

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE**  
**KYIV NATIONAL ECONOMIC UNIVERSITY named after Vadym Hetman**

Department of Systems Analysis and Cybersecurity

**Report on practical work 1 - 2**  
in the discipline "Systems Analysis"

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**KNEU 2025**

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## **Task 1.**

### **Model as an open system SoftServe :**

- input resources
  - human resources - IT specialists, managers, analysts;
  - knowledge, skills, innovation;
  - technological infrastructure (servers, software, cloud services);
  - financial investments;
  - customer data and project requirements.
- transformation process
  - software development (custom software, AI solutions, big data, cloud);
  - business process consulting and analytics;
  - testing, implementation, product support;
  - internal knowledge management and staff training (SoftServe University).
- exits
  - ready-made IT solutions for business;
  - consulting services;
  - increasing customer digital efficiency;
  - job creation, development of Ukraine's IT sector;
  - profit and company image.
- feedback mechanisms
  - customer feedback (customer satisfaction surveys);
  - market analytics;
  - project results, KPIs;
  - internal staff evaluations;
  - certifications, ratings (e.g., Deloitte Technology Fast 50, ISO).
- key environmental influences
  - global IT trends (AI, Cloud, Data Science);

- competition with other outsourcing companies (EPAM, GlobalLogic, Luxoft);
- economic situation (especially in Ukraine);
- requirements of customers from the USA, EU;
- legislation, cybersecurity, taxes;
- social and environmental trends (sustainability, diversity).

## Task 2.

**Analysis of the external and internal environment** of the organization using:

- PESTEL analysis . Present the conclusions in a table.

Factor	Examples of impact on the organization
Political (P)	<ul style="list-style-type: none"> <li>- The war in Ukraine affects the location of offices and projects.</li> <li>- Support for the IT sector by the Ukrainian government (preferential taxation, Diya.City).</li> <li>- Cooperation with international clients requires stable diplomatic relations.</li> </ul>
Economical (E)	<ul style="list-style-type: none"> <li>- Exchange rate fluctuations affect the profitability of contracts.</li> <li>- Demand for IT services from the US and EU is growing.</li> <li>- Reduced investment during periods of crisis may reduce the number of projects.</li> </ul>
Social (S)	<ul style="list-style-type: none"> <li>- Demand for remote work and flexible schedules is growing.</li> <li>- The younger generation of IT professionals demands training, development, and a transparent corporate culture.</li> <li>- The company's social responsibility enhances its reputation (STEM education, charitable initiatives).</li> </ul>
Technological (T)	<ul style="list-style-type: none"> <li>- Active implementation of artificial intelligence, big data, and cloud solutions.</li> <li>- The need for constant technology updates and employee training.</li> <li>- Competition through technological innovation stimulates investment in R&amp;D.</li> </ul>
Environmental (E)	<ul style="list-style-type: none"> <li>- The desire for a “green office” (reduction in resource consumption, electronic document management).</li> <li>- Customers expect compliance with the principles of sustainable development.</li> <li>- Environmental standards in partner countries affect project requirements.</li> </ul>
Legal (L)	<ul style="list-style-type: none"> <li>- Regulation of the IT industry through Diya.City, taxation of individual entrepreneurs.</li> <li>- Personal data protection (GDPR, ISO certification).</li> <li>- Compliance with copyright and licensing laws.</li> </ul>

Conclusion: SoftServe operates in a dynamic environment where technological and economic factors are key. For the company's success, it is important to adapt to

political conditions, invest in human resources development, and maintain leadership in innovation.

### Task 3.

**Classification of organizations** by systemic characteristics (goal, resources, structure, adaptability, environment). **Comparison** with tax .

Sign	SoftServe (private IT company)	Government agency (e.g. tax office)
<b>Goal</b>	Making a profit, developing innovative IT solutions, meeting customer needs, and developing staff.	Performing state functions, providing public services, monitoring and regulating in accordance with the law.
<b>Resource</b>	Financial (profit, investments), human (developers, managers), information (technology, knowledge), material (offices, servers).	Budget funds, state infrastructure, personnel, legal resources, access to state databases.
<b>Structure</b>	Flexible, networked, project-oriented (agile, scrum teams), decentralized management.	Hierarchical, rigidly formalized structure, centralized management, subordination to ministries.
<b>Adaptability</b>	High - quickly responds to market changes, technological trends, and customer requirements.	Low — changes are implemented slowly due to bureaucracy and legislative restrictions.
<b>Environment</b>	Competitive, dynamic, global (clients from the USA, EU, Asia).	Stable, regulated by legal norms, focused on domestic state policy.

Conclusion: SoftServe is an adaptive, innovative system that operates in an open competitive environment and flexibly uses its resources to achieve business goals. A government institution, on the other hand, is a more closed and stable system, the main goal of which is to ensure the performance of public functions, not profit.

### Task 4.

**Which general, partial and situational principles of organization** are most fully implemented in SoftServe , and which are violated. + examples of the consequences of compliance or violation of these principles.

Principle	Implementation in SoftServe	Examples of consequences
<b>Scientific and systematic</b>	Using analytics, metrics, KPIs, Agile methodologies, data-driven management.	High efficiency, high-quality planning, risk forecasting.
<b>Hierarchy</b>	Partially implemented - there	Flexibility in decision-

	are management levels, but the structure is decentralized.	making, but sometimes it is difficult to coordinate large projects.
<b>Unity of purpose</b>	All divisions work towards a common goal — customer success and the development of innovations.	Coordinated team actions, shared corporate culture.
<b>Planning</b>	OKRs, sprints, and strategic planning are used.	Clear understanding of goals, reduction of chaotic decisions.

<b>Principle</b>	<b>Implementation in SoftServe</b>	<b>Examples of consequences</b>
<b>The optimal combination of centralization and decentralization</b>	Managers have autonomy in decisions, but strategic directions are controlled by management.	Motivated employees, quick response to changes.
<b>Rationality of the management structure</b>	Flexible teams, minimal bureaucracy.	High speed of decision-making, effective communication.
<b>Staff motivation</b>	Strong corporate culture, development programs, bonuses.	Talent retention, low staff turnover.
<b>Control and responsibility</b>	Partly - in remote work conditions, it is difficult to ensure the same level of control.	There may be communication delays or uneven load.

<b>Principle</b>	<b>Implementation in SoftServe</b>	<b>Examples of consequences</b>
<b>Adaptability to environmental changes</b>	The company quickly responds to market changes and switches to new technologies.	Maintaining competitiveness, resilience in times of crisis.
<b>Management innovation</b>	Implementation of AI, data-driven solutions, corporate idea incubators.	The emergence of new services and markets, leadership among Ukrainian IT companies.
<b>Social responsibility</b>	Charitable and educational projects, support for veterans, environmental initiatives.	Positive reputation, public trust.
<b>Resilience in crisis situations</b>	Partly — the challenges of war and team relocations sometimes reduce efficiency.	Additional staff support and safety reserves are needed.

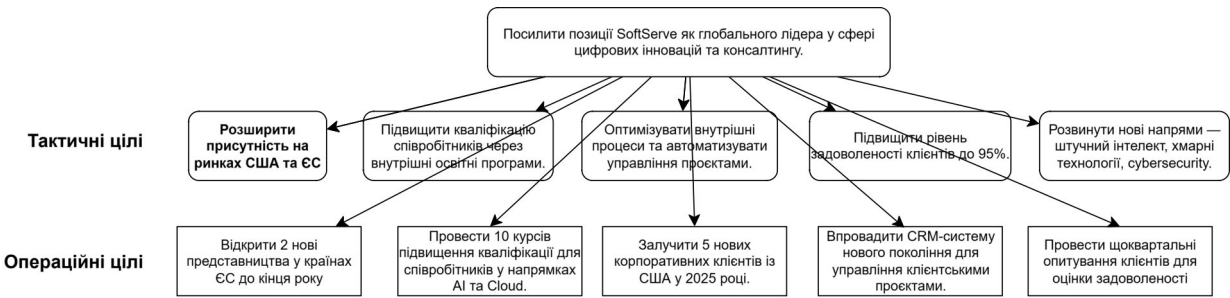
Conclusion: SoftServe most fully implements the principles of scientificity, motivation, adaptability, and innovation - they ensure the stable growth and flexibility of the company. Certain violations are observed in the principles of

control and stability, which is associated with the large scale of the company and the influence of external crisis factors.

Task 5.

Objective tree for the organization:

- strategic goal,
- tactical goals,



- operational goals. + **SMART criteria** .

Target	S	M	A	R	T	
Expand presence in the US and EU markets	+	+(number of new clients/offices)	+	+	+(by the end of 2025)	SMART
Conduct courses for employees	+	+(10 courses, number of participants)	+	+	+(during the year)	SMART
Increase customer satisfaction to 95%	+	+(survey, NPS rating)	+	+	+(for 12 months)	SMART
Automate project management	+	+/- (degree of system implementation)	+	+	+(until the end of the year)	+/- SMART
Develop the direction of AI	+/-	+/- (required KPIs)	+	+	+/- (need to clarify the term)	Not SMART

Task 6.

Formulate **two alternative strategies for the development** of the organization. Evaluate their advantages and disadvantages from the point of view of a systems approach (resources, risks, environmental compatibility).

The intensive strategy is to focus on the implementation of new technologies (AI,

Big Data, Cloud, Cybersecurity), increase investments in R&D, develop internal innovation laboratories and partnerships with universities.

#### Advantages and disadvantages

- + Increases technological competitiveness.
- + Creates new sources of profit through high value-added products.
- + Strengthens the brand as a leader in innovation.
- + Attracts the best talent (attractive company reputation).
- High costs for development and staff training.
- There may be low short-term payback.
- Risk of technological failures or rapid obsolescence of technologies. Active development (innovation and technological strategy)

Aspect	Rating
Resource	Requires large investments in personnel, equipment, and research.
Risks	High financial and technological risks, but potentially great benefits.
Environmental compliance	High — the IT market is actively developing, the demand for innovations is growing.

Extension strategy - focusing on expanding market presence - opening new offices, increasing the client base, entering new geographic markets (e.g., the Middle East, Asia, Northern Europe).

#### Advantages and disadvantages

- + Increases sales volume and market share.
- + Reduces dependence on specific customers or regions.
- + Allows you to scale existing products without large R&D costs.
- Requires significant organizational and human resources.
- There may be a problem of cultural adaptation in new markets.
- Risk of service quality degradation with rapid expansion.

Aspect	Rating
Resource	Needs more managers, HR, and finance to enter new markets.
Risks	Medium - depending on the stability of new regions and economic conditions.
Environmental compliance	High — global demand for outsourced IT services is



	growing.
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### Strategy comparison table

Criterion	Intensive (innovative)	Extensive (market)
Main focus	Innovation, R&D, new technologies	Market expansion, scaling
Resource Need	Very high (scientific and technical, human)	High (organizational, financial)
Risk level	High	Average
Environmental compliance	High, especially for developed markets	High, especially for globalization of services
Effect in the short term	Limited	Perceptible
Long-term effect	Very high	Stable but gradual

**Conclusion:** from the standpoint of a systems approach, both strategies complement each other: the innovation strategy ensures long-term sustainability and uniqueness of the system, market expansion - the scale and stability of resource flows. The ideal option for SoftServe would be a combination of these strategies, that is, innovative growth with parallel entry into new markets.

### Task 7.

#### Organization development scenario

My steps:

1. Determine the current state of the company
2. Identify influencing factors from PESTEL analysis
3. We identify trends that may change in the next 3–5 years.
4. Description of scenarios of how these changes could positively or negatively affect the organization.

Scenario	Characteristic	Environmental factors	Consequences for the company	Possible actions
<b>Op t.</b>	Active growth of the IT services market, stable economic situation, development of AI	- Technological development (AI, Big Data) - State support for the IT industry - Increasing demand for digital solutions in the world	- Increase profits - Enter new markets - Staff growth and training	- Invest in R&D - Expand partnerships - Launching new IT solutions
<b>Dog .</b>	Economic crisis, reduced investment	- Economic instability	- Reduction of orders	- Diversify the customer base

	in IT, staff turnover	<ul style="list-style-type: none"> <li>- Political tension</li> <li>- Increasing competition</li> <li>- Restrictions on access to international markets</li> </ul>	<ul style="list-style-type: none"> <li>- Staff optimization</li> <li>- Delay in innovation projects</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce costs</li> <li>- Increase the efficiency of internal processes</li> </ul>
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If we expand the PESTEL analysis again, the results will be as follows:

Factor	Optimistic influence	Pessimistic influence
<b>Economic</b>	Stable development of the IT market	Crisis, funding cuts
<b>Technological</b>	Development of AI, cloud, automation	Delay in the introduction of new technologies
<b>Social</b>	Demand for remote work and IT services	Attrition, employee burnout
<b>Political</b>	Support for the IT industry, partnership with the EU	Geopolitical instability, sanctions
<b>Legal</b>	Promoting the digital economy	Strengthening regulations and taxes

## Task 8.

### And risk analysis

Risk	Yes .	Consequences	Ways to minimize
Loss of key customers	Medium	Decrease in income, loss of reputation	Diversification of the customer base, constant communication, loyalty programs
Cyberattacks or data leaks	High	Data loss, legal fines, reputational damage	Strengthening cyber defense, regular security audits, staff training
Economic instability in Ukraine	Medium	Currency fluctuations, decreased profits	Financial diversification, contracts in the client's currency
Staff turnover	High	Decreased productivity, project delays	Salary increases, training, corporate culture, flexible working conditions
Technological obsolescence of products	Medium	Loss of competitiveness	Investments in R&D, technology updates, courses for developers
Violation of project deadlines	Medium	Financial penalties, customer dissatisfaction	Agile implementation, management automation, KPI control
Negative publicity	Low	Loss of trust, rejection of partners	Transparent communication, PR strategy, feedback monitoring