

ლერი ნოზაძე-ასოცირებული პროფესორი,
სსიპ სამცხე-ჯავახეთის სახელმწიფო
უნივერსიტეტი, ინჟინერიის, აგრარულ და
საბუნებისმეტყველო მეცნიერებათა
ფაკულტეტი
ელ-ფოსტა: nozadzeleri@sjuni.edu.ge

**IT აუტსორსინგის ბაზრის ეკონომიკური განვითარება საქართველოს სამცხე-
ჯავახეთის რეგიონის ბიზნესის დაწესებულებებში/ორგანიზაციებში
აბსტრაქტი**

ინფორმაციულ ეკონომიკაზე გადასვლისთანავე დიდი ყურადღება მიიქცია IT აუტსორსინგის გამოყენების საკითხმა, რადგან ის მოიცავს ინფორმაციის დამუშავების სისტემების დანერგვის, საწარმოს ინფორმაციული ტექნოლოგიისა და მენეჯმენტის სფეროებს. თანამედროვე ბაზრის პირობებში ინოვაციური ინფორმაციული ტექნოლოგიების გამოყენება მათ საშუალებას აძლევს მეტი მატერიალური სარგებელი მიიღონ და კონკურენტუნარიანები გახდნენ.

სამცხე-ჯავახეთის რეგიონისთვის აუტსორსინგი წარმოადგენს მენეჯერულ სიახლეს, რომელიც საწარმოებს დაეხმარება IT ხარჯების ზრდის პრობლემის მოგვარებასა და ინოვაციური ტიპის ეკონომიკური ურთიერთობების ჩამოყალიბებაში. IT აუტსორსინგის მომსახურებებში სპეციალიზირებულ კომპანიას, სისტემების ფუნქციონირების მაღალი საიმედოობა და ეფექტურობა შეუძლია უზრუნველყოს მაღალტექნოლოგიური რესურსების, გამოცდილებისა და წარმოების მასშტაბური ორგანიზაციულობის გამო. საკუთარ IT სისტემებზე დაწვრილებითი კონტროლი და ის, რასაც აუტსორსერი აკეთებს, მიიღწევა ურთიერთქმედების მკაფიო რეგულირების გზით.

IT აუტსორსინგის საშუალებით კომპანიას შეუძლია:

- სწრაფად შეძლოს IT სისტემების გამართული ფუნქციონირება;
- მომსახურების საჭირო ხარისხის მიღწევა;
- პრობლემების გადაჭრაში მაღალკვალიფიციური სპეციალისტების დაუყოვნებლივ ჩართვა;

- კრიტიკული მონაცემების დაკარგვის რისკის მნიშვნელოვნად შემცირება;
- ხარჯების ოპტიმიზირება და პროგნოზირებადობა ;
- კომპანიის რესურსების ძირითად ბიზნესზე კონცენტრირება.

IT ამოცანების გადაწყვეტის აუტსორსინგზე გადაცემა კომპანიას ათავისუფლებს პროგრამული უზრუნველყოფის შემუშავებისა და დანერგვის ხარჯების და არამატერიალური აქტივების საკმაოდ რთული აღრიცხვის გამომანგარიშებისაგან. პროგრამების შემუშავების, პერსონალიზაციის და ინტერნეტ პორტალების აუტსორსინგის გზით მხარდაჭერით, კომპანიები ერთდროულად იშორებენ ამ სფეროში ბუღალტრული აღრიცხვის სირთულეებს. შედეგად, კომპანიის დოკუმენტებში ჩნდება მხოლოდ თანხა, რომელიც აუტსორსინგ პარტნიორის მომსახურების გადახდის შესაბამისია. პროგრამულ უზრუნველყოფასთან დაკავშირებული ბუღალტრული და საგადასახადო აღრიცხვის ყველა საკითხი პარტნიორის მიერ დამოუკიდებლად წყდება.

ინფორმაციული სისტემის მთლიანად გარე კომპანიაზე გადაცემით საშუალება გვეძლევა თავი დავაღწიოთ პროგრამული და ტექნიკური უზრუნველყოფების, შესაბამისი განახლებების, შეკეთებისა და ტექნიკური მომსახურების ხარჯებს. ამასთან, საუბარია არა მხოლოდ ინფორმაციის ინფრასტრუქტურის შექმნის, მოწყობის, შენარჩუნებისა და შენარჩუნების სამუშაოთა აუტსორსინგზე, არამედ ასევე კორპორატიული საინფორმაციო სისტემის შესაქმნელად და მხარდასაჭერად მთელი ღონისძიებების მესამე მხარისათვის გადაცემაზე, რითაც კომპანიებს აღარ დაჭირდებათ საკუთრებაში შეიძინონ აპარატურული უზრუნველყოფა, რადგან ყველაფერი პარტნიორ აუტსორსერს წარედგინება/დაექვემდებარება. ასეთ კომპლექსურ აუტსორსინგს პარტნიორის მხრებზე გადააქვს ინფრასტრუქტურის მუშა მდგომარეობაში შენარჩუნებაზე ზრუნვა. ასევე, პერიოდულად ტექნიკური და პროგრამული უზრუნველყოფის, ორგანიზაციული ტექნიკისა და სამეურნეო მასალების განახლება.

აუტსორსინგის პარტნიორის თანამშრომლები, რომლებიც კომპანიაში მუშაობენ ხელშეკრულების შესაბამისად, ექვემდებარებიან უშუალო უფროსებს და

არა იმ კომპანიის მენეჯმენტს, რომელსაც აუტოსორსინგულ მომსახურებას უწევს. ამან შეიძლება სირთულეები შექმნას, როდესაც აუცილებელია ოპერატიული მოქმედებების განხორციელება, მაგალითად, ინფორმაციული სისტემის მუშაობის აღდგენა მწყობრიდან გამოსვლის შემდეგ. ამ შემთხვევაში, მომხმარებელ კომპანიას აქვს ინფორმაცია ინფორმაციული სისტემის ფუნქციების აღდგენის ოპტიმალური თანმიმდევრობის შესახებ, ხოლო აუტოსორსინგის კომპანიის თანამშრომლები მოქმედებენ მხოლოდ საკუთარი კომპანიის მენეჯმენტის მითითებით.

კომპანიის ბიზნეს პროცესებში მესამე პირების დაშვება მნიშვნელოვან ინფორმაციული უსაფრთხოების რისკებს ქმნის. ეს რისკები ასოცირდება როგორც ინფორმაციის დაკარგვის შესაძლებლობასთან, ასევე მისი გამჟღავნების შესაძლებლობასთან აუტოსორსინგის განმხორციელებელი ორგანიზაციის თანამშრომლების მხრიდან. ეს ძალიან მნიშვნელოვანი ფაქტორია, ვინაიდან სპეციალური ხელშეკრულების ხელმოწერაც კი, პარტნიორის პასუხისმგებლობის შესახებ კომპანიის ინფორმაციის მთლიანობის ან კონფიდენციალურობის დარღვევის შესახებ, - არ წარმოადგენს გარანტიას, რომ ეს არ მოხდება.

Ieri Nozadze-Associate Professor,
LEPL Samtskhe-Javakheti State University
The Faculty of Engineering, Agrarian and
Natural Sciences
E-mail: nozadzeleri@sjuni.edu.ge

**Economic Development of IT Outsourcing Market in Business Institutions / Organizations
of Samtskhe-Javakheti Region of Georgia**

Keywords: IT outsourcing, innovative information technologies, IT systems control and protection, company management.

The use of IT outsourcing in business organizations of Samtskhe-Javakheti Municipality started with the support of IT infrastructure and then spread to its tasks and

business processes. Today, IT outsourcing is an established type of customer service that is evolving alongside the information and communication technology market.

With the shift to the information economy, the spread of IT outsourcing, which includes the introduction of information processing systems, information technology and enterprise management, has become explosive. The use of innovative information technologies in the modern market environment allows enterprises to obtain material benefits and increase their competitiveness.

At the same time, their use leads to an increase in the complexity and scale of IT projects, changes in the IT infrastructure of enterprises, increased saturation of the enterprise with information and communication technology equipment and software, an increase in the share of IT costs in the total costs of the enterprise.

In the region, the main groups of IT outsourcing services are:

- Technical support and management of IT - infrastructure: support for computer equipment, basic corporate services, communications systems, information and technical security systems, business applications.
- Creation and development of information systems: development of applications and their integration with other systems, development of existing information systems.
- Training and development of staff in the organization - client in the field of IT: creation and implementation of training programs, evaluation of the effectiveness of training.
- Provision of IT personnel of various skill levels to perform assigned tasks: developers, programmers, system administrators, database administrators, project managers, analysts, etc.

Constant changes in business and the complexity of IT infrastructure make it difficult for many companies to control and maintain growing IT systems.

A company specializing in IT outsourcing services can ensure the high reliability and efficiency of systems operation due to high technology resources, experience and production scale of its organization. Detailed control over your own IT systems and what the outsourcer does is achieved through clear regulation of interactions.

Through IT outsourcing the company can:

Quickly establish the proper functioning of IT systems

Achieving the required quality of service

Involve highly qualified specialists in problem solving immediately

Significantly reduce the risk of losing critical data

Optimize and predict costs;

Concentrate company resources on core business

Among the goals of IT outsourcing are the following:

Reduced total cost of ownership (TCO) and “hidden costs” are associated with standardization, larger scale and better management. Among other things, capital is freed up for reinvestment in the main business;

Standardized infrastructure and increased transparency of fixed assets combined with effective budget management. service-level agreement (SLA) transparency is enhanced and combined with effective workload management;

A decrease in the number of service providers entails a decrease in the complexity of the infrastructure, which leads to a simplification of the support process and to a decrease in operational risks;

Increasing quality: integrated solutions reduce the number of uncoordinated suppliers, increasing the quality of services provided and the level of user satisfaction;

Increased scalability: Providing flexibility and scalability requires an increased level of support for the core business.

Outsourcing the solution of IT tasks relieves the company from the need to calculate the costs of developing and implementing software solutions and maintaining a rather complicated accounting of intangible assets. Today, many experts admit that accounting for software purchased by a company, calculating the corresponding tax amounts, depreciation deductions, etc. is a non-trivial task, since modern legislation does not sufficiently cover intellectual property objects, and there is no methodology for accounting for such complex objects as, for example, an Internet portal.(Ilyin V.V. 2006). By outsourcing software development and personalization and supporting Internet portals, companies are simultaneously avoiding the hassle of accounting in this area. As a

result, only the amount corresponding to the payment for the services of the outsourced partner will appear in the company documents. All software and tax accounting issues are handled independently by the partner.

The transfer of the information system as a whole to an external company allows the company to get rid of the costs of software and hardware, for appropriate updates, repairs and maintenance. Recently, we are beginning to talk not only about outsourcing work on setting up and configuring, maintaining and maintaining information infrastructure, but also about transferring to third parties the entire range of measures to create and support a corporate information system.

In the latter case, companies do not even try to acquire hardware in their ownership, as everything will be submitted / subject to a partner outsourcer. Such complex outsourcing shifts the care of the partner to the maintenance of the infrastructure. Also, periodically update hardware and software, organizational equipment and household consumables.

Employees of an outsourcing partner who work in a company in accordance with a contract report to their immediate superiors, and not to the management of the company that ordered the outsourcing services. This can create difficulties when it is necessary to carry out any operational actions, for example, to restore the operation of the information system after a failure.

In this case, the customer company has information about the optimal sequence for restoring the functions of the information system, and employees of the outsourcing company act only on the instructions of their own management.

The admission of third parties to the company's business processes creates significant information security risks. These risks are associated with both the possibility of loss of information and the possibility of its disclosure through the fault of the outsourcing service provider's employees. This is a very important factor, since even the signing of a special agreement on the liability of an outsourcing partner for violation of the integrity or confidentiality of company information is not a guarantee that this will not happen.

As a rule, subsequent legal proceedings, and even their successful completion, cannot compensate for the company's losses. Therefore, today domestic firms are extremely wary of the possibility of processing their internal information by third parties.

If we summarize the effectiveness of IT outsourcing, we can highlight both the Positive and Negative of IT support both independently and through IT support outsourcing.

table №1

Self-service IT		IT outsourcing		
Positive	Negative	Positive	Negative	Negative
1. formal control over personnel and processes in IT;	2. Absence of necessities to interact with a supporter.	1. lack of real control over personnel; 2. the complexity of introducing innovations; 3. high cost of ownership and support; 4 non-transparency of IT costs; 5. the need to find and manage IT professionals.	1. financial responsibility for the quality of service; 2. fast access to technology and ease of innovation; 3. the ability to reduce the cost of ownership and support; 4. complete transparency of costs; 5. there is no problem of finding IT personnel; 6. fixed level of service.	1. fear of losing operational control over systems; 2. fear of leakage of commercial information; 3. dependence on the provider.

Small enterprises are developing, and when things go awry with time, it is necessary to expand the spectrum of used IT, which often leads to an increase in the

number of services and communications. Failure to properly develop and service IT infrastructure requires adequate access to a sufficient amount of time and takes a lot of time.

On a daily basis, the basic needs for IT outsourcing service is a major business. But the economic effect of their use is minimal or absent, while everything that works for the floor is prestige. With the financial support, the distribution of merchandise under the support of IT infrastructure company will cover the entire A small and midsize business(SMB) sector.

Companies are increasingly finding that hiring a full-time IT professional is more expensive and more problematic than buying these services from an IT firm.(Molotkova N.V. 2008).

IT outsourcing is gradually gaining and will become more widespread in our region as the understanding of the economic benefits from its use comes.

As a result of the Internet, a new situation has emerged in the markets, since not only network goods have appeared, but also network organizations, network markets. The following features are characteristic of networked markets: virtualization, network organization of equal participants, cooperation based on information systems. At the same time, today it is necessary to move on to studying their impact on business models, especially IT outsourcing. (Karacharovsky V.2010).

IT outsourcing inevitably emerges as a flexible form of networking. If network access to economic objects and agents is provided, then the problem of establishing and maintaining the necessary connections between them in the network economy turns into the problem of organizing an effective process of continuous contacts and information exchange, which gives great potential for the development of IT outsourcing.(Karacharovsky V. 2010).

The current place of IT outsourcing, in the structure of economic systems, is sufficiently uncertain and determines it quite complexly. To view IT outsourcing as a system of economic relations, it is convenient, as we are told, to use a cluster form of economic organizations. (Karacharovsky V. 2010).

We give the following definition of a cluster: A cluster is a concentration of the most efficient and interconnected types of economic activity, that is, a combination of successful groups of competing firms that form the "golden section" of the state's entire economic system and secure competitive positions in sectoral, national and global markets. Figure 1 clearly shows the possible composition of the cluster.(Karabutov N.N. 2002)

In addition, when considering IT outsourcing as a system of economic relations, it is logical to separate objects and subjects (economic agents).

Subjects' about IT outsourcing include:

- on the one hand - outsourcers offering their services
- on the other hand, all the economies have grown (not including, have grown, requiring secrecy at the state level, for example, the military industry, etc.)

The object of the market is - IT infrastructure. Summing up, we can say that the IT outsourcing market has its own specific feature. The peculiarity lies in the fact that potential consumers of this market, unlike the others, are all clusters of the economy: engineering firms, manufacturers, suppliers, credit organizations, professional associations, authorities and public organizations, etc.(Karacharovsky V. 2010)

Types of IT Outsourcing in the Modern Economy; Qualitative characteristics of IT outsourcing

Before discussing the types of IT outsourcing, note that there is a complete and partial outsourcing of IT. Complete IT outsourcing is a combination of services to solve problems related to the construction, development or maintenance of an enterprise information infrastructure. As a rule, the client company does not have its own IT specialists, all IT functions are performed by contractors on a contract basis, with reference to service facilities and classification of service levels.

Specifics of information technology consist in the fact that their input and exploitation are related to income, but risky business. The government cannot put the task of investing its own investments in the information sector, its role - as shown by the peace practice, - to create the necessary conditions for development in these areas of partial

investments, including the number of them.

To stimulate the quantitative and qualitative growth of the IT sector is presented as essential:

- to reduce payments on insurance premiums (with the addition of the fact that a sharp non-increase in social taxes has been postponed during the day);
- reduce the Value Added Tax (VAT) size of the Export IT service and sell it on the internal network - navigate to zero items;
- Introduce the "order channel" mode for different IT companies;
- The simplification of the accounting system of accountability and accountability, the diligence of which in significant degrees prevails over the study of learning in other parties.

This measure - necessary support for an innovative innovation-oriented business with storied gossip, which should be of interest in the development of the parent company.

It is necessary to develop the practice of outsourcing - from the creation of an IT infrastructure to a service model. The effectiveness of the work of organizations and government agencies today is largely determined by the degree of use of outsourcing practices, including in the field of IT.

- Another important measure of institutional development of the domestic IT industry is the adoption of an action program to protect intellectual property and combat illegal use of IT products ("piracy"). Legal regulation is the main lever of influence on all areas of information development. Only the active participation of the state can increase the investment and social attractiveness of IT industry, thereby improving the business climate in this area.

Socio-economic efficiency of the proposed activities

To conduct a comparative analysis, consider four options:

As Was - As it was (Economic parameters before the conclusion of the outsourcing contract);

As Is - How it became after the introduction of outsourcing

As Would Be - As would: Assess the use case of one permanent employee;

As Will Be - As will be: planned parameters that we plan to achieve within the next 6 months;

Table # 2 provides an estimate of time losses, characterized by such indicators as the average response time to information about a failure, which decreased from 40 hours to 4, that is, 10 times; average daily downtime of computer equipment: decreased from 240 to 3 computer-minutes, and is predicted to become equal to 1 computer-minute.

The indicator of the total average daily loss of users' time due to the inefficiency or inoperability of the information system has decreased by 8 times compared to the situation before the conclusion of the outsourcing contract and by 4 times compared to the market value of these services and, according to forecasts, in six months will decrease by another 3 times ...

table #2

Time Costs for Different Models of IT Support	As Was	As Is	As Would Be	As Will Be
Parameter	(As it was)	(As it became)	(Hired specialist or cost in the service market)	(As it will be)
Average response time to information about a failure, hours	40	4	2	6
Average daily downtime of computer equipment, computer * min	240	3	12	2
The total average daily loss of time of users due to inefficiency and / or inoperability inf. systems, persons * min	270	45	90	20

It is necessary to develop and legally consolidate the mechanisms of effective partnership cooperation between state enterprises and organizations with commercial

structures operating in the domestic and world markets of IT outsourcing in order to develop and stimulate domestic production of socially significant information products. It is required to ensure legal regulation in the field of formation, storage and use of national information resources and to improve the norms governing liability for offenses in the production, storage, use and dissemination of information.

Intellectual property protection institutions in the field of production and consumption of information are subject to further improvement, primarily manufacturers, distributors and users of information products and services.

It follows that for the successful application of IT outsourcing, it is necessary to take into account not only the difficulties of its use, which are common in world practice, but also the regional specifics of this institution, which has just begun to take shape: the imperfection of the legal framework, the weak culture of contractual relations, the mistrust of entrepreneurs in this service sector.

Assessment of the quality and economic efficiency of IT outsourcing

The process of evaluating the quality of IT outsourcing services begins with the definition of the necessary quality indicators that allow the quality of service to be assessed. Service quality indicators should meet the needs of customers, as well as characterize the features of the service at the stages of its life cycle, which determine the ability to meet certain needs of customers.

During the life cycle, the results of the services can be selected by their own indicators of quality. Existing data and the highest priority in selecting quality indicators in the largest case are the designation, functions and functional suitability of services.

The fundamental and technical capabilities and accuracy of measuring the values of quality indicators are always limited by their content. This determines the rational ranges of values that can be selected and fixed as optimal in the specifications of the requirements of real technical tasks.

The preparation of primary data, which highlights a range of key, priority quality indicators that describe the functional relevance of the service to each group of customers, is accompanied by the customer rating itself according to the priorities

required by certain service quality indicators. Taking into account their specialization and professional interests.

The following method for measuring the quality of IT outsourcing services will help to calculate the resulting indicator by combining the values of both quantitative and nominal and qualitative characteristics of quality indicators: (Polyansky Yu.A.2010).

- Determination of factors influencing the assessment of the quality of IT outsourcing services.
- Definition of criteria for each factor.
- Determination of the required (reference) values of quality indicators (nominal, qualitative, quantitative).
- Assessment of IT outsourcing services for each criterion.
- Comparison of the obtained values with the reference ones, ranking according to the level of satisfaction of requirements and awarding points for each assessment according to a pre-developed scale.
- Determination of non-functional (constructive) quality indicators of values (vector) of their priority (P) for each group of stakeholders (actors). For the functional characteristics of quality, the value of $P = 1$.

Since outsourcing is one of the fastest growing industries, there are currently no clear methods for determining efficiency. For many company executives, the return on investment in information technology is not the main criterion for deciding to implement projects. The effectiveness of systems is often assessed in terms of increased labor productivity.

However, in international practice, there are several different methodological approaches to assessing the effectiveness of the operation of information systems. Investments in information technology outsourcing give a return in the form of an increase in the company's market capitalization due to its greater controllability, transparency, new competencies, industrial culture, attractiveness for customers and employees, and reduction of business risks.

CONCLUSION:

Today it is difficult to find a company that does not use information technology in its daily work. Maintenance and configuration of equipment, consulting users, installation and maintenance of accounting and personnel programs, office software - this is the standard list of work that IT specialists perform in almost every company, regardless of its size, type of activity and number of employees. Small businesses are developing, and in order to keep pace with the times, it is necessary to expand the range of used IT, which often leads to an increase in the volume of their service and support. Providing the proper level of development and maintenance of IT infrastructure is expensive and time-consuming for small businesses.

Therefore, many are looking for cost-effective ways to solve this problem. One of them is the transfer of technical support to a third-party organization for which these services are the main activity, that is, to outsourcing. Based on this, we can conclude that the IT outsourcing market has its own specific feature. The peculiarity lies in the fact that potential consumers of this market, unlike others, are all sectors of the economy: engineering firms, manufacturers, suppliers, credit organizations, professional associations, government bodies and public organizations, etc. (Karacharovsky V. 2010). Currently the main consumer of IT outsourcing services is large business. But the economic effect from their use is minimal or absent, most often this is done to raise prestige. From the financial side, the transfer of measures to support the IT infrastructure to third-party companies is most beneficial to the SMB sector. (Molotkova N.V. 2008).

How popular is this solution among small business companies today? In Samtskhe-Javakheti Region IT outsourcing for small companies is still less popular than in other Regions, mainly due to financial considerations, companies increasingly come to the conclusion that hiring a full-time IT specialist is more expensive and more problematic than buying these services from IT firms. (Molotkova N.V. 2008)

Having studied the history of the formation of the world market for outsourcing of

IT services, in conclusion, we can say that, undoubtedly, in some countries this market began to develop much earlier than in Georgia, but at one time it was also formed slowly and uncertainly. World practice shows that a significant part of the IT outsourcing market is software development.

Based on the experience of economically developed countries, the main directions of development of IT outsourcing are identified, the state and prospects for the development of the IT outsourcing market in the region are determined.

REFERENCES:

Concept for the development of the information technology market in the Russian Federation until 2010

Elizbarashvili Z., A. Kvantaliani A., Nozadze L. Mathematical Modeling of Manufacturing Situations and Excel “Universal”, Tbilisi, (in Georgian). 2002

Gottschalk P. IT outsourcing: building mutually beneficial cooperation. - M.: Alpina Business Books, 2007

Gnidenko I.G., Sokolovskaya S.A. Information technology in business. - M.: Vzlet, 2005

Ilyin V.V. Business process modeling. Practical developer experience. - M.: LLC "I.D. Williams ", 2006

Ilyin, V.V. Project quality management. Practical experience. - M.: Vershina, 2006

Karabutov N.N. Information technology in economics: Analysis of information in economics. - First ed. - M.: Economics, 2002

Karacharovsky V. Market of IT services in Russia / IT service providers increase exports and struggle with imports, 2010

National Statistics Office of Georgia; Environment Statistics, 2018

Nozadze L., Petashvili F. Informatics and Computer Programming “Universal”, Tbilisi, (in Georgian).2009

Molotkova N.V. Quality of IT outsourcing: organizational and technological solutions. - Tambov: Publishing house of TSTU, 2008

Popkova E.G., Boyarsky D.M. International information business. - Volgograd: Volg State

Technical University, 2002

Polyansky Yu.A. Criteria for evaluating the effectiveness of certain types of outsourcing functions, prospects for the development of the outsourcing market; 2010

Reference materials of the State Department of Statistics of Georgia, 2019