of Internet technologies is developing, we believe that the best method of staff development is to hold conferences and webinars.

The development of the IT sphere and the successful operation of IT companies depend on the qualifications of IT specialists, their skills and desire to work productively, so the issue of human resource management should occupy one of the main positions in the strategy of IT development in Ukraine. , stopping their possible outflow abroad, etc.). In addition, companies themselves need a special staffing policy in order to take a leading position in the market, attract and retain highly qualified and talented professionals.

SECTION 2. RESEARCH OF PERSONNEL MANAGEMENT SYSTEM OF SIGMA SOFTWARE LLC

2.1. Organizational and economic characteristics of the enterprise and features of its development

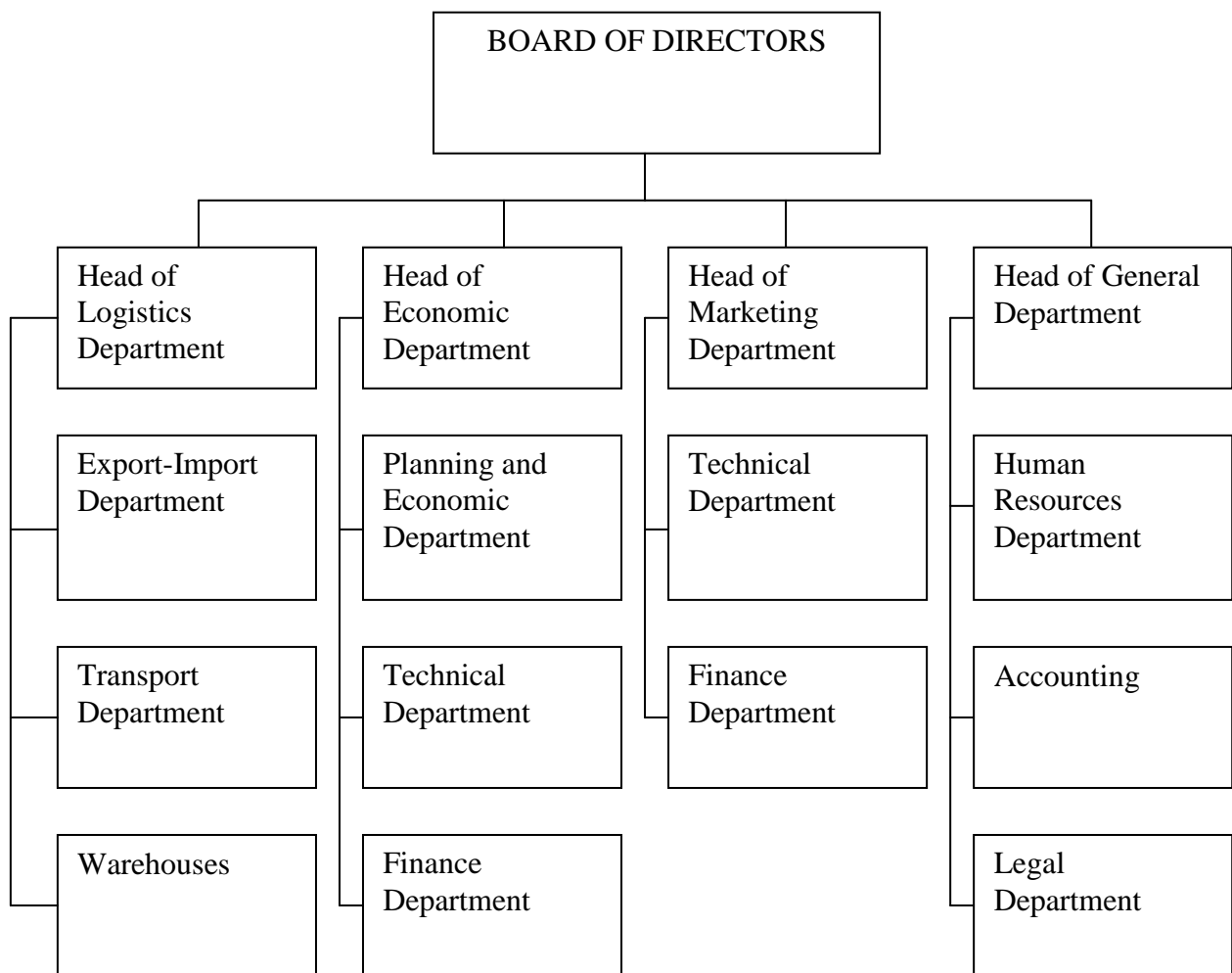
Sigma Software Limited Liability Company is a Ukrainian company that supplies high-quality information technology and is part of the Scandinavian group of companies specializing in IT consulting and other areas of the field. From the very beginning, the legal entity was registered in the Unified State Register of Legal Entities, Individual Entrepreneurs and Public Associations on May 10, 2002 (USREOU code 31935930) under the name Eclipse SP [24].

In order to enter the Scandinavian market of IT services in 2006, the company joined the Sigma Group and began to take an active part in attracting projects for international brands. In 2011, in order to create the best conditions for expanding its activities and becoming the leading Ukrainian provider of IT solutions in the global market, Eclipse SP executives developed the concept of a single brand Sigma Group, which was primarily to change its name, but retaining unique competitive advantages. The company begins to operate in both Ukrainian and international markets under a new brand - "Sigma Ukraine". "The decision to change the name of the company was a logical step forward for us.

The company's mission is to provide high quality IT services. In 2014, the company opened offices in the United States and Poland, bringing the company from the national to the international level. In the same year, Sigma Ukraine changed its name again and still operates under the name Sigma Software.

As Sigma Software's activities are diversified (multidisciplinary) and complicated by high-tech processes in a changing environment, the company's management decided to choose a divisional management structure with existing functional connections on the ground.

The organizational structure of the company "Sigma Software is shown in Picture. 2.1.



Picture 2.1 Organizational structure of Sigma Software LLC

The highest governing body is the Board of Directors, which consists of members of the Sigma Group. Chairman of the Board, CEO of Sigma Technology Group AB - Carl Vikingson. Member of the Board, CEO of Sigma IT Consulting - Lars Krai. Chief Financial Officer, co-founder, head of the Kharkiv office - Dmytro Vartanyan.

For 2021, Sigma Software is represented in four major cities in Ukraine (Kharkiv, Odesa, Kyiv, Lviv), Poland (Warsaw), USA (New York, San Jose, Bellevue, Los Angeles), Sweden (Stockholm, Gothenburg, Malmo, Weixo and others). Sales and support partners are located in the UK, Switzerland, Germany, Austria and Australia.

An important part of any company is corporate values that demonstrate the vector of development and the internal atmosphere. The Sigma Software team is built on professionalism and mutual respect, where team members are endowed with autonomy in decision-making. The team promotes trust, devotion and openness, because it is important to keep promises.

The company does not forget to invest in the development of education and IT ecosystems in Ukraine for the future. Last but not least is the social responsibility of business, because as part of the Swedish group "Sigma Software" tries to follow the principles of green office and energy efficiency. The company adheres to its principles no matter what project they carry out.

It is important for the members of the Sigma Software team that the client receives the best decision on time and on a budget. Sigma Software's mission is to provide premium quality IT services, keeping the focus on helping customers achieve their business goals.

The main values of the company: professionalism and mutual respect; decision autonomy; trust, devotion and openness; investing in education and the IT ecosystem and in Ukraine; compliance with the concept of "Green Office".

Like every company, Sigma Software LLC operates on the basis of its own Charter, Laws of Ukraine "On Business Associations", Civil and Commercial Codes of Ukraine and other legislative acts.

To determine the economic activity it is necessary to diagnose the financial and economic condition of the enterprise by calculating the relevant groups of indicators.

The financial results of Sigma Software LLC for 2019-2021 are given in Table 2.1.

Table 2.1

Performance indicators of Sigma Software LLC for 2019-2021, UAH
thousand

Indicators	2019	2020	2021	Absolute deviation			Growth rate		
				2019 to 2020	2021 to 2020	2021 to 2019	2020 to 2019	2021 to 2020	2021 to 2019
Net income from sales of products, thousand rubles. UAH	6565 3	10946 8	14865 7	4381 5	39189	83004	66,74	35,80	126,4 3
Cost of products sold (goods, works, services), thousand rubles. UAH	6445 6	76815	98112	1235 9	21297	33656	19,17	27,73	52,22
Net financial result: profit, thousand rubles. UAH	2611	9646	4345	7035	-5301	1734	269,4 4	-54,96	66,41

Table 2.2 shows the results of the calculation of profitability of LLC "Sigma Software for 2019 - 2021.

Table 2.2.

Dynamics of profitability indicators of Sigma Software LLC for 2019-2021,
UAH thousand

Indicator	2019	2020	2021
Profitability of sales	0,24	0,23	0,18
Return on assets	0,15	0,20	0,18
Return on equity	0,46	0,59	0,42

In 2020, the profitability of assets and equity increased compared to 2019, but in 2021 all the values of the indicators decreased, which indicates a deterioration in the financial condition of the company.

Table 2.4 shows the indicators of financial stability of Sigma Software LLC for 2019-2021.

Table 2.3

Indicators of financial stability of Sigma Software LLC for 2019-2021,
thousand UAH

Indicator	Meaning		
	2019	2020	2021
Financial independence ratio	0,49	0,53	0,53
Funding ratio	1,02	0,88	0,88
The coefficient of provision of own working capital	0,56	0,73	0,75

The calculation of financial stability indicators over the past three years showed that the value of the financial independence ratio in 2019 did not meet the recommended 0.5, then the size of the indicator increased by 0.04 and during 2020 and 2021 remained at the level of 0.53.

We can consider the value of this coefficient sufficient, and the enterprise is sufficiently independent of external sources of financing. The same positive trend is observed with the funding ratio

Over the past three years, the level of security of the enterprise with its own working capital has also increased. The value of this indicator in 2020 increased by 0.17, and in 2021 – by another 0.02. So, at the end of 2021, Sigma Software LLC financed 75% of current assets at its own expense, as well as long-term loans.

2.2. Diagnostics of the enterprise personnel management system

Analysis of the availability and use of personnel is customary to begin the study of the structure of personnel, which can be produced in many ways. The most important parameters are the structure of the numerical composition by experience, gender and professional characteristics.

The gender-age structure of personnel of Sigma Software LLC for 2019-2021 is presented in Table 2.4.

Table 2.4

Gender and age structure of personnel of Sigma Software LLC for 2016-2018, thousand UAH

Categories of workers by gender	Years						2021 to 2019	
	2019		2020		2021			
	Perso ns.	%	Perso ns.	%	Perso ns.	%	in %	(+,-)
1	2	3	4	5	6	7	8	9
Persons.	49	58	51	62	45	54	64,1	-4
Female.	36	42	32	38	39	46	75,5	3
Categories of workers by gender								
Up to 25 years	19	10,6	12	14,5	13	15,5	144,4	4
25-40 years	44	51,8	46	55,4	42	50,0	95,5	-2
40-55 years	14	28,2	18	21,7	22	26,2	91,7	-2
More than 55 years old	8	9,4	7	8,4	7	8,3	87,5	-1
Total	85	100	83	100	84	100	98,8	-1

According to table data. 2.4, the company is dominated by men by gender, their share was in 2019 58%, in 2020 62%, and in 2021 amounted to 54% of the total number of personnel. This suggests that in the study period there is an increase in the number of women. The share of women in 2021 amounted to 46%,

while in 2019 the share of women was only 42%, and in 2020 only 38% in the total number of employees. At the same time, the number of men decreased in 2021 compared to 2019 by 35.9%, and the number of women by only 24.5%.

The structure of personnel by experience can be considered in two variations: by total experience and by work experience in this organization. Work experience in this organization characterizes the stability of the labor collective.

The structure of personnel in terms of education and work experience in Sigma Software LLC in 2019-2021 is presented in Table. 2.5.

Table 2.5

Characteristics of the quality of personnel of Sigma Software LLC for
2019-2021, thousand UAH

Categories of personnel by level of education	Years						2021 to 2019	
	2019		2020		2021			
	Perso ns.	%	Perso ns.	%	Person s.	%	in %	(+,-)
Average (including medium-special)	1	8,8	-	-	-	-	3,8	-1
Unfinished Higher	45	52,9	41	49,4	40	47,6	88,9	-5
Higher	39	38,2	42	54,7	44	54,7	120,8	5
Categories of personnel by work experience								
up to 1 year	16	18,8	18	21,7	26	31,0	162,5	10
from 1 - 5	41	48,2	38	45,8	36	42,9	87,8	-5
more than 5 years	28	32,9	27	32,5	22	26,2	78,6	-6
Total	85	100, 0	83	100,0	84	100,0	98,8	-1

According to the data presented, in the study period, the number of employees with secondary education decreased by 100%, with unfinished higher education - by 11.1%. The number of employees with higher education increased by 20.8%. As we can see, the number of employees with higher education is

growing at the fastest pace. This is due to the fact that many employees increase their educational level, receiving higher education.

In 2019-2021, there was a significant increase in the number of employees who worked at the enterprise for less than 1 year by 62.5% or 10 people. In addition, the number of employees with more than 5 years of experience in the enterprise decreased by 21.4%, which is a rather negative trend, since the staff becomes quite impermanent. The number of employees with experience from 1 year to 5 years decreased in the study period by 21.4%.

The characteristics of the staff of Sigma Software LLC for professional purposes are represented by Table. 2.6.

Table 2.6

Characteristics of the professional orientation of the personnel of Sigma Software LLC in the study period

Categories of employees by positions	Years						2019 by 2021	
	2019		2020		2021			
	Pers ons.	%	Pers ons.	%	Per son s.	%	in %	(+,-)
- managers	12	14,1	9	10,8	9	10,7	75,0	-3
- programmers	48	56,5	44	53,0	43	51,2	89,6	-5
- junior assistants	25	29,4	30	36,1	32	38,1	128,0	7
Total	85	100	83	100	84	100	98,8	-1

According to table 2.6 in 2021, there is a decrease in the number of managers by 25% and programmers by 10.4%. These data indicate a reduction in the volume of the product produced and, as a result, a reduction in the number of employees in these categories, which are directly related to the implementation of the production process.

In the period under study, there were no major changes in the professional structure of personnel. The main share in the structure belongs to programmers, in 2021 it amounted to 51.2% of the total number of personnel, the share of junior

assistants was 38.1%, management staff - 10.7%.

Analysis of labor productivity is also an integral part of the analysis of the use of personnel of the enterprise. In order to make an analysis of labor productivity, it is necessary to have data on the movement of personnel. Data on the movement of personnel in Sigma Software LLC are presented in Table. 2.7.

Table 2.7

Data on the movement of personnel in Sigma Software LLC for 2019-2021, uah 1,000. . Persons.

Name of the indicator	Years			2021 g. to 2019	
	2019	2020	2021	%	(+,-)
1	2	3	4	5	6
Number of staff at the beginning of the year	88	85	84	95,5	-4
Hired	8	6	12	150	4
Number of staff at the end of the year	85,0	84	83	97,6	-2
Dropped out, including:	11	7	13	118,2	2
Of general desire	11	7	13	118,2	2
Average number of personnel	86	85	83	96,5	-3
number of employees for a period with more than 5 years of experience at this enterprise	28	27	22	78,5	-6
Turnover rate for receiving employees,%	0,09	0,07	0,14	-	0,05
Turnover ratio for the disposal of employees,%	0,13	0,08	0,16	-	0,03
Staff turnover ratio, %	12,7	8,3	15,6	-	2,85
Staff sustainability ratio,%	0,32	0,32	0,26	-	-0,06

According to table 2.7, it can be concluded that the average number of personnel at the end of 2021 amounted to 83 people, which is 3 fewer people than in 2019. In 2021, 12 people were admitted to the enterprise, which is 50% more than in 2019.

The turnover rate for the turnover of employees and the turnover rate tend to increase, the values of these coefficients have increased significantly over the study period. Thus, the turnover rate, which amounted to 12.7% in 2019, increased in 2021 to 15.6%. If we talk about the coefficient of sustainability of personnel, it tends to decrease and is equal to 0.26% in 2021, while in 2019 its value was 0.32.

Thus, we see that the turnover rate significantly exceeds the coefficient of sustainability of personnel, which is an extremely negative trend for the enterprise.

As a result of the study conducted at this point, we managed to find out that the company has a fairly low level of staff sustainability, which can adversely affect the effectiveness of personnel development measures.

2.3. Evaluation of the effectiveness of the personnel management system of the enterprise

We will analyze the assessment of the quality of professional development of personnel of Sigma Software LLC. 2.8.

Table 2.8

Results of calculation of indicators of the zone of qualitative assessment of professional development of personnel of Sigma Software LLC for 2021,

(minimum score – 0, maximum – 100)

Staff Development Program	Level of consistency of the curriculum with production needs	The level of compliance of the curriculum with the possibilities of perception of listeners	The level of assimilation of new knowledge and skills
Advanced training of electricians "Repair and maintenance of electrical equipment"	55	51	85
Advanced training of repairmen "Operation of power equipment"	64	28	73
Advanced training of packers	65	32	74
Advanced training of locksmiths-repairers "Hydraulic drives. Pneu motor	67	45	63

drives. Lubricant systems. Basic devices, operation, repair"			
Advanced training of laboratory workers	43	53	92
Advanced training of marketers	52	47	65
Advanced training of IT department	41	38	88
Manager re-certification program	70	56	80
Special training of workers on labor protection "Fire-technical minimum"	45	41	71
Advanced training of electricians "Repair and maintenance of electrical equipment"	40	39	75
Average level per year	53	42	76

On the basis of Table 2.8, the head of the human resources department fills out a card for assessing the quality of professional development of personnel for the conditions of the enterprise under study for 2021. 2.2.

	INDICATOR	POSSIBLE LEVEL OF THE INDICATOR		
		Poor	Satisfactory	High
QUALITY ASSESSMENT ZONE	The level of coordination of the curriculum with production needs, points	0-49	50-79	80-100
	The level of responsibility of the curriculum to the possibilities of perception of students, points	0-49	50-79	80-100
	The level assimilation of new knowledge and skills, points	0-49	50-79	80-100
QUANTIFICATION ZONE	Share of employees who have undergone vocational training, %	0-29.9	30-49.9	50-100
	The weight of investments in human capital from the general payroll, %	0-0.39	0.40-1.29	over 1.3
	Re-development of advanced training, years	Over 5	3-5	1-3
PERFORMANCE ASSESSMENT ZONE	Plinth coefficient of prospective employees, %	Over 3	2.9-0.3	0-0.29
	The ratio of financial capacity of investment in human capital, %	0-0.59	0.6-0.99	Over 1
	Efficiency factor of investment in professional development of personnel, %	0-99	100-110	Over 110

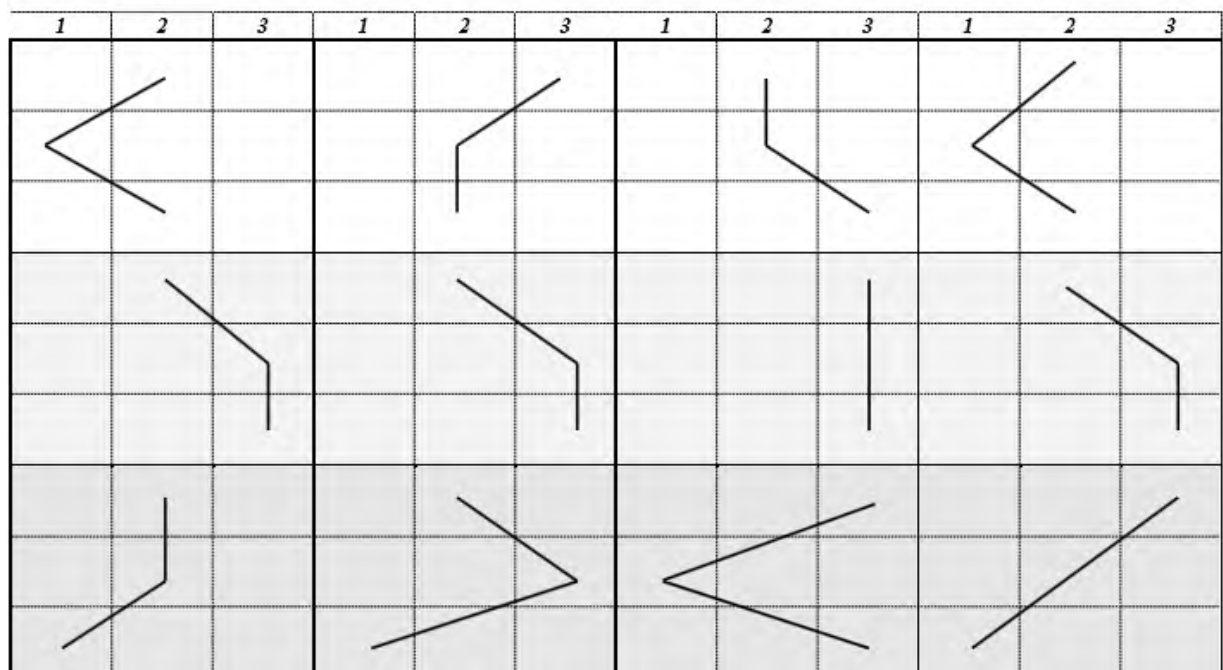
Rice. 2.2. Sigma Software LLC personnel quality assessment card in 2021

So, we can conclude that Sigma Software LLC should pay more attention to improving such qualitative characteristics of the process of professional development of personnel as accessibility, practical orientation, progressiveness and effectiveness of training programs, their consistency with production needs, the degree of motivation of students to achieve high results during training. that gradually, through an established system of continuity of best practices, it will

create conditions for improving the socio-economic efficiency of measures for professional and qualification development of personnel at the enterprise.

The fullest possible implementation of this condition will allow several to reduce the intensity of professional development measures at the same time with unchanged or even growing socio-economic returns. That is, the company will be able to receive two positive effects at the same time – saving money aimed at professional development of personnel and improving the resulting indicators of production and economic activity.

At the second stage of the analysis, all the resulting curves were summarized into a single graph (matrix) of the estimate, Picture. 1. 2.3. Due to the fact that the methodology for determining the efficiency of investment in professional development of personnel is based on the calculation of growth rates, the assessment of the quality of professional development of personnel was made only for four years – from 2017 to 2021.



Rice. 2.3. Matrix of quality assessment of professional development of personnel of Sigma Software LLC

The analysis of the calculations carried out according to the proposed evaluation methodology made it possible to conclude about the relatively positive

trends observed during the study period with the quality of professional development of personnel in the conditions of Sigma Software LLC.

From the average level of quality, which was established according to the results of calculations, high quality of professional development of personnel was achieved. This became possible due to the growth of the qualitative characteristics of professional development, which made it possible to achieve a quantitative increase in the values of indicators of investment performance in human capital.

In addition, there was an increase in the intensity of the processes of professional development of personnel, which also contributed to a positive return. In the future, there was a sharp reduction in the values of qualitative indicators for assessing professional development with an almost unchanged high intensity of this process. As a result, there was a drop in the values of the resulting block of indicators.

The use of the methodology for assessing the quality of professional development of personnel proposed in the work through the filling of special cards and matrices made it possible to clearly diagnose the achieved level of quality of the processes under study at Sigma Software LLC.

The methodology is quite easy to use and can be quickly transformed into any features of the production and economic activity of the enterprise and market requirements – adjustment can be subject to both the number of indicators in each of the three assessment zones, the gradation of the ranges of estimates of each indicator, and the indicators themselves, the choice of which for each zone is quite significant.

In addition, the use of the technique allows you to clearly trace in the dynamics for a number of years the change in indicators in each of the three separate zones, which makes it possible to identify existing imbalances and distortions between the quality characteristics of the training programs and the intensity of the processes of professional development of personnel. Timely diagnosed imbalances will help prevent future errors in management decisions regarding the organization of professional development processes of personnel,

and, consequently, increase the effectiveness of training programs and the overall financial and economic efficiency of the enterprise.

SECTION 3 DIRECTIONS OF IMPROVEMENT OF PERSONNEL MANAGEMENT SYSTEM OF SIGMA SOFTWARE LLC

3.1. Determination of the strategy for improving the personnel management system of the enterprise

The personnel management system of enterprises should be formed on the basis of modern principles that will allow such enterprises to achieve both common goals within the selected markets and a high level of employee commitment. An effective personnel management system is work with personnel, in accordance with the concept of enterprise development.

In the context of this, a diagnostic of the personnel management system was carried out at Sigma Software LLC in order to make adjustments to the current management system.

A complete picture of the already established personnel management system and training scheme was obtained and its weaknesses were identified, namely:

underestimation of the role of personnel participation in decision-making and in planning the activities of the enterprise;

- low responsibility of management for the level of professionalism and qualification of employees.

- lack of creative methods of staffing at the enterprise.

Based on the analysis, measures for improving the personnel management system at Sigma Software LLC (Table 3.1) are proposed.

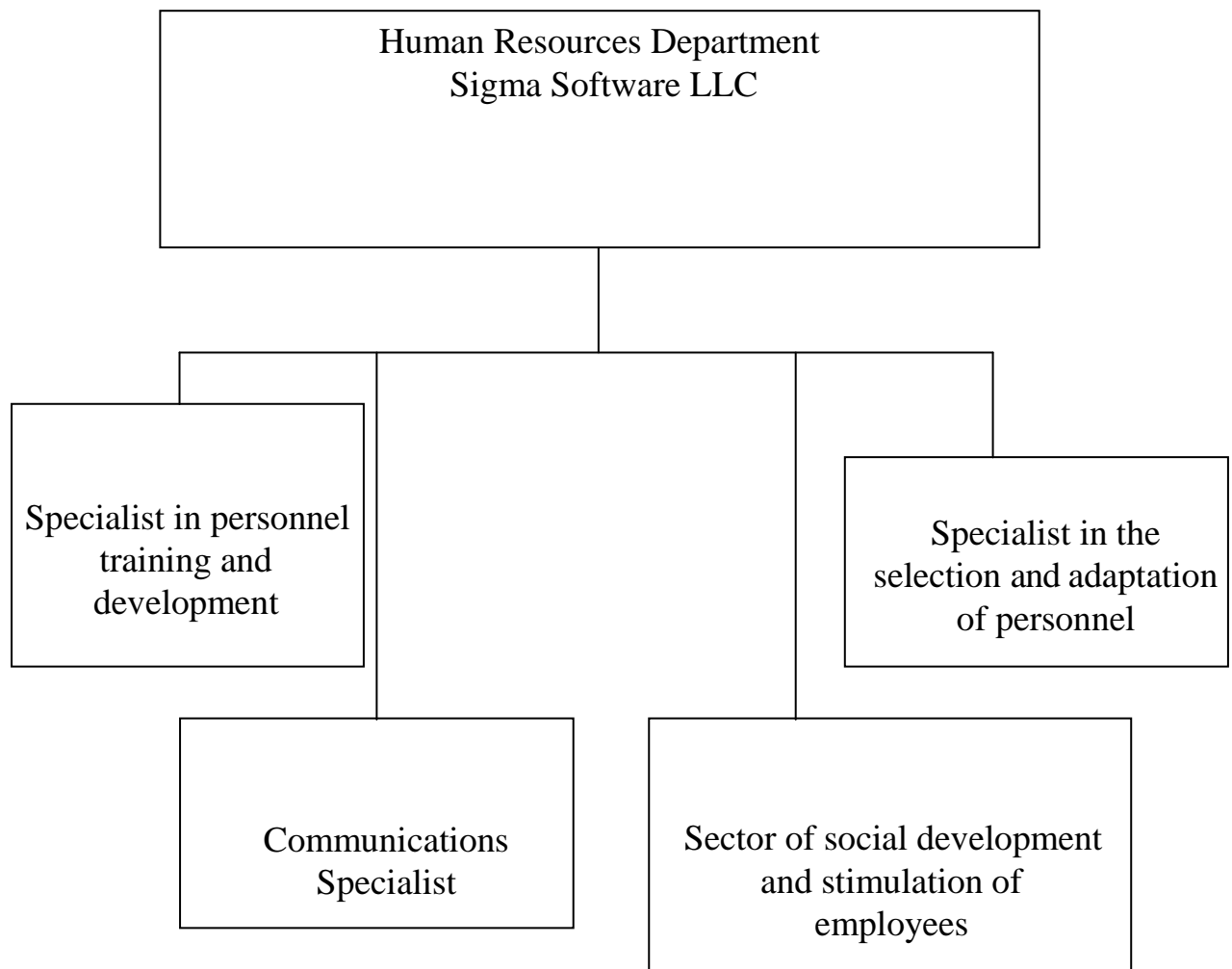
Table 3.1

Measures to improve the personnel management system at Sigma Software
LLC

Directions	Tools
Improvement of the organizational structure of Sigma Software	<p>It is proposed to make changes in the personnel department in the general organizational structure and create a personnel management department</p> <p>Development of the "Regulations on personnel management department"</p> <p>Development of the "Code of Corporate Culture and Organizational Behavior".</p>
Improving the learning process, preparing and retraining Staff	<p>Building a learning system</p> <p>Development of training "Creative Management"</p>
Improving the information support of Sigma Software LLC	<p>Introduction of isf-7 software product - personnel management and personnel accounting system "ISF Staff".</p>

Effective use of personnel of Sigma Software LLC can be ensured by improving the organizational structure.

The main task of the director of the personnel management department will be to form a strong team within the unit. The director is individually responsible for the quality of the team in his unit; responsible for retaining valuable members of his team, providing them with motivational and career opportunities; responsible for maintaining the image of Sigma Software LLC inside the enterprise and beyond;



Picture.3.1. Organizational structure of personnel management department of Sigma Software LLC

The main activity of the HR department of Sigma Software LLC should be regulated by the Regulations on the Personnel Management Department.

1. General provisions: it should be indicated that the personnel management department is an independent structural unit of the apparatus.

2. Tasks of the department: tasks for staffing, formation of a stable labor collective, reducing staff turnover and strengthening labor discipline

Taking into account all the above, it is proposed to consider the training as an initial stage in the process of creating a corporate training system. The process of developing an effective learning system consists of three successive steps. At the first stage, the company's management is aware of the need to use progressive

forms of training and begins to use trainings. The next step is the development of personnel development programs that provide for a regular set of training activities planned in advance. At the final stage, provided that the company understands the importance of the role of the personnel component, a comprehensive corporate training system is being created, which is currently the most advanced form of development of professional and personal competencies of personnel.

The quality of training of employees is determined using the criteria for the effectiveness of training (Table 3.2).

Table 3.2

Criteria for the effectiveness of training

Criterion	Comments
Satisfaction of a trained employee	Determined by means of a questionnaire, after which the analysis and calculations of the effectiveness of this criterion are carried out, the causes of dissatisfaction and conclusions are drawn
Acquisitions that are trained necessary knowledge, skills and abilities	To assess this criterion, a special form of the training report is used, with the help of which the degree of development of the necessary knowledge, skills and abilities is determined.
Effectiveness of submitted proposals to improve professional activity	Taking into account the knowledge gained, the trained employee submits to the management his proposals for improving the activities of both the employee and the organization as a whole, which are further evaluated from the point of view of Efficiency
Efficiency of the employee who has passed teaching	The efficiency expressed in: increasing production rates is assessed; productivity growth; reducing the time for work/ projects; reduction of financial costs for implementation of the project; - increase in sales, etc.
Manager satisfaction with results teaching	After about a month, a special questionnaire of training effectiveness is filled out for evaluation

Training, advanced training, retraining of employees and solutions as the main goal of the tasks for the formation of competitive personnel put forward to

the personnel service new, very complex and urgent tasks for the development and implementation of the main directions of training.

Of course, it is important to introduce information technologies in Sigma Software LLC.

3.2. Justification of the feasibility of implementing the proposed measures

Training of employees of the enterprise is the most important factor influencing the further labor activity of the employee, his salary, his attitude to work, productivity and labor efficiency. Investments in training are equally important for both the employee and the enterprise itself, since the labor activity of personnel with the necessary knowledge and skills for the organization is of higher quality and efficiency.

The success of training will be determined by the additional cost that it will bring to the organization. The measurement of learning effectiveness indicators for Sigma Software LLC will be carried out in two different planes (Table 3.3).

Table 3.3

Performance indicators of staff training

	Return to knowledge	Effectiveness of training
Units involved in the calculations effectiveness of training	Economic Department; Human Resources Department	Human Resources Department
Desired deliverables	Increase the volume of services; cost reduction; increasing the degree of customer satisfaction; increase productivity; increasing the degree of satisfaction employees; reducing staff turnover	Downsizing number of suppliers educational services; reduction of the cost of an hour of study; increase Motivation employees, their loyalty to the organization; breakaway time, studying from work

Increase in add-on. Profit				70	70	70	130	130	130	195	195	195
Cash flow	- 165	-45	-45	60	60	60	85	85	85	185	185	185
Accumulated cash flow	- 165	- 210	- 255	- 195	- 135	-75	10	95	180	365	550	735

The investment includes the cost of a trainer who will receive labor remuneration and corresponding deductions of UST, the cost of date materials, equipment costs (tables and chairs), which will be purchased at the beginning of the project. The accumulated cash flow becomes positive in 7 months after the start of the project, so the project will be recouped in 7 months.

The total investment for personnel training of Sigma Software LLC will amount to 450 thousand U. UAH in 2023, while it is expected that additional revenues in the amount of UAH 2,370,000 will be received at the expense of personnel training, and the additional profit will be UAH 1,185,000, at the same time at the end of the year, the net cash flow from the event will be positive and amount to UAH 735,000. and the payback period of the project will be 7 months, so staff training is economically feasible.

As can be seen from the model, the direct impact of internal factors, in addition to the structure of personnel, on the competitiveness of the enterprise is 60%. The overall impact of staff structure on competitiveness is 23%.

The distribution of the impact of its characteristics on competitiveness will be as follows: with participation in economic activity - 1.6%, by age - 3.3%, by qualification - 7.6%, by the nature of the functions performed - 5.2%, by the nature of labor relations - 4.2%, in relation to property - 1.1%. To increase the efficiency of using the labor potential of Sigma Software LLC, it is necessary to improve personnel policy in the enterprise, provide for material and moral incentives for employees, use modern personnel management technologies.

Expected results from the training of the staff of Sigma Software LLC: an increase in the level of qualification; a reduction in staff turnover; an increase in the average check when ordered; an increase in the company's image and improved customer loyalty; an increase in revenue and net profit.

The total investment for staff training will amount to 450 thousand rubles. UAH in 2019, it is expected that due to staff training, additional revenues of 2,370 thousand rubles will be received. uah., and the additional profit will be 1185 thousand rubles. UAH, at the same time at the end of the year, the net cash flow from the event will be positive and will amount to 735 thousand rubles. uah., and the payback period of the project will be 7 months, so staff training is economically feasible.

The analysis allows us to assert that at present it is the organization of a modern and effective personnel management system and improving the efficiency of the personnel management system that is one of the most important factors in improving the efficiency and competitiveness of domestic business entities.

CONCLUSIONS

As a result of the diploma study of personnel management of an IT company in the XI century, the following conclusions can be drawn.

Personnel management is a set of principles, mechanisms, methods and forms of influence on the creation, development and use of company employees, implemented as a number of interdependent activities and activities. In the context of this, it turns out that personnel management is at the same time a system of organization, process and structure.

Personnel management in the structure of modern management is of particular importance, is one of the most important functional areas in the organization, which can provide multiple increases in the efficiency of its work. In modern management science and practice, there is a constant process of improving, updating and searching for new approaches, concepts, ideas in the field of personnel management as a key and strategic resource of organizations. An important feature of modern management is a comprehensive impact on all personnel as a whole. In this regard, a personnel management system is formed that integrates personnel management into the general management system, connects it with strategic installations and corporate culture, as well as with production planning, sales, quality improvement, etc.

Personnel development management of IT companies should be based on long-term goals that can be determined by developing and implementing a sustainable development strategy. In addition, the tasks facing the management of an IT company on the basis of personnel development should be achievable, measuring, logical and structured, which requires the implementation of scientific and applied research and the intensification of cooperation between research institutions.

Personnel management is carried out using various methods (methods) of influence on employees and technologies. There are three groups of methods of personnel management of the organization: administrative, economic and socio-

psychological. All developed technologies are divided into several groups (traditional, industry, professional and innovative) depending on the ultimate goal, scale of application or origin.

The main purpose of Sigma Software LLC is to make a profit by carrying out trade and intermediary activities, carrying out foreign economic activity and making a profit and realizing the interests of the Owner on its basis.

In the organizational structure of Sigma Software LLC, the advantages of linear and functional structures are combined, but vertical (command) connections of the "manager-subordinate" type remain dominant.

Analysis of the availability and use of personnel is customary to begin the study of the structure of personnel, which can be produced in many ways. The most important parameters are the structure of the numerical composition by experience, gender and professional characteristics.

Thus, we see that the turnover rate significantly exceeds the coefficient of sustainability of personnel, which is an extremely negative trend for the enterprise.

As a result of the study conducted at this point, we managed to find out that the company has a fairly low level of staff sustainability, which can adversely affect the effectiveness of personnel development measures.

The use of the methodology for assessing the quality of professional development of personnel proposed in the work through the filling of special cards and matrices made it possible to clearly diagnose the achieved level of quality of the processes under study at Sigma Software LLC.

The methodology is quite easy to use and can be quickly transformed into any features of the production and economic activity of the enterprise and market requirements – adjustment can be subject to both the number of indicators in each of the three assessment zones, the gradation of the ranges of estimates of each indicator, and the indicators themselves, the choice of which for each zone is quite significant.

The personnel management system of enterprises should be formed on the basis of modern principles that will allow such enterprises to achieve both common

goals within the selected markets and a high level of employee commitment. An effective personnel management system is work with personnel, in accordance with the concept of enterprise development.

In the context of this, a diagnostic of the personnel management system was carried out at Sigma Software LLC in order to make adjustments to the current management system.

Based on the analysis, measures for improving the personnel management system at Sigma Software LLC are proposed

Training, advanced training, retraining of employees and solutions as the main goal of the tasks for the formation of competitive personnel put forward to the personnel service new, very complex and urgent tasks for the development and implementation of the main directions of training.

Expected results from the training of the staff of Sigma Software LLC: an increase in the level of qualification; a reduction in staff turnover; an increase in the average check when ordered; an increase in the company's image and improved customer loyalty; an increase in revenue and net profit.

The analysis allows us to assert that at present it is the organization of a modern and effective personnel management system and improving the efficiency of the personnel management system that is one of the most important factors in improving the efficiency and competitiveness of domestic business entities.

To improve the personnel situation in the company, it is also advisable to make changes in the personnel department to the overall organizational structure and create a personnel management department; develop a "Regulations on the personnel management department"; develop a "Code of Corporate Culture and Organizational Behavior"; introduce is-7 software product - personnel management and personnel accounting system "ISF-Personnel".

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APPENDICES