

E-COMMERCE

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Edited by
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Preface

The idea and the possibility of creating this book emerged as a result of the cooperation of professors, lecturers and scientists from Russia, Germany, Lithuania, the Netherlands, Israel, Ukraine in the project TEMPUS — ECOMMIS ("double-level training programs of e-commerce for developing information society in Russia, Ukraine and Israel").

Today, the development of education is perceived as an essential prerequisite for economic and social well-being of our society.

In turn, civil society expects the universities to perform their active role, designed to help meet the challenges of the XXI century.

The development of the universities' ability to quickly respond to new demands of the labor market and to adapt, update, develop and introduce new areas of study to ensure demand for the graduates provides the participation in the international projects of the European program improving higher education «TEMPUS».

The project TEMPUS — ECOMMIS («double-level training programs of e-commerce developing the information society in Russia, Ukraine and Israel») was launched in October 2011, and belongs to a class of joint projects to develop new courses and courses for bachelor's and master's degrees. The project consortium involves 12 universities from Germany, the Netherlands, Lithuania, Israel, Russia and Ukraine. The main objective of the project is to develop and implement new academic courses and areas of study, taking into account the current status and trends of economic development and the specific requirements of the labor market on the basis of cooperation between universities in different countries.

The main feature and complexity of the project academic content of is that e-commerce as an academic concept is absolute new and it appeared just only in the last decade. It is a new interdisciplinary field of knowledge, which is located at the intersection of economics and computer science and it is not covered by the classical training courses in economics and computer science technology. The aspects of national and international law in connection with the growth of international trade, economic cooperation and the development of new Internet based technologies should be taken into account.

For the project's period of three years on the basis of international cooperation the following results were obtained:

1) The analysis and modernization of existing curricula in the field of e-commerce were carried out;

2) new training modules with the introduction of the European credit modular system of accumulation and transfer transcripts units (ECTS) were developed; new modules and courses: e-commerce, electronic payment systems; Internet trading in the financial markets and the stockmarket systems; Information systems for financial analysis and investment; Information systems for business process modeling; corporate information systems and portals; Customer-oriented systems; Internet Marketing; electronic systems for document management; legal aspects of e-commerce; advanced course security for e-commerce were introduced;

3) two international online games to enhance practical skills in the field with online marketing and online trading were developed and conducted among university students;

4) skills training courses e-commerce for various social groups (students, housewives, pensioners, unemployed) were developed and tested;

5) business offices, e-commerce were established to strengthen cooperation between the universities in the labor market and to create the conditions of commercialization of the project results after the end of financial support from the TEMPUS Program.

6) textbooks on the topic of the project were developed and published.

In May — July 2013. 62 teachers targeted universities in Israel, Russia and Ukraine received intensive training in the field of e-commerce in three European universities: FONTYS (NL), TU Berlin (DE), VGTU (LT).

From October 2013 in target universities of Israel, Russia and Ukraine students' training began on the courses developed in the framework of the new training courses and modules with using computer classes, equipped in accordance with the project plan with new hardware and software tools.

The final stage of the project was intended to develop a five-year detailed plan for sustainable development of the results. Such plan that includes coordinated action to disseminate best practices, development of new joint courses for graduate and post-graduate students, scientific methodical conferences, joint publications will support the further dynamics of the activities involved universities.

Joint work on the implementation of the project ECOMMIS led to the emergence of sustainable professional relationships between organizations in the consortium as the training of new qualified professionals, as well as in the field of scientific and methodological developments.

This is confirmed by the present collective monograph «E-commerce», which is recommended as a textbook for graduate and postgraduate students.

Introduction

For many decades e-commerce has defined the innovative development process for the society, the economy and public administration. Ecommerce can be considered as a special category of business communications based on the information technology (IT), which penetrated into practically all economic activities of management. Modern ways of doing e-commerce are constantly updated with new IT capabilities. For example, there are the technologies of network and social interaction, which can significantly extend the scope reach of e-commerce to afford new opportunities.

Modern society is in the stage of technological paradigm shifts. In e-commerce interstate borders are virtually removed, and successful result obtained in one particular country can and should be transmitted to other countries. But have the paradigm of business changed itself? That is the question.

This book is prepared by the international team of the authors.

The purposes of the research are the following:

the development of the theoretical foundations of e-commerce and management of virtual enterprises, being able to dynamically transform their control purposes and also to adapt, as well as their adaptation to these transformations; analysis and generalization of the experience in using the Internet for the purposes of establishing and developing e-commerce systems and identifying shortcomings in e-commerce technologies to improve the effectiveness of traditional and virtual enterprises doing business via the Internet.

Within the framework of these purposes the following issues were formulated:

- knowledge management features and tendencies in E-business;
- the concept and the brief history of e-commerce;
- increase in e-commerce;
- research of national and global trends in establishing and developing e-commerce;
- features of e-content management in virtual enterprises;
- capabilities of electronic payment systems;
- research and improvement of the process of the content management in virtual organizations;

- improvements of theoretical foundations and methodology of Internet marketing;
- analysis and identification of marketing communications features in modern digital society.

Availability of these sub-goals is stipulated due to the different fields of scientific research of the authors from the universities of five countries.

This research is based on the methodology of studying e-commerce enterprises (and virtual organizations), as well as statistical data and analytical reviews of research centres.

In the process of preparing this collective monograph theoretical principles of scientific surveys on information society, management and business processes examination were studied and applied.

Theoretical significance. The theoretical concept of the research is the application of two levels of presentation: the global and the national, and precisely, the global trends and the processes of developing e-commerce, e-government systems, national interests and priorities, offline and virtual enterprises.

The study identified the tendencies and dynamics of their changes and development of the traditional subject technology in a virtual environment. For example, learning content allowed to optimize the process of categorization and searching content, as well as to reveal the peculiarities of its life cycle. The conclusions about the advantages and disadvantages of e-commerce are drawn.

Theoretical and methodological foundation for building an integrated system of Internet marketing is developed.

This work is a completed original scientific research. Its research result consists in creating a new unified view in electronic commerce, electronic business, virtual management and virtual enterprise of scientists from different countries.

The main statements of this research were reported on the international conferences, scientific seminars and meetings in Germany, Ukraine, Russia and Lithuania.

Thus, the collective monograph contains the concept of e-commerce systems. Theoretical and applied results allow drawing the conclusion that an important contribution to the development of one of the areas of modern applied science is made.

This collective monograph considers the methods of solving scientific problems, identifying technologies selected for investing funds, to improve the performance of economic sectors and enterprises, chosen as the objects of management by the regions.

This research results can be used in further scientific developing problems of e-commerce and writing of scientific papers devoted to this area. The technique of content management in virtual organizations is designed.

Introduction

Technological solutions for e-commerce and methods of improving its efficiency in these enterprises are developed.

Scientific analysis and presented tools play an important role in the study and the development of electronic Commerce in the future. They involve the ability of flexible respond to the environment dynamics and e-commerce conditions changes a particular company.

The practical significance. It is determined directly by the implementation of the urgent tasks on developing the strategy, further integration of the countries — project members in the global community, and by the necessity of efficient using available potential. The practical significance lies in the fact that the results of the conducted research can be used by e-commerce (B2C) enterprises, virtual enterprises, vendors — developers of distributed information systems in managing virtual enterprises. assessment

The results of the study are valuable for the assessment of the knowledge management processes (starting with the knowledge identification and ending with the knowledge evaluation) and the formation of a unique strategic solutions to improve these processes, which are based on the multifaceted results of the evaluating knowledge of management processes factors.

Scientific publication «E-Commerce» consists of 8 chapters, prepared by the international team of authors:

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KNOWLEDGE MANAGEMENT PECULIARITIES IN E-BUSINESS: ACTUALITY AND TENDENCIES

Jurgita Raudelienė Abstract

In the context of transformations, knowledge management appears to be an effective tool for increasing the efficiency of the activity of e-business organisations. Knowledge management is an expedient and systematic management of knowledge processes, techniques and means in order to comprehensively exploit the potential of knowledge for goal achievement, problem solving and effective decision-making.

This part of «*Knowledge management peculiarities in e-business: actuality and tendencies*» presents the main aspects and key components of knowledge management in e-business, importance of employee competency integrated assessment in e-business, analysis of factors motivating human resources in e-business, evaluation system of factors affecting creativity and knowledge appliance process in e-business for problem solving and goals achievement. Knowledge management is analysed by applying a systematic approach and is implemented through a procedural model of knowledge management forming the cycle of the processes (starting from the setting of knowledge objectives and ending with the evaluation of knowledge) and structuring the chain of knowledge value creation. In this research will be analysed knowledge identification and measurement (employee competency integrated assessment in e-business; analysis of factors motivating human resources in e-business), knowledge development (evaluation system for factors affecting creativity in e-business) and knowledge appliance processes in e-business organisations.

Key words

knowledge management, e-business, competency, assessment, motivation, factors affecting motivation, creativity, factors affecting creativity, knowledge appliance, efficiency.

Introduction

The knowledge need and satisfaction of e-business organisation and its customers are growing especially fast under globalisations' conditions. The knowledge becomes the essential source of exclusivity and uniqueness. E-business organisation tries to apply the necessary knowledge on the suitable time and in the most convenient way that it could satisfy needs of organisation's customers more effectively and create e-business organisation's value.

This part of «*Knowledge management peculiarities in e-business: actuality and tendencies*» consists from five parts: the importance of knowledge management to increase the efficiency of the organisations activity

in e-business; employee competency integrated assessment in e-business; analysis of factors motivating human resources in e-business; evaluation system of factors affecting creativity in e-business; knowledge appliance process in e-business organisation.

The importance of knowledge management to increase the efficiency of the organisations activity in e-business. This part presents the issues of knowledge management, discusses key components of knowledge management and identifies their characteristics in e-business.

Employee competency integrated assessment in e-business. The scientists and researchers have paid particular attention to the analysis of such complex phenomenon as employee competency evaluation and improvement, which is considered one of the most important factors affecting the innovativeness and competitiveness of e-business organisation. In the context of transformations, the significance of the employee competency management, which is considered the effective tool for increasing the efficiency of the operating of e-business organisations, is based on the recognition of the fact that the management of the traditional resources is not enough for maintaining the existing competitive advantage and ensuring the long-term competitor-resistant one. E-business organisations should focus on the management of the essential and exceptional employee competencies, stay above the current knowledge level, and be able to create new knowledge at the lowest cost.

The constantly changing environment causes the changes in the factors affecting e-business employee competency and its evaluation methods, which are considered controversial in the scientific literature. Various authors apply different approaches when evaluating the factors affecting ebusiness employee competency. Therefore, the problem of identifying the approach, which reflects the real situation in the most accurate and comprehensive way, has been detected. In this part discusses the problems in question by combining various scientific positions considering the aspects of the evaluation of the factors affecting competency. The research is aimed at forming the model of the employee competency integrated assessment in e-business organisation, based on the examples of the Lithuanian Armed Forces. In order to identify and evaluate the factors affecting employee competency, multiple criteria assessment and expert evaluation methods have been employed. The employee competency integrated assessment model, allowing identifying and evaluating the factors affecting employee competency as well as developing the solutions for its improvement, has been proposed.

Analysis of factors motivating human resources in e-business. The improvement of management functions and procedures of human resources in e-business area is a continuous and constantly evolving process. The

efficiency of e-business activities depends not only on the education, competence and abilities of employees. The efficiency of human resources motivation system has a significant impact on the effectiveness of e-business processes. For the purposeful work results of e-business human resources, it is important to analyse not only the existing processes, functions and procedures, but also to investigate the factors that affect the motivation of human resources in performing the processes, functions and procedures effectively. The purpose of this part is to perform the motivation factors analysis of human resources in order to enhance the effectiveness of existing e-business processes, functions and procedures. For the realization of the intended purpose, a methodological triangulation is applied: the analysis of scientific literature, comparative and systematic analysis, synthesis and qualitative research methods, analysis of documents.

Evaluation system of factors affecting creativity in e-business. Due to the process of globalization and increase of organisations' dynamics and importance of knowledge management during the last decades, e-business organisational success is closely connected with creativity and innovation; hence, nowadays economy is referred to as the knowledge and creativity economy. Recently, it was admitted that the maintenance of the longterm competitive advantages mostly depends on the level of creativity in e-business organisations, whereas the motivation for creativity and the results of this activity could be significant not just to individuals alone but also to e-business organisations, certain regions and even countries.

In a constantly changing environment, factors influencing e-business employee creativity and approaches to evaluating them, considered controversial in the scientific literature and in practice, are also experiencing changes. Different authors evaluate and interpret factors affecting creativity differently. Consequently, the problem how to identify and evaluate which of the approaches fully reflects the situation arises. This part deals with these problems by combining the approaches of different authors from the aspects of identification and evaluation of factors affecting creativity. The aim of the research is to develop an evaluation system of factors affecting creativity in e-business organisation. In an attempt to identify and evaluate factors affecting creativity, expert and multiple criteria assessment methods for evaluation were applied. A multi-level system for the evaluation of factors affecting creativity, that creates preconditions favourable for the identification of factors affecting creativity (by means of the method of determination of the significance of criteria), more objective evaluation of factors affecting creativity and development of suggestions for the stimulation of e-business organisation creativity, was suggested.

Knowledge appliance process in e-business organisation. The importance of knowledge appliance process is based on effective existing knowledge use to solve problems, to manage processed of e-business organ-

isations and to create appropriate work environment for knowledge use. Scientists the factors of the efficiency of knowledge appliance process are analysing for decades, but still there is no united position how to determine objectively which factors have the biggest effect for efficiency of this process. The knowledge appliance process is complicated and ambiguous objective of research, so scientific literature submits different positions of scientists how to identify and evaluate essential factors. The objective of research in this part is to determine the factors of the efficiency of knowledge appliance process, which makes assumptions to evaluate and improve the knowledge appliance process in e-business organisation.

1.1. The importance of knowledge management to increase the efficiency of the organisations activity in e-business

The conception of the knowledge management in the academic society was started to analysing since the end of 1980 and there are submitting opinions of various scientists about the start of knowledge management's discipline. Some scientists have stated that knowledge management is not a new concept — just systematised newly and is supporting by new methods, measures, technologies. Authors, who accept this opinion, say that the knowledge management history starts in the ancient civilisations — the first manifestations of knowledge management, such as knowledge notation, saving and using, appeared 3 thousand years ago when the cuneiform was starting to use.

Despite the long history of the development of knowledge management, the knowledge management is the science and training discipline which is still in the formation process, is the interdimensional and multidisciplinary concept, involving the most activities of organisation.

Wilson (2012), Jashapara (2005) evaluate concept of knowledge management critically and say that knowledge management is more pretentious synonym of information management, the discipline characterizing by fragmentation, which doesn't have theoretical substantiation (Raudeliūnienė 2012).

The other scientists have pointed out that the concept of knowledge management appeared in the last decade of previous century in large companies in which the problems of information's processing became critical. There became clear that the weakest point is the processing of knowledge, which was saved by organisation's employees, and that knowledge gives advantage against other organisations (Raudeliūnienė 2012).

McInerney, Koenig (2011) have distinguished four stages of knowledge management development (Raudeliūnienė 2012). The first stage is connected with information technologies when large international consulting companies understood that trading of securities was information and

knowledge. There were orienting for the job with new technologies (e.

g. internet, extranet, intranet) implementing the purposes of information spread, in this stage.

The second stage of knowledge management is connected with the recognition of the human and cultural factors, knowledge creation and spread (e.g. the scientific researches of Nonaka and Takeuchi (1995) are connected with tacit and explicit knowledge and its development).

The third stage is oriented into the knowledge content's importance, definitions, structures, aspects of classification.

The fourth stage, according scientists, should be connected with the accessibility of organisation information and knowledge outside, the development of their content, seeking to make knowledge of organisation more effective.

The scientists have stated that knowledge management integrating such disciplines as business, strategic, changes management, human resources management, organisation learning, communication, document management, information management, information technologies, sociology, psychology.

The most scientists have stressed that knowledge management, as a separate theoretic conception, is one of the newest management paradigms and researches objectives. The knowledge management is very relevant for the knowledge economy which becoming prevalent and dictating new rules to e-business organisations.

It's not enough to manage internal and external data flow in e-business organisations, seeking to create uniqueness of organisation and purchase long-lasting advantage. The knowledge can't be treated in the same way as the information, as well as it is impossible to reform information systems into the knowledge system. The e-business organisation's learning and knowledge management are the most important factors in the effective strategies forming process.

Scientists, such as Becerra-Fernandez *et al.* (2004), Chen *et al.* (2005), Ruževičius (2005), Probst *et al.* (2006), Mačiūtis *et al.* (2008) , Kebede (2010), Morkvėnas (2010), give various definitions of knowledge management:

- some scientists have pointed the human resources in the definitions of knowledge management («intellectual capital», person abilities management, accent of learning importance and conception «life-long learning» in organisation);
- other scientists have pointed the importance of the strategic management of knowledge management (effective knowledge management depends on the unit of human factor, technologies and methods and it's coordination) (Raudeliūnienė 2012).

But the most scientists have pointed that knowledge management is effective means to increase the efficiency of e-business organisation activity especially in the transformation context.

The knowledge management is purposeful and systematic management of knowledge processes, methods and means, using versatile knowledge potential, seeking the purpose, solving problems and making effective decisions.

The scientists have emphasized that knowledge management, as a discipline, is not limited to the perception «tacit — explicit». The knowledge management is not management of just individual knowledge. It is a management and based activities of e-business organisation, focused on unique ability, connected with realisation of knowledge potential for needs of organisation, as well for satisfaction of customers' demands.

It is important to compare the difference between traditional organisation and e-business organisations which are oriented into knowledge management according their stock, investment, value in the analysing the meaning of knowledge management.

According to the resources the traditional organisation is oriented to material, classical factors of production (work, capital, territory) and organisations of knowledge are oriented to the not material resources (image of the organisation, patents, licenses, loyalty of customers).

According to the investments the traditional organisation is oriented to the increase of material property (industrial, administrative buildings, equipment) and organisations of knowledge are oriented to the knowledge base, employees with specific competencies, motivation systems, learning, innovations, knowledge management system and technologies, support of the communication between partners and customers.

According to the value the traditional organisations are oriented to the increase of the material property value and organisations of knowledge — to the intellectual capital value.

The scientific literature contains quite lot scientific works which develop knowledge management influence to various organisation's levels: employees, processes, products (services) and to all organisation's activity and the increase of its value (Becerra-Fernandez *et al.* 2004; BecerraFernandez *et al.* 2010).

The influence of the knowledge management in the employees' level can ease their learning processes in the organisation (internal learning), either out of it (external learning) and form the conditions to adapt to the dynamically changing environment, changes of customers' demands and, under such circumstances, realise the acquired knowledge gained by learning. For this reason employees are better prepared for the probable changes and can use the acquired knowledge in the organisations activity

and this creates assumptions to be motivated seeking objectives of organisation and feel satisfaction of done work. This creates assumptions for the organisation to change the structure of knowledge base and to manage internal processes efficiently and create more unique products (services).

The influence of knowledge management in the process level increase processes' efficiency (less mistakes, adaptation according changed conditions), productivity (speed, cost reduction), innovation (innovations, creativity, better use of new ideas). This improves existing and created innovative products (services) in e-business organisation.

The influence of knowledge management in the products (services) level is connected with the creation of added value and knowledge products. The e-business organisation is able to offer new or improved products.

The influence of knowledge management in the all e-business organisation's activity level is connected with a direct (return of investments) or indirect (economy of scale and scale, long-lasting advantages) effect. The direct effect is by using knowledge to create innovative products and this is connected with a profit or with e-business organisation strategy when the strategy of knowledge management is matched. The indirect effect could be connected with an intellectual leadership in the market, knowledge use by keeping relations with partners and customers, which is strengthen their loyalty for the organisation.

Seeking to manage knowledge efficiently in e-business organisation, it is necessary to know very well the essential components of management: processes, factors, methods, measures and their features. Scientists are analysing such problems as how to manage existing knowledge efficiently, create new ones, what kind of barriers, difficulties are faced, what kind of management's methods, factors, evaluating criteria are using, under systematic view and applying under procedural knowledge management model (knowledge management processes) which creates processes cycle and forms the chain of knowledge value creation.

The knowledge management processes are investigating differently. Some scientists are offering four knowledge management processes, and others are offering extended cycle of knowledge management.

For example, Becerra-Fernandez, Gonzalez, Sabherwal, distinguish the complex spectrum of knowledge management components, determining effective knowledge management decisions, as a knowledge management processes and subprocesses, systems, mechanisms and technologies, infrastructure. The knowledge management processes are describing as processes which help to find out, identify, share, apply the knowledge and these processes are divided into new knowledge finding, existing knowledge identification, sharing, knowledge applying processes (BecerraFernandez *et al.* 2004; Becerra-Fernandez *et al.* 2010). Submitted processes and subprocesses by Becerra-Fernandez, Gonzalez, Sabherwal were

distinguished integrating the results of such scientists as Nonaka (1994) (four ways to manage the knowledge — socialization, externalization, internalization, combination) and Grant (1996), Nahapiet ir Ghoshal (1998) (changing, management, routine).

Probst, Raub, Romhardt (2006) is offering integrated knowledge management system for managing knowledge resources and based under knowledge management processes: knowledge goals' determination, knowledge identification, acquisition, development, knowledge sharing and distribution, use, preservation, measurement.

O'Dell, Hubert (2011) have submitted APQS (*American Productivity and Quality Center*) process of knowledge moving, which has such components as people, processes, content, technologies. The essence of this process is to realise how should work the process of knowledge moving in organisation, what kind of critical knowledge, extinction or problematic areas are existing and effecting negatively proceeding of knowledge moving process. When the problematic area of knowledge moving is established, authors are suggesting choosing another stage — the knowledge management strategy's forming to remove identified extinctions (Raudeli`unien'e 2012).

Maryam, Denford (Smith *et al.* 2011) have carried four knowledge management processes: knowledge creation, knowledge saving and searching, knowledge transmission and sharing, knowledge use.

In this research will be analysed knowledge identification and measurement, knowledge development and knowledge appliance processes in e-business organisations.

1.2. Employee competency integrated assessment in e-business

The growth of economic and social welfare of the state is tightly interconnected with capital and natural resources, but only few countries around the globe have that kind of superiority. As an example could be mentioned Russia, Middle East countries and USA. These countries have abilities to form their future because of resources owned. Lack of resources and increasing demands for social and economic progress in Western European states amplify the importance of human resources as assurance for continued growth of states' welfare. Constant transformations tend to amplify the meaning of human resource management in public administration and business sectors. Effective management of human resources is frequently seen as an efficient means to improve performance. Development of competitive abilities that cannot be quickly and easily imitated guarantees high market value in e-business. In order to ensure market success e-business organisation must effectively manage human capital. Outstanding performers (organisations) must develop their abilities to manage

fundamental and exclusive competencies of human resources. Effective e-business organisations must continually strive to improve current knowledge levels and develop abilities for creation of new knowledge at lowest costs possible. Today, it is widely acknowledged that an organisation's long-lasting competitive advantage depends primarily on the competency level of its human resources. Competent human resources are seen as capital of e-business organisation and are able to make difference for particular individuals, organisations, countries and regions. The competitive advantage of Scandinavia, Finland, and Germany in the global environment is often linked to its human resources potential.

The growth of human resource potential in a dynamic environment should be secured by timely identification, procurement and application of important knowledge, capabilities and skills. Constant search for new teaching applications and possibilities for its implementation, promotion of life-long learning concept should be a part of human resource potential improvement policy. Change in the conception of human resource competency and its assessment is influenced by economic, social and technical progress. The assessment of human resources becomes a tool that not only enables one to measure potential of human resources owned, but makes assumptions for human resource potential development related decisions in e-business processes.

Historically, competency assessment was rooted in the business sector, because privately owned organisations are more concerned about performance efficiency. Business organisations are used to accumulate experience of human resource competency assessment and development. These organisations are more open for innovative competency assessment and development methods, while human resource competency assessment in public administration organisations is often very formalized and subjective, lacking effective methods for human resource potential assessment and development.

Scientists have been studying human resource competency assessment for more than one decade. Nevertheless, there is no unified approach on how one should objectively assess employees' competency. Conception of competency is a complex and ambiguous research subject, sharing different point of views in scientific literature on how one should identify and evaluate factors influencing competency.

The research object of this part is the assessment of the factors affecting employee competency in e-business organisation. This part is aimed at forming a model for the employee competency integrated assessment in e-business, based on made research results — the example of the Lithuanian Armed Forces. This would make it possible to evaluate the potential of human resources and serve as basis for human resources potential development related decision making.

Presenting the topic of human resources competency assessment, its meaning and systematizing factors influencing competency in this research were used methods of theoretical analysis, comparison and summation. Expert and multiple criteria assessment methods were used for complex identification and evaluation of factors influencing human resource competency.

1.2.1. Theoretical evaluation aspects of factors affecting employee competency

Knowledge combined with human skills and experience form the competency, which is considered as a set of the certain knowledge, abilities and skills.

The concept of the competency has been analysed by various sociologists, philosophers, psychologists, economists and managers; however, no general consensus in defining the concept of the competency has been reached. Most researchers and business practitioners link the concept of the competency with the individual perspective, experience, expertise, specialisation, intelligent expression, decision making and efficiency.

R.E. Boyatzis (2008) has argued that efficiency is the essential aspect of the competency; moreover, according to him, the concept of the competency is based on the contingency theory: the highest efficiency level could be achieved when the skills and talents of the individual (i.e., vision, values, philosophy and interests) meet the professional requirements (i.e., tasks, functions and roles) and organisational environment (i.e., culture, organisational climate, structure and system, and key competencies).

R. Adamonienė and L. Rūbytė (2010) have distinguished two key aspects related to the topicality of the competency: the position of the employee and the position of the organisation. On the one hand, the competency is considered a significant factor in the successful implementation of the career, on the other hand, employee competency and related trainings are important for the implementation of the goals of the organisation.

According to A. Skaržauskienė and G. Paražinskaitė (2010), there could be identified a number of conceptual drawbacks, theoretical inaccuracies and ambiguities in the competency models and research methods. Competency research is usually focused on the competency development and assessment of the specialists of certain areas (Skaržauskienė *et al.* 2010).

In the Education of the Republic of Lithuania Law Amendment Act (No XI-1281 of March 30, 2011), competence is defined as the «ability to perform a certain activity on the basis of the entirety of acquired knowledge, skills, abilities and values.»

Other concepts related to the competency include abilities, proficiency and skills.

Ability is the physical or mental capacity to perform a certain operation, action or work, i.e., the precondition and the consequence of the proficiency. The concept of proficiency is employed when dealing with the ability as a result of learning. The ability has several bases: the physical, i.e., health; the psychological, i.e., talent, skills acquired and intellect; the pedagogical, i.e., knowledge, proficiency and skills; and the social, i.e., the right to act, and etc. (Jovaišsa 1993).

Ability is the talent developed in the process of learning and studying, as well as the performance of certain intellectual and (or) physical operations in certain field (Laužackas 2005).

Proficiency is the ability to perform certain theoretical and practical operations on the basis of current knowledge and sensory and practical experience (Jovaišsa 1993).

Skill is the action automated by mental and material, or practical, activity, or simply the knowledge, developed to an automated level. It is the ability, acquired by repeating, to automatically perform a certain operation (Jovaišsa 1993).

Competency could be analysed at individual, group and organisational levels.

According to D. Diskienė, A. Marčinskas and A. Stankevičienė (2010), the competency as a set of basic personal characteristics indicates the individual level whereas the key competency indicates the organisational level. Such organisation-specific competencies include motivation, employee efforts, technological and professional experience, cooperation methods and management processes, which are difficult for competitors to imitate (Diskienė *et al.* 2010).

At the individual level, the competency is usually classified into a professional, methodological, social, personal, management (control) and intercultural (Sakalas 2003; Radzevičienė 2005; Butkevičienė *et al.* 2009; Adamonienė *et al.* 2010; Raudeliūnienė *et al.* 2012).

Professional competency is identified as the ability to work effectively in several practices, which is directly related to the employee's education, qualification and experience. There could be distinguished two dimensions of such competency: the area (indicating the area of competence of the individual) and the quality (describing the efficiency of the performance according to a certain scale).

Methodological competency reflects the ability related to work performance regardless of its professional content, employing the methods, techniques and tools required.

Social competency reflects the individual's social behaviour and expresses adaptive and effective functioning in certain situations. Individual's social competency criteria include social skills, the ability to achieve goals and (or) the quality of interpersonal relations. This competency is linked

with the professional one, which is characterised by the ability to cooperate with colleagues, managers and customer, and create the appropriate organisational climate.

Personal competency is related to self-evaluation, attitude to work, motivation and personal abilities employment level.

Management (CEO or managerial) competency involves certain professional, personal and methodological competencies and their sets requires for the particular position.

Intercultural competency is the ability of the individual, based on certain knowledge, skills and attitudes, to work efficiently in the context of cross-cultural interaction.

V. Zydvyūnaitė (2003) has discussed the concept of the team competency as an independent holistic competency covering specific competencies, which are based on the principles of education, management, psychology and sociology, reflecting personal potentiality, which incorporates human ability to integrate mental and physical capacity. Teamwork competencies include three elements: teamwork-based knowledge, abilities, attitudes and behaviour; focus on management, psychology, education and sociology studies, stimulating teamwork; and orientation towards individual (as a team member) and team levels. The integration of the above-mentioned aspects into the teamwork environment allows its members understanding teamwork and communication processes, diagnosing the problems related to the implementation of the teamwork competencies, reflecting the activity on the basis of diagnostic results, and encouraging continuous professional self-improvement (Zydvyūnaitė 2003).

J. Makūnas (2005) has formed a theoretical model of consultant competencies, based on the theoretical analysis of the competency structure, and indicated the most important factors affecting professional, personal, methodological and social competency. However, in this model, some of the factors overlap when evaluating both personal and social competencies (e.g., the ability to work in a team). A. Sakalas (2003) has agreed with such approach by arguing that «only professional competency could be clearly identified whereas the features of other competencies are interrelated, which both indicates the theoretical incompleteness and provides a wide variety of practical applications.»

Various Lithuanian and foreign scientists have carried out a number of managerial (management and leader) competency researches. The U.S. scientist R.E. Boyatzis (1982) has initiated more extensive studies of managerial competency. In their studies, the scientists have described the management (managerial and leader) competency as an integrated multifaceted concept related to the efficiency at both the individual and organisational levels.

Managerial competency research issues are influenced by globalisation and transformation processes as well as technological and social changes, affecting both the needs of society and the management forms of public and business organisations. As a consequence, the role of the leader and the competency framework also experience changes since it becomes important making both effective and socially responsible decisions considering the public interests and the long-term well-being. When forming and making the decisions, it is also important for the leader to understand the systemic transformation processes and be able to control them under uncertainty conditions, i.e., realising how the particular solution could affect the organisation and its environment.

According to D. Diskienė, A. Marčinskas and A. Stankevičienė (2010), the theoretical analysis of the managerial competency is significant by providing the possibility to identify which of the competency elements are the most important: the innate (e.g., personal characteristics) or the acquired (e.g., knowledge and skills) ones.

When dealing with the managerial competency, Lithuanian scientists distinguish two approaches, which are widely spread in Western management practices (Petkevičiūtė *et al.* 2003; Skaržauskienė 2008), such as:

- a functional analytical approach (Management Charter Initiative), applied by the scientists of the United Kingdom, according to which the competency is identified as an equivalent of work performance standards, and a combination of skills, knowledge and attitudes related to the effectiveness of the operations;
- a personal characteristics approach, applied by the scientists of the United States (Boyatzis 1982), according to which personal characteristics of the individual are treated as an integral part of the competency causally related to more effective work performance.

The first approach (British scientists' model) is mostly oriented to the employers' sector and the profession, emphasising the work performance requirements, that is related to the job function.

The second approach (competency model of R.E. Boyatzis) is related to work performance by focusing on the contribution and emphasising the individual characteristics of the manager.

R.E. Boyatzis (2008), discussing the main competencies of the leaders of the twenty-first century, has identified three groups of the competencies:

- cognitive competencies, such as systems thinking and cognitive models and structures;
- emotional intelligence competencies, such as self-consciousness and control (e.g., emotional self-awareness and self-control);
- social intelligence competencies, such as social awareness and relationship management (e.g., empathy and teamwork).

A number of the Lithuanian scientists and business practitioners have conducted managerial (e.g., management and manager leader) competency researches in the public and business sectors in order to investigate the components of the competencies in question (Butkevičienė *et al.* 2009 ; Adamonienė *et al.* 2010; Diskienė *et al.* 2010; Skaržauskienė *et al.* 2010). Summing up the results of the research of the competency expression in the context of knowledge economy and society, scientists and business practitioners have paid particular attention to the description and evaluation of the essential leadership competencies. Manager leadership competencies are directly related to the concept of effectiveness at both managerial and organisational levels, i.e., covering the leader as an individual (including successful carrier planning), and the organisation's strategy in general (including the competencies required for the change management under uncertainty, complex problem solving, and efficient and socially responsible decision making). The effective managerial competencies control preconditions the leader's targeted operation in a dynamic environment, and the implementation of the innovative management tools for the development of the creative potential of the organisation.

Employee competency, influenced by a variety of interrelated factors (sometimes acting contrary) is described as a complex social phenomenon. According to V. Podvezko, multiple criteria assessment methods are efficiently employed in case of integrated assessment of complex values, as it allows quantifying the complex phenomenon represented by many indicators (Podvezko 2008).

R. Ginevičius has noted that the assessment of complex and integrated phenomena usually includes the following stages of the multiple criteria assessment: formulation of the research problem and setting the research object and objectives; compilation of the list of the factors affecting the research object; formation of the system of the factors affecting the research object; setting the quantification (the indicators) of the factors affecting the research object; formalisation of the factors affecting the research object, setting the values of the indicators, and their normalisation; selection of the model for rating the significance of the factors affecting the research object, and rating the significance of the factors affecting the research object; the selection of the method of the connection of the indicators of the research object into a summative value; the connection of the indicators of the research object into a summative value; and decision making related to the improvement of the research object (Ginevičius *et al.* 2005).

According to R. Ginevičius and V. Podvezko (2003), the method discussed includes, first, the determination of the sub-indicators of the research object, then the calculation of their values and weights, and,

finally, their connection into a summative value which integrates a set of sub-criteria.

Since individual indicators describing the research object affect that object differently, the estimation of the significance of the indicators is particularly important when employing the multiple criteria assessment method. The methods of the estimation of the criteria significance could be divided into objective and subjective: in case of the subjective method, the significance of the criteria is evaluated by experts, whereas, in case of objective method, it is estimated using the mathematical calculations based on the objective information (Podvezko 2008). When estimating the criteria significance on the basis of the criteria weight scale, the scales of different values (e.g., [0, 1], [0, 100], and etc.), grades, scores and per cent are used. The criteria weight scale in the range [0, 1] is the most widely-used one (Ginevičius *et al.* 2005). Summing up the research results, it could be stated that the employee competency is a complex phenomenon affected by a number of interrelated factors. On the basis of the analysis of the scientific literature, 51 factors affecting the employee competency have been indicated, and the initial list of those factors has been compiled and submitted for the expert evaluation.

The integrated multiple criteria assessment is suitable for the employee competency assessment according to the following facts: the factors could not be expressed by a single evaluation criterion, and the number of the criteria does not have to be restricted when this method is employed, which allows evaluating the importance of the single criteria to the evaluation results, and comparing the values of the sub-criteria to each other.

1.2.2. The identification of the factors affecting the employee competency

Identification of competence assessment factors on the example of the public relations specialists of the Lithuanian Armed Forces. The identification of the factors affecting the employee competency in the Lithuanian Armed Forces (LAF) has been carried out employing the expert and multiple criteria assessment methods. The initial list of the factors affecting the employee competency has been compiled on the basis of the research analysis. 51 factors affecting the employee competency have been submitted to the expert evaluation. The expert group was represented by 6 experts, who have been selected according to the following two criteria: 5 years work experience in public relations (PR) of National Defence System (NDS), and the qualification in PR (i.e., the training course is completed or the appropriate education is acquired). On the basis of the complex multiple criteria assessment method, the integrated assessment of the competency of the PR specialists of the LAF has been carried out including the following stages: the compilation of the initial list of the factors affecting the competency of the PR specialists of the LAF; the revision

and the formalisation of the list compiled; the estimation and normalisation of the weights and values of the criteria of the factors affecting the competency of the PR specialists of the LAF using the [1, 5] rates scale; the experimental assessment of the competency of the PR specialists of the LAF; the calculation of the integrated criteria of their competency; and the formation of the set of the possible solutions for improving the competency of the specialists assessed. The interval of [0, 1] was used for the estimation of the weights of the criteria. Applying the method of the estimation of the weights of the criteria, 4 criteria of the primary 51 have been considered insignificant. The results of the assessment of the factors affecting the employee competency have shown that professional and communicative competencies are the most significant ones for the overall competency of the PR specialist of the LAF (Table 1.1).

The professional competency of the PR specialist of the LAF is mostly affected by the knowledge of PR-related legislation and its application in the service, the pursuit of professional knowledge, education and work experience; whereas, the communicative competency, according to experts, covers literacy, oratorical skills and computer skills (Raudeliūnienė *et al.* 2012b).

Identification of competence assessment factors for Professional military service soldiers in Lithuanian armed forces. Research was conducted in order to identify factors influencing human recourse competency assessment. List of initial competency assessment criteria have been created by analyzing internal and external document sources:

- *external sources*: scientific literature, legal documents of foreign countries, documents describing professional military service competency assessment and assessment certificates of US, Canada, Sweden, experience of professional military service competency evaluation in foreign countries;
- *internal sources*: Lithuanian legal documents, regulations of Lithuanian armed forces, competency evaluation certificates of professional military service in Lithuanian armed forces (Lithuanian Ministry of Defense regulations 2012 order V-1039, Lithuanian armed forces regulations 2012 order V-479, Lithuanian Ministry of Defense regulations 2004), experience of competency evaluation in Lithuanian armed forces.

List of initial competency assessment criteria for professional military service in Lithuanian armed forces consisted of 98 factors: found and eliminated from the list 42 initial competency assessment factors that were similar one to another by its content. After the removal of similar items, list of initial competency assessment criteria consisted of 56 factors, which were divided into four groups according to its content (Table 1.2.):

Table

1.1

Factors affecting employee competency (Raudeliūnienė *et al.* 2012b)

Integrated Second-Level Sub-Criterion (the Weight of the Criterion)	The Initial Criterion (The Weight of the Criterion of the Initial Evaluation)
1. Personal Competency (0,13)	1.1. Tolerance of innovation (0,28) 1.2. Initiative (0,38) 1.3. Objectivity (0,34)
2. Social Competency (0,12)	2.1. Self-awareness (0,17) 2.2. Self-management (0 , 3) 2.3. Social awareness (0 , 3) 2.4. Relationship management (0,23)
3. Professional Competency (0,25)	3.1. Education (0,17) 3.2. Pursuit of professional knowledge (0,21) 3.3. Work experience (0,17) 3.4. Team-work skills (0,05) 3.5. Ability to be a team leader (0,07) 3.6. Knowledge of Military Service Law and ability to apply it in practice (0 , 1) 3.7. Knowledge of PR-related legislation and ability to apply it in practice (0,23)
4. Managerial Competency (0,07)	4.1. Recognition of the problems of the caller (0,13) 4.2. Enthusiasm (0,24) 4.3. Professional and ethical standards support (0 , 3) 4.4. Maintenance of the climate of trust (0,13) 4.5. Decision making (0 , 2)
5. Methodological Competency (0,12)	5.1. The ability to manage the information (0,17) 5.2. Analytical thinking (0,13) 5.3. The ability to solve problems (0,12) 5.4. The ability to manage conflicts in service (0,08) 5.5. Planning skills (0,27) 5.6. The ability to organise work (0,15) 5.7. Critical thinking (0,08)
6. Communicative Competency (0,18)	6.1. Oratorical skills (0,23) 6.2. Knowledge of styles of language and its application (0 , 1 7) 6.3. Focus on the interlocutor (0,07) 6.4. Cooperation skills (0,08)

Table

7. Moral Competency (0,08)	6.5. Literacy (0,25) 6.6. Computer skills (0 , 2) 7.1. Will strength (0,17) 7.2. Telling the truth (0,22) 7.3. Defending the truth (0,08) 7.4. Ability to fulfil promises (0,13) 7.5. Ability to accept responsibility for given decisions (0,05) 7.6. Ability to recognise mistakes and failures (0,08) 7.7. Caring for others (0,08) 7.8. The ability to learn from personal mistakes (0,12) 7.9. The ability to learn from the mistakes of others (0,07)
8. Intercultural Competency (0,05)	8.1. Cultural sensitivity (0 , 2) 8.2. Cultural objectivity (0,13) 8.3. Flexibility (0,08) 8.4. Foreign language skills (0,27) 8.5. Nonverbal communication competence (0,12) 8.6. Cultural awareness (0 , 2)

- *personal* (24 factors): views, personal values, motivation, self-arrangement, personal qualities (Adamonien'e and Ruibyt'e 2010) ;
- *moral* (11 factors): willingness to stand for ones believes, behave in the accordance to values declared even when it can lead to unfavorable consequences, persistence and ability to act understanding all consequences in situation filled with indeterminacy (Doctrine for the armed forces of United states 2009) ;
- *management* (16 factors): capabilities related to leadership in profession area or organisation, effective way of distributing tasks and teamwork (Butkevi~cien'e and Vaidelyt'e 2009) ;
- *profession related* (5 factors): operational field specific capabilities, skills and experience based knowledge which allows for one to fulfill tasks assigned in perfect manner (Kalesnykas and Dieninis 2012).

It was arranged structured survey for experts in order to qualify list of initial competency assessment factors (56 factors). Experts could express their opinions about each competency assessment factor using modified *Likert scale* (strongly favorable, favorable, unfavorable and strongly unfavorable). Experts in this survey were high ranking officers having not lower but majors military rank, because their experience in armed forces were greater than 10 years. According to Lithuanian president decree (Lithuanian president 2012) which determines the highest numbers of personnel in Lithuanian armed forces for five years to come (year 2012-2017) general population of this study consisted of 496 Lithuanian high ranking officers (major and above). Respondent sample were made of 81 military experts, having not lower than major military rank.

International expert survey was organized in such manner that every expert received e-mail letter with a link to electronic survey tool (which was translated into Lithuanian, English, and Swedish). More than 300 recipients who met above described criteria received electronic letters. Totally 103 experts from four different countries participated in this survey: Lithuania (71), USA/Canada (23), and Sweden (9). Survey was conducted in September — December 2012. This above mentioned survey was aimed to qualify list of initial competency assessment criteria for professional military service in Lithuanian armed forces. Mean values and rating distribution of initial competency assessment factors were counted in order to fine the list. Mean values of personal competency factor survey results were computed in order to clarify which of personal competency factors was most significant (1 — highest value, 4 — lowest value). According to experts most significant personal competency assessment factors are: flexibility of mind, performance, knowledge, proficiency, situation assessment. While least significant are: spontaneity, obstinacy and questioning. Respondents rated proficiency as the most important and second most important competency assessment factor (Table 1.3). According to the experts most

Table

1.2

Competency assessment factors for human resources (Raudeliūnienė *et al.* 2013)

Competency	Assessment criteria (author, year)
Personal	Performance (United States Marine Corps regulations 2000, order p1610), personal qualities (Ansari and Khadler 2011), situation assessment (Lenburg and Abdur-Rahman 2003), proficiency (Swedish armed forces regulations 2012), integrity (Lithuanian armed forces regulations 2012, order V- 479), knowledge (Tian and Miao 2009) , potential (Duncan <i>et al.</i> 2010), commitment (Duncan <i>et al.</i> 2010) , sense of duty (Department of army 2007), efficiency (Swedish armed forces regulations 2011), self-knowledge (Savanevičienė <i>et al.</i> 2008) , emotional stability (Tian and Miao 2009), obstinacy (Thomas and Panchal 2010), strength (decision) (Tian and Miao 2009), questioning (Dyer <i>et al.</i> 2011), observation (Dyer <i>et al.</i> 2011), recognition (Ansari and Khadler 2011), stress management (United States Marine Corps regulations 2000, order p1610), adaptation (Helyer 2011) , flexibility of mind (Tucker and Pleban 2010), autonomy (Burns and Costley 2002), potency to learn (Helyer 2011), social perception (Tian and Miao 2009), spontaneity (Muhlbacher <i>et al.</i> 2011)
Moral	Patriotism (Lithuanian armed forces regulations 2012, order V-479), devotion (Lithuanian armed forces regulations 2012, order V-479), self-denial (Lithuanian armed forces regulations 2012, order V-479), honesty (Lithuanian armed forces regulations 2012, order V-479), bravery (Lithuanian armed forces regulations 2012, order V-479), loyalty (Department of army 2007), respect (Lithuanian armed forces regulations 2012, order V-479), honor (Lithuanian armed forces regulations 2012, order V-479), responsibility (Lithuanian armed forces regulations 2012, order V-479), setting an example (United States Marine Corps regulations 2000, order p1610), influencing others (Tian and Miao 2009)
Management	Analytical thinking (Thomas and panchal 2010), networking (Dyer <i>et al.</i> 2011), experimenting (Dyer <i>et al.</i> 2011), creativity (Botha 2010), critical thinking (Lenburg and Abdur-Rahman 2003), decision making (United States Marine Corps regulations 2000, order p1610), motivation (Swedish armed forces regulations 2011), planning (Botha 2010), initiative (United States Marine Corps regulations 2000, order p1610), leadership (Lenburg and Abdur-Rahman 2003), control (Ansari and Khadler 2011), team work (Duncan <i>et al.</i> 2010), developing subordinates (United States Marine Corps regulations 2000 , order p1610), working with people (Botha 2010), communication (United

Table

	States Marine Corps regulations 2000, order p1610), knowing foreign languages (Muhlbacher <i>et al.</i> 2011)
Profession related	Professional military education (United States Marine Corps regulations 2000, order p1610), military attitude (Tian and Miao 2009) , modern military skills (Swedish armed forces regulations 2011), physical fitness (Tian and Miao 2009), integration of knowledge (Lenburg and Abdur-Rahman 2003).

significant moral competency evaluation factors are: responsibility, honesty, respect, setting example, and honor. While least significant are: patriotism, bravery, self — denial.

Table 1.3

Importance and ratings of personal competencies (Raudeliūnienė et al. 2013)

Importance of personal competencies	Rating of personal competencies	
Flexibility of mind (1,31)	1 place	Proficiency (28 %)
Performance (1,31)	2 place	Proficiency (16 %)
Knowledge (1,31)	3 place	Sense of duty (10 %)
Proficiency (1,32)	4 place	Flexibility of mind (9 %)
Situation assessment (1,39)	5 place	Emotional stability (11 %)

Table 1.4

Importance and ratings of moral competencies (Raudeliūnienė et al. 2013)

Importance of moral competencies	Rating of moral competencies	
Responsibility (1,16)	1 place	Honesty (28 %)
Honesty (1,23)	2 place	Honesty (21 %)
Respect (1,43)	3 place	Responsibility (18 %)
Setting an example (1,44)	4 place	Responsibility (19 %)
Honor (1,51)	5 place	Influencing others (17 %)

Table 1.5

Importancies and ratings of management competencies (Raudeliūnienė et al. 2013)

Importance of management competencies	Rating of management competencies	
Decision making (1,21)	1 place	Analytical thinking (29 %)
Leadership (1,23)	2 place	Decision making (17 %)
Teamwork (1,34)	3 place	Decision making (15 %)
Planning (1,34)	4 place	Planning (14 %)
Initiative (1,35)	5 place	Creativity (11 %)

Respondents rated honesty as the most important and second most important competency assessment factor (Table 1.4).

According to the experts most significant management competency evaluation factors are: decision making, leadership, teamwork, planning, and initiative. While least significant are: knowing foreign languages, networking, experimenting. Respondents rated analytical thinking as

the most important and decision making second most important competency assessment factor (Table 1.5).

According to the experts most significant profession related competency evaluation factor is: professional military education (1,32). While least significant is: physical fitness. Respondents were asked to rate actuality of each competence group (personal, moral, management, professionrelated) for professional military service separately. According to the experts most significant competency group for professional military service profession-related (1,23), less importance have (in descending order) management (1,35), personal (1,38), moral (1,43). After analysis of expert survey data was completed 24 competency assessment factors were chosen to the newly qualified competency assessment factor list, which later with expert advice was complemented with two more factors suggested

Table
1.6

Weight of professional military service competency assessment factors
(Raudeliūnienė *et al.* 2013)

Weight of partial integrated evaluation criteria	Weight of initial assessment criteria
Personal (0,215)	Sense of duty (0,146) Proficiency (0,206) Flexibility of mind (0,114) Emotional stability (0,154) Situation assessment (0,114) Knowledge (0,156) Empathy (0,110)
Moral (0,185)	Honesty (0,160) Responsibility (0,182) Respect (0,125) Honor (0,166) Influencing others (0,104) Setting an example (0,183) Tolerance (0,080)
Management (0,27)	Decision making (0,159) Planning (0,161) Leadership (0,122) Team work (0,136) Analytical thinking (0,182) Initiative (0,140) Creativity (0, 1)
Profession related (0,33)	Professional military education (0,320) Integration of knowledge (0,245) Military attitude (0,140) Modern military skills (0,160) Physical fitness (0,135)

Table

during the survey. Final competency assessment factor list consisted of 26 factors: personal — 7, moral — 7, management — 7, profession related — 5 (Table 6). In the next stage of this study, expert group of high ranking officers in Lithuanian Air Force Air Space Surveillance Command (further LAF ASSC) was composed, which consisted of 10 experts. In February — March 2013 LAF ASSC experts were asked to determine importance of initial and partially integrated competency assessment factors.

Groups of profession — related (0,33), management (0,27), personal (0,215) competencies were determined as the most important for LAF ASSC personnel. While least important for LAF ASSC personnel was moral (0,185) competence group. Most important competency assessment factors in personal competency group were proficiency (0,206), knowledge (0,156), and emotional stability (0,154). Setting example (0,183) and responsibility (0,182) were evaluated best in moral competency group (Table 1.6).

Most important competency assessment factors in management competency group were analytical thinking (1,82), planning (0,161). Profes-

sional military education (0,320) and knowledge integrity (0,245) were highlighted in profession related competency group.

1.2.3. Concept complex competency assessment model of e-business organisation

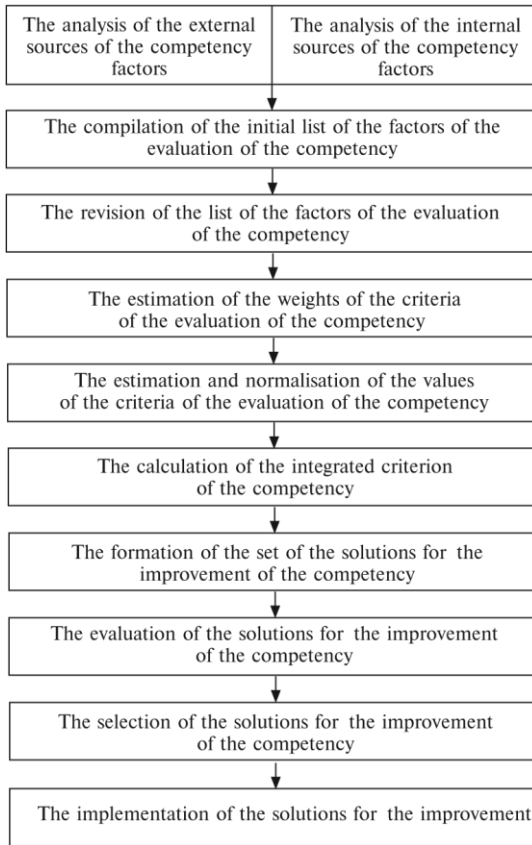
Data collected from international and domestic studies (see 2.2 part) made it possible to create concept complex competency assessment model of e-business organisation (Figure 1.1).

The model includes the following basic stages:

- the analysis of the external and internal sources of the competency factors, according to which the initial list of the factors of the evaluation of the competency of e-business organisation has been compiled; the revision of the list of the factors of the evaluation of the competency of e-business organisation;

Concept complex competency assessment model of e-business organisation

(adapted by Raudeliūnienė *et al.* 2012b; Raudeliūnienė *et al.* 2013)



- the estimation of the weights of the criteria of the evaluation of the competency of e-business organisation;
- the estimation and normalisation of the values of the criteria of the evaluation of the competency of e-business organisation;
- the calculation of the integrated criterion of the competency of e-business organisation;
- the formation of the set of the solutions for the improvement of the competency of e-business organisation;
- the evaluation of the solutions for the improvement of the competency of e-business organisation;

- the selection of the solutions for the improvement of the competency of e-business organisation;
- the implementation of the solutions for the improvement of the competency of e-business organisation.

Suggested concept complex competency assessment model of e-business organisation makes it possible not only comprehensively assess factors influencing competency but even determine weak and strong points of competency. Data accumulated by this competency assessment model allows easy formation of competency improvement sets for e-business organisation.

1.3. Analysis of factors motivating human resources in e-business

The improvement of management functions and procedures of human resources in e-business is a continuous and constantly evolving process. The efficiency of e-business organisation depends not only on the education, competence and abilities of employees. It is also important to emphasize that the human resources motivation system has a significant impact on the efficiency of e-business organisations. In order to increase the efficiency of e-business organisation, we need to improve the motivation system of human resources.

The purpose of this part is to perform the motivation factor analysis of human resources in order to enhance the effectiveness of existing ebusiness functions and procedures.

For the realization of the intended purpose, a methodological triangulation is applied: the analysis of scientific literature, comparative and systematic analysis, synthesis and qualitative research methods, analysis of documents.

The importance of human resources management was evaluated at the end of last century. A new approach to the management of private sector, which is based on the principles of greater efficiency (effectiveness), responsibility (transparency) and the need of quality, is often attributed to the management of e-business organisation.

Analyzing the development of private sector, these tendencies are observed: a growing focus on efficiency (the analysis of the main organisations in e-business is necessary, the analysis of structures ensuring that the existing goals will be retained and new goals will be realized), the transformation of leadership (education of leaders, support for employees, indicating the importance of leadership and its influence on the e-business organisation; the education of individuals, the perception of skills needed in their activities ensuring that the work of effective team is more useful to the leaders and organisations); the reformation of payment systems (the creation of payment system that is related to the organisation's goals, state's strategy and employees' motivation); the necessity to carry out researches on the efficiency of employees' performance (the personnel change management realizing better the needs and motivation of the employees); the promotion of collaboration between employees. The competencies of people working in e-business, the successful compatibility of personal features and motivation, their aiming at the realization of strategic goals and plans are one of the challenges, the solving of which may give good performance results.

The human resources management system consists of: management strategy and structure, personnel policies, also management techniques and tools, employees' motivation. It is important how these concepts are realized in a particular e-business organisation, and the fact that all parts of human resources management are closely linked and make influence on each other.

Management style and methods used in e-business organisation often vary, and depend not only on the formal part of the management or personnel management techniques, but also on the organisation's culture and philosophy, the people who work at that organisation, the employees' skills of human resources department. On the other hand, informal processes within the organisation have an impact on the formal part of the management and the technique of human resources management. Employees' skills, proficiency, leader's authority, motivation determine a particular human resources policy and management concept.

The human resources management is a dynamic process that depends on the external and internal factors, and its purpose is to harmonize the interests of the e-business organisations with the abilities and interests of people working there, as well to motivate properly, effectively seeking the objectives.

In the reviews published by international organisations the tendency to individualize the human resources management is stated. It is the most prominent in the selection processes, establishing the deadline for appointment to the service, in trainings and so on. Having recognized that the

needs of each organisation are different, different management and motivation means should be applied to them, considering the needs and goals of the e-business organisation. However, it is noted that the individualization of human resources management may have a negative impact on the ethics of employees.

Another direction, where the reforms of human resources management are carried out, is the delegation of human resources management activities. Although the intensity and volume of this tendency vary in different countries, decentralization of human resources management is observed, some functions of central authority are disposed to other units. This tendency is especially apparent in cases, where the leadership role increases, and the functions of central authority that is responsible for the management of state council change.

A part of the European Union member states establish increasingly decentralized approach to the procedures of human resources management, especially, employment, wages, evaluation, education policy. Delegation trend is typical to those countries, where the career system dominates.

However, the need for e-business organisation to react to changes quickly and effectively promotes not only the processes of human resources management, but also the motivation system of personnel.

1.3.1. Theoretical evaluation aspects of factors affecting human resources motivation

Many scholars agree that currently one of the most important and popular dimensions in e-business is the motivation of employees, which is diversely understood and defined (Palidaukaitė 2007; Palidaukaitė *et al.* 2008; Worthley *et al.* 2009; Anderfuhren-Biget *et al.* 2010; Merkys *et al.* 2010; Palidaukaitė *et al.* 2011; Andersen *et al.* 2012; Chen *et al.* 2012; Park *et al.* 2012; Andersen *et al.* 2013; Jin 2013; Pedersen 2013).

One of the major discourses of scholars and business members are the factors and means that affect personnel's motivation. In the scientific literature, the factors that affect the workers of e-business are analysed and categorized diversely (for example, the socio-demographic factors, the results of their activities, etc.).

Many scholars distinguish intrinsic (self-help, achievements, personal development, etc.) and external motivation (the level of involvement in work, wage, promotion, career opportunities, and other rewards).

There are a number of scientific researches that try to determine the relationship between motivation and job satisfaction, employees' activities, efforts, the activities of organisation, bureaucracy, personal characteristics, etc. However, there is no common approach among the scholars to the concept of workers' motivation and abilities to properly assess the workers' motivation and its influencing factors.

Summing up the various factors, which affect the motivation of workers and are identified by various scholars, five groups of factors influencing motivation have been distinguished:

- Material factors: wages, bonuses, premium allocation;
- Recognition factors: thanking, nominal gift, more responsibility and authority, involvement in decision-making, career opportunities;
- Self-expression factors: possibility to work interesting and responsible work, ability to improve constantly (trainings, qualification raising courses, rotation, internships, missions);
- Social factors: good psychological climate, appropriate leadership style, free time or entertainment events, manager's attention, informal conversations, team work organisation;
- Security factors: appropriate working conditions, equipped workplace, social security, insurance.

1.3.2. Analysis of factors that influence the motivation of human resources

Summarising the factors of employees motivation analysed by various scientists (such as Palidaukaitė 2007; Palidaukaitė *et al.* 2008; Worthley *et al.* 2009, Anderfuhren-Biget *et al.* 2010; Merkys *et al.* 2010; Palidaukaitė *et al.* 2011; Andersen *et al.* 2012; Chen *et al.* 2012; Park *et al.* 2012; Andersen *et al.* 2013; Jin 2013; Pedersen 2013) was carried five factor groups by content influencing the motivation: material, acceptance, self-expression, social and security factors (Raudeliūnienė *et al.* 2014(a)).

The groups of motivation factors were identified on the basis of the results of empirical research which took place in 2011 (Chlivickas *et al.* 2011 ; Raudeliūnienė *et al.* 2014(a)) whose aim was to analyse the functions and procedures of the Lithuanian personnel administration offices and personnel administration specialists. Research carried out a questionnaire survey. It was formed the questionnaire to conduct the survey form of 65 closed type questions. The survey was carried out online. The questionnaire was answered by more than 87 percent respondents (218 respondents). Also, in order to clarify the individual moments were additionally carried out in-depth interviews, which consisted of 27 open questions. The answers of questionnaire and in-depth interview are reliable and represent a summary of the opinion of the heads of budget office's (Lithuanian state and municipal institutions and agencies) personnel departments (Chlivickas *et al.* 2011).

The respondents were asked to evaluate each of the factors in the evaluation scale: negatively perceived motivation means, insufficiently motivating motivation means, average, good and very good motivating means. The survey has showed that the function of motivation system design and realization is typically carried out once a year (36 percent). 36.7 percent

Table 1.7

Classification of human resources administration procedures according to the more detailed regulations of procedure's performance

(Raudeliūnienė et al. 2014(a))

Need to regulate level	Procedures of human resources administration
High	Planning and implementation of human resources strategy (56 percent) Motivation of employees (56 percent) Planning and implementation of employees' career (45 percent)
Average	Planning of employees' needs (37,2 percent) Preparation of standard acts related to personnel administration (34,9 percent) Evaluation of employees' activities (31,7 percent)
Low	Training of employees (25,2 percent) Official study (23,9 percent) Staff training (22,5 percent) Preparation of orders related to personnel administration (17 percent) Admission of employees (9,2 percent) Dismissal of employees (8,7 percent)

of respondents noted that this function was not carried out at all. The function of social and other guarantees realization is typically carried put every day (44.0 percent). 7.8 percent of institutions did not carry out this function. The high demand for the regulation of human resources management procedures can be supplemented with the planning and realization of human resources strategy, also with employees motivation, career planning and implementation (Table 1.7) (Chlivickas *et al.* 2011). Evaluating the characteristics of motivating factors in the public sector, in the group of material factors wage was mainly evaluated well (34.9 percent) by the respondents, bonuses as the motivating means were evaluated insufficiently (41.3 percent), the premium allocation was evaluated insufficiently (33.5 percent), onetime payout prescribed by the government was evaluated insufficiently (36.2 percent). Summarizing the research results it can be stated that from the material factors group, wage motivates the employees the most, and other means (bonuses, premium allocation, onetime payout prescribed by the government) were evaluated as inadequate means to increase workers' motivation. In the group of recognition factors, thanking as the means of motivation was evaluated well (32.6 percent), nominal gift was evaluated insufficiently (32.6 percent), state awards were evaluated insufficiently (29.4 percent), more responsibilities and authority were evaluated well (35.8 percent), involvement in the decision-making process was evaluated well (43.6 percent), career opportunities were evaluated well (29.8 percent). Summarizing the research results, the most effective motivating means are employees' involvement in the decision-making process, more responsibil-

ities and authority, thanking, career opportunities; inadequate motivating means are nominal gift and state awards.

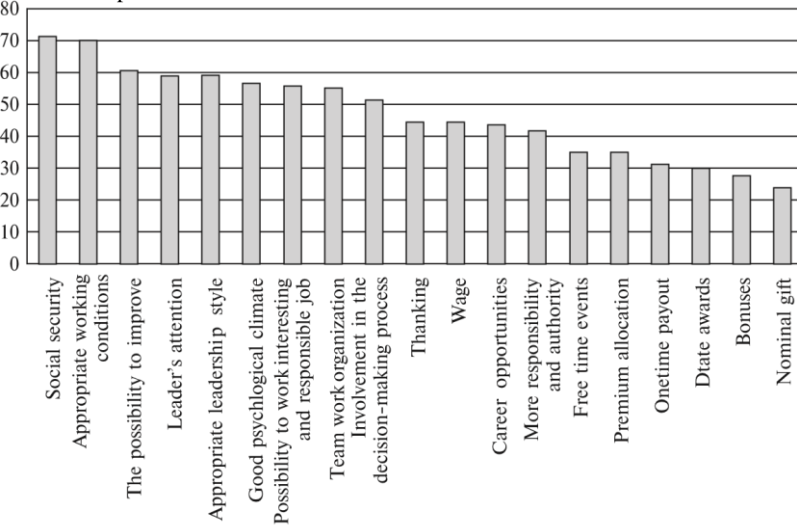
In the group of self-expression factors, the ability to work interesting and responsible job, the ability to improve constantly (training, qualification raising courses, rotation, internships, missions) were evaluated well (42.7 percent).

In the group of social factors, good psychological climate was evaluated well (37.2 percent), appropriate leadership style was evaluated well (41.7 percent), free time or entertainment events were evaluated averagewell (29.4 percent), manager's attention, informal conversations were evaluated well (48.2 percent), team work organisation was evaluated well (46.3 percent). Summarizing the motivating means of this group, the most effective means are manager's attention, informal conversations, team work organisation, appropriate leadership style.

In the group of security factors, appropriate working conditions, equipped workplace were evaluated well (49.1 percent), social security and insurance were evaluated well (47.7 percent).

The most effective motivating factors, which were evaluated as good or very good in the public sector, can be distinguished in this succession (Fig. 1.2):

- Social security, insurance (good — 47.7 percent, very good — 22.9 percent) — 70.6 percent;
- Appropriate working conditions, equipped workplace (good — 49.1 percent, very good — 20.6 percent) — 69.7 percent;
- Ability to improve constantly (training, qualification raising courses, rotation, internships, missions) (good — 42.7 percent, very good — 17.4 percent) — 60.1 percent;
- Leader's attention, informal conversations (good — 48.2 percent, very good — 11.9 percent) — 58.7 percent;
- Appropriate leadership style (good — 41.7 percent, very good — 17.0 percent) — 58.7 percent;
- Good psychological climate (good — 37.2 percent, very good — 19.3 percent) — 56.5 percent;
- Ability to work interesting and responsible work (good — 42.7 percent, very good — 12.8 percent) — 55.5 percent;
- Team work organisation (good — 46.3 percent, very good — 8.7 percent) — 55.0 percent;
- Involvement in the decision-making process (good — 43.6 percent, very good — 7.8 percent) — 51.4 percent;
- Thanking (good — 32.6 percent, very good — 11.9 percent) — 44.5 percent;
- Wage (good — 34.9 percent; very good — 8.3 percent) — 43.2 percent;



Range of motivating means in public sector (percents) (Raudeliūnienė *et al.* 2014(a))

- Career opportunities (good — 29.8 percent; very good — 13.3 percent) — 43.1 percent;
- More responsibilities and authority (good — 35.8 percent, very good — 5.5 percent) — 41.3 percent;
- Free time or entertainment events (good — 24.8 percent, very good — 9.2 percent) — 34.0 percent;
- Premium allocation (good — 22.9 percent, very good — 11.0 percent) — 33.9 percent;
- Onetime payout prescribed by the government (good — 21.1 percent, very good — 10.1 percent) — 31.2 percent;
- State awards (good — 20.6 percent, very good — 9.2 percent) — 29.8 percent;
- Bonuses (good — 19.3 percent, very good — 8.7 percent) — 28.0 percent;
- Nominal gift (good — 17.0 percent, very good — 6.4 percent) — 23.4 percent.

The research results have showed that the most effective motivating factors in the public sector are social security, insurance; appropriate working conditions, equipped workplace, the ability to improve constantly. The assumption can be made, that in the public sector workers care about their social security, the appropriate working conditions and the ability to improve, which, due to limited financial resources, are not always realized. The least effective motivating factors in the public sector are onetime pay-

out prescribed by the government, state awards, bonuses, nominal gift. One of the main reasons why these motivating factors are less effective in the public sector is the fact that they are rarely applied.

It is offering for the motivating e-business organisation employees to use factors (which are given below) which were formed based on empirical researches:

- material factors: salary, bonuses, benefits;
- factors of acceptance: gratitude, rated gift, concession of more responsibility and mandates, involvement in the process of decisions making, career opportunities;
- factors of expression: the opportunity to do an interesting and responsible work, the ability of constantly improvement (trainings, courses of improving the qualification, rotation, apprenticeships, secondments);
- social factors: good psychological microclimate, acceptable managing style, leisure and recreational activities, the attention of the leader, informal conversations, work in groups;
- security factors: suitable work conditions, the provision of work space, social guarantees.

1.4. Evaluation system of factors affecting creativity in e-business

E-business organisations' managers and employees responsible for decisions in knowledge management, taking into consideration the importance of creativity for such processes as new product (or service) development and acquisition of long-term competitive advantages, determine a goal: to stimulate the creativity of certain employees and the whole organisation in order to develop products (or services) that are hard for competitors to imitate. In order to achieve this goal, it is required both to have a good understanding of the phenomenon of creativity and manage to identify factors affecting creativity, as well as methods for evaluating them.

After recognizing creativity as a core factor affecting e-business organisations' innovation and competitiveness, researchers and practitioners have paid a particular attention to the investigation of this sophisticated phenomenon in their studies. The studies have indicated that creativity is not an innate human quality but a developed human ability; therefore, in the scientific papers, a considerable attention is paid to the identification of factors affecting creativity. During these studies, a set of factors affecting creativity, which could be applied to stimulate creativity at different levels: individual, group, organisational, or country, was estimated. However, in recent scientific papers, the process of the identification of factors affecting creativity is emphasised more than the process of the identification of methods required for a comprehensive evaluation of interrelated factors affecting creativity.

Consequently, e-business organisations seeking to stimulate creativity are facing the problem of how to develop and select for the evaluation an expedient subset of factors affecting creativity, the implementation of which would lead to the effective results achieved in organisations' innovation development processes.

The object of the research, presented in this part, is the identification and evaluation of factors affecting creativity. The aim of this part is to present the system for evaluation of factors affecting creativity. Presenting the problems connected with the phenomenon of creativity and its significance, and structuring the factors affecting creativity, theoretical methods of analysis, comparison and generalisation are applied. Expert and multiple criteria assessment methods for evaluation are used for a comprehensive identification of creativity factors.

1.4.1. Theoretical evaluation aspects of factors affecting creativity

The significance of creativity as an extraordinary human quality was noticed many years ago but, during a long period of time, it was regarded as an exceptional and highly rare ability acquired by birth; in other words, creativity was considered as a God-given talent.

During the 6th and 7th decades of the last century, the phenomenon of creativity was investigated by various scientists. Even in early studies, it was already estimated that creativity and genius are not mystical human qualities. Investigating the activity of creative geniuses, T. Edison has declared that geniuses' inventions are achieved by 99 per cent of perspiration and 1 per cent of inspiration (Titus 2007) and, by declaring that, he confirmed J. W. Goethe's saying that genius is innate diligence. According to the studies, it was found out that creativity as human quality can be developed and trained as the result of continuous practices and special techniques and methods applied. Hence, this phenomenon has become the object of studies of the researchers of various scientific fields.

Creativity is a complicated and complex phenomenon; therefore, it is investigated and interpreted by various scientific disciplines, such as psychology, social psychology, sociology, adult education, organisational behaviour studies, knowledge management and etc. The reasons mentioned have resulted in the absence of a universal definition for creativity, and so authors have provided a variety of definitions in their works (Simon 2005 ; Watson 2007), describing creativity as, for example, a production of novel, useful ideas in various human activities; a process of persuasion, as people become creative in so far as they are able to persuade others to be recognized as creative; a process consisting of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements and etc., making guesses and formulating hypotheses about these deficiencies, measuring,

testing, re-testing and possibly modifying these guesses and hypotheses and, finally, communicating the results.

Taking into consideration the variety of creativity concepts and theories, explaining it, all of these approaches and theories could be systematized. M. H. Chen has systematized and identified four approaches to creativity, namely the evolutionary approach, the cross-disciplinary science approach, the social system approach and the social network approach. The evolutionary approach to creativity identifies creativity as a social process which is characterized by volatility and certain selection process and is caused by human preferences, surrounding factors and socialization. According to the cross-disciplinary science approach, creativity is viewed as a complex phenomenon, extending the limits of psychological knowledge, which cannot be explained by a single discipline and, therefore, must be studied comprehensively, applying such disciplines as sociology, organisational theory, economic theory, metrology and social anthropology. Employing the disciplines mentioned, such aspects as environment, culture, experience, knowledge and skills must be taken into account. According to the social system approach, creativity, in social context, is considered as a result of the interaction between the following three subsystems: the field (various estimated rules and procedures), the sphere (all individuals following the prescribed rules and procedures), and the individual. Taking into consideration this approach, it is highly important to link creativity to individual, group and organisational levels that interact as one huge social system (Chen 2008).

In the discipline of knowledge management, creativity is connected with the process of knowledge development. The aim of this process is to develop new competencies, management tools, processes and products (services) in order to create greater value for an organisation and its clients. During the process of knowledge management, the organisation must either make decisions or create knowledge within itself, or acquire knowledge outside itself; therefore, the potential for creativity is crucial (Probst et al. 2006).

Creativity is highly important for making strategic decisions (Savanevičienė, Gudonavičius 2007). It is recognized that the ability to create is mostly related to the acquisition of competitive advantages, whereas, according to T. Levitt, the future and the utility of business, and the maintenance of competitive advantages, depend on the degree of creativity in organisations (Titus 2007).

In order to systematize the value of creativity, it may be evaluated from technological, economic and cultural-artistic aspects. From the technological side creativity is inseparable from the process of the development of new products, ideas and technologies. In case of the economic aspect taken into consideration, creativity is important for turning these new ideas,

products and technologies into new business or new industries, and thus leading to creating of a significant added value, in other words, leading to economic benefits. Cultural-artistic aspect of creativity refers to the ability to invent new art forms, concepts, designs and individual works of art (Suciu et al. 2009).

According to the form of display, the value of creativity could be divided into material and non-material. In case of material aspect involved, creative innovations are incorporated into material products. As a result, creativity is leading to inventing products that create new sensations (e.g., food), new styles and forms (e.g., fashion design) and new functions (e.g., new technical tools), and to stimulating new researches in the sectors, during which, innovations of a certain field are developed and applied to other fields of industry. From a non-material point, creativity plays an important role in the invention of new forms of expression (e.g., visual arts), new visions (e.g., new architecture and new urban structures) and new relations (e.g., social interaction between different professional and social groups) and affects life quality, that is related to social, cultural and economic sustainability and is dependent on such aspects as migration, tolerance and social interpersonal understanding (Suciu et al. 2009).

Creativity may be important to individuals alone, as well as to organisations, countries and regions. On the individual level, creativity is important, for it is the first step towards innovation at organisational level. For e-business organisations, creativity is important because of value creation and acquisition of long-term competitive advantages with their further preservation. For regions and countries, creativity is important, for it leads to the added value creation, public welfare and country's or region's competitiveness.

It is highly important for the e-business organisations seeking to motivate creativity of their employees to identify factors affecting creativity, in order to take these factors into consideration when developing reasonable decisions related to the organisation's innovative activity.

Since there is no universal theory explaining the phenomenon of creativity, and there are numerous multiple approaches, different authors, in their works, mention different factors affecting creativity. Such variety of different factors mentioned makes it complicated to understand the phenomenon of creativity; therefore, it could be appropriate to take into account R. Ginevičius' observation that, when dealing with a complex phenomenon, the primary goal is not searching for relations between the factors describing it, but grouping them together according to certain characteristics (Ginevičius 2007).

There could be distinguished three main groups of factors affecting creativity: of the individual level, of the organisational level and of the

external environment level. The first group consists of factors directly related to the individual's competencies (individual level competencies). The factors of the second group are related to the organisation's competencies (organisational level competencies). Finally, the third group consists of factors related to the organisation's external environment (external factors affecting creativity).

Since creativity is defined as the ability to create new knowledge, factors affecting creativity related to individual and organisational level competencies could be divided into the subgroups, according to the classification of competencies. This division is based on the fact that competence is usually defined as an attribute of knowledge or skills describing the employee's ability to perform certain tasks, or the organisation's ability to carry out certain activities.

In their studies, J. Martinkienė and A. Stonienė distinguish the following competencies: personal, social, professional, managerial and methodological (Martinkienė 2009; Stonienė et al. 2009). Since creativity occurs at individual and organisation levels, the above-mentioned competencies can also occur at individual and organisational levels.

Personal competencies include: attitudes, personal values, the motivation for self-organisation and reflection, and personal qualities (Jocienė 2007; Adamonienė, Ruibytė 2010).

Social competencies include the following abilities: to communicate, to state the opinion and express thoughts, to persuade, to motivate, to coordinate, to resolve conflicts, to work in team, and to be able to create a favourable environment (Jocienė 2007; Martinkienė 2009; Adamonienė, Ruibytė 2010).

Professional competencies include: special knowledge and abilities at a field of professional activity, process and technology skills, market and competitor's skills, production and service skills (Stalėnienė 2009).

Managerial competencies are related to the following abilities: to manage professional field and organisation, to communicate effectively, to listen, to allocate tasks effectively, and to work in team (Martinkienė 2009; Butkevičienė, Vaidelytė 2009).

Methodological competencies are closely related to professional competencies, supplementing them, and are defined as: procedural skills, abilities to apply appropriate methods and techniques, when dealing with different contexts, and abilities to accomplish tasks regardless of their professional content (Jocienė 2007; Adamonienė, Ruibytė 2010).

Personal competencies (at individual level) are characterized by such factors affecting creativity as: motivation (Pierce et al. 2003; Titus 2007; Chang, Chiang 2008; Galia 2008; Zhou et al. 2008; Zabieliavičienė 2009), personal qualities (Raja, Johns 2010), acuteness (Laumenskaitė, Vasiliauskas 2006; Titus 2007), cognitive flexibility (Titus 2007), curiosity (Lust

for learning) (Choi et al. 2009), perseverance (Ganusauskaitė, Liesionis 2008; Choi et al. 2009), confidence (Ganusauskaite, Liesionis 2008), openness (Homan et al. 2008; Jensen, Beckmann 2009), playfulness (Ganusauskaitė, Liesionis 2008), intellectual abilities (Karkockienė, Butkienė 2005 ; Kobe, Goller 2009), and creative abilities (Titus 2007; Choi et al. 2009).

Social competencies (at individual level) include such factors affecting creativity as communication skills, interpersonal understanding, cooperation skills, the ability to create an appropriate environment, resistance to criticism and failure, and the ability to learn (Jocienė 2007; Martinkienė 2009; Adamonienė, Ruibytė 2010).

Professional competencies (at individual level) include such factors affecting creativity as existing knowledge structure (Titus 2007) and work experience (Lorenz, Lundvall 2010).

Managerial competencies (at individual level) include the following factors affecting creativity: leadership experience (Chang, Chiang 2008) , leadership characteristics (Ferrin et al. 2007; Choi et al. 2009), and leader's management style (Malovikas 2002; Watson 2007; Chang, Chiang 2008 ; Choi et al. 2009; Wang, Rode 2010).

Methodological competencies (at individual level) include the following factors affecting creativity: analytical thinking, individual work skills, teamwork skills, the ability to submit proposals, and decision-making skills (Jocienė 2007; Adamonienė, Ruibytė 2010).

According to scientists, personal competencies (at organisational level) are characterized by the following factors affecting creativity: task (work) characteristics (Watson 2007; Choi et al. 2009; Raja, Johns 2010) , the workload (Verbeke et al. 2008), the organisation's culture (Alves et al. 2007; Chang, Chiang 2008; Atkočiūnienė et al. 2009; Choi et al. 2009) , the organisation's environment (McFadzen, O'Loughlin 2000; Chang, Chiang 2008; Atkočiūnienė et al. 2009; Choi et al. 2009; Wang, Rode 2010) , routine behaviour (Ohly et al. 2006; Alves et al. 2007), freedom of actions (Isaksen et al. 2001; Choi et al. 2009), shared goals (Alves et al. 2007), shared values (Alves et al. 2007; Vveinhardt, Nikaitė 2008), the organisation's motivation (Watson 2007), and the access to resources and technologies (McFadzen, O'Loughlin 2000; Isaksen et al. 2001; Zhou et al. 2008).

Social competencies (at organisational level) include such factors affecting creativity as characteristics of the co-workers (Choi et al. 2009) , interpersonal trust (Isaksen et al. 2001; Choi et al. 2009), risk tolerance (Isaksen et al. 2001; Choi et al. 2009), organisational support (encouragement) (Verbeke et al. 2008; Choi et al. 2009), and cooperation and discussions (Isaksen et al. 2001; Alves et al. 2007; Jensen, Beckmann 2009; Fliaster, Schloderer 2010).

Professional competencies (at organisational level) include such factors affecting creativity as professional coordination practice and the organisation's knowledge of the latest developments and work methods (Staliūnienė 2009).

According to scientists, managerial competencies (at organisational level) include such factors affecting creativity as human resource management practice (Isaksen et al. 2001; Zhou et al. 2008), organisational flexibility (Raipa 2001; Alves et al. 2007), employee's participation in management (Huang 1997), evaluation system (Alves et al. 2007; Chang, Chiang 2008; Wang, Rode 2010), organisational structure (Isaksen et al. 2001; Alves et al. 2007; Chang, Chiang 2008), and organisational strategy (Alves et al. 2007; Melnikas, Smaliukiene 2007; Wang, Rode 2010).

Methodological competencies (at organisational level) include: the organisation's ability to manage innovations, the ability to adapt to changing situations, the ability to organize work activities, project-management skills, the ability to create complex projects, and problem-solving skills (Jakubavičius et al. 2003; Watson 2007).

The third group of factors affecting creativity consists of factors related to the organisation's external environment. According to the model of distribution of factors, suggested by J. Alves, external factors affecting creativity can be divided into two subgroups: factors related to the institutional support, and factors related to the sets of values and norms (Alves et al. 2007).

Factors related to the institutional support are: labour market mobility (Lorenz et al. 2010), education system (Lorenz, Lundvall 2010; Spencer 2011), innovations in residential areas (Walcott 2002; Sands, Reese 2008), economic diversity in residential areas (Desrochers, Leppälä 2010), university system (Florida 2005), cluster system (Schoales 2006; Jucevičius 2009), public investment in education and research, and tax incentives for scientists and their researches (Schoales 2006).

Factors related to the sets of values and norms are: public culture (Glaveanu 2010), tolerance (Sands, Reese 2008), local environment's tolerance, diversity and size of the residential area (Spencer 2011), revolutionary (major) changes (Livingstone et al. 2002), competition, and social mobility (Pruskus 2004; Simon 2005; Klimašauskienė 2007).

Creativity is considered as a complicated and complex social phenomenon, as it is influenced by many interrelated factors acting in opposite directions. According to V. Podvezko, multiple criteria assessment, that makes the basis of quantitative evaluation of any complex phenomenon expressed by a number of criteria, has been effectively used for a comprehensive evaluation of complex quantities (Podvezko 2008).

Summing up the results of scientific research, it can be stated that creativity is a complicated and complex phenomenon that is affected by

many interrelated factors. Factors affecting creativity have been identified in scientific papers, and may be divided into three groups according to their specific characteristics. The first and the second groups consist of factors directly related to individual and organisational level competencies. The third group consists of factors related to the organisation's external environment.

Complex multiple criteria assessment method is suitable for the evaluation of factors affecting creativity, as all factors cannot be expressed by a single evaluation criterion; but when this method is employed, the number of evaluation criteria is not restricted, that results in opportunity to evaluate the integrated partial criteria of both external and internal factors, determine the significance of certain criteria to evaluation results, and compare the values of the partial criteria with each other.

1.4.2. Identification of factors affecting creativity

The identification of factors affecting creativity in e-business organisation was based on example of the Lithuanian Armed Forces research results in the following two structural military units of the Lithuanian Armed Forces: the Air Defence Battalion of the Lithuanian Air Forces (hereinafter : ADB) and the Air Base of the Lithuanian Air Forces (hereinafter: AB).

On the basis of the analysis of the scientific researches, the initial list of factors affecting creativity was compiled, with 77 factors affecting creativity subject to expert evaluation. A commission of 6 ADB and 6 AB experts, who were selected according to the following two criteria: relevance to the process of knowledge formation, and experience (not less than five years) at the process of knowledge formation, was formed. The interval $[0, 1]$ was used in order to determine the criteria weights. Applying the method of the determination of the significance of the criteria, 43 of the 77 initial criteria were evaluated as negligible.

After the identification of factors affecting creativity has been carried out, it was estimated that the creativity of the organisation members depends on individual level competencies, organisational level competencies and external factors (Table 1.8).

According to the experts, the following factors affecting creativity were considered as belonging to individual level: personal competencies (motivation, personal qualities, cognitive flexibility, perseverance, intellectual abilities, and creative abilities); social competencies (communication skills, interpersonal understanding, cooperation skills, and ability to create a favourable environment); professional competencies (work experience, professional knowledge, professional knowledge of the latest developments and professional techniques, and foreign work experience); managerial competencies (leadership experience and leader's management style); and methodological competencies (analytical thinking, teamwork skills, and decision-making skills).

The following factors affecting creativity were considered as belonging to organisational level: personal competencies (organisation's environment, motivation, and access to resources); social competencies (interpersonal trust, organisational support, cooperation, and discussions); managerial competencies (evaluation system and organisational strategy); and methodological competencies (project-management skills and problemsolving skills).

The following factors affecting creativity were considered as belonging to external level: institutional support (education system and public investment in education and research); and sets of values and norms (public culture and local environment's tolerance).

1.4.3. Evaluation system of factors affecting creativity

On the basis of carried out scientific and practical researches, multiple criteria assessment is suggested for evaluating factors affecting creativity. This evaluation system is based on the multifaceted approach, taking into account such quantitative and qualitative criteria that characterize factors affecting creativity comprehensively and precondition their evaluation in e-business. The evaluation criteria are grouped together in a form of a set of the initial criteria, according to their content and interrelation. The multiple criteria assessment is employed in order to achieve more objective and explicit evaluation and precondition the evaluation of the aspects of major factors affecting creativity on the basis of the hierarchical model. In order to maximize the application flexibility of the evaluation system in e-business organisations, the experts have considered the specifics of the organisation's activity, when estimating weights and values of the criteria.

The following sequence of the evaluation of factors affecting creativity is suggested: estimation of the need for the evaluation of factors affecting creativity; compilation of a list of the criteria; determination of the criteria weights and values; calculation of a value of the integrated criterion of the evaluation; and decision-making and implementation.

Estimating the need for the evaluation of factors affecting creativity. The need for the evaluation of factors affecting creativity appears when an organisation states an objective to stimulate creativity at individual and organisation levels.

Compiling the list of the evaluation criteria of factors affecting creativity. In the process of analysing scientific literature and collaborating with experts, all essential factors affecting creativity are included into the list of factors affecting creativity. The criteria, added to the list, are grouped according to certain characteristics, and the structured hierarchical system of the criteria, subject to expert evaluation, is formed.

Determining the weights of the evaluation criteria of factors affecting creativity. The weights of criteria of factors affecting creativity are determined according to expert evaluation. The determination of the weights

Table 1.8

The identification of factors affecting creativity by applying the method of the determination of the significance of the criteria (Raudeliūnienė et al. 2012a)

Partial integrated criterion (third stage)	Partial integrated criterion (second stage)	Initial criterion	Criterion's weight
Individual level (0.57)	Individual level personal competencies (0.32)	Motivation	0.20
		Personal qualities	0.15
		Cognitive flexibility	0.15
		Perseverance	0.13
		Intellectual abilities	0.17
		Creative abilities	0.20
	Individual level social competencies (0.20)	Communication skills	0.27
		Interpersonal understanding	0.22
		Cooperation skills	0.24
		Ability to create a favourable environment	0.27
	Individual level professional competencies (0.21)	Work experience	0.26
		Professional knowledge	0.29
		Professional knowledge of the latest developments and professional techniques	0.24
		Foreign work experience	0.21
	Individual level managerial competencies (0.11)	Leadership experience	0.44
		Leader's management style	0.56
Individual level methodological competencies (0.16)	Analytical thinking	0.27	
	Teamwork skills	0.35	
	Decision-making skills	0.38	
Organisational level (0.33)	Organisational level personal competencies (0.30)	Organisation's environment	0.33
		Organisation's motivation	0.37
		Access to resources and technologies	0.30
	Organisational level social competencies (0.35)	Interpersonal trust	0.22
		Organisational support (encouragement)	0.25
		Cooperation	0.28
		Discussions	0.25
	Organisational level managerial competencies (0.16)	Evaluation system	0.53
		Organisational strategy	0.47

External level (0.1)	Organisational level methodological competencies (0.19)	Project-management skills	0.41
	External level factors related to institutional support (0.50)	Problem-solving skills	0.59
		Education system	0.50
	External level factors related to sets of values and norms (0.50)	Public investment in education and research	0.50
		Public culture	0.50
	Local environment's tolerance	0.50	

of the criteria illustrates the significance of each criterion in comparison to other criteria. In order to create preconditions favourable for more objective and explicit evaluation, the weights of the criteria must be differ-

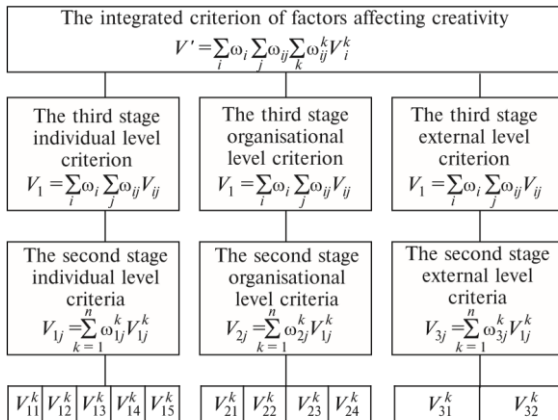
entiated according to the specifics of the organisation's activity. The scale of measurement with interval [0, 1] is suggested to use when determining the weights of the criteria, i.e., the total value of the weights of the criteria of each stage should be equal to one. The weights of the criteria of the evaluation are determined for each level of the criteria, starting with the initial criteria of the evaluation.

Determining the values of the evaluation criteria of factors affecting creativity. Factors affecting creativity are evaluated according to the initial quantitative and qualitative criteria. Qualitative criteria are measured by using a scale with the interval [1, 5], where the value «1» of the evaluation criterion means «negative», «2» means «insufficient», «3» means «average», «4» means «good», and «5» means «high». Other criteria are measured quantitatively, by providing a ration and an average of the measured values, or expressed in absolute values. In order to illustrate the comparability of the criteria values (expressed in various units of measurement), they could be normalized by using a scale with the interval [1, 5] (in which «1» means «risk», «2» means «insufficient security», «3» means «security», «4» means «advantage», and «5» means «leadership»), or by applying other methods for the normalization (adapted by Chlivickas, Raudeliūnienė 2007).

Calculating the value of the integrated criterion of factors affecting creativity. In order to calculate the integrated criterion V of factors affecting creativity, a multiple criteria evaluation system is employed (Fig. 1.3) (adapted by Chlivickas, Raudeliūnienė 2007).

The following are the first stage criteria of the evaluation of factors affecting creativity: V_{11}^k — the initial criteria of individual level personal

creativity (Raudeliūnienė et al. 2012(a))



The sequence of estimating the integrated criterion of factors affecting

competencies; V_{12}^k — the initial criteria of individual level social competencies; V_{13}^k — the initial criteria of individual level professional competencies; V_{14}^k — the initial criteria of individual level managerial competencies; V_{15}^k — the initial criteria of individual level methodological competencies; V_{21}^k — the initial criteria of organisational level personal competencies; V_{22}^k — the initial criteria of organisational level social competencies; V_{23}^k — the initial criteria of organisational level managerial competencies; V_{24}^k — the initial criteria of organisational level methodological competencies; V_{31}^k — the initial criteria of external level related to institutional support; V_{32}^k — the initial criteria of external level related to the sets of values and norms.

The following are the partial integrated criteria (of the second stage) of the evaluation of factors affecting creativity: V_{11} — the partial criterion of individual level personal competencies; V_{12} — the partial criterion of individual level social competencies; V_{13} — the partial criterion of individual level professional competencies; V_{14} — the partial criterion of individual level managerial competencies; V_{15} — the partial criterion of individual level methodological competencies; V_{21} — the partial criterion of organisational level personal competencies; V_{22} — the partial criterion of organisational level social competencies; V_{23} — the partial criterion of organisational level managerial competencies; V_{24} — the partial criterion of organisational level methodological competencies; V_{31} — the partial criterion of external level related to institutional support; V_{32} — the partial criterion of external level related to the sets of values and norms.

The following are the partial integrated criteria (of the third stage) of the evaluation of factors affecting creativity: V_1 — the partial criterion of individual level; V_2 — the partial criterion of organisational level; V_3 — the partial criterion of external level.

The integrated criterion V of factors affecting creativity is equal to a total of the summation of the values of the initial (of the first stage) and the integrated partial criteria (of the second and the third stage) of factors affecting creativity, V_{ij}^k , multiplied by their weights:

$$V' = \sum_i \omega_i \sum_j \omega_{ij} \sum_k \omega_{ij}^k V_{ij}^k \quad (1)$$

where ω_i is the weight of the i -th partial integrated criterion (of the third stage); ω_{ij} is the weight of the j -th partial integrated criterion (of the second stage); ω_{ij}^k is the weight of the k -th initial criterion (of the first stage); V_{ij}^k is the value of the initial criterion; i, j, k refer to the indices of the criteria of the particular stages; $i, j, k \in 1, 2, 3, \dots, n$, where n stands for the number of the criteria of a particular stage; the total value of the weights of the criteria of each stage is equal to one:

$$\sum_i \omega_i = \sum_j \omega_j =$$

$$\sum_k \omega_{ij}^k = 1.$$

Decision-making concerning the improvement of the situation of factors affecting creativity. When forming a decision-subset, the largest gap between the maximum possible values of the initial criteria of the evaluation of factors affecting creativity and the measured values of the initial criteria of the evaluation of factors affecting creativity, is taken into account (adapted by Chlivickas, Raudeliūnienė 2007):

$$A_i = (N_i \omega_{ijk}) - (N_i^* \omega_{ijk}), \quad (2)$$

where A_i is the largest gap between the values of the possible largest and measured initial criteria; N_i is the normalized value of the i -th initial criterion; N_i^* is the possible largest normalized value of the i -th initial criterion; ω_{ijk} is the weight of the i -th initial criterion of the evaluation. The estimated gap is seen as areas to be resolved; in order to eliminate them, a decision-subset is formed from the existing one.

Implementing the decisions concerning the improvement of the situation of factors affecting creativity. The resources required for the improvement of the system of factors affecting creativity are identified and provided; and the measures, required for the improvement of the system of the factors, are implemented.

Feedback. The efficiency of the measures employed to the improvement of the system of factors affecting creativity, and a possible application of further measures, are identified.

The proposed system for the evaluation of factors affecting creativity is characterized by a complex evaluation, and creates preconditions to identify the strengths and weaknesses of factors affecting creativity and make decisions based on this identification.

1.5. Knowledge appliance process in e-business organisation

The knowledge appliance process is describing as a stage of knowledge management realisation when the knowledge is transforming into the specific e-business organisations results.

The e-business organisations seeking to implement and coordinate the knowledge appliance process effectively often face psychological and functional problems.

Psychological problems are connected with employees who block the use process of new knowledge, because they are scared to show the existing extinctions of knowledge, to lose their, as a specialist of some area, position. As well organisation's employees often express the distrust about external knowledge, so they are not motivated to apply such knowledge in their work environment.

Functional problems are connected with employees (while accomplishing casual routine functions under usual (automatic) way), who are sure

that there's no more efficient way to accomplish some function or procedure, so for the new procedures they pay too less attention.

To solve such problems is applying the knowledge appliance process for which is important not only as to know what kind of internal and external knowledge existing, where they are, who has that knowledge, but at the same time to apply existing knowledge to accomplish work functions and to create e-business organisation's value.

Scientists the factors of the efficiency of knowledge appliance process are analysing for decades, but still there is no united position how to determine objectively which factors have the biggest effect for efficiency of this process.

The knowledge appliance process is complicated and ambiguous objective of research, so scientific literature submits different positions of scientists how to identify and evaluate essential factors.

The objective of research in this part is to determine the factors of the efficiency of knowledge appliance process, which makes assumptions to evaluate and improve the knowledge appliance process in e-business organisation.

To submit the factors evaluations' meaning and problems of the efficiency of knowledge appliance process and to systematise the factors, which affect this process, were used theoretical analysis, comparison and generalisation methods in this research, to identify and evaluate factors is suggesting to apply multiply assessment methods.

The knowledge use is defined as the using process of appropriated (actual) knowledge (which was found, set, shared) seeking to make solutions and tasks, by Becerra-Fernandez, Gonzalez, Sabherwal (2004). This process is created of management's (diversion) and routine's subprocesses. Person (in the management's (diversion) subprocess) uses knowledge directly collected by other person for the action and during this subprocess the difficulties, connected with transfer of tacit knowledge, are avoided. E.g. the organisation's employee asking for the expert for the solution of appeared problem and managing instruction by the expert. But when such kind of problem appears the employee is not able to solve the problem without instructions of expert, because in this subprocess the knowledge is not adopting from expert. The subprocess of routine contains knowledge established in procedures, rules, rates under which are managing (Raudeli'unien'e *et al.* 2014(b)).

According to the Probst, Raub, Romhardt (2006) knowledge use is a process connected with an effective application of «working» knowledge to solve problems, to manage processes and to create suitable working environment to apply knowledge (the importance of motivation, work environment).

According to O'Dell, Hubert (2011) the knowledge appliance process (transfer, re-use, adaptation or interception) is such a process when the knowledge is submitted in special form and adapted to solve problems, to improve the process or make decision. The problematic area in this process is that employee's technical knowledge or knowledge creation could be more valuable compared with knowledge sharing. If an organisation pays more attention to the invention, employees face more difficulty to accept knowledge from new resources (O'Dell *et al.* 2011).

Maryam, Denford have stated that knowledge use is knowledge using to make decisions, to solve problems and its coordination of persons and groups in an organisation (Raudeliūnienė 2012).

Scientists are offering various ways and measures how to use knowledge (Raudeliūnienė 2012):

- information centres where information is submitted in one place and in various forms, employee has the access to participate actively in the creation and management of the information centre;
- training in workplace, as employees are using new knowledge easily, which can be directly applied in work activity;
- documents, which are attractive in their form and has interesting content (e. g. diagrams, summary, etc.);
- working conditions, as workplace is supplied by necessary means to use the knowledge and when it is shorter physical distance till necessary knowledge sources.

Sandkuhl (2009) has stated that organisations often face success the method based on network. The meaning of this method is that as much employees will be included in the process, as much the knowledge will be valued and employees by themselves will be motivated to use and share existing knowledge.

Summarising opinions of various scientists it is possible to state that knowledge appliance process is connected with knowledge management realisation, because the use process is applying after the objectives of knowledge are formed in the organisation, the knowledge extinctions are identified and decisions of knowledge acquisition and development are made. So the knowledge appliance process is one of the most important of all knowledge management processes, because on its efficiency depends employees effectiveness of work activity, fluency of internal processes, the quality of satisfaction of customers demands, the created value and uniqueness of e-business organisation.

The most scientific researches pointed out that the main motive for employees to use knowledge is knowledge value (expecting benefit of knowledge) and comfortable knowledge base, infrastructure, which is simple to use when there's possibility in the knowledge appliance process create them at the same time and it saves costs of time and emotions.

1.5.1. The factors proceeding efficiency of knowledge appliance process in e-business

The factors of knowledge appliance process efficiency are variously dividing and classified according the content in the scientific literature, such as psychological, functional and social aspects according resource groups (human, information, technological, information and knowledge resources), etc. (Table 1.9).

Summarising the results of researches made by scientists (Chlivickas, Raudeliūnienė 2007; Chlivickas, Raudeliūnienė 2008; Raudeliūnienė 2012 ; Chlivickas *et al.* 2011; Raudeliūnienė *et al.* 2012(a); Raudeliūnienė *et al.* 2012(b); Raudeliūnienė *et al.* 2014(a); Raudeliūnienė *et al.* 2014(b)) are offering the factors of knowledge appliance process efficiency group by content of organisation's resource groups as the factors are using in the employees motivation and ability to use information and knowledge, organising, technological and financial infrastructure rational for knowledge use in the work activity.

This segregation of factors' groups are based on such logical-causal sequence: the main objective of organisation is the aspiration of the longlasting economic profit and value creation, which depends on motivation of e-business organisation employees to use knowledge for more effective working activity (it's directly connected with an organising, content and technological aspects which create assumptions to coordinate the knowledge appliance process fluently and financial resources which ensuring financial aspect of important knowledge use). In this research forming the assumption that the knowledge appliance process could function properly only when e-business organisation has staff that is motivated and prepared to take advantage of organisational, knowledge content, technological, financial infrastructure.

The factors of knowledge appliance process efficiency are associated with such resource groups of e-business organisation as:

- factors associated with the target orientation: organisational structure, objectives, culture, networks;
- human resources evaluation factors: employees' motivation, competence;
- factors of knowledge-content evaluation: quality of knowledge, knowledge value, the level of knowledge application, the form of knowledge submission, the period and place of knowledge use;
- factors of technological resources evaluation: infrastructure of technologies and base for knowledge use, methods and means;
- factors of the financial resources evaluation: profitability of activity, the level of investment costs, the profitability net sales, the cost of knowledge and technologies use, financial sources, ways, etc.

The factors of human resources — employees' motivation and competence — are evaluating the most controversial.

Summarising the factors of employees motivation analysed by various scientists was carried five factor groups by content influencing the motivation: material, acceptance, self-expression, social and security factors (Raudeliūnienė *et al.* 2014(a); Raudeliūnienė *et al.* 2014(b)) (see 3 Part):

- material factors: salary, bonuses, benefits;

- factors of acceptance: gratitude, rated gift, concession of more responsibility and mandates, involvement in the process of decisions making, career opportunities;
- factors of expression: the opportunity to do an interesting and responsible work, the ability of constantly improvement (trainings, courses of improving the qualification, rotation, apprenticeships, secondments);
- social factors: good psychological microclimate, acceptable managing style, leisure and recreational activities, the attention of the leader, informal conversations, work in groups;
- security factors: suitable work conditions, the provision of work space, social guarantees.

Another important factor of knowledge appliance process efficiency is competence of employees. A lot of scientists were analysing the concept of competence and have stated that the competence of human resources is difficult and complex phenomenon.

The knowledge and human's abilities and experience together consist of competence which is understandable as the entire of knowledge, abilities and skills.

Summarising factors of competence which were analysed by various scientists and use the results of empirical research which took place in 2012 (Raudeliūnienė *et al.* 2013), whose aim was to form conceptual complex evaluation model of competences of professional military service in Lithuanian armed forces. To evaluate the competence was selected 26 of the 98 factors, which were grouped in four ranges (see 2 Part):

- factors of personal competence: duty, professionalism, flexibility of mind, emotional stability, efficiency, knowledge, empathy;
- factors of moral competence: honesty, responsibility, respect, honor, influence to others, being the example, tolerance;
- factors of management competence: decisions making, planning, leadership, teamwork, analytical thinking, initiative, creativity;
- factors of profession competence: professional knowledge, knowledge integrity, military posture, modern warfare basics, physical preparation.

In this research were evaluated the factors of knowledge appliance process efficiency and suggested such factors as duty, professionalism, emotional stability, efficiency and knowledge for the further evaluation of experts in the range of factors of personal competence.

Table 1.9

The factors of knowledge appliance process efficiency by the psychological and functional aspects (source: Raudeliūnienė et al. 2014(b))

Context	The factors of knowledge appliance process efficiency
Dividing by the psychological factors	psychological, functional and social aspects (Poonkundran 2009 ; Sandkuhl 2009; Evangelista <i>et al.</i> 2010; Shijaku 2010; Turner, Minonne 2010 ; Woolliscroft 2012; Hasanzadeh, Mahaleh 2013)
Functional factors	The collaboration of members of rganization, training, motivation of members, suitable work conditions, theevaluation of members importance
Social factors	The implementation of innovations and novelties, technological and technical resources, possibilities for external collaboration, computer system
Dividing by the Chlivickas <i>et al.</i> 2008	The intensity of employees trainings, communication, management of documents important for the work
Factors associated with the target orientation	e resource groups (Chlivickas <i>et al.</i> 2007; Chlivickas <i>et al.</i> 2008 ; 011; Raudeliūnienė 2012; Raudeliūnienė <i>et al.</i> 2012(a); Raudeliūnienė <i>et al.</i> 2012(b); Raudeliūnienė <i>et al.</i> 2014(a))
Factors of human resources	The organisational management structure, objectives, culture, networks
Factors of knowledge-content evaluation	The motivation of employees to use knowledge (material factors, factors of acceptance, expression, social, security factors), the knowledge value, the approach of employees to the innovations, competence
Factors of technological resources evaluation	Quality of knowledge, knowledge value, the level of knowledge application, the form of knowledge submission, the period and place of knowledge use
Factors of financial resources evaluation	The infrastructure of technologies and base for knowledge use, methods, means and measures of the knowledge use
	The profitability of activity, the level of investment costs, the profitability net sales, the cost of knowledge and technologies use, financial sources and ways

It is important to evaluate in e-business organisation such factors as a honesty, responsibility, respect, honour, influence to others, being the example, tolerance in the factors group of moral competence.

The attention should be paid to the abilities and skills to plan the knowledge appliance process, management abilities, the abilities to use knowledge in the teamwork, analytical thinking, initiative and creativity in the factors group of management competence.

It needs to valuate professional knowledge, the level of knowledge integrity, the employees' qualification, experience, area (to evaluate in which area employee has the competence) and quality (to evaluate activity efficiency according specific scale) in the factors group of profession competence.

Summarising the results of empirical researches it is possible to state that the knowledge appliance process has the complexity of evaluation and

variety of the factors, so seeking to evaluate efficiency of knowledge use complexly it is suggesting to evaluate it by the groups of organisations' resources when the factors are divided in five ranges: factors associated with the target orientation, factors of human resources, factors of knowledge-content evaluation, factors of technological resources evaluation, factors of the financial resources evaluation.

1.5.2. The selection of the method to evaluate efficiency of knowledge appliance process in e-business

The knowledge appliance process has the complexity of evaluation and variety of the factors, so to do research it is suggested to apply multiple criteria assessment methods, which belong to group of decisions making and create assumptions to evaluate knowledge appliance process complexly and make decisions of the process improvement. It is possible to evaluate any sophisticated phenomenon, made of plenty indicators, quantitatively applying multiply assessment methods.

Ginevicius and Podvezko (2005) indicate that the complex and sophisticated assessment of phenomena begin with the formulation of the research problem and identification of the subject and objectives, and end with the decisions making on improving the state of the phenomenon.

Summarising the results of scientific researches it is possible to state that the factors of knowledge appliance process efficiency in e-business are complicated and complex. A complex multiple criteria assessment is appropriate to evaluate the factors of knowledge appliance process efficiency, because it's impossible to express the factors by one criterion, so applying this methods there's no limits of factors and criteria quantity and it makes assumptions to determine the importance of separate factors to the evaluations' results, to compare factors between each other and to form suggestions for process improvement.

The knowledge appliance process is connected with implementation of knowledge management and it is one of the most important processes of knowledge management in e-business, because on its efficiency depends employees effectiveness of work activity, fluency of internal processes, the quality of satisfaction of customers demands, the created value and uniqueness of organisation.

The knowledge appliance process has the complexity of evaluation and variety of the factors, so seeking to evaluate efficiency of knowledge use complexly it is suggesting to evaluate it by the groups of e-business organisations' resources when the factors are divided in five ranges: factors associated with the target orientation, factors of human resources, factors of knowledge-content evaluation, factors of technological resources evaluation, factors of the financial resources evaluation.

The factors of knowledge appliance process efficiency are complicated and complex, so it is suggesting to apply complex multiple criteria assessment is appropriate to evaluate the factors of knowledge appliance process efficiency, because it's impossible to express the factors by one criterion, so applying this methods there's no limits of factors and criteria quantity and it makes assumptions to determine the importance of separate factors to the evaluations' results, to compare factors between each other and to form suggestions for process improvement.

Conclusions

The importance of knowledge management to increase the efficiency of the organisations activity in e-business. Summarising opinions of various scientists, it is possible to point out that knowledge management conception was developed from the knowledge management identification with information and information technologies management till integration of social, managerial, technological factors.

The basis of the knowledge management is knowledge potential management, individual and collective competency, abilities and skills.

The knowledge management is connected with ideas, creativity, knowledge creation, applying and spread. The technologies of knowledge management are just a measure to create, use and spread the existing knowledge, because the main source of creating new knowledge is a human.

The knowledge management essential is impalpability, intellectual capital which forms assumptions to use existing knowledge efficiently and create new ones under minimal conditions in e-business.

The knowledge management as a discipline satisfy challenges of knowledge economy: knowledge creation, use and spread. The effective knowledge use is becoming actual in the dynamic environment by the economic, social development, when it is important to make reasoned decisions connected with a knowledge and creation of its products, effective development to create and safe the uniqueness of e-business organisation's implemental activity.

Employee competency integrated assessment in e-business. The scientists and researchers have paid particular attention to the analysis of such complex phenomenon as employee competency evaluation and improvement, which is considered one of the most important factors affecting the innovativeness and competitiveness of e-business organisation.

In the context of transformations, the significance of the employee competency management, which is considered the effective tool for increasing the efficiency of the operating of the public management institutions and business organisations, is based on the recognition of the organisations of the fact that the management of the traditional resources is not enough for maintaining the existing competitive advantage and ensuring

the long-term competitor-resistant one in e-business. The organisations should focus on the management of the essential and exceptional employee competencies, stay above the current knowledge level, and be able to create new knowledge at the lowest cost. It has been recently accepted that the maintenance of the long-term competitive advantages usually depends on the competency level of the employees of the e-business organisation; this is particularly important as the results of such activity could be significant at the individual, organisational, regional and even state level.

The concept of the competency has been studied by many scientists, who have emphasised the fact that the employee competency is a complex phenomenon; therefore, there is no general consensus in defining the concept of the competency. The researchers analysing the factors affecting the employee competency suggest different interpretations; moreover, little attention is paid to the evaluation of the factors of the competency evaluation. Thus, the issue of selecting the most explicit approach to the problem occurs. In order to solve the problem in question, the expert and multiple criteria assessment methods have been employed. The research of the factors affecting the employee competency has been carried using the example of the Lithuanian Armed Forces. As a result of accomplished study concept complex competency assessment model was prepared for e-business organisations. This model can be used in order to assess human resource competence in objective manner and later form competency improvement solution sets based on data collected during assessments.

Analysis of factors motivating human resources in e-business. The efficiency of e-business organisations is highly dependent not only on the education of employees, competencies and abilities, but also it is important to note that the human resources motivation system has a great impact on the effectiveness of e-business organisations. In order to increase the effectiveness of e-business organisation performance, the human resources motivation system should be improved.

A number of scientific analyses have been carried out in order to identify the motivation factors. However, there is no common approach among the scholars to the concept of workers' motivation and abilities to properly assess the workers' motivation and its influencing factors.

The research results have showed that the most effective motivating factors in the public sector are social security, insurance; appropriate working conditions, equipped workplace, the ability to improve constantly. The assumption can be made, that in the public sector workers care about their social security, the appropriate working conditions and the ability to improve, which, due to limited financial resources, are not always realized. The least effective motivating factors in the public sector are onetime payout prescribed by the government, state awards, bonuses, nominal gift.

One of the main reasons why these motivating factors are less effective in the public sector is the fact that they are rarely applied.

It is offering for the motivating e-business organisation employees to use factors (which are given below) which were formed based on empirical research results:

- material factors: salary, bonuses, benefits;
- factors of acceptance: gratitude, rated gift, concession of more responsibility and mandates, involvement in the process of decisions making, career opportunities;
- factors of expression: the opportunity to do an interesting and responsible work, the ability of constantly improvement (trainings, courses of improving the qualification, rotation, apprenticeships, secondments);
- social factors: good psychological microclimate, acceptable managing style, leisure and recreational activities, the attention of the leader, informal conversations, work in groups;
- security factors: suitable work conditions, the provision of work space, social guarantees.

Evaluation system of factors affecting creativity in e-business. Creativity is a key element in the development of knowledge that motivates e-business organisations to generate new ideas, develop solutions and implement more effective processes.

Creativity is a complicated and complex phenomenon which is being studied by various branches of science. Numerous approaches dealing with factors affecting creativity interpret those factors differently and pay little attention to the evaluation of them. As a result, the problem of identifying the approach which would reflect the real situation more explicitly and comprehensively appears. In order to resolve this problem, multiple criteria assessment method for evaluation was employed.

On the basis of the scientific researches, factors affecting creativity were divided into the following three groups: of the individual level, of the organisational level and of the external level. The groups of the individual and the organisational level consist of factors related to individual and organisational competencies. The group of the external level includes factors affecting creativity related to the institutional support, and to the sets of values and norms.

The multiple criteria assessment for the evaluation of factors affecting creativity in e-business, which could be applied for achieving more objective and explicit evaluation, was suggested in order not only to identify factors affecting creativity, but also to evaluate them comprehensively, determine their strengths and weaknesses and, on the basis of this evaluation, make decisions stimulating the creativity.

Knowledge appliance process in e-business organisation. The knowledge appliance process is connected with implementation of knowledge

management and it is one of the most important processes of knowledge management, because on its efficiency depends employees effectiveness of work activity, fluency of internal processes, the quality of satisfaction of customers' demands, the created value and uniqueness of e-business organisation.

The knowledge appliance process has the complexity of evaluation and variety of the factors, so seeking to evaluate efficiency of knowledge use complexly it is suggesting to evaluate it by the groups of e-business organisations' resources when the factors are divided in five ranges: factors associated with the target orientation, factors of human resources, factors of knowledge-content evaluation, factors of technological resources evaluation, factors of the financial resources evaluation.

The factors of knowledge appliance process efficiency are complicated and complex, so it is suggesting to apply multiple criteria assessment is appropriate to evaluate the factors of knowledge appliance process efficiency, because it's impossible to express the factors by one criterion, so applying this method there's no limits of factors and criteria quantity and it makes assumptions to determine the importance of separate factors to the evaluations' results, to compare factors between each other and to form suggestions for process improvement in e-business organisation.

Self test questions

1. Is knowledge management necessary for an e-business organisation's activities? Please comment.
2. What results could be expected after implementation of knowledge management principles in an e-business organisation?
3. What is the difference between competence, capabilities, skills? Please provide practical examples.
4. What competencies are the most important for an e-business organisation?
5. Why is it important to motivate e-business organisation's employees? Please comment.
6. What can be motivating factors of an e-business organisation's employee? Please comment the importance of those factors for efficient e-business organisation's performance.
7. Why is the process of knowledge creation important in an e-business organisation?
8. What kind of knowledge creation tools can be used in an e-business organisation? Please give some practical examples.
9. What assessment factors can be used for evaluation of employees' creativity?
10. What factors would motivate your own creativity in an e-business organisation? Please comment.
11. What is the importance of knowledge application process in an e-business organisation?
12. What are the main problematic aspects of knowledge application process in an e-business organisation?

13. What factors stimulate employees' creativity in an e-business organisation?

14. What factors would stimulate you to apply knowledge in an e-business organisation?
Please give examples.

15. Why are the multiple criteria assessment methods useful in ensuring the efficiency of processes in e-business organisations?

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CONTENT MANAGEMENT IN VIRTUAL ORGANIZATIONS

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Tatiana A. Semkina*

Abstract

The article is devoted to content management (Electronic Content Management) in virtual enterprises, which includes electronic documents, scanned images, drawings, graphs, charts, presentations, video, audio, Flash-animation, that is, the diversity of content required to effectively conduct business that fits in with the concept of the information society and opens up new possibilities for the implementation of governance through information and communication technologies.

Key words

information society; virtual enterprise; management of electronic content; electronic document; the life cycle of the content; electronic signature.

Introduction

Virtualization of the enterprise and the introduction of the constant reengineering of business processes require the use of models that integrate into a single unit processes and objects, different in nature. This makes it necessary to control not only the document and its territorial agreement on a common methodological basis, but also manage the associated content, as determined by the term Electronic Content Management (ECM).

ECM systems are an important element in the information system of any large enterprise. They provide the accumulation and use of corporate information (intellectual asset of the entity), helping to attribute it — for easy retrieval and document routing, provide paperwork supporting for their life cycle. ECM systems resolves the problem of mass storage, search, and presentation of metadata and content to ensure the effectiveness of document management systems (EDMS) and related information systems. EDS is a specialized subset of ECM systems.

Content Management Systems (ECM) are oriented to work with unstructured and semistructured information. This information can be presented in any form: text and table electronic documents, documents in PDF, as well as drawings, scanned images, drawings, graphs, charts, presentations, e-mails, web-pages, video, audio, Flash-animation that is, the variety of content needed to run your business effectively. The main purpose of ECM-system is to maintain

the full life cycle of information, from its creation or receipt and up to destruction after the loss of value.

2.1. A systematical approach to automate content management in a virtual organization

We live in a rapidly changing world, all of the processes which occur at an ever increasing rate. In the last century, Bill Gates, in his book «Business at the speed of mind» wrote that if companies want to survive in the modern world, they must acquire the «electronic nervous system», which refers to the technological infrastructure. The result of this process is the beginning of virtual enterprises.

It can be a company, a division of which are located in different areas of the city, or corporation, which has branches or subsidiaries in different parts of the world. This may be a temporary form of co-operation of several, usually independent partners (companies, institutions, individuals) in order to achieve specific goals or implementation of any project.

A very important feature of the management of virtual organizations is that the interaction of employees eliminates the need for direct physical contact, but it is particularly important to effectively organize the information space of interaction. [2]

In the normal course of business information space is filled with a variety of content, information, documents, knowledge.

Creation of a common information space is based on the creation of a single data repository that holds all necessary information resources for the effective operation of the subjects in organizations with a distributed structure, and shall contain an electronic archive with images of documents, databases of various documents, manuals, classifications, document templates, and content database enterprise.

This infrastructure involves the creation of an information portal, through which the exchange of documents and necessary content.

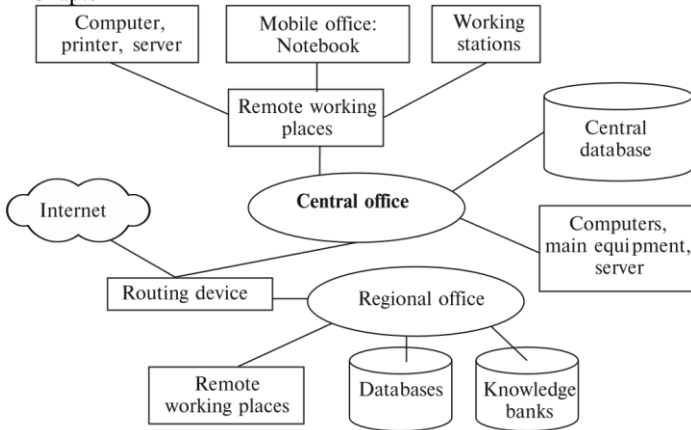
For processing, storing and organization of use of bond information and content management system has special workers, professionals, whose specialty is the information activities. Groups of workers are united in the management structure.

In literature and international practice for the generalized names of all species management staff uses the term «office».

Offices are a system of business relations with complex information flows.

Virtual office — the office is established on the basis of modern information and communication technologies, ensuring the functioning of the enterprise in real-time, in spite of the geographical spread of employees.

Software and telecommunications office environment based on the development of information space, which should allow the integrated processing of all kinds of content circulating in the system, including documents generated by electronic and paper-based: the external and internal communications, as implemented in electronic and paper form.



Virtual Office

There can not be any office which is completely virtual, having no basic structures in real physical space, of course.. Here we are talking about the intense interaction of real-life specialists and units in the virtual space, implemented on the basis of new information and communication technologies (see Fig. 2.2).

The basis of the current management information is an official document i.e. information is recorded on any media suitable for a sufficiently long-term storage, and decorated by the current bureaucratic rules: it can be in any conflict in the evidence. This means information is website, ready to bear full responsibility for it, it is dated, entered into the database, ie may be repeated later has distortion.

The process of creating and processing of modern management instruments based on the extensive use of technical means, subject to regulatory and procedural conditions and best traditions of office technologies of previous centuries.

Document (from the Latin documentum — «proof», «evidence») — is a material object that is the bearer of certain information and intended for transmission in time and space.

Document as the main element of the office system

The main object of document management is document. This object contains other objects, texts, pictures, tables, charts, and etc. The document is considered to be a content media.

The primary function of the document is to record information so that it can be further processed, stored, transmitted and used.

Electronic document — a document in which the information is presented in digital form.

Electronic form of the document allows you to develop, implement and

use innovative means of computer technology. The electronic document must meet the following requirements:

- To be created, processed, stored, transmitted and received using the software and hardware;
- To contain details that allow to confirm its authenticity and integrity.
- to be displayed (reproduced) in a form understandable to read.

Authenticity of the document is considered to be confirmed, if the scan is set immutability of all details. Special props electronic document is the electronic signature.

Under the electronic signature is meant a digital version of a property of the document designed to protect against counterfeiting, the resulting cryptographic transformation of data using a private key and a digital signature allows to identify the owner of the signature key certificate, as well as to establish the absence of distortion of information in the electronic document.

Preparation of an electronic document produced on a computer using various programs. Currently, the most popular package for creating various kinds of documents is Microsoft Office.

Work with electronic documents in the office carried out similar to working with traditional (paper) documents.

2.2. The concept of the content. Content Management

At the beginning of this decade, AIIM (Association for Information and Image Management, the most prestigious international industry association for the management of information and documents) coined a new, widely used and generally accepted today the concept of Enterprise Content Management (ECM) - Enterprise Content Management (information resources company).

Content comes from the English word «content» — purport. Content is called all the content of documents. Content includes text, tables, images, videos, etc. Documents translated into electronic form, also referred to the content. In general, the content attribute information resources of the organization, «human-generated», which are often formed in the mode of collaboration. Types of content:

- text content — it reports, manuals, instructions, articles, books, etc.
- graphic content — the content is different kinds of graphs, charts, drawings, pictures, animations, photos, screenshots, slides.
- Audio — content — it is treated music, lectures, webinars, interviews.
- video — content — it's videos, movies, presentations, video tutorials and other videos

Content management in organizations currently used ECM system. According to the definition of the Association for Information and Image

Management (AIIM), ECM is a «set of approaches, methods and tools designed to capture, organize, store, and search content and documents related to the organization's business processes.» The composition of the ECM systems generally include components that address the following key functional tasks [6]:

- Document Management — Export-import documents created by the control of document versions, security for business documents;
- image management documents (Document Imaging) — Capture, convert paper documents into electronic form and document management;
- records management (Records Management) or in accordance with the last transfer of the IEEE 15489 (GOST R ISO 15489-1-2007), «document management» — long-term archiving, automation of retention policies and compliance with regulatory authorities, ensuring compliance with legal and industry standards ;
- workflow management (Workflow) — support for business processes, content and transmission of documents on the routes, the purpose of work tasks and states, the creation of audit trails;
- Web content management (WCM) — automation role webmasters managing dynamic content and interaction of users;
- multimedia content management (DAM) — control graphics, video and audio files, various marketing materials such as flash banners, commercials;
- Knowledge Management (Knowledge Management) — Support storage systems and delivery of relevant business information;
- document-oriented collaboration (Collaboration) — joint work with documents and user support project teams.

2.3. The life cycle of the document

Document life cycle — a movement document from the moment of creation or receipt to the time of transfer to the archive (in storage) or destruction.

As it can be seen from the figure document life cycle consists of the steps, including the creation or receipt document, agreement, in which the process can create different versions of the document until the final approved version, keeping in line with established timelines and the destruction of the loss of value.

The management tasks for documents, records management and control publication or Web-based content are solved, throughout the life-cycle.

Records management involves archiving documentary information, use of it in the course of operational work, examination of the values at the end of shelf life, or lack of demand and the destruction.

Managing Web-content includes transfer to other formats, publishing on various information resources, including the corporate website, transfer to a variety of electronic media.

Taken together, these problems combine the concept of information lifecycle management, or content.

The life cycle of content. The content of AIIIM in accordance with it the life cycle of content consists of data collection, management, collection, storage and delivery of information [7].

Capture information. At this stage of the life cycle of information is created or imported into the system. The information may be created by man. These are paper and electronic documents, various completed forms, multimedia information. Information can also be created by different applications and imported into the system, such as ERP or CRM systems, or enter via the electronic exchange of data in electronic form or forms.'

At the stage of capturing the following technologies are used: document scanning, pattern recognition documents, forms processing, aggregation, integration, classification.

Storage content. databases, data warehouses, file systems, various libraries, media can be used for storage. The choice of a storage technology is caused by the amount of information for a period of storage, access credentials to users, the required level of reliability and security policies of an enterprise.

At the stage of storage the following tasks are resolved: search, version control, check in arrival / departure documents and information retrieval of documents and information, audit user activity.

Archiving and Preservation. To address these challenges can be used the following activities: special archive formats such as, PDF-A, output information to archival media: paper, microfilm, data backup and recovery, conversion and transfer to other media.

Delivery or distribution of information to consumers. Dissemination may be in printed form, using electron interaction, or Web-based technologies. This should solve the problem: access rights management, report management, printing and publications, providing access from mobile devices, organization of interdepartmental electronic document (MEDO).

Management. Several distinct types of activities: Document Management, Electronic Records Management (Records Management), Digital Asset Management (Digital Asset Management), E-Mail Management (Email Management), Web Content Management (Web Content Management), Business Process Management (Business Process Management, Workflow), the Organization of interaction (Collaboration).

Outsourcing. Today, many organizations resort to the transfer of certain functions to third parties. For example, an organization can outsource document storage, processing or entry, etc.

2.4. Document management in a virtual organization

Virtualization of the enterprise and the introduction of the constant re-engineering of business processes require the use of models that are integrated into a single unit processes and objects, different in nature. Hence the need to control not only the document and its territorial agreement on a common methodological basis, but also to manage the associated content, as determined by the term Electronic Content Management (ECM). ECM systems are an important element in the information system of any large enterprise. They provide the accumulation and use of corporate information (intellectual asset of the entity), helping to attribute it — for easy retrieval and routing of electronic documents, provide processing of electronic documents while maintaining their life cycle. Problem ECM systems a lot of time to store, search, and provide metadata and content to ensure the effectiveness of electronic document management systems (EDMS) and related information systems. EDS is a specialized subset of ECM systems.

EDS being a part of ECM systems, provides document management company. When workflow within virtual companies can be difficult, related to the question of centralization IP ECM.

There is traditional information flow in a virtual organization: inbound, outbound, and internal. [2] Internal information flow is divided into two: the corporate information flow, which brings together all of the structural units (branches, offices, subsidiaries, etc.) and in addition, each structural unit also has its own internal information flow.

While the workflow processing within virtual organizations there could be problems with delays in the collection of data or in violation of the principle of SSO document, with the complexity of the process of searching for documents because of the lack of a single registry of documents, with the complexity of the process of monitoring the execution of documents, with the increase of time coordination and approval of documents, with an increase in the probability of loss of documents.

For these problems to be solved it requires the development of information technology, accelerating all the management processes that automate business and primarily document.

Questions workflow in every company can be dealt within their own way depending on the situation. For example, it can be formed an independent local loop for each document for each structural unit that share documents with each other by transferring. This is so-called bottom-up approach, which is implemented by means of e-mail, for example, Microsoft Outlook. With the help of e-mail can be sent as files with documents and scanned images of documents. But with such a workflow, many of these problems are not only allowed, but also enhanced.

Another approach — based on the implementation of a centralized system of electronic document. He provides a unified information space of the company, within which are implemented through workflow processes that support the business processes and collaboration of all structural units.

Creation of a common information space is based on the creation of a single data repository that includes all necessary information resources for the effective operation of the subjects in organizations with a distributed structure, and shall contain an electronic archive with images of documents, databases of various documents, manuals, classifications, document templates, and content database enterprise.

2.5. Content capture technology

On this stage captured information is inputed to the system. The technology of work with the content at this stage include:

- reception and primary processing of documents,
- their preliminary review and distribution,
- registration,
- creation

Electronic document management based on the use of electronic documents that can be obtained by e-mail, fax, can be created in the system of electronic document management, discharged from another information system. Initial processing of such documents involves validation of delivery (addressing) correspondence, integrity and reliability of investment information. Among them are also allocated recorded documents.

Documents can enter the organization by email, in which case they are also presented in electronic form and can be loaded into the information system.

Documents can be delivered by courier, obtained by mail or by facsimile. In this case, they are a regular paper document. The introduction of such documents in an information system scanning is performed, followed by OCR. This may be obtained by way of a document (image) or an electronic document (after recognition). With a large flow of paper documents in the organization have to solve the problem of mass input documents into the system.

Organization of mass input of paper documents.

Consider the content of the basic operations of the automated capture of paper documents. [1] Automated reading and input of documents includes the following operations:

- Preparation of the document to be scanned
- Preparation of a document image
- Recognition and input of the data contained in the document in the data base.

Preparation of a document for scanning involves two operations: direct preparation of the document to be scanned and description of the system setup performance in a specific form of the document.

The basis of the implementation of the concept of operations is formation of the (structured) document. The basic structural unit of the formatted document is a document field.

Field — a place in the document, which keeps the information of a certain category, such as the address field for storing e-mail addresses.

Each field is described in two ways: visually, in particular geometrically, and meaningful.

Preparation of the document image includes performing operations such as *scanning*, quality control of scanned images and the possible rescan.

Recognition and input of the data contained in the document information database involves the following main steps: pre-processing of images, finding the fields, check the recognized information, data entry into the data base.

Recognition of the document is currently being implemented by the following text recognition systems:

- OCR (Optical Character Recognition) — Optical Character Recognition technology printing characters
- ICR (Intelligent Character Recognition) — recognition technology separate printed characters, handwritten,
- OMR (Optical Mark Recognition) — recognition marks.

OCR — is a mechanical or electronic translation of images of handwritten, typewritten or printed text into a sequence of codes used to represent in a text editor. Recognition is widely used to convert books and documents into electronic form, to automate accounting systems in a business or to publish the text on a web page. OCR enables you to edit the text, search for a word or phrase, store it more compactly, display or print material without losing quality, analyze information and apply for the test format. OCR is a research question in the fields of pattern recognition, artificial intelligence and computer vision.

Unlike conventional systems of recognition input system uses standard forms formal description of the initial form of a document or form. This allows you to automatically place the recognized information in a database field without operator intervention. Strict adherence to the standard form of appearance significantly improves the accuracy of recognition of the document fields.

Control data is detected by the following operations and realized by the system input.

System of automatic recognition usually with the result returned to the so-called «degree of certainty.» To improve the reliability of data after

recognition apply user-defined automated methods of data validation (for example, you can check whether there is a recognized information in a database, and if not, mark the field as invalid). To improve the reliability of the data used by additional mechanisms, such as the use of dictionaries and tables, user-defined. In addition, the system includes a special builtin tools to determine the specific verification procedures for each field in the document.

As a system of forms processing system can be used *Cognitive Forms* of Cognitive Technologies. [11] Cognitive Forms — The Russian system of industrial input standard forms of documents. It is designed for automated entry into information systems and databases arbitrary, single and multiple forms of documents. In this case, the documents must meet certain physical requirements and the completion of and be prepared for laser, inkjet, and dot matrix printers or standard forms using typewriters. Cognitive Forms system consists of several modules:

- The scan engine,
- Module for automatic identification and recognition of shapes,
- Verification module recognition results.

Scanning can be performed page by page, as well as in stream mode. During the processing of the scanned images a document type definition is produced, the input fields are defined, recognized by the contents of the fields identified by the document template. At the stage of recognition of the document identified the input field, ie determined by the nature of the text: a typewritten (OCR), handwriting (ICR), marks (OMR), etc.

Verification module is designed to verify the results of recognition. In this process, the operator is involved. If the data after recognition marked as not valid, they are automatically directed to the manual editing. The module displays the image of the document and the form to recognize data, and the operator may compare the results of different modes.

During editing, the operator sees the actual image of the unrecognized field and has the ability to correct it. After entering the new operator data again apply data validation rules, ie at all stages of input, both automatic and manual, performs data validation in accordance with the rules defined by the user.

Using such a system enables an acceleration input standard form documents 5-10 times compared with manual input, reducing the number of errors.

Indexing and data loading. The final step of the process — is the export document images and associated data to a particular document management system or database and indexing. The main requirements for export are to support various data formats and speed.

Once the document is recognized, it is entered into a database or in a document management system, which hold its indexing.

Unlike conventional systems of recognition input system uses standard forms of formal description of the original form of the document, a description of the model input and model matching and indexing of input fields. [11] This allows you index automatically documents and upload information in a database field or archive without operator intervention.

At the moment, for a modern company is very urgent problem of digitizing paper documents and create all kinds of databases of electronic documents, as the work with electronic documents can reduce errors, minimize routine tasks and save time. Modern technologies of identification documents, such as OCR / ICR and retrieve data (Data Capture) is now well developed. One of the leading software developers in the field of pattern recognition, processing and document capture, linguistic technologies and services is of ABBYY.

Creating documents

Currently, training (formation) of documents in organizations is conducted exclusively on the computers. Documents are formed directly on the user workstations (document file) using standard office applications (eg, MS Word or Excel). Filing create electronic archives. Electronic document management systems work with documents in electronic form.

Documents are created in accordance with the compliance with established standards. To create a document can be used letterheads, forms and document templates

Blank document - is a piece of paper with pre-requisites reproduced containing constant information about the organization — the author of the document.

Official documents of the organization, as a rule, are made using the standard form of the enterprise and have established a set of mandatory details and their order.

Template — a document that contains a variety of information about styles and standard texts, macros and much more. Being once prepared and stored in the computer memory template allows you to quickly make a new, similar in shape (but not content) documents without spending time on formatting. [1]

In Microsoft Word, there are special templates for the creation of standard documents, such as letters or faxes.

In addition, and very importantly, the template can contain automation of document preparation. With Microsoft Office allows you to create templates of frequently used pieces of text and documents.

Creating a document based on the template is to fill in a certain form, create a template.

Form — a blank document containing static information (text) or omissions, or fields for variable information.

These fields contain a hint to the compiler of the document, where, and how the text should be entered. When you fill in the tip erased and replaced it with the desired text. These forms are often referred to stencil letters.

Forms can be filled in on-screen and on-line and can be printed first, and then fill up on paper.

Some forms of documents are common to all organizations. These forms were developed and included in the specialized office programs.

Many organizations develop their own forms of documents and successfully use them in paperwork, significantly reducing the time spent on the design of each individual document.

Technology for storage of documents and content

After the execution of the documents are stored in a certain time of the organization. In order that they can be quickly find and use, requires systematization performed cases, ie grouping them into action.

Special classification guide, allowing to determine the order of distribution of documents in the case, is the nomenclature of affairs.

The range of cases - a systematic list of names of cases zavodimyh in the organization, the dates of storage, designed in accordance with established procedure.

Electronic archive — a system of structured electronic document storage, provide secure data storage, privacy and access rights, track the history of use of the document, a quick and easy search.

On the other hand electronic archive — a hardware — software complex tasks: accounting documents, they are stored; access control; stored management information, including the development of a new.

Information included in the electronic archive, can be used in electronic form, and in the «traditional paper», ie. To. Replication is possible (print) documents.

Search documents and content

Having an electronic archive allows you to quickly and easily find any document using the search function. Function provides instant retrieval of documents in any kind of request. Search Result — is a list of documents that satisfy the query, the list of values of the details of the documents found.

For documents with text representation, the system provides the ability to search for words and phrases in the document — context search. In addition, if the registration card filled the «Summary», it is possible to implement contextual search for words and phrases recorded in this field. It is also possible to organize the search at the same time to the details and the context of the document.

Version Management

A useful mechanism for working with documents is tracking document versions. Artist working on a document, edit it, and create his own version of the document. In the SED for each version of the document contains the date of creation version, artist and description of the version, while it is possible to see all the available versions of a file of documents.

Version of the electronic document reflects the relevance of its content. Each version can be in one of the states: the development of acting, outdated. For a visual representation of the state of the version used a special typeface.

Each document can have an unlimited number of versions. Versions that arise during development and coordination, can be stored in an easy to edit format DOC / DOCH and the final agreed version — in an immutable format PDF.

Mechanism for storing and versioning in a content management system allows you to keep a history of all created versions of a document. Each version can be installed their access rights for different users.

Check in and check — is the means by which users can control the creation of new versions of the document and annotate their changes with the return of the documents.

Content delivery technology

The volume of electronic document is constantly increasing, especially in connection with the development of the World Wide Web and the ability to exchange documents via e-mail, as well as the growing popularity of ecommerce. [3]

When sending an e-mail recipient receives the document almost immediately after it is sent. And then the electronic document may be reproduced in any desired shape and form: open on your computer screen, transferred to the paper, magnetic or optical media. Using e-mail provides users the ability to:

- Timely delivery of documents to recipients;
- Simultaneous distribution to any number of recipients; • Editing documents received, storage and distribution;
- Printing received documents.

Functioning of the e-mail based on the collective memory usage host and routing emails. E-mail subscriber is a user of a personal computer connected to the host computer via the PSTN or a special computer network. Routing is provided by special software e-mail network.

Preparation of business messages for sending to multiple recipients at the same time, begins with the creation of a mailing list. To store the address, you can use your personal address book, address book on the server, or a list of contacts.

If you often send messages to the same group of destinations, it makes sense to define mailing lists. You can create as many lists as you want,

including the insertion of some recipients simultaneously in several different lists. In the future, the name of the distribution group created, as well as the recipient's name can be entered from the keyboard or select from the address book.

2.6. Cloud technologies in business processes CMS

Cloud technology in the electronic document management system allow for a fresh look at the problems that it solves, to expand the scope and improve the quality of information services.

Cloud technologies are transforming the business process, all information on employees and their work is located on the cloud, it simplifies the IT structure of the company. Rapid scaling, in extending and when minimized business processes in a cloud environment, improves the efficiency of the management of business processes, including workflow processes.

Of Microsoft and Google released a set of tools that enable you to work with documents. [8] In Google's Google Docs, from Microsoft — Office Web Apps. Package of Office Web Apps provides viewing and basic editing of documents Word, Excel, PowerPoint and OneNote on the Internet, viewing files from mobile devices, the uniform format files in Office applications for desktop and Web-based applications.

Since June 2011 the market has another online service from Microsoft Office 365. Getaway Office 365 — is the evolution of the services Microsoft Online Services. Microsoft Office 365 combines the cloud versions of popular Microsoft software for email and collaboration (such as Exchange Online, SharePoint Online and Lync Online) with the familiar office suite Office Professional Plus. Package allows you to set up a virtual office, giving employees secure access to information from almost anywhere with the devices to which they are accustomed to working with existing business applications. The technology used to create and collaborate on documents. [4]

The process of exchange of electronic documents has long crossed the boundaries of individual companies and has grown into much more massive phenomenon. Now Russian companies have the right to legislate the use of electronic documents and legally significant in the external document management — working with customers and suppliers. Contracts, invoices, certificates of work performed, etc.. Electronic signature can be signed and sent to counterparties via the Internet, eliminating the mail and couriers. In early 2011, the company SKB Contour has launched a web-based service »Diadok« which allows companies to communicate with each other legally significant (in accordance with Russian law) of electronic documents: the primary accounting documents and accounting, organizational, administrative and supporting documents. The service allows you to reduce costs

in times of the postal forwarding, courier services, archiving, printing and handling paper documents. [10]

Company «1C-Bitrix» launched a cloud service to work together «Bitriks24», which is based on the concept of social intranet. Service «Bitriks24» spans multiple data centers in the cloud Amazon. «Bitriks24» combines the familiar tools of management tasks, documents, working time with a well-known social services.

In the «Buzz», you can quickly create a message to one or more employees and attach a document by dragging it to boot from your computer or from the library on the portal.

Service allows you to work with documents on the portal in any conditions, even in the absence of the Internet. At the time of connecting to the internet documents on the portal and on your device synchronized.

On our site, each employee has a folder «Files», in which you can create data directories with any hierarchy of storage objects. With the publication of new material made from indexing them, with the help of which the instant search of the necessary documents. History of changes is kept, so you can restore a previous version of the document.

In the absence of the computer software required to work with documents, such as an office suite, you can use the technology Google Docs. This technology allows you to open, view and edit directly from any files of popular formats.

The use of mobile technology when working with content.

The main trend in the informatization today is globalization of computer networks and the massive increase in Internet users. Therefore, the status of the virtual enterprise affects the availability of Internet access (channel) and the possibility of mobility of staff, which can be stated now as BYOD — bring your own device.

Mobile penetration in Russia complies with international trends. It is expected that the growth of mobile data (the amount of information in mobile networks) by 2015 will increase by 26 times, while the number of mobile workers in the world will reach 1.3 billion. [5]

Creation of corporate portals and connecting to mobile clients on technology »thin« client is using technology of managing mobile devices (Mobile Device Management, MDM), which is based on the use of software that provides monitoring and management of mobile devices, their safety and support operation. The portal should provide:

- a single point of access to back-office systems;
- ability to adapt to different mobile platforms;
- integration of mobile customers in the infrastructure of a virtual enterprise, taking into account the requirements of the IB;
- the development of new mobile «production» applications;

- implementation of mobile decision support applications for enterprise managers.
- customized access to corporate IT function and the information resources of the virtual enterprise.
- facilitate the work of a traveling staff.

As a result, under the influence of the spread of global, regional and local computer networks and mobile technologies and the increasing use as a communication environment views on the organization of management began to change, and today the company, anyway, to accumulate the features inherent in the new communications infrastructure — networks. Now the network business interactions are characterized by properties such as globality, extraterritoriality, accessibility, interactivity, anonymity, and others.

Well and mobility — access to your workplace and information from anywhere at any time, as well as Social business — modern means of ensuring horizontal level management, information sharing, search and work with experts, etc. What is needed quality search results and indestructible content storage, protection of corporate and personal information.

Mobility of modern business requires managers to make decisions quickly. This requires the development of information technology, which would provide an opportunity to head in all environments — in the office, in the conference room, on a plane, at home, etc. Today, not only the leaders, but many employees of companies actively use in their work a variety of mobile devices. Software development companies have tried to provide a variety of mobile devices, mobile applications.

Mobile workplace iDecide head of the company's Flexis allows managers to manage key processes and people in the company directly from their tablet computer Apple iPad. The solution consists of a set of modules, as well as the shell program, allowing it to integrate with various systems of electronic document management and e-mail services. The solution provides remote interaction with the head secretary, supports the process of decision-making, allows you to get instant access to the necessary documentation, enables you to monitor processes, manage orders, negotiate documents. One of the advantages iDecide client — the ability to work offline- in the absence of the Internet. When the connection all the updated and stored on the tablet documents instantly synchronized with EDS manager receives notification that his document is sent to EDS.

Conclusion

System of Enterprise Content Management (ECM system) focuses on working with both structured and unstructured information in any form. These may be electronic documents, documents in format PDF, drawings, diagrams, charts, presentations, scans, email, web-pages, video, audio,

Flash-animation. The main objective of ECM — is the maintenance of the full life cycle of information, from its creation or receipt from the outside to the destruction of the loss of value.

ECM system is a means of enhancing the effectiveness of a virtual enterprise as a whole, as well as a tool to support decision-making and management. Development of content management systems includes the latest technology as a knowledge portal, professional social networks, availability of which is increased in terms of household «mobilization» of employees (application of technology BYOD) in virtual enterprises, against cloudy posting content opens up entirely new possibilities for controlling and consistent with the concept of the Information society.

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MARKETING COMMUNICATION IN DIGITAL AGE

Vida Davidavichene

Abstract

Traditional business processes are being transferred to the virtual space, new forms of business emerge, the number of tools for communication with customers is growing, and it is caused by development of information and communication technologies (ICT). Deeper understanding of e-marketing phenomenon (social networks, blogging, charts, etc.) as well as knowledge of e-marketing implementation possibilities and tools in order to gain competitive advantage is vital for e-businesses and for traditional companies. In this chapter the ICT caused changes are presented by analyzing digital market places, most popular e-marketing tools and efficiency evaluation methods will be presented as well as recent research results in this field.

Key words

e-marketing, e-commerce, consumer behavior, e-marketing tools, social networks, e-marketing communication.

Introduction

It should be noted that the traditional business processes are being transferred to the virtual space. The new forms of business emerge, the number of tools for communication with customers is growing, and it is caused by development of information and communication technologies (ICT). The new generation of users emerged in the context of Internet usage habits. The Internet becomes a part of the daily routine, e.g., people do not imagine any other way of searching for information and do not see their lives without being in the social Internet spaces, such as social networking sites, blogs, online interest groups, etc. Thus, the digital content is pervasive in daily life, its influence is unquestionable and powerful, and considering the existing situation, it is particularly important for the organizations to take more active measures in order to represent themselves in the virtual world. Huge amount of ICT based solutions and tools for communication in digital society as well as for e-business development exist. For example, Hubspot reports that 70% of business-to-consumer marketers have acquired a customer through

Facebook. Thus, the digital content — including social media — is pervasive in daily life, its influence on

consumers' lives is unquestionable and powerful, and considering the existing situation, it is particularly important for organizations to take more active measures in order to represent themselves in the virtual world.

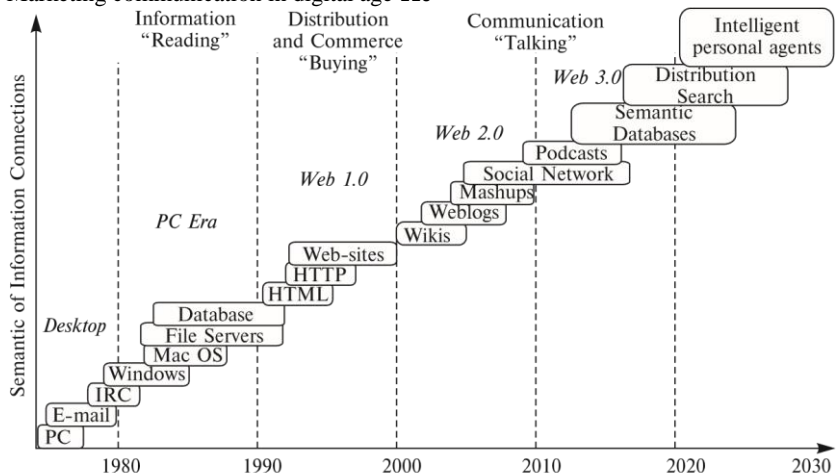
Therefore, understanding the technology-driven change in marketing has critical importance to marketers, as it bears new customers, new brands, new markets, and new market leaders, new market channels and marketing tools (Tiago and Tiago 2012). Despite that not all enterprises exploiting advantages of online marketing for their traditional or e-business as an interaction channel. The peculiarity of this field is that the object and subject are changing rapidly (these changes are caused by many factors such as economic, cultural, social, political, technological environment), so regular research and analysis of market and environmental changes are needed. Deeper understanding of social e-marketing phenomenon as well as knowledge of e-marketing implementation possibilities and tools in order to gain competitive advantage is vital for e-businesses and for traditional companies. In this chapter most popular e-marketing tools and recent research results in this field will be presented.

3.1. The growing potential of the market

The Internet market is relatively young, but it is growing at a high speed, providing potentially new opportunities for business in communication with consumers. Despite the initial purpose of the Internet (communication via e-mail messages and the exchange of digital information) the pioneers of the Internet marketing (Marc Andreessen, Ken McCarthy, Craig «Buz» Buszko, etc.) revealed the growing potential of a new market to reach consumers and to provide them with useful information (Liu 2010). Afterwards the dynamic development of IT as well as changes in the Internet marketing followed.

Figure 1 highlights the main e-space development stages, which is important for further analysis. The first stage of the Internet marketing was e-mail (the first e-mail dispatched in 1971), and e-mail itself is the first Internet marketing tool. Later, companies started to create web sites and generate visitors flow. In year 2000 simultaneously with the search systems formation (Yahoo!, Google), the irritating blinking banner advertisements era came, and it finished with the introduction of the option for the user — «to disable the intrusive advertising». Thus, the move was made to new, science-based «permission» marketing. The subsequent emergence of Web 2.0 technology stage determined the transformation of the Internet market into the global society, in which special attention is paid to the relations marketing aimed at the establishment of contact with the client, the promotion and maintenance of customer loyalty. However, it has not solved the problem of irritating marketing tools. Many authors describe the years 2000-2004 as a transition from mass marketing

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Evolution of Web technologies [Source: Adapted from Chaffey&Ellis-Chadwick, 2012; Spivack, 2007]

to personalized one (Liu 2010; Sharma and Sheth 2004; Sheth and Sisodia 2002; Urbanas 2012). Other authors (Constantinides et al. 2013) classify social networks, which they define as the second generation network applications that allow creating individual virtual networks, as a part of Web 2.0 technology. The field of social networking is currently becoming one of the most rapidly growing markets in the Internet environment, connecting millions of users worldwide. In summary, the potential of the Internet market to reach consumers is growing; new means of communication that change the essence of the market emerge, moving from Web 3.0 to Web 4.0 technologies. It should be emphasized that the Internet and a breakthrough it made in business performance has a great influence on changes of money, communication and exchange platforms, that it encourages the development of the global e-markets, where the efficiency of activities can be measured by success of usage of e-marketing tools and the Internet penetration (Chinn and Fairlie 2012; Davidavi'cien'e 2012; Pabedinskait'e and Davidavi'cius 2012; Sun and Wang 2012).

In parallel with technological development and marketing changes the communication specifics should be analyzed. The classification of marketing communication (Kiang et al. 2000) reveal the main issues that should be taken in to account during the research from the e-business point of view:

- the communication channel, that can be used for the exchange of information between the seller and the buyer in order to: obtain, process and transmit information; enhance interactivity and comprehensible experience; collect information about customers by means of various

surveys and contests for the development of new products, relations and adaptation for personal needs

- the transaction channel, that can be used for sales activities in order to: improve the visibility and to reach a wider audience; increase income by cross-sale; simplify transactions process by reducing the complexity of tasks, document processing and transactions costs; personalize advertising and sales for individual clients and to increase flexibility
- the distribution channel, that can be used for physical exchange of goods and services in order to: avoid storage costs, and other costs; in order to shorten the distribution chain and to reduce costs. The growing potential and importance of social networks is doubtful. According to the statistics 58 % of internet users are consumers of at least one social network. Some social networks have more active user base than others. Most popular social networks in the world are mostly the same mentioned in various surveys: Facebook — 56 %, LinkedIn — 14 %, Twitter — 11 % and Google+ — 9 % [11]. It should be noted that 98 % of 18 — 24 years old users have profile in social network sites; even 25 % Facebook users are children under age of 10 years even there are restrictions. This is a stunningly large number, which shows that young children have easy access to social media. This is a segment that can be tapped by social media marketers. But marketers should take in to consideration ethical issues and straightly follow the law concerning advertisements for children. These facts show that in a future the number of social network users will grow drastically, this will be catalyzed by easier connection and possibilities to log on to the internet, because it strategic priority of most countries (Europe 2020, Rain, Rain II) as well as organizations.

Facebook has more than 1,310,000,000 active users, who connect at least once per month. 680,000,000 users exploit mobile version. More than 1.5 million local businesses have active pages on Facebook. The average user spends more than 55 minutes per day. 22% teenagers connect to Facebook at least 10 times; 48 % of age group 18 — 34 years connect in a morning (just waked up), and 28 % connect before going to sleep [11].

From year 2012 till 2013 the amount of users' increased 22 %. Taking in mind that these social networks created in 2004 the changes are drastic and potential is immeasurable.

Statistical research has revealed that more than 95 % of Facebook users log into their account every day, Twitter — 60 % and LinkedIn — 30 % [11]. Average number of friends in social network site is 130, and each user has 80 «likes», and user spending approximately 18 minutes each time.

Twitter has over 645,750,00 registered users, and 190,000,000 unique visitors per month, 135,000,000 active users with 58,000,000 tweets per day [11]. 43% use mobile version; 60% users twitting via third party

applications, what shows that in this process are involved not only users but companies and web marketers also. 40% users do not write tweets themselves, but reading written by others.

LinkedIn has 60+ million professionals worldwide, including all Fortune 500 companies. LinkedIn, which have a very small reach in terms of market impact, because their users are not active when compared with Facebook or Twitter.

From Baltic States the highest rate of social networks usage is in Lithuanian (88% of Lithuanian responders signified that they are registered at least in one social network). The most intensive users of respondents are till 20 years. 78.2 % of those respondents claim to log in social network profile every day. According to respondents — the most popular social network is „Facebook«. The purpose of using social networks is mostly for information sharing with friends (66%) and for research of friends (43%). 25% of Lithuanian enterprises users social networks. In Lithuanian companies social networks are used in marketing, client service and selling departments. The purposes that are mostly willing to be reached are: brand popularity expenditure, news on goods or enterprise presentation, new clients attraction, communication with existing clients, community creation. So, activities of Lithuanians in the social networks are not much different from worlds statistics, but some peculiarities can be observed, and will be presented in the next part.

3.2. Previous studies in e-business and e-marketing areas

DEFINITIONS:

E-business, is the application of information and communication technologies (ICT) in support of all the activities of business

Electronic commerce is trading in products or services conducted via computer networks such as the Internet.

E-marketing is marketing efforts done solely over the Internet. This type of marketing uses various online advertisements to drive traffic to an advertiser's website.

It is important to identify the current trends in exploration of ebusiness and e-marketing areas. Research in e-business and e-marketing can be divided into such main areas:

- Studies on quality measurement of e-commerce and quality of website structure measurement studies (Alba et al. 1997; Cao et al. 2005 ; Dholakia and Zhao 2009; Guseva 2010; Janda et al. 2002; Santos 2003; Taylor and Kaya 2010; Aladwani 2006; Barnes and Vidgen 2003 ;
Loiacono et al. 2007; Parasuraman 2005) ;

- Studies on web site communication elements (Virtsonis & HarridgeMarch, 2008; Alper 1999; Ghose & Dou, 1998; Olsina, Godoy, Lafuente & Rossi, 1999; Judd, 2006)
- Studies of web advertising efficiency (Cutrell and Guan 2007; Pabedinskait'e & Davidavičius 2012) ;
- Studies of e-commerce behaviour (Alzola and Robaina 2010; Dennis et al. 2009; Hashim et al. 2009; Su et al. 2008) ;
- Studies on Social Media (SM) usage in B2C communication (de Vries et al. 2012; Soares et al. 2012; Stephen and Galak 2012; Zhang et al. 2011) and Social Media (SM) usage in B2B communication (Pabedinskait'e and Davidavičius 2012; Culnan et al. 2010; Riemer and Richter 2010) ;
- Studies on ICT or website security (Radovanovic et al. 2010; Stewart 2004) ;
- Studies in e-marketing (Chaffey 2009, 2011; Davidavičius 2012; Denis et al. 2009; Guseva 2010; Kiang 2000; Levina 2013; Pabedinskait'e 2012).

Number of studies on Social Media in different industries were conducted (Barnes 2010; Senadheera et al. 2011) as well as social networks (such as Facebook, LinkedIn, Twitter and Google+) in social communication were analyzed (Chaffey 2011; Dholakia et al. 2004). Social networks could be described as communities, defined as groups of people who have common interests and identified in academic literature as an element of web site communications (Farquhar & Rowley, 2006, cited in Virtsonis & Harridge-March 2008). According to Levina & Vilnai-Yavetz (2013) , Barnes (2010), who analyzed the e-behavior of Fortune 500 companies, focused only on a limited set of industry categories, so more detailed analysis in order to reveal the B2B communication peculiarities in e-environment needed. Hence, providing services or especially selling goods, sharing experience and knowledge in e-space by B2B model is harder, than in B2C sector because of lack possibilities of first-hand experience in quality assessment caused by the nature of services (Frieden & Goldsmith, 1989 , cited in Virtsonis & Harridge-March, 2008). In the next capture detailed analysis of B2B internet marketing specifics will be provided.

3.3. The specifics of Internet marketing in B2B communication

The Internet offers marketers the widest spectrum of advertising tools and formats, use of which depends on the specifics of the target audience, its behavioral patterns, cultural aspects, habits etc. Many of issues faced by Business-to-Business marketers can be addressed through the internet's interactivity and availability (Virtsonis & Harridge-March, 2008). Business-to-Business marketing is about meeting the requirements

of other businesses, and Harrison et al. (2006) have emphasized the fact that B2B is a more complex decision-making unit in comparison with B2C, which is one of the main challenges in B2B marketing as well as issues with products which are more complex, so B2B marketers need to have full knowledge and technical expertise in providing technical details to the customers. Wright (2006) has identified the following features of B2B: decision-making structure is complex and the process involves a lot of people; decision-making could be delayed, depending on the purchase value; rational reasons for ordering; high value of product/service, contacts, projects and consulting; the final consumer probably will not be a decision-maker; since the process time increases, suppliers have the access to decision-makers. In this context, the dissemination of the information related to a product or a company in the e-space that could be reached by the target audience is particularly important. Also, an important aspect of B2B communication is company's image and prestige, which is often reflected in the consumer response and by the company's visibility in e-space.

Online advertising can be classified into: search advertising, display advertising, classified listings and e-mail based ads (Burns and Lutz 2006 ; Evans 2008; Evans 2009). Jensen (2008) argues that no accepted framework for categorization of online advertising exists and suggests a way to categorize these tools into six major disciplines in accordance with Chaffey et al. (2006), where they are categorized by the way they are generally used:

- search marketing: search engine advertising (SEA); search engine optimization (SEO). Search marketing is an encompassing term to denote all the techniques that can be utilized to make a certain website visible in the search engines (Chaffey et al. 2009). The search results page is divided into the organic search results that are based on the relevance of the web page to the keywords entered by the user (SEO) and the paid search results which are clearly demarcated text advertisements (SEA) that also look like search results (Evans 2009; de Vries et al. 2012). The sponsored search is a mechanism to compete the negativity related to interactive advertising. Those ranked after the top five usually are treated as ineffective;
- online public relations: portal presentations; blogs, RSS, podcasts; social media; community C2C posts; wikis; micro-blogging. Online public relations includes all the activities performed by a company to maximize favorable mentions of its company, brand or website in a range of third party websites such as blogs, social networks and etc., where the target audiences of the company are likely to visit (Chaffey et al. 2009; Chaffey et al. 2006; Pabedinskaite and Fiodorovaite 2012) ;
- interactive advertising: display ads, banner ads; rich media; websites, microsites; online games; video marketing. Interactive advertising can

be defined as the use of online display advertisements such as banners, skyscrapers, and rich media in order to achieve brand awareness and encourage click through to a target website;

- online partnerships: link building; sponsorships; affiliate marketing; cobranding. The most commonly used tools of online partnerships are: link-building, sponsorship, co-branding (an arrangement between two or more companies where they agree to jointly display content and to conduct joint promotions using brand logos or advertisements), affiliate marketing (a scheme where a company pays another affiliate for links that are generated via the affiliate's website to the company's website);
- opt-in e-mail: cold (rented list); co-branded e-mail; 3rd party enewsletter; houslist e-mail. Types of e-mail advertisements: e-mail newsletters, e-mail discussion lists, the subscribed e-mail marketing channels. E-mail is a great form of communication, however, it is the least effective when it comes to marketing;
- viral marketing: web/e-mail prompt; pass along e-mails; incentivized e-mails; gene-rating media mentions. Viral marketing is an advertising method that encourages people to pass along a message. Terms as buzz marketing, word-of-mouth are used as synonyms of viral marketing in the literature. Viral marketing is an efficient way to distribute a message to a wide audience and facilitate building a list (Blumberg et al. 2005).

3.4. E-marketing tools

The internet offers marketers the widest spectrum of advertising tools and formats. According to Interactive advertising bureau (2009), the prevalent means of online advertising are search and display related advertising, which together are responsible for more than 70% of the total advertizing revenues. In addition to established online tools such as e-mail, websites and display advertising, distinguished emerging online advertising vehicles, such as blogs, games, podcasts, social networks, virtual worlds, widgets, wikis and etc (McKinsey 2007). Scientists deviding online advertising industry into (Burns & Lutz 2006, Evans 2008, Evans 2009): search advertising, display advertising, classified listings and e-mail based ads. Jensen (2008) argues that no accepted framework for categorization of online advertising methods exists and suggests a way to categorize these tools into six major disciplines in accordance with Chaffey *et al.* (2006). The categorization is by the way online activities are generally used and categorized by practitioners, and will be taken in to consideration in futher research:

- *search marketing*: search engine maadvertising (SEA); search engine optimization (SEO);

- *online public relations*: portal presentations; blogs, RSS, podcasts; social media; community C2C posts; wikis; micro-blogging;
- *interactive*: display ads, banner ads; rich media; websites, microsites; online games; video marketing;
- *online partnerships*: link building; sponsorships; affiliate marketing; co-branding;
- *opt-in e-mail*: cold (rented list); co-branded e-mail; 3rd party enewsletter; house list e-mail;
- *viral marketing*: web/ e-mail prompt; pass along e-mails; incentivized e-mails; generating media mentions.

In order to evaluate and identify the efficiency criterions and factors of advertizing tools the deeper analysis of scientific studies would be proceeded.

Search marketing is an encompassing term to denote all the techniques that can be utilized to make a certain website visible in the search engines (Chaffey *et al.* 2006). Search results page is divided into the *organic search results* that are based on the relevance of the web page to the keywords entered by the user (SEO) and the *paid search results* which are clearly demarcated text advertisements (SEA) that also look like search results (Evans 2009, Lee 2007). Sponsored search is a mechanism to compete the negativity related to interactive advertising. Lee (2007) indicates that sponsored results are just as relevant as non-sponsored results for search queries. However Jansen and Resnick (2006) research indicates that web users have a negative bias against sponsored link. A selection will result in three to four more clicks than a sponsored search, and that websites must appear in the top three to five search results to have any significant effect on directing search traffic (Sinclair 2007). Those ranked after the top five are completely ineffective (Miller 2006). An eye-tracking study indicated that most search users overlook search advertisements almost entirely (Emarketer 2011a). However, only 28% of participants looked at right-side advertisements on Google, and just 21% did the same on Bing spending around 1 second viewing all ads combined on each search engine. So, users have learned to overlook search advertisements, and they will continue to ignore as they become more search-savvy.

Online Public Relations (PR) includes all the activities performed by a company to maximize favourable mentions of its company, brand or website in a range of third party websites such as blogs, social networks and etc., where the target audiences of the company are likely to visit (Chaffey *et al.* 2006). The best step to make online public relations activities successful is to add interactivity. It can be claimed that everything that is done online is public relations activity. This means that undertaking nothing can have a negative influence on the organisation as well (Pantea

2009). Firms with a poor pre-existing brand image become vulnerable to

unfavorable consumer-generated content in online communities. Blogs and collaborative projects (e.g., Wikipedia) have a low level of social presence and media richness, which Kaplan and Haenlein (2010) consider could be explained by that communication mostly consists of text. The amount of social presence and self-disclosure is much higher in blogs than in collaborative project. The communication does no longer only consist of just text but also pictures and videos. Consumers' aim is no longer merely to look for product information or advices concerning a brand, but also to get together and share an experience (Cova & Cova 2002). Social networking is becoming important. Of the Fortune Global 100 companies, 65% have active Twitter accounts, 54% have Facebook fan pages, 50% have YouTube video channels and 33% have corporate blogs. More than three-quarters (79%) of the top 100 companies in the rankings are using at least one of the social media platforms to actively engage with stakeholders (BursonMarsteller 2010). In order to build a community and engagement through social networks, the consistent conversation is needed (one or two company's posts a day) (Emarketer 2011c). Companies should consider day, time and content than writing posts, because engagement rates are 18 % higher on Thursday and Friday than the other days of the week. Shorter message is better, as posts with 80 characters or less have a 27% higher engagement rate (Emarketer 2011c). Emarketer (2011d) reports, that social media is known as a venue for brand discussions, but social sites still not the first choice for customers talking brands. Only 35% of the overall population, and 56% of the young adult population, talked about products and services on social sites (Emarketer, 2011d). The work of Bagherjeiran and Parekh (2008) provides evidence to support the claim that social links are correlated with ad response rates (measured by means of CTR) and whether they can be used as predictors of these rates.

Interactive advertising can be defined as the use of online display advertisements such as banners, skyscrapers, and rich media in order to achieve brand awareness and encourage click through to a target website. In one of the early studies of banner advertisement effects Briggs and Hollis (1997) found that even without click-through, banner advertisements resulted in heightened awareness, brand perceptions and attitudinal shifts for brands. The significance of animation and location of banner advertisement with the eye tracking technology studies revealed that animation was not important to attract viewer's attention (Josephson 2005, Diao & Sundar 2004). But the location plays a significant role and banner advertisements at the top of the webpage were more often viewed (Josephson 2005, Diao & Sundar 2004). These findings contradict the results of a study conducted by other scientists (Kim *et al.* 2004 , Dreze & Hussherr 2003, Sundar & Kalyanaraman 2004, Zhang 2000, Li & Leckenby 2004) who found that animated banner advertisements gener-

ates higher recall, more favourable attitude towards the advertisement and higher click-through intention than static ads.

The Burns and Lutz (2006) studied consumers' attitudes to six different online advertisement formats (banners, floating ads, large rectangles, interstitials, skyscrapers and pop-ups) and found that banner score highest on the information factor and received highest overall positive attitude from consumers. Banner, during that research, did best in all behavioural measures such as click-through percentage, percent visit later and clickthrough frequency among the six online ad formats they tested.

A interstitials (pop-ups and pop-under) are the most controversial format of internet advertising. Interstitials are perceived to be intrusive because they put audiences in a forced exposure mode (Cho, Lee & Tharp 2000). Studies that use the pop-up in the experiment show negative attitudes and reactance from the consumer resulting in ad avoidance and feeling of irritation (Cho & Cheon 2004). Burns and Lutz (2006) studied revealed that pop-up and floating ads scored highest on the annoyance factor, but highest on the entertainment factor. Rich media is highly interactive, visually influential internet advertising format. Most rich media advertisements are displayed in a voluntary exposure, so they are acceptable for most users. Appiah (2006) tested the impact of multimedia on commercial website and found that the advertisements with audio and video results are in better perception, because they are more targeted, ensure better rating on the site in comparison with text and graphics only. So, the new technologies improve the effectiveness of online advertising, because studies confirmed that rich media advertisements are more effective than banner advertisements (Emarketer 2011a, Li & Leckenby, 2004), video marketing was named as a hottest new format for online advertising with high engagement factor (Hallerman 2007, Bruner & Singh 2007). The game-based advertisements are very effective also, but in many cases, game players may feel annoyed with advertisements while they are playing games (Chang *at al.* 2001).

The most commonly used tools of online partnerships are: link-building, sponsorship, co-branding (arrangement between two or more companies where they agree to jointly display content and to conduct joint promotions using brand logos or advertisements), affiliate marketing (a scheme where a company pays another affiliate for links that are generated via affiliate's website to the company's website). Studies that examine sponsorship effects online revealed significant benefits for sponsors of content websites (e.g., newspapers). Sponsors whose products match the news content induce higher memory, attitudes, and purchase intentions for the sponsored brand than do sponsors and stories that do not match (Rodgers, Cameron & Brill 2005). Attitudes toward the sponsor are positive when the

advertisement occurs at the beginning of the news story, is highest in the middle and lowest for advertisement placed at the end (Rosenkrans 2009).

Opt-in e-mail marketing is a form which exploits electronic mail. Types of e-mail advertisements: e-mail newsletters, e-mail discussion lists, the subscribed e-mail marketing channels. Email is a great form of communication, however it is the least effective when it comes to marketing. Personalization is important in marketing via email because only 1% of adults read all email advertising available to them, 20% occasionally read emails personalized to them (Charlesworth 2009, eMarketer 2010b). Too frequent commercial emails create a negative impression on email advertising among web users (Chang *et al.* 2001, Holland 2007) and could be considered as spam email.

Viral marketing is an advertising method that encourages people to pass along a message. Terms as buzz marketing, word-of-mouth are used as synonyms of viral marketing in the literature. Viral marketing is an efficient way to distribute a message to a wide audience and facilitate building a list (Blumberg, Forman & Miller 2005). Viral marketing through e-mails can occur most commonly in three different ways: through passalong e-mails, e-mail or a web prompt and incentivized e-mails. A social ties (e.g., a close friend) are more influential and serve as bridge through which referrals will more likely flow (Blumberg, Forman & Miller 2005). So, influence of viral marketing is greater than classic advertising media.

Studies conducted by scientists give quite clear vision of internet advertizing tools efficiency and evaluation criterions, but it would be beneficial to conduct empirical research of perception and internet users behaviour conserning web advertizing tools in each region constantly.

3.5. Social networks in marketing

In order to provide sequential research of social networks in marketing usage and perception of those decisions by consumers it is important to identify the current trends in exploration of the area. Research in social networks in marketing can be oriented to the value development framework which recognizes that marketing is a social and societal process. So, a customer orientated approach to value generation becomes one of main issues nowadays. The understanding of social network in this paper is taken from Boyd and Ellison (2008), and it is defined as web services that allow people to construct profile which can be public or semi-public and that profile is in delimited system, also it allows to make a lists of other users and share connection with them, moreover, with possibility view list of connections made by other in the system. This perception is extended by users understanding to organizational and group levels. The research were made taking in to account the actuality of the permanent research of social

networks which were emphasized by S. Dann (2010) and assumption that companies follow such aspects as:

- Power transmittance to customer. Customer dictates their own conditions and producer must consider it, because competition in market is harsh and product life cycle is shorter in time.
- Speed of changes. The information is changing so rapidly that customer has constantly observe the situation around him/her.
- Absence of distance. Geographical boundaries vanishes, market expands to the barriers of internet.
- Importance of intellect capital. The imagination, creativity of enterprise is more important than financial capital.

For the research different models and methods of work, behavior, and marketing communication in social networks were taken in to account, such as presented by D. Chaffey: publishing via blog, syndication via RSS, post on „Twitter«, post on «Facebook», «LinkedIn» page involvement, email newsletter, etc. It is important how technologies and methods are used by organization for marketing, but nevertheless, it is more important how people are going to react to them.

A lot of scientific researches in the field of social networks in marketing in B2C communication were processed by De Vries, Gensler and Leeflang (2012), Soares, Pihno and Nobre (2012), Stephen and Galak (2012), Davidavičienė (2012), Zhang, Dubinsky and Tan (2013), Powers, Advincula, Austin & Graiko (2013) and B2B communication by Pabedinskaitė & Davidavičius (2012), Culnan, McHugh and Zubillaga (2010), Riemer and Richter (2010). Studies on Social Media in different industries were conducted by Barnes (2010) Senadheera, Warren and Leitch (2011), Levina & Vilnai-Yavetz (2013), social networks Facebook, LinkedIn, Twitter and Google+ in social communication were analyzed by Chaffey (2011), Dohlakia et al. (2004).

Important view proposed by Dohlakia et al. (2004) (authors proposed tools that helps understand the motives of participants of virtual community and their motivations using different media) were taken in to account during the first research. Authors emphasize the informational value as the participant derives from getting and sharing information in the virtual community, and from knowing what others think, as well as instrumental value that a participant derives from accomplishing specific tasks, such as solving a problem, generating an idea, influencing others.

Several studies have shown that many participants join such communities mainly to dispel their loneliness, meet like-minded others, and receive companionship and social support. Social enhancement is the value that a participant derives from gaining acceptance and approval of other members, and the enhancement of one's social status within the community on account of one's contributions to it.

Maintaining interpersonal connectivity and social enhancement both emphasize the social benefits of participation, and are group-referent, i.e., the referent of these values is the self in relation to other group members. This distinction between self and group referent values is important, since later on.

Near all mentioned above the entertainment value, derived from fun and relaxation through playing or otherwise interacting with others plays significant role also. Studies have shown that many participants do so for entertainment through exploring different fictional identities, encountering, and solving virtual challenges, etc.

3.6. Effectiveness evaluation theories

There is agreement that online advertising can be audited through factors such as brand awareness, product or service recall, changes in the attitudes and behaviour. The studies and theories of such processes focus on information processing on the internet. Such processes can be illustrated by online advertising information processing models, which are mostly the integration of old theories (such as the product involvement theory, information processing theories, and psychological theories) with some new elements specific to online advertising (Ha 2008). It has been widely argued that the effectiveness of online advertisements should be evaluated by their ability to generate click-through, which refers to a user's clicking on a certain web advertisement, or some other behavioural responses, such as sales or interactions on a website (Bagherjeiran & Parekh 2008, Burns & Lutz 2006, Chavosh *et al.* 2010, Papadopoulos *et al.* 2009, Rodgers 2004). Others have argued that direct response is a complex phenomenon which is partly determined by factors relating to the predisposition of the audience, not the advertising itself (Baltas 2003, Bruner & Kumar, 2000). A single measure cannot provide a complex picture of online advertising. Discussion of advertising effectiveness must take in to account the objectives in marketing contexts. If the objective is to attract online users to visit its website, then the ability of advertisement to generate the desired behavioural responses should be measured, but if the objective is to increase brand awareness, the level of click may be irrelevant.

Online advertising depends on the *advertiser-specific* aspect (objective advertisement features) and the *customer-specific* aspect (subjective advertisement features) (Rodgers & Thorson 2000). Most of these factors include structural elements, such as advertisement features, formats and types. Factors that are specific to users, such as their personal propensities, perceptions, and motivation, may influence the effectiveness of online advertising as well.

Many hierarchy-of-effects models have been proposed for advertising effectiveness. For example in the DAGMAR (Defining Advertising Goals

for Measured Advertising Results) model it is assumed that advertising works in the sequence of awareness, comprehension, conviction, and action (Scholten 1996). Hierarchy of effect model categorizing elements into three categories: cognition, affection and conation (Li & Leckenby 2004). Conation is natural tendency, impulse, striving, or directed effort, and it was a popular term for behavioral intentions but it has been replaced by behavior as the organizing term. Studies found that advertising on the web has sizable effects on brand loyalty and attitudes that can't be reflected in click-through (Bergkvist & Melander 2000, Bruner II & Kumar 2000). However, the internet introduces an additional dimension — alienation (subject's estrangement from its community, society). So, internet is an active media and moving consumer to the role of an active receiver from being a passive receiver. Rodgers and Thorson (2000) draw a distinction in their Internet Advertising Model (IAM) with extra features of online advertisements which are interactivity, attitude toward online advertisements and attitude toward websites. These factors divided into *consumer-controlled* (functions and information process) and *advertisercontrol* (structures) that lead to consumer response such as emailing to advertisers, clicking on advertisement, and exploring the website (Chavosh *et al.* 2010). Model of key success factors of effectiveness of online advertising which are measured by click-through rate was proposed by Papadopoulos *et al.* (2009). First factor is online activity type including article reading, picture tagging, social bookmarking and message exchanging. Second — is social context that is the perceptual influence of friends of a user (McCoy *et al.* 2007). Third success factor is functional elements where motives and behaviour must be considered. Fourth factor is structural element, which are devoted to physical presentation and format of the advertisements (Papadopoulos *et al.* 2009, Bagherjeiran & Parekh 2008). The effectiveness according to the Danaher and Mullarkey (2003) can be denoted as the page viewing duration.

3.7. Website quality and efficiency evaluation

In order to identify key criterions for evaluation of e-commerce websites the existing methods and models, such as: VPTCS (Sloim *et al.*, 2001), based on TAM or SERVQUAL model (Cao *et al.* 2005), a model of virtual service quality dimensions (Santos, 2003), WebQual model (Barnes & Vidgen, 2003), Web Quality Model (WQM) model (Calero *et al.*, 2005), E-S-QUAL model (Parasuraman *et al.* 2005), 2QCV3Q quality measurement meta-model (Mich *et al.*, 2003), WebQual TM quality evaluation model (Loiacono *et al.* 2007), IRSQ criterions list (Janda *et al.* 2002), EtaiQ model (Wolfenbarger & Gilly, 2003), PeSQ model (Cristobal *et al.*, 2007), Netqual web products quality evaluation system (Bressolles, 2004) were investigated and evaluated. Scientists emphasize different elements

of quality evaluation of website. Calero et al. (2005) analysis the website quality from three different points of view: consumer, designer and owner. Qin Su et al. (2008) used 6 dimensions for analysis of degree of consumer satisfaction using e. services: quality of service provided, customer service, management of processes, ease of use, the quality of information and design of the website. Cao et al. (2005) analyzed the quality based on the principle of information systems and identified four essential elements: information, services, system quality and attractiveness. Alzola and Robaina (2010) only two major phases of the evaluation of e-services: phase before and phase after the sale, and pointed out importance of added value. Santos (2003) distinguishes passive and active categories of elements of the website quality. Parasuraman et al. (2007) and Zeitmal (2002) highlights the importance of reaction to the consumer named problems.

As a reason the different types of websites (informative, commercial, educational, entertainment) can be named. The evaluation methods and models of such researches depend on target group (consumer, designer, website owner) interests and perceived quality. The 5 most important criterion groups were identified (easy to use, navigation, security assurance, real time help, and content).. The other kind of criterions should be evaluated also, but their significance depends on consumer behavior habits (design, easy search, image created, etc.), macro environment (reliability, loading time, innovativeness, etc.) which could be determined by country specifics. Deeper analysis of 7 models was preceded (Table 3.1).

The analysis enabled to identify key elements for e-commerce websites quality evaluation. In most cases the authors emphasize the quality of such items as website navigation and clear layout of information, ease of use, content, real-time support, reliability, security, design and ease search (Davidavičienė & Raudeliūnienė, 2010; Loiacono et al., 2007; Parasuraman et al., 2007; Cao et al., 2005; Calero et al., 2005; Santos, 2003 ; Barnes & Vidgen, 2000; Barnes & Vidgen, 2003; Mich et al., 2003). Evaluating the e-commerce website quality the following criterions should be included: simplicity of product search, ordering, payment process, security provisions, adequacy of delivery types for target audience, order status tracking capabilities, product return process, loyalty programs.

The survey enabled to identify specifics of navigation and quality perception of Lithuanian consumers. The sample size: people who buy online, 8.5% in year 2009 of Lithuanian population (Ministry of Statistics Department, 2010). The survey involved 81 respondents (43 men and 38 women). Respondents' age average — 26.8 years. Their computer literacy respondents rated six points (in seven point scale). Indicating the causes of online shopping the respondents highlighted a lower price of the goods (29%) , convenience and simplicity (22%), lack of time (19%), greater diversity of goods (16%), opportunities in the Internet (6%), will to try something

Table 3.1

E-commerce web site quality evaluation models analysis

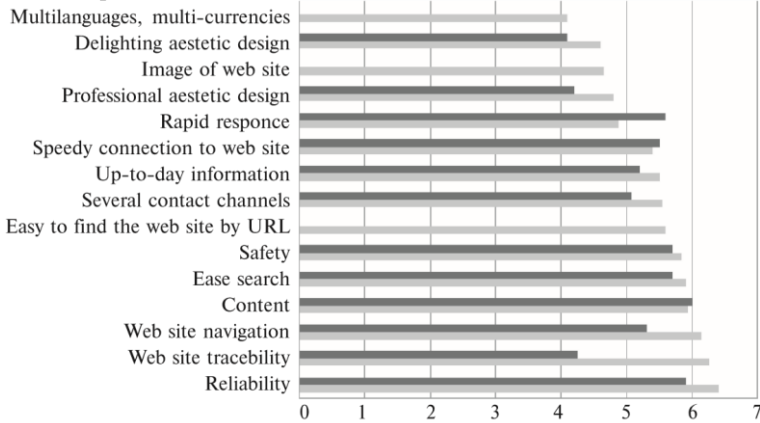
Dimension	Model of						
	Loiaco <i>no et al,</i> 2007	Parasuram, <i>et al,</i> 2007	Cao <i>et al,</i> 2005	Calero <i>et al,</i> 2005	Santos, 2003	Barnes & Vidgen, 2003	Michelet <i>al,</i> 2003
Easy to use	+	+	+		+	+	+
Navigation	+	+	+	+	+	+	+
Security	+	+	+	+	+	+	+
assurance	+	+	+	+	+	+	+
Help (real time)	+	+	+	+	+	+	+
Content	+	+	+	+	+	+	+
Design	+		+	+	+	+	
Easy search		+	+	+	+		+
Reliability	+					+	+
Loading time	+		+				+
Image created		+					+
Innovativeness					+		+
Contact details					+		+
Language/currency alternatives						+	+
Update frequency							+
Availability							
Domain (easy to remember)							

new (4%), entertainment (2%), etc. The results confirm that the website functionality and attractiveness are important elements for the consumer and becoming a critical factor. The survey of e-commerce website quality evaluation factors of Lithuanian consumers (carried out in scale from 1 to 7) confirm the results of other scientists (Loiacono et al. 2007; Parasuraman et al. 2007; Cao et al. 2005; Calero et al. 2005; Santos, 2003 ; Barnes & Vidgen, 2003; Mich et al. 2003).

The most important elements of assessment of e-commerce quality in Lithuania (blue) align with the Qin et al. (2008) carried out in China (red color) of a similar (Fig. 3.2). There are compared those elements, which were analyzed in both (Qin et al. 2008 and Lithuanian) surveys.

The differences of results can be caused by cultural differences, user experience when browsing the Internet and technological changes. For Lithuanians the most important factors are: reliability (6.4), website tractability (6.26), navigation (6.14), content (5.93), ease search (5.9), and safety (5.84). The other elements (multilingual, multi-currency option, design, image of the website) are actual for the consumers, but wasn't mentioned among most important. The biggest differences of consumer approach were identified to such elements: website traceability, website navigation, response time factors.

Investigation showed (Fig. 3.3) that Lithuanian consumers find, as most complicated, such e-shopping processes steps: return of the product



Quality elements for e-commerce success

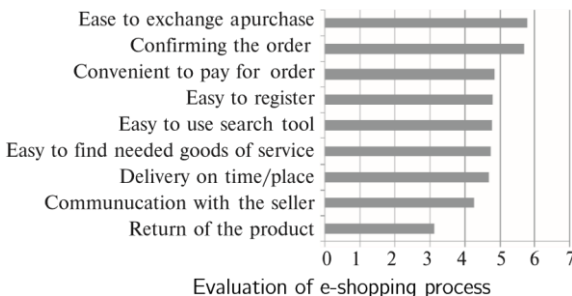
(3.12 out of 7 points), and communication with the seller (4.26 out of 7 points). The exchange a purchase (5.81) or confirming the order (5.7) was thought as quite clear processes.

The assessment of e-commerce websites revealed the importance of the delivery on time (5.75), easy to find goods or services (5.66), easy comparison of products or services (5.45), the order status tracking possibilities (5.35), and rapid response (real time) (5.24).

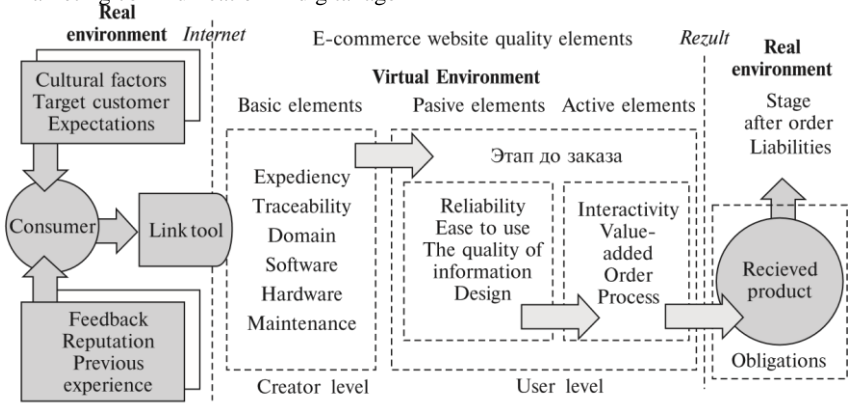
Empirical research results comparison with previous studies revealed minimal changes in consumer behavior. As reasons of identified differences should be name the consumers' online browsing habits and skills change, technological changes and geographical aspects.

The result of the literature analysis and survey — the list of 129 criterions for evaluation and comparison of e-commerce websites were created. Key element groups: basic elements of website, reliability, easy to use, information quality, design, interactivity, added value, and order process.

E-commerce website quality evaluation model was formed after the research (Fig. 3.4). The real and virtual environments are separated in the model. The quality factors are divided into different levels: user level and developer level.



Evaluation of e-shopping process



The model of e-commerce website quality evaluation

Focus was on user level analysis, which consists of passive and active elements, and two phases — phase before the product or service purchase and after the order (outcome quality).

Consumer needs. Concerning the goals of the organization, it is necessary to analyze and define the potential profile of consumers taking into account the fact that consumers will pay attention to the online trading company's reputation and image.

Specifics of virtual retail. The website should eliminate the lack of real-seller consultation feeling for consumer by interactive elements and exploit advantages of virtual environment.

Basic elements in virtual environment are binding website elements. In order of importance, they are located in the following order: expediency, traceability, domain, software, hardware and maintenance.

Passive elements in virtual environment directly intended to meet the needs of Internet users. The consumer directly involved with them in buying products or services online process. In order of importance, they are located as follows: the reliability, ease of use, quality of information, and design.

Active elements in virtual environment are the elements, which efficiency can be evaluated by consumer begin to use all services provided. In order of importance, they are located in the following order: interactivity, added value for consumers, and of the order process.

Buying process: there are two phases (before and after) of ordering products or services. The first phase begins at the moment when a potential buyer enter the website (at this stage the buyer evaluating is it easy to use, quality of the information, services offered and the benefits of interactivity). Phase ends after the payment made. Then begins the second phase in which the consumer expects that the products or services

will be as described, the convenient on time delivery as promised, and rapid solving of emerging problems. The model of e-commerce website quality evaluation assesses all processes of e-shopping and provides logical and systematic structure of quality assessment.

3.8. Cases: resent research results

3.8.1. Online advertisements efficiency research

The online advertising formats included in the research are based on studies conducted by the Belch and Belch (2009), Burns and Lutz (2006), Chaffey et al. (2006), Jensen (2008), Rodgers and Thorson (2000), Wolin et al. (2002) and others. The research period — spring of 2011. More research result presented in master thesis (Raudien'e 2011). The 24 questions were related to hypothesis developed from literature analysis and 4 additional questions in order to get the demographic and internet motive data. 121 filled questionnaires were received out of which 61% female and 72 % of age group between 25-44 years. Most of the respondents (90%) were users, accessing internet every (or almost every) day. Among the most popular online activities were email (90%), reading online news, newspapers or magazines (82%), searching for information (79%) and banking online (7%). Regarding the general attitude toward online advertising, only 15 % have negative attitudes (consider as irritating, indulgent and interruptive), 31% have positive attitudes, 14% does not pay attention and 40% affirm having different attitudes toward online advertising (depends on product, advertising features, etc.).

The 55% of respondents that have negative attitudes (15%) or have different (negative or positive) attitudes depending on product being advertised (40%) were asked to answer the additional questions in order to investigate if the overall negative attitude toward online advertising has an impact on the effectiveness of online advertising. Total of 66 respondents answered this question out of which 55% states that they may respond to online advertising if they find the product interesting or relevant to their personal needs and 26% stated that they may find it interesting if the advertisement is eye-catching or exceptional from others.

As the most effective online advertising formats the rich media (22%), banner advertisements (20%) and contextual advertisements (19%) were indicated.

The pop-ups (74%) were found as the most irritating online advertising format. The most acceptable online advertising format features are idea uniqueness (50%), eye-catching design (44%) and photos or pictures embedded in the ad (29%). As the most irritating ad features are no «exit» option to stop or delete the ad (74%), moving across the screen or blinking (flashing) ads (57%) and ads that cover the content the consumer is watching/reading (52%). Regarding the online ad features that

attracts the viewer's attention the most, the results show that viewers pay attention to the ads that are relevant to their personal needs (55%), not interruptive (39%) and exclusive from the context, contrastive ads (24%).

The results show that the banner advertisement size has no impact on the effectiveness of this format (64%), but banner located on the top of the page (47%) are more attention-grabbing than on the side (29%) or on the bottom of the page (3%). Moreover it was found that banner advertisements with short phrase (38%), logo/brand name (35%) or animation (27%) have more chances to grab attention than banner with long text message (0 %).

The results indicate that relevant to content sponsorships are more efficient (63%) than irrelevant (16%). Depending on motives, the internet users respond to relevant sponsorships (60%) when they searching for the information, than internet surfers for entertainment or leisure (16%). Users have a negative bias against sponsored search results (50%) and 32% of respondents indicate that sponsored results are just as relevant as non-sponsored results for search queries. Only 18% of respondents in most cases use sponsored results. In organic search result list 42% of respondents view the results ranked in more than one page of result list and 34% of respondents indicate that only first page of organic search results. 24% of respondents view only up to top five of organic search results.

52% of respondents open and read advertising emails if they found the email title interesting and 29% do not open advertising email at all. Investigating the features of what make email advertising effective, respondents indicate that the personalization (49%) and creativeness (36%) does not influence much on their interests. The loyalty programs were found equally influencing the interest. The strongest influence on interest to open and read email advertisements have the interesting and compelling title of the message (37%) as well as interesting and useful email message content (38%). In order to investigate the desired frequency of email messages being received, 32% of respondents prefer one or more advertising emails per week, 39% of respondents prefer one or two advertising emails per month and 23% of respondents prefer less than one advertising email per month.

Regarding interactive pictures embedded in the article text that can get most attention, one third of the respondents indicate that the most attention attracts the pictures or photos placed right after the article title (33%) and 20% of the respondents claim that the picture or photo placed in the right or left side of an article may attract the most of their attention, less attention attract photos in article text (16%) or on the bottom of the article (13%). Regarding the attitudes towards online discussion issues, 57% of respondents prefer more traditional methods for product discussions as they usually discuss such issues on face-to-face conversations. Only 4% of the population discuss products and services on internet

Table 3.2

Effective Physical Presentation of Online Advertising Formats

Advertising formats	Physical presentation	Medium Characteristics	Relationships
SEO	Search results being optimized to show up within the first page of result list.	Relevance Accessibility	Communication
Public Relations	Company generated posts; Daily frequency; Video, audio, picture, photo consisting communication; Involvement stimulation;	Interactivity Frequency Relevance Accessibility	Communication Feedback Customer Support
Banner Ads	All possible activities in order to maximize favorable mentions and respond to unfavorable mentions. Animated;	Creativity Interactivity	Communication
Rich Media	Located on the top of the web page; Frequency of 6-7 exposures to each viewer. Video, audio streaming content;	Frequency Accessibility Creativity	Communication
Websites/ Micro-sites	3D Visualization Graphics; Flash Technology N/A	Interactivity Frequency Accessibility Creativity	Communication Feedback
Contextual Sponsorships Co-Branding	Matching the content sponsorships;	Interactivity Accessibility	Customer Support Communication
Email Marketing	Located on the top of the content; Content related links	Relevance Interactivity Relevance	Communication
Viral Marketing	Compelling and interesting title; Useful content; Frequency of 1-2 commercial emails per month; Compelling and useful content with no requirement to pass- along the message;	Interactivity Interactivity Relevance Accessibility Frequency Interactivity Relevance Accessibility	Communication Feedback Customer Support Communication

(social sites, forums and etc.) and 21% of respondents discuss it equally on the internet and face-to-face. 24% of population tend to read the information by themselves but do not recommend it to their friends and colleagues with only 15% ignoring such recommendations as they do not have time or do not think it will be useful. The results indicate that 40% of respondents forward the buzz creating messages to their friends and colleagues either they found it interesting themselves and others will like it as well (31%) or forward the message as it is required in order to get the benefit (9 %).

Concerning word-of-mouth influence on consumers' choices — 48 % of respondents think the opinion of their friends, relatives or colleagues are of high importance and shapes positive attitudes towards the product, 42 % of respondents state the opinions of other people are important, but the

choice to purchase is determined by other criteria (price and etc.) with only 10% saying that the opinions of other people do not influence the choice to purchase.

The results are summarized in Table 3.2 and extents effective advertising criteria list, detailing the physical presentation of formats in order to meet the effectiveness criteria and show the interaction.

Concluding the research main aspects should be outlined: creative quality is a key to any brand success, optimization of exposure frequency; evaluation should be processed taking in to concern the objective of campaign.

In the case of brand building, click may provide additional benefit but is not the only measure to look at. Recall, awareness, liking, image are keys to the evaluation process and are indeed likely to move with multiple exposures. Online brand building is in line with these findings and suggests that optimal levels of frequency depend on the value of the copy and the brand itself. Advertising frequency coupled with personal relevance impacts the way individual's process information. Interaction in an online context requires active participation on the user's part.

Any form of online advertising can be considered as a tool for communication between company and its stakeholders. The interactivity of online environment enables to get customer feedback which is a capability to collect information regarding the consumers' needs, preferences, attitudes and behavior. The ability to get customer feedback enables to provide customer support.

3.8.2. Evaluation of Lithuanian e-shops

The evaluation of 6 Lithuanian e-shops was preceded following the concepts of created e-commerce websites quality evaluation model. The list of 129 criteria for evaluation was engaged. Six e-shops (selling household appliances and Electronics) were chosen randomly for evaluation: www.pigu.lt, www.neriba.lt, www.butis.lt, www.vekrone.lt, www.preka.lt, www.troliai.lt. Principle of evaluation if website meets the quality requirement of the element that element should be evaluated by the assessment one point (Table 3.3).

The evaluation showed, that two websites www.pigu.lt www.neriba.lt meets quality requirements. These two e-commerce websites has the highest evaluation of users (highest page ranking and number of unique visitors per day (table 3.4). In determining the rank of the website, loading time and server vendors the data from website www.alexa.com were analyzed. The e-mails (with inquiries about website statistic data) were send for owners of those e-commerce websites, which data wasn't available there.

Websites with more than a five grade scores may be attributed to the well-known and useful to consumers. Higher than the five grade scores

Table 3.3

Evaluation results of Lithuanian e-shops

Category (max evaluation)	pigu.lt	neriba.lt	buitis.lt	vekrona.lt	preka.lt	troliai.lt
Basic elements (27)	23	22	19	18	12	11
Reliability (10)	10	10	6	6	4	2
Easy to use (19)	15	15	14	14	6	9
Information quality (22)	21	19	17	15	8	8
Design (10)	9	9	8	8	6	2
Interactivity (14)	7	9	7	7	2	5
Added value (17)	13	13	5	3	4	1
Order process (19)	17	15	11	6	6	7
Total (138):	115	112	87	77	48	45

Table 3.4

Statistics of evaluated websites

E-shop	Unique visitors	Page Rank
www.pigu.lt	19000	6
www.neriba.lt	6000	6
www.buitis.lt	400	3
www.vekrona.lt	2200	4
www.preka.lt	450	1
www.troliai.lt	120	3

and evaluation score got www.pigu.lt and www.neriba.lt. The conclusions from the research are that other e-commerce websites should pay more attention to weak links and to improve quality. First of all the ranking shows the quality of website, and if the ranking scores are low the website owners should precede the detail evaluation in order to indicate weaknesses and to take measures to eliminate them.

Conclusions

The speed of e-markets growth is high, so the potentially new opportunities in communication with consumers provided by it are vitally important for traditional and e-business. The dynamic development of ICT as well as changes in the Internet marketing dictates the need for constant research and analysis of the markets, consumer behavior, and B2B communication changes. Since the Internet offers wide spectrum of tools for advertising, communication and interaction, as well as formats, use of which depends on the specifics of the target audience, its behavioral patterns, cultural aspects, habits etc., the research area become complex, and needs systemic approach.

This chapter explored the usage and adoption of e-marketing tools, improvement of websites of enterprises, the resent research results performed in Lithuanian and EU were presented. The focus of the researches were on the question of how businesses use web communication channels, present information on websites and which e-marketing tools for commu-

nication are commonly used and well treated by consumers in B2B and B2C sectors.

The results confirm that Facebook is the most popular social media channel. It was found that all industries use at least one of the social media tools. Once again should be highlighted the importance and need of constant research of usage peculiarities and choice of e-marketing tools in order to identify trends and form the models which ensure efficient B2B communication in the web.

Self test questions

1. How You would describe ICT caused changes of web markets during past 10 or 20 years?
2. Which social networks are most suitable for B2B marketing communication? Why?
3. Which social network has significant impact on companies marketing complex?
4. What kind of research should be runned contantly in the companies in order to follow market requirements?
5. Which marketing tools are recommended for B2C marketing communication. Why?
6. Identify keyfactors influencing quality of website and e-commerce. Is there any differences?
7. Define market development trends?
8. Define consumer behavior changes and trends.
9. Which advertizing formats are most popular in your target area (research area)?
10. Which advertizing formats are most annoyng in your country?

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IMPROVING THE EFFICIENCY OF E-COMMERCE

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Abstract

The available experience of using e-commerce in industrial applications is generalized, which is necessary to improve the efficiency of commercial activity on the Internet. The resources for promotion of industrial sites on the Internet, as well as general practices and recommendations for improving the efficiency and security of e-commerce in the industry are considered. It is suggested to consider the E-commerce as an Internet technology, based on common principles.

Key words

e-commerce, Internet, Internet technology, industry, individual e-business, corporate e-business, e-commerce security.

Introduction

The goal of this section is to analyze the experience of using the Internet for commercial purposes in terms of industrial enterprises, which is necessary to increase the efficiency of e-commerce in an industrial plant.

The importance and relevance of this problem is evident as industrial enterprises are the main backbone enterprises of Ukraine's economy and their performance effects on the country population living standards.

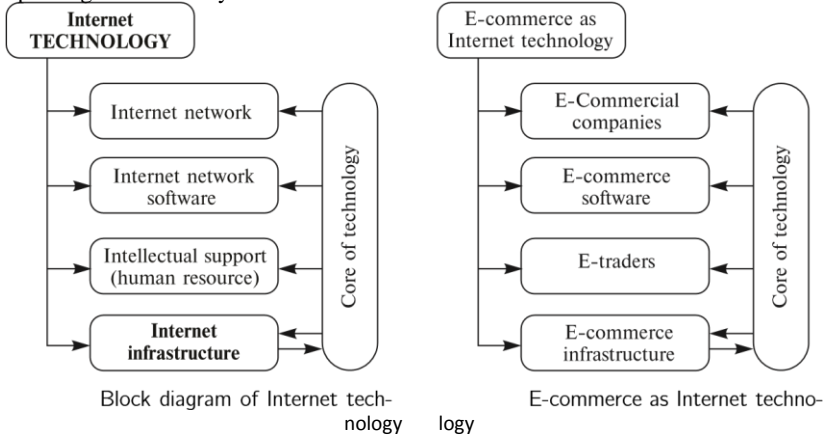
It is necessary to evaluate the advantages and disadvantages of e-commerce in industrial enterprises and offer recommendations to improve their effectiveness.

4.1. Scientific research. E-commerce as the Internet technology

Consider the components of Internet technology. This concept is widely used and very important in the development of modern systems of doing business. Any Internet technology consists of three main parts: the material, intellectual and software, which forms the core, is

developing rapidly, as well as external to the core infrastructure in which they interact. Fig. 4.1 schematically presents the components of Internet technology.

Information technologies have the property hierarchy as any system. One technology may be part of another or nested inside another technology. It is obvious that the technology of e-commerce can only exist within



the existing Internet technologies. There is e-commerce, as it is embedded in Internet technology; of course, that it uses the resources of the hardware, software and intellectual part of Internet technology, as well as its infrastructure, but not all, in Fig. 4.2 is a block diagram of an electronic commerce technology as the Internet.

By hardware electronic commerce as technology, computers are only commercial sites and sites buyers products on commercial websites. Gradually audience ecommerce grows and tends to approach the audience all over the Internet. However, you should immediately make a reservation, this audience is a system divided into a plurality of sub-systems, which are called commercial niches. Both sellers and buyers usually work in one or more commercial niches, according to their specialization and interests. As in the offline, in every commercial niche there is a competition related to the limited demand for goods. In it are the usual laws of market economy, difference can only be targeted.

The software part of e-commerce is also based on Internet technology, but applies to it and a number of specific programs, such as selling sites, payment systems, internet banking, affiliate programs, mailing lists, labor exchanges, articles, services, micro stock, social networks, file sharing, video hosting services, etc.

In other words, all the resources that are already in use or can be used for commercial purposes. As the use of a resource, to what extent and consistency — from this it largely depends on the success of e-commerce, but that's not all.

Intellectual supports for e-commerce, as a rule, people are presented with, but not all users, but only those who are engaged in commercial activity on the Internet. According to the statistics of successful entrepreneurs are not more than ten percent of all those who are trying

to become the internet businessmen. For example, if in RuNet (targeted, focused on Russian-speaking audience) they are about 50 million. Internet users, of which some 5 million. Trying to engage in commercial activities, the successful entrepreneurs are only one percent of them, for a total of 50 thousand people. They earn 99% of all e-money payment systems rotating in Russian Internet. Speaking about Ukraine, the Yuanet about one third of merchants, as they prefer the cheaper and multiuser RUnet, so a rough estimate says that in the information space of Ukraine is working and earning online approximately 1.5 million. Commerce sites, however, in this relatively small commercial Internet space 99% of the money, earn only 1% of the sites. It is about 15 thousand. Sufficiently large sites, such as: www.ukr.net, www.bigmir.net, www.i.ua, www.rozetka.com, www.fotomag.com et al., In the number of sites selling tangible products and information for real and electronic money, as well as Internet search engines.

Infrastructure of e-commerce is the external services, without which it cannot exist in the first place, this is the Internet technology, in which there is e-commerce, and secondly, all Internet services related to the maintenance of e-commerce. This can be attributed banks and phone companies working with the Internet, a network of «popolnyashek» electronic invoicing, electronic money exchange offices, the company for the delivery of goods and others.

In e-commerce is traditionally divided into four organizational and economic models:

- 1) business-to-business or business-company (B2B);
- 2) business-to-consumer or business-to-consumer (B2C);
- 3) business administration (B2A);
- 4) user-Administration (C2A), also the intermediate model (C2C).

Of these models, the most widely used on the Internet and received RuNet B2C model, where the sale of goods is carried businessman private entity such www.fotomag.com.ua. However, the industry is of particular importance B2B model, where one businessman or company supplies goods to another entrepreneur or company, for example www.prom.ua.

As we have already mentioned above, e-commerce is an information technology Internet. This means that, in particular, if the goods sold are also information (books, audio, video lessons, pictures, spreadsheets, databases, intelligence cards, etc.), it is possible for full automation of most stages of commercial activity. However, the «business machine» is a distant utopia, because without human intervention is not possible to create information products, writing for them selling texts, creation and placement of online advertising banners, writing articles in blogs and other operations. You can automate not only the operation order of goods, but also his payment and delivery of in electronic form, and this is greatly

simplifies the organization and conduct of business. This primarily relates to the individual e-business on the Internet.

As for the corporate e-business, which is engaged primarily in sales of tangible goods on the Internet, they pay real money can be automated by using a special secure protocol to transfer money over a network, electronic signatures and other mechanisms that are now sufficiently well developed. Delivery can be done in terms of outsourcing companies, specializes in the delivery of goods. An example is the Ukrainian company «New Mail», «Intime» that a day to deliver the goods on all the major cities of Ukraine for a modest fee.

The advantages of e-business. For the organization of offline businesses (ie, without the use of the Internet), the first step is to calculate the costs of setting up a store that will sell a certain type of goods. A list of some items of expenditure:

- rental and repair, purchase or construction of shop premises and the cost of the goods themselves;
- purchase of commercial equipment and accounting information system product, including cash and equipment;
- salary costs of personnel hired manager, accounting and sales, as well as increased, the associated taxes.

General functional classification of all sites is divided into fourteen positions and has the following form:

- Search engines are at the top of the management hierarchy of the Internet and search for information on a given request, the classification and ranking of sites on the Internet.
- Social networks provide the ability to create free blogs and collected hundreds of millions of users who can communicate with each other and share freely available on the Internet information.
- Large portals, that provide services in addition to the news e-mail and other services to attract visitors.
- Exchange of articles, photos and multimedia.
- Corporate websites, which provides information about the company, its products and services, news, subscribe to the mailing list of vacancies and others.
- Sites of electronic payment systems and banks.
- Online shops with the electronic catalog, comparison shopping services, private office, order management system and payment mechanisms through payment systems, etc.
- Sites that provide web hosting and other information services, such as the promotion of sites in the network.
- Promo representing promotional information about products, services, promotions or projects.

- Information and service portals or content projects around which creates virtual community of interested users, organized their communication in forums, chats and blogs, offers a variety of ratings, polls, reviews, guides, online consultation.
- Personal (author) web projects and blogs, which represent the interests and results of operations of the individual or a small group of people.
- Websites selling mini sites that for a particular algorithm is advertised in advance and imposed on any one or more of the material or information products, with an immediate transition to the payment system when the user clicks «buy».
- Sites «culture», offering free material and information products for a subscription to a particular user's mailing list in order to increase the subscription base and increase the target audience.
- Simple sites, business cards with telephone numbers and addresses for the communication link.

4.2. Promotion of e-business

The successful development of modern business is impossible without competent marketing policy, using exposure to a wide audience of potential customers a powerful tool — the Internet. The influence of the World Wide Web is that the popularity of the company confidence in its name, and an increase in demand for its products and services are now directly dependent on the position of the site in the rankings of popular search engines.

According to statistics, as of today, more than 60% of the population of Ukraine decides to apply to one or another company based on the opinions formed after analysis of data obtained on different online resources. That is why promotion of e-business is a core area of business portal UA-REGION.

More than 10 years of experience in business promotion helped to formulate an integrated approach to ensure maximum promotion of e-business on the Internet. As part of any proposed UA-REGION packages, UA-REGION company offers a complete network registration UA-REGION business and Internet portals, a significant increase in the search rankings of the leading positions in popular search engines Google, Yandex, Meta. Given the different purposes and needs of small, medium and large businesses UA-REGION created unique packages that can benefit any client (Table 4.1).

Huge amount of work to create a product that could take a leading position in the market, may not produce the desired results if the thoroughly inadequate to treat conduct marketing activities. Market segmentation, research sample, clearly describes the target audience, the strict focus of advertising campaigns, the use of the most effective methods of promoting

Table 4.1

Package services UA-REGION for the promotion of e-business)

Proposal	Result
Package «VIP»: Maximum Business Rating	Aimed at maximizing business promotion on the Internet. Universal means of achieving a leading position for a dynamic company whose aim is the constant expansion of spheres of influence
Package «Optimum»: Integrated business information system «All enterprises of Ukraine»	Comprehensive program is perfect for any medium-sized business enterprises. Permanently affect the target audience to get into the top 10 search engines, to make information about the services and products readily available
Package «effective»: To promote and advance the business	A holistic approach aimed at improving the visibility of your company in the search results for the developing of small and medium business
Package «Budget»: To begin the conquest of the company network	Set the minimum required means of influencing the rating of the company on the Internet. Perfect start to the promotion of any business with a limited budget

business competitiveness of enterprises and provide a noticeable increase in sales. Quality advertising, providing the most complete databases with relevant and reliable information, site promotion and SEO-optimization comprehensive list of possibilities for a favorable impact on the promotion of business.

UA-REGION offers carefully structured to take advantage of the system, which is based on the most comprehensive database of Ukrainian enterprises. Using the catalog of companies for

online advertising — perfect strategic move. His clever use provides unobtrusive but steady improvement in the company's position on the Internet.

4.3. A set of basic tools for e-business

1. Company's website. Requirements for the site may be different. The site is a key element of which online business is just beginning. It is a virtual representation (a kind of office) of a businessman in the network and the face of the company. The best option by far is to create a corporate website on 1C-Bitrix CMS.

On the site you can see the following basic elements of modern design (top to bottom):

- Switch language reporting.
- Form Site and site map.
- Header (cap) site which is the logo of the NSU and the site name.
- Horizontal main menu of the site to be able to select major categories and elements of the site. Horizontal menu located in two lines, between which is slider with pictures visually reflects (scrolls) the current main content. Controls the main menu is basically the internal links,

but also more complex element — the list to select the links on the page relevant departments of the university.

- Select the main content for the issuance of annotations made in the form of two columns: News and announcements, is a kind of two newswires (blog), dynamically changing, in which new entries appear at the top, and the old — move down and then disappear from sight.
- The right column is a sidebar. It using the browser displays a variety of widgets: Calendar Activity, video, text information, a list of blog categories, archive records, tag cloud, advertising, etc..
- In the bottom of the site there is a design element called footer. It is displayed in the sidebar and widgets that do not fit on the side panel or the ones that need to be placed horizontally. The site in the footer of the NSU made the following information in the form of lists of links with names of: services, internal resources, social networks, Information Partnership. At the bottom of the footer is a slider, which scrolled logos partner websites NSU, for which the external image links.

We now turn to other types of e-business tools.

2. Page capture subscribers. On this page, usually located a free bonus (for example, an e-book offers visitors for consent to receive emails postal subscription seller. On this page is a form of subscription, which is usually prepared on special servers, mailing lists, such as <http://smartresponder.ru>.

Modern capture pages have a small amount of subscription and include a video for 2-3 minutes, to which the author himself explains the benefits gained when you subscribe to a mailing list. The aim is to create a capture page subscription database containing the target audience inclined to purchase the offered product. It goes without saying that the amount of the subscription database should collect as much as possible. There are a number of marketing tricks to do it. For example, charge capture page display in a strange, large enough subscriber base.

3. Confirmation page newsletter. Issued to the customer on the screen immediately after completing the subscription form. On this page, the client is invited to return to your email account and activate the link that was sent to the mail server, which will serve as confirmation of the consent of the subscriber to receive letters of the author. There is evidence that the message is not spam, sent in. In response to the confirmation you agree to receive emails mailing service mailings will put in the browser window with the message subscribe you to the appropriate mailing list, and mail a link to download the book «bait.

4. Series of letters in which the seller immediately send a link to download the bonus and gently brings the subscriber to perceive information about paid product website. Series of letters ends with reference to

The screenshot shows the ROBOKASSA website interface. At the top, there are navigation tabs: [Главная](#), [Услуги](#), [Партнеры](#), [Компьютеры](#), [Контакты](#), [Поддержка](#), and [Новые услуги](#). The main heading is "Организация приема электронных платежей ROBOKASSA". Below this, a text block describes the service: "ROBOKASSA — это сервис, позволяющий Продавцам (интернет-магазинам, поставщикам услуг) принимать платежи от клиентов с помощью [банковских карт](#), в любой [электронной валюте](#), с помощью сервисов [мобильной коммерции](#) (MTC, Мегафон, Билайн), платежи через [дистант-банки](#) ведущих Банков РФ, платежи через банкоматы, через терминалы [мгновенной оплаты](#), а также с помощью приложения для iPhone".

The central part of the page features a diagram with a shopping cart character in the center, surrounded by six payment methods:

- Электронные деньги**: 7 млн. держателей равно полевой валюты ЗПС. Список платежных средств.
- Мобильная коммерция**: более 100 млн. абонентов сотовой связи.
- Интернет-банк**: Ведущие банки РФ.
- Банковские карты**: Includes a VISA logo.
- Терминалы**: Более 100 тыс. терминалов по всей России.
- iPhone iPad**: Represented by icons of the devices.

At the bottom of the diagram, there is a call to action: [Подключиться сейчас!](#)

On the right side, there is a "Новости" (News) section with the following items:

- 26.12.2013**: График работы Службы поддержки в праздничные дни. В связи с приближающимся Новым Годом график работы Службы клиентской поддержки и Службы технического сопровождения изменился.
- 26.12.2013**: Дорогие наши клиенты, друзья, партнеры! Поздравляем Вас с наступающим Новым Годом и Рождеством.
- 19.12.2013**: Новая редакция Договора с ОКЕАН БАНК (ОАО).
- [Все новости](#)

Service receiving payments ROBOKASSA

the Education Page (mini site), which in certain clearly defined procedure performed paid advertising of the product and a link to buy it.

Link can usually be done in the form of a «Buy» button, or click «Start ordering» that the customer has to press. Next, the program included the »master«, which holds the client through the process of purchase.

5. Payment on the relevant web page. For this purpose, all ways are possible. To pay cash to the courier, payment transfer money to a bank account or via electronic payment systems: WebMoney, PayPal and others.

Sooner or later, any webmaster will face the need to use on your site or a client system for receiving electronic payments. Various systems of a large array, you can use them individually, but it's better to use ready-made service, for example ROBOKASSA (<http://robokassa.ru>) (Fig. 4.3).

6. Letter of acknowledgment of receipt of money for goods. It sends to the customer after the order by e-mail.

7. Delivery of goods to the customer. Electronically, the postal service or the seller's vehicle. Must include all possible ways of delivery, from which

the customer selects the most suitable for him, shipping the goods directly to the apartment or in the client's office.

8. Making proof of purchase by the customer (deed of sale) and a letter of guarantee to the free exchange of goods or services to the new.

4.4. Security in e-commerce

First, and this applies not only to websites CMS, you must choose a reliable hosting provider that has extensive experience and reputation among traders network. The first step is to examine providers recommended by search engines (which have the highest rating in the network: <http://timeweb.ru/>, <http://www.hostmonster.com/>, <http://beget.ru/> (Yandex); <http://www.avahost.ru/>, <http://nevohosting.com>, <http://ithost.ws> (Google), <http://mirohost.net/>, <http://hvoiting.ua/>, <http://avahost.ua/>, <http://www.1c-bitrix.ru/partners/hosting.php> — best hosting for websites on CMS «1C-Bitrix» (Meta), and others). However, it must be borne in mind that not always these providers will be best for your business. For example, you set prohibitively high cost of services, ignoring your requests (tickets), frequent disconnection website at preventing or total disability your site for some unknown reason. Not to mention the damage or destruction of your business site (and maybe even the entire hosting server) domestic or foreign hackers (hackers). In other words, we need a deep and comprehensive analysis of the decision to choose a hosting provider.

In a network, provided that you provide may be used by people for whom it was not intended, but who can take it for their own purposes, to the detriment of your interests. The Internet, especially, should be protected from criminals who want to deceive you. They may collect personal information about you to commit theft, fraud, etc.

People often forget that the accumulated information on the site is completely destroyed and, with it, your entire business network. This can happen due to the fault of your competitors, enemies, network fraud, or «just because» of hooliganism.

Hosting provider is your business partner, with whom you will be working for a long time, even if you do become engaged in this kind of service delivery. The Internet cannot be completely independent of anyone, do not forget that you are in touch all over the world. This should always remember and take appropriate measures to store your business information.

This is best done daily to keep all information on the external surfaces, at least in duplicate, and do not keep copies in a single room, in case of fire, theft or other «random» events. And even that is sometimes not enough. General safety rules online:

1. First you need to realize for themselves that money cannot come to you just like that, it takes a long time and a lot of work, salary is not too

fast. Throw away all thoughts of quick enrichment and do not consider a business proposal in which you promise fast and big earnings.

2. Check with whom you are dealing with, or do not want to deceive you crooks. Remember that the Internet can act anonymously, so do not trust »virtual friends« important information for you.

3. Do not try to make money on clicks, especially if you are offered a lot of money per click. You do not get. Sponsors often resort to deception and honest in sponsoring your earnings will be \$ 1–4 per month.

4. Do not put money in network marketing and pyramid different. Really makes a profit only owner of the pyramid. Do not put money in mutual funds online, online lotteries, casinos, etc.

5. Now most widely used affiliate programs that promise up to 50 % commission. Do not trust strangers, especially foreign partners before working on anyone, let alone invest in the promotion of affiliate programs, make sure that they work, though each partner will convince you of my honesty.

6. Do not believe in cracks payment systems, magic wallets, generators recharge codes payment systems, free internet. Do not believe the information presented on free hosting. Check information about domain owner and date of registration (in terms of sites ephemeral). Read reviews about the site by typing the address into a search engine. Go ahead and talk with the owner of the site, call him on the phone, if it is available on site. Do not trust the information on the forums, be sure to check it.

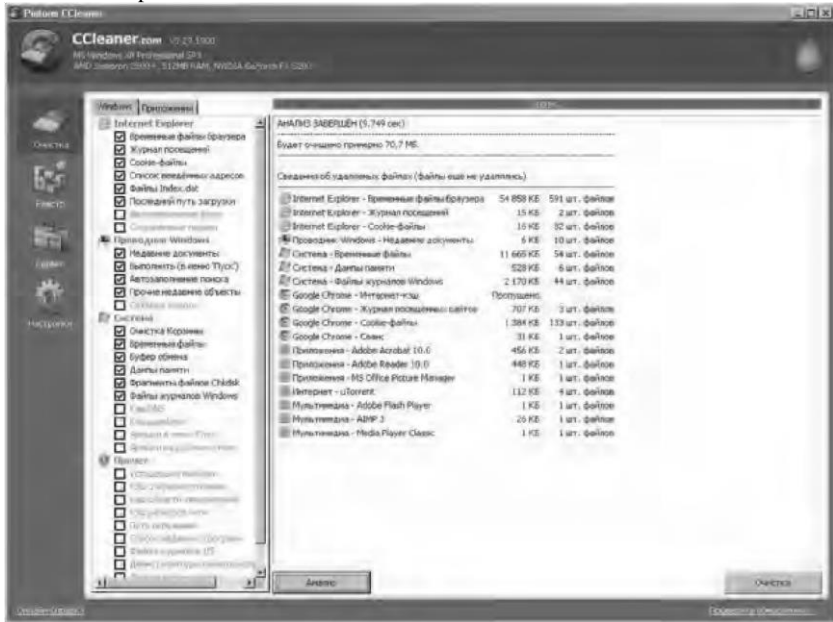
7. Do not have to deal with spam. It is a criminal offense. Nobody sends no passwords, do not open unknown emails with attachments, do not swing the files from suspicious sites. Buy products only in the author's site. Do not try to fool other people online, guard your reputation.

Safety on social networks, email and surf the web:

1. Conceal information about themselves. Do not use real data about themselves and their loved ones, use fictitious names, pseudonyms.

2. Using the Internet, we all leave there many traces of their work. For email you can find all important information about a person, including name, father's name, photograph, place of employment, position, ISQ, Skype, phone, website, address, etc. It should be more responsible attitude to their own safety and not to leave information online that can give criminals on your trail.

3. When you visit the site using the browser on your computer are small files that are stored on your machine for a long time. These files must leave sites where authorization is required, since without them the transition from page to page authorization to fly. It should delete files daily cookies, e.g., program Ccleaner (Fig. 4.4) to information are not used for other purposes not your computer (including viruses). You can set your browser to delete cookies immediately upon completion of work on site.



The window Ccleaner

4. Remove your accounts on sites that do not use them. The delete function is usually all great resources. For example in the Facebook feature complete removal of account available at www.facebook.com/help/delete_account. After pressing «delete my account» and enter the password of your account after a while will be completely removed. A number of sites complete removal account is challenging due to the lack of information on how to do it.

5. Use a very complex and different passwords accounts. It is essential that contained letters in passwords that are typed in different languages and registers, numbers and special characters. The password it must be at least 10-12 characters. Do not store passwords in a file on your computer, it is better to do a special external media. Duplicate files password in order to secure their safety, such as CD / DVD. You can use variations of the password with a specific extension at the end of each account or secure document, then your head will be stored master password, common to all, and expansion of, for example, for each social network or affiliate program. Invent difficult to crack passwords for email and change it regularly. This email can serve as a starting point for more information about you. Some email services can use a two-stage authentication with entering the password, and phone number with the transfer of SMS, but remember that the loss of a smartphone, you can lose access to an account.

6. Do not fill out all the fields offered in social networks, keep a number of information about yourself. Note that these data can use for criminal purposes. For example, for the organization of spam in your e enough to have a framework in which included your interests, name and email, then you will be sent a letter with the offer of free bonus in order to get permission from you register you as a Subscriber server lists. You give yourself permission to sending you a series of letters.

7. For social network could not find you in photos of friends, in the privacy settings you must set the visibility for friends only. Do not turn you unfamiliar people as a friend. View personal data of your account allow only friends. Your friends can also participate in the dissemination of your personal data. Forbid them to do so. Then post a message only to friends. Do not post about your intentions, for example, to go to the moon anywhere. Remember that this information will help attackers rob your apartment.

8. Do not use free email services in the areas of ru. or ua. Upon request of any public service, your account will be opened for viewing. It is better to use e-mail on your own domain registered by foreign host. It is possible to use different mailboxes to register for various services, such as type facebook@mysite.com.

9. For safe surfing online so that search engines could not be base sites you visit, you can use services — anonymizer such www.hidemyass.com or programs — anonymizer such CyberGhost VPN.

10. Major search engines Google, Yandex and other popular portals keep search history together with the IP-address of the user and his story jumps from site to site. The network is the search engines that do not store your search history, for example, www.ixquick.com. This search engine recommended by the European Union as one of the safest. For those who want to be informed as to Google, but it does not send your IP-address and any other information about a project there www.startpage.com (Fig. 4.5).

Home search engine startpage



Online payments safety:

1. In the implementation of online payment exists considerable risk of theft of payment card data. The first thing to do is to include SMS message when withdrawing money from the account. In this case, you can quickly call the bank and block the card and achieve the abolition of bank transactions. Room Desk bank customers should always be in your smartphone contacts, which should always be at hand.

2. Set a daily limit on withdrawals. It does not allow an attacker to quickly remove all the money from your account.

Use instead of 3 main credit card, virtual card for you before committing payments you will transfer the required amount. In case of suspicion of autopsy data virtual card, you must immediately open another virtual map.

4. When paying for goods in stores using credit cards, use only a secure encrypted connection. When in doubt, pay for goods in other ways, such as digital cash in some pretty proven payment system.

5. More than \$ 1.2 billion. During the last few years had been stolen via phishing. First you got e-mails asking to perform some action on your payment system. When you go to the site, there is a substitution, and you get to the website up where you steal your account information. Often, while payments you slip the number of purse, wallet number is different from the store in which you want to purchase. If you check this information, your money will go to an attacker. Carefully check to see that number on the bill you are sending money. Remember that viruses Trojans are usually implemented on your computer in order to steal your electronic money and payment details.

6. It is necessary to pay attention to the payment system for the domain to which you go, usually the primary address is highlighted in a bright light in your web browser. In the address bar of your browser, for example, in Opera 12, if the site uses a secure protocol to https (s speech on Secure) appears the word «Safe» and the lock icon. On sites where important safety data in the address bar you can see highlighted in green word «trusted» and the lock icon.

7. All modern browsers have a mechanism for determining or content. If the site is listed in the database of fraudulent resources, the user receives a message that is hard to miss.

8. Do not make payments from public (not password protected) WiFi networks in cafes, restaurants, etc., and your personal network should be protected properly password on the router. It is necessary to attackers not intercepted your traffic and not used in your network.

9. If you are using a handheld device for making payments, keep in mind that it is easy to steal and get access to the information stored in it.

Security browsers

Modern browsers include remedies that can help you keep personal data and hide the history of the Internet. Different browsers such modes are called differently.

1. Private viewing (privacy) in Firefox. Go to Tools / Options / Privacy. Tick «Notify websites that I do not want to be watching me.» In the Firefox select «do not remember history.» In the «When using the location bar offer links» can select multiple options «from the magazine and bookmarks», «log», «bookmarks» and «do not offer.»

2. Incognito mode in Google Chrome. Click «Setup and Administration» in the upper right corner of the screen. Then select «New window in incognito» window opens.

3. In the browser, Opera has two modes of private browsing. The first mode is called so: Opera / tabs and windows / Create tab confidential.

In this mode, when closing a private tab browsing history is deleted, all the elements of the cache, cookies, and usernames. Covered confidential tab can be restored. The second mode is called as privacy: Opera / tabs and windows / Create a confidential box. In this mode any tab will open in safe mode. Pumped to disk files and bookmarks you create ostayutsya in both modes. To remove personal information from the browser manually, you can use the command Opera / Settings / Clear Private Data. In addition, traces of removed program all browsers SSleaner.

4. To ensure confidentiality for passwords in the browser better disabled. For example, in Chrome it is so Settings / Show advanced settings and uncheck «Enable AutoComplete for entering data into web forms with one click» and «Offer to save passwords».

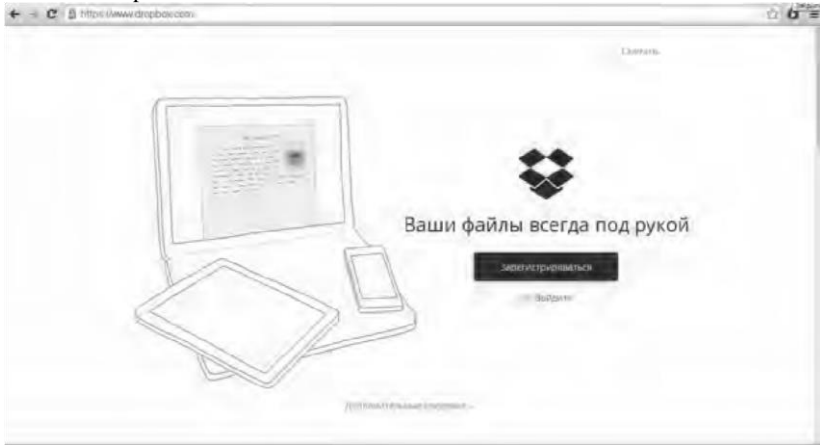
5. To store personal data securely there Installer service password LastPass.com. It can be installed in some browsers, and in all browsers Windows. These programs remove personal information from your computer and can automatically set the credentials on the selected sites. Program installers are free, pay \$ 12 a year is taken only for mobile devices.

Secure storage of files

Important data should be stored «in the cloud» to be able to anywhere in the world to access them. It is worth also encryption.

Most popular in Ukraine cloud data store, allowing users to store their data on servers in the cloud and share them with other users on the Internet is Dropbox (Fig. 4.6). Whose work is based on data synchronization.

Dropbox allows users to place files on remote servers using the client or using the web interface through a browser. When you install the client software on your computer Dropbox creates a folder that is synchronized. Although the main emphasis is placed on synchronization technology and information sharing, Dropbox download history is that after deleting files from the server was able to recover data.



Home cloud service Dropbox

Dropbox does not use encryption on the client side, in particular, has made it possible incident June 19, 2011, when due to an error in software update server for four hours was able to sign in to any account using any password [41].

Service Wuala (Fig. 4.7) is another popular and secure cloud services, but little is known on the territory of Ukraine. Data is stored on a virtual disk, which is available only on startup of the client. No password is transmitted to a remote server, and it is impossible to intercept. Data is replicated in encrypted form, so if it is stolen laptop Wuala client can be run on another computer and access your files will be provided.

To an attacker is able to copy the data in the cloud Wuala must deactivate labeled «Remember password» box authentication (login) and enter the password each time manually. Change some settings. On the Tools menu, point to Settings, deselect «Start Wuala at startup» check and activate «Enable integration with file system» checkbox in the integration of the file system. Then select any letter virtual disk for file storage. The disc will be available in Windows Explorer, and you can save documents directly in Wuala. After closing the client virtual disk appears.

Security of online shopping

1. Shop products only in well-known and proven electronic stores such as, for example, www.rozetka.com.ua. In these stores delivery of goods held in firm delivery point where they can be freely obtained from the two-week money back guarantee.

Buy 2 new products at online auctions should be only after reviewing the seller's rating and feedback about it to other buyers. This will give you confidence in the integrity and reliability of the seller. Use one auction in the country. In Ukraine it www.aukro.ua.



Home cloud service Wuala

3. Do not buy suspiciously cheap new products. They are more likely to be stolen. During suspiciously cheap refers to products on the western margin of the cost or less than 50-100 USD.

4. Buying goods from the seller to the other cities of Ukraine, order delivery COD service «New Post». In this case you can pay package after checking its content in accordance to your expectations. Ukrpochta this possibility does not.

Increased site security for CMS WordPress

WordPress is the most common in the world of Content Management System. This CMS is easiest to create a commercial site on the net, but it should be borne in mind that more than a million websites WordPress was broken in 2011-2013 due to the fact that the authors did not pay enough attention to security issues. With little effort you can protect your site running WordPress and enhance its safety. This should do the following:

1. Do not use the name «admin». Since version 3.0 WordPress has an option to change the administrator name. Those who try to access the admin toolbar necessarily begin with the name «admin». If you change it, the potential burglars will choose not only the password but the administrator's name.

2. Install the plugin Login LockDown. A potential attacker tries to uncover the combination of username / password or conduct a dictionary attack logon screen of your site. Login LockDown plugin helps to prevent hacking attempts. It records the IP-address and time of all failed login attempts. If a short period of time will be found a number of attempts from one IP-address range, then the login function is blocked for all requests of this range. This method can significantly complicate hacking site. By default, the plug-blocks 1 hour block IP-address after 3 unsuccessful login attempts in the course of 5 minutes. Settings can be changed through the settings panel plug.

3. Install the plug-Secure WordPress. The site has been running WordPress there are many places that can inform attacker system version number and other potentially dangerous information. Secure WordPress enhances the security of your WordPress site by removing error information on login page by adding an index.html file in the plugins folder by hiding the version number of the system and much more.

4. Move the file wp-config.php. The file wp-config.php is the Parameter database connections and other important information that should be stored carefully. Beginning with WordPress 2.6, you can easily move this file from the root directory to another. WordPress will automatically look for this file if it cannot read it in the root directory. Thus, only a user with FTP access can read this file.

5. Change your database prefix. The default table prefix used WordPress wp. Since the system is open source, if you leave the prefix unchanged, anyone will know the exact names of the tables in your database. You can change the prefix database tables during installation. To change the prefix on an already running system should use the plugin WP Secure Scan.

6. Change the security keys. If you open the file wp-config.php on your system, you can find 4 security key:

- 1) `define ('AUTH KEY', "");`
- 2) `define ('SECURE AUTH KEY', "");` –
- 3) `define ('LOGGED IN KEY', "");` 4) `define ('NONCE KEY', "");`

Many people, even experienced users data keys left unchanged. Security key used for hashing passwords to strengthen them. Visit the <https://api.wordpress.org/secret-key/1.1.4> and copy the generated key in the file wp-config.php on your system.

7. Always CMS Wordpress update to the latest version, as it has a higher level of security. Also be sure to stay tuned plugins and themes. System updates, plug-ins and themes to make very simple with admin panel.

8. Protect folder wp-admin, using plug AskApache Password Protect, which adds serious protection for folders wp-admin, wp-includes, wpcontent, plugins.

9. Use stronger passwords to log into the administration panel. I personally after breaking my site using a password of 24 characters in two languages, two registers containing numbers and special characters. This password hacking virtually impossible. This is the easiest method to enhance the protection of your system WordPress. The same complexity password will be provided to you by your hosting provider. However, any password can be stolen from your computer using a virus attack, so pay enough attention to protecting against viruses and Trojans. Before each entry in the Admin Panel or hosting, you should carefully check the computer. Do not forget also that passwords may be disclosed to your staff, so each must be responsible for the dissemination of classified information. Most change passwords and access rights to them.

10. Make regular backups of your data. This advice applies to indirect security. If anyone break your site, and you will not have a backup, then restore the system will be difficult or impossible. Regular backup is essential. Remove unused users from the system, and also unused themes and plugins.

Conclusion

This section discusses the traditional e-commerce tools, such as the company's website, capture page subscribers server mailings confirmation page newsletter, a series of letters, marketing minisite, service payment for the goods, an acknowledgment of receipt of money for goods, methods of delivery to the customer, documents confirming the purchase. These tools should always be used, even after the conclusion of the contract with the UA-REGION, since all of them are effective and virtually free.

It is noted that very great importance in e-commerce should be paid to security issues on the Internet. Relevant recommendations given in this section, where considered: general safety in the network security in social networks, e-mail and Web-surfing, online payment security, browser security, secure file storage, security while shopping on the Internet, enhancing security on site CMS WordPress.

Self-examination questions

1. Components of Internet technology and its infrastructure?
2. E-commerce as Internet technology and its components.
3. Organizational and economic models of e-commerce?
4. What are the advantages of online business to offline.
5. Example 5 business promotion through the Internet portal business.
6. List and describe the main recommendations to improve the efficiency of individual businesses.

7. What is Content Management?
8. What is the set of basic tools of Internet business?
9. What are the main elements of modern website design.
10. What are the safety rules in the network?
11. What are the safety recommendations in social networks, email and web surfing?
12. What are the steps in safe online payments?
13. How can we save personal data and hide the history of the internet?
14. What is cloud services and principles of operation?
15. How to strengthen the security of the site by CMS WordPress?

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ELECTRONIC PAYMENT SYSTEMS

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Abstract

This chapter presents issues of electronic payments as an integral part of e-business. On the bases of the payment classification in the traditional and e-business consistently the different technologies performing electronic payments are described: via system «ClientBank» and online banking, using payment cards and card payment systems, using digital cash, via online systems based on virtual accounts. The evolution of electronic payments from the possibility of their use in traditional business to e-business on the Internet is denoted.

Key words

electronic payments, the classification of traditional and electronic forms of electronic payments, Electronic Funds Transfer (EFT), online electronic payment system based on virtual accounts, digital cash, bank card, a card payment system (CPS), «Client-Bank», Internet banking,, the international card payment system, local card payment system.

Introduction

E-business is inextricably linked with such stage of commerce as payment for goods or services. Current economic realities suggest making payment by moving funds from the consumer-buyer to the supplier of goods or services. There are various ways to do such money transactions, but so far it all comes down to the actual or physical transfer of cash or to make payment through an intermediary bank. In the second case, the payment was carried out through the exchange of special documents.

Development of information technology and e-business technology practically allows you to transfer all the stages of the commercial cycle into an electronic form of interaction. Modern business partners face the problem of choosing the most effective ways of payment. In this case the duration of payments, convenience of executing payment transaction and its value, as well as providing safety and security can be understood the main characteristics of efficiency.

In Russia, making payments as part of the traditional and e-business is governed by the federal legislation, defining the basic principles and the rules for the functioning of the National Payment System. Traditionally,

payment technologies were to be subdivided into cash and non-cash ones. In the evolution of technologies of effecting payments in electronic form there are various payment systems (including the Internet). All of these technologies are inherently automated methods of the traditional cash and non-cash payments.

After the introduction of the law «About the National Payment System» a number of payment systems had to be evolved to meet the new requirements. Currently, the most commonly used Russia forms of electronic payments are: bank payment cards, internet banking and «client-bank», online payment system.

5.1. The concept of electronic payments. National payment system in Russia

The concept of payments (or settlements) is closely linked to commercial activities, as an indispensable element of virtually every commercial contract (purchase and sale agreement). At the stage of making the contract of commercial transaction participants must come to an agreement on the term within and the manner of payment, in which the calculations are to be made. Payment can be made either as a natural exchange (barter) or as exchange money amount (or its analog). In the early and mid-nineties of the twentieth century barter was very common form of payment on the territory of Russia, but in the late 90s. The Russian government has taken a series of measures that led to the almost complete exclusion of barter money calculations.

The term of payments (calculations) supposes the technology of payment under any commercial transaction, oral or in written. As a commercial transaction provides for at least two parties (counteragents), then in the calculations there are always two subjects: the payer (or the buyer) and the recipient of funds (the seller). Performing calculations in Russia is inseparable from the national payment system, regulated by the Central Bank of the Russian Federation. According to the Russian legislation calculations are divided into cash and non-cash ones.

Traditional methods of payment (cash and non-cash) have certain advantages and disadvantages depending on the application in a normal and e-commerce. For example, payments in cash do not require any special skills and additional technical resources from parties to the transaction (possible but not necessary application of counting appliances and equipment to check the authenticity of banknotes).

At the same time such payments are characterized by a high level of distribution costs at the state level (special manufacturing process on a special paper, and maintaining a high degree of protection, obsolete banknotes, etc.), and for payers and recipients of relevant problems of translation and exchange of individual notes, the complexity of transport

and storage. At the same time, cash payments can be held anonymously and in compliance with the terms of the unity of time and place of payment. The mediator in the cash payments are not necessarily, if the seller and the buyer have the opportunity to meet at one time in one place.

If this is not possible, then there are the ways to pay cash or through the system of postal remittances, through the use of a bank safe deposit box or other means of cash transfer that satisfies all parties involved from the standpoint of safety and reliability. Cash payments are considered universal, but only in case of payments between citizens and between citizens and organizations: the territory of the Russian Federation cash transactions between organizations can be only for small amounts.

Payments using cashless payments at the state level are characterized by a lower cost (compared to cash payments), but at the same time they are associated with high labor intensity in the organization of payment documents.

All the organizations in the Russian Federation are required to have at least one bank account and «store» their money mainly in non-cash form. Non-cash payments in the territory of the Russian Federation cannot be held anonymously, that makes it possible to exercise control over the implementation of payments from both parties to commercial transactions, as well as by regulatory government agencies.

With the development of information technologies, the notion of «Electronic Fund Transfer» (EFT), implying the use of computer systems and communication channels to carry out financial transfers (so-called «Transaction») in electronic form. In fact EFT is a remittance, in which one or more steps in the process of such transfer, previously performed through using paper documents, but now it is performed by electronic methods. To implement the concept of EFT the development of special standards for the electronic interaction is required, which allowed all the payers and recipients of financial intermediaries to interact with each other at the level of information systems.

Originally, the term EFT applied only to non-cash settlements, but with the development of Internet technologies, new means of payment, which are outside the boundaries of the concepts of cash and non-cash payments, involve the use of electronic equipment (computers, etc.) and communication channels at the same time.

This is how «electronic money», «online currency», etc. are appeared. These are the terms, the meaning of which has long been uncertain with terminology and legal points of view. One of the first approved definitions for this phenomenon has been presented in 2000 Directive of the European Parliament and of the Council of the European Union 2000/46 / EC of 18th September 2000. «On the establishment and activities of the organizations emitting electronic money, and prudential supervision of

their activities.» According to this directive the «electronic money» means «money value, which is a requirement of the issuer, and which is stored on an electronic device; it is issued upon receipt of funds in an amount not less than the monetary value of manufactured; accepted as a means of payment by other companies, rather than the issuer.»

Initially, the existence of technology EFT proved of great help in this sector as a B2B e-commerce, but not for the B2C sector. This gave impetus to the development of specialized online systems, organizing payments in electronic form. The development of electronic payments (i.e. payments in electronic form) for B2C sector in Russia for a long time was delayed because of underdeveloped legal framework. In 2011 the Federal law №161-FZ «On the National Payment System» was adopted, which currently sets the legal and organizational framework of the national payment system, including in respect of the transfer of funds through electronic means of payment.

Classification of payments in the form of diagrams the relationship of traditional and electronic forms is shown on fig.5.1. The original criterion of this classification is the traditional («pre-electronic» or paper) form of payment. All modern forms of electronic payments are inherently automated methods of traditional payments. But in some cases, the appearance of these electronic forms followed the path of the line to automate the process of payment, and in another case — electronic payments «simulate» the traditional technology of the payment with the help of modern IT tools.

Classification of traditional technologies of payments is shown in the first level of the scheme. At the second level should be automated forms of traditional technologies, which appeared before the wide spread of the Internet.

New technology payments, resulting from the development of mobile services, can be referred to the same level. A massive increase in interest in the Internet technology business led to a modification of the «classical» electronic forms (such as «Client-Bank» settlement through bank cards) for use in the Internet environment. At the same time the unique to the Internet environment forms of payment began to appear. The latter two groups are shown in the last (lowest) level of the circuit.

At the first level of classification (Fig. 5.1) are traditional forms of payment, legally permitted in Russia. There are usually distinguished by two fundamentally different groups: cash and non-cash payments. In practice, however, there is one, in fact a hybrid form of payment: cash payment to the bank account of the seller. Cash transactions involve the exchange of paper currency signs issued the Bank of Russia. They can be executed in a direct form (direct transfer of cash from the payer's hands to the

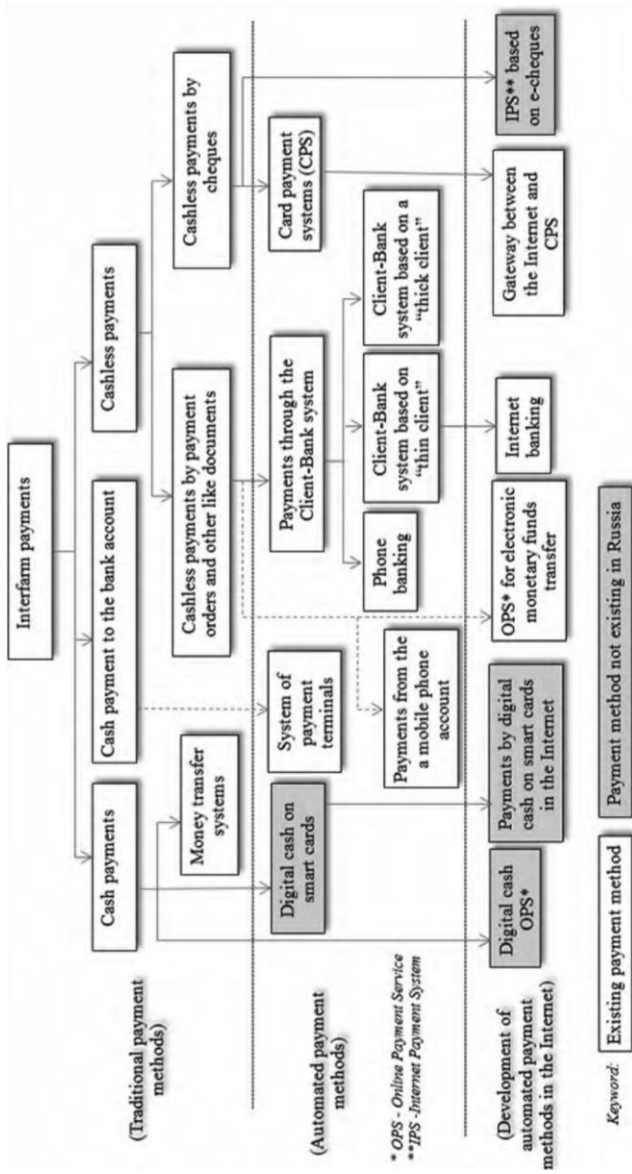


Fig. 5.1. Classification for E-payments in the National Payment System of Russia

recipient's hands), or in the form of money transfer. Remittance means that the payee receives funds through an intermediary.

We should not confuse this form with payment clearing, which require both sides of bank accounts. Remittance made without opening any accounts: mediator informs the receiver of the money transfer, and hands him the amount of the transfer. Remittances are a relatively inexpensive way to pay and comfortable in those cases, where the payer and the recipient are geographically distant from each other. Mediator remittances can act as a bank (bank transfer), and a non-bank entity (e.g., the company Western Union). Russia is also popular so-called «money orders», i.e. through the Russian Post.

It should be noted that the intermediary company uses information and communication technologies (ICT) for the transmission of electronic messages about transfers between its regional representatives (offices). That is, at a certain stage of remittance there is in electronic form. This suggests that remittance, in some sense, is a form of electronic payment. In fact, however, neither party of payment (payer or payee) uses this ICT, so in terms of settlement by the participants the money remittance is not associated with the concept of «electronic payment». And we do not consider it the automated forms of payments.

Cashless payments are made through an intermediary (in Russia its functions can be performed only by credit institution that has the appropriate license from the Bank of Russia; for simplicity this organization will be understood as the «Bank»). Cashless payments imply, both parties of payments opened current accounts with banks. Such payments have a paper form and differ from each other according to the kind of a document and the technology of its creation and processing. Non-cash payments are characterized with money order, check, payment for collection, payment by the letter of credit. In the proposed classification the technologies of cashless payments are divided into two types according to the parameter of «technology transfer payment to the payer's bank» (document provides any account holder, i.e. the payer or the payee).

In the theory of banking calculations with promissory notes can be the separate form of activity (paper circulation was initially regarded as a kind of bank operations with securities, and only then as a settlement service customers).

The second level of classification (Fig. 5.1) shows the system, completely or partially automating every direction of traditional payment. So, check calculations are calculations of the basic technology of bank cards within the card payment systems (CPS). Non-cash payments, based on the management of the bank account (calculations with money order or other document of this kind) are the basis of the class «Client-Bank» and telephone banking systems.

«Client-Bank» organizes electronic documents between the bank and its clients (members of calculations). Currently, using the systems the client may transmit to the bank a wide range of documents relating not only payments, but also, for example, loans and other bank products.

Cash calculations served as a prototype for creation of systems of electronic payments by «digital cash». Payments by digital cash mean the presence of the issuer of «digital banknotes» who is not always the bank organization. As the issuer of «digital banknotes» the organizer of system who provides necessary program and technical providing to all participants of payment acts. It is possible to consider that traditional cash calculations were simulated in systems of calculations by digital cash on smart cards, and the transfer of cash of funds of the payer for the bank account of the recipient is conditionally simulated in systems of payment terminals. Separately the emergence of a new type of electronic payments in recent years — payment from the account of the mobile phone should be noted. On Fig. 5.1 this type of payments is shown as development of non-cash payments by means of payment orders, but this communication is conditional as the new technology only models (i.e. to a certain extent copies) traditional bank technology. Instead of the bank account «the account of the mobile phone» acts, the payment order is replaced with the order on the carrying out payment sent usually in the form of the SMS.

With development of the Internet the automated forms of payments began to be modified. So there were specialized Internet gateways allowing accepting cash cards for payment on the Internet. Client Bank systems gained new development and led to emergence of such concept as Internet banking. Systems of calculations by digital cash on smart cards began to develop in the direction of using the technical devices allowing paying off «digital banknotes» on the Internet. But also the systems existing only within the Internet and functioning according to the principles of traditional technologies of cash calculations began to appear. Payment Internet systems of calculations by digital cash can be referred to them. The special place is taken by systems of payments on the basis of the virtual accounts opened for participants of calculations of the non-bank organizations. The majority of modern Internet systems of electronic payments belong to this type. Automation of check calculations as systems of document flow led to the emergence of systems of calculations by electronic checks (in Russia check calculations are unpopular among individuals and the organizations, therefore also calculations by electronic checks almost seldom). The electronic check represents the electronic document, in which the payer instructs the bank in transferring money to the bearer of the check. The electronic check has the same properties and requisites, as the usual paper check, and the technology of calculations completely repeats paper, only the document exists not on paper, and a type of the

Table 5.1

Examples of the operating systems of electronic payments

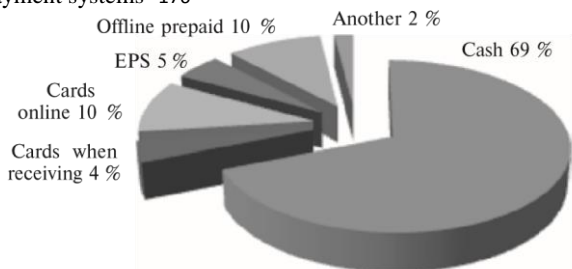
Kind of electronic payments	Examples of Russian electronic payment systems	Examples of foreign (including international) electronic payment systems
Payments Systems «ClientBank» (including telephone banking)	Almost all the banks	Almost all the banks
Internet Banking	Almost all the banks HandyBank.ru	Almost all the banks No information
Internet banking portal	Yandex.Dingi, WebMoney,	WebMoney, PayPal
Payments based on virtual accounts	RBK.Money, Mail.Деньги, RapidaOnline	
Card payment system (bank card payments)	Universal Electronic Card (PRO100), Zolotaya Korona, Union Card	VISA, MasterCard, AmericanExpress, UnionPay
Internet payments based on bank cards	RBK.Card,	PayPal,
Payments based on electronic checks	Banks providing acquiring	Banks providing acquiring
Internet payments digital cash	No information	Automated Clearing House ACH (USA), Check21 (USA)
Digital cash system on smart cards	No information	Mondex, Chipknip (the Hetherlands) BitCoin
Internet payments by digital cash	No information	

file, instead of couriers and voice authorization electronic communication channels are used (for example, the Internet). The electronic check can go to the seller on the channels, and then the last shows the electronic check in bank for receiving money. For ensuring legal full value and safety of calculations with electronic checks it is necessary to use the mechanisms which are unambiguously defining, that the electronic check is sent by the full manager of the bank account, and the sum and other requisites of the check weren't distorted in the course of data transmission on communication channels. For achievement of high level of safety, and also acceleration of the circulation of similar financial documents special technical infrastructures are created.

In the Table 5.1 the examples of the Russian and foreign systems realizing the automated forms of calculations, presented in the Fig 51 , are given. Now the existing systems of electronic calculations, as a rule, combine some automated forms. It is caused by aspiration to diversify a range of the provided services and to increase thereby number of the clients who are carrying out calculations by means of these systems.

In recent years in Russia rapid development of branch of electronic payments is observed. It is connected as with growth of a segment of electronic commerce in Russia, and with growth of volumes of non-cash payments. But at the same time analysts consider that the branch of electronic payments didn't reach the maximum yet. The overwhelming part

Electronic payment systems 176



Segmentation of electronic payments in Russia for the 2nd quarter 2013 of payment according to transactions of electronic commerce in sector of B2C is still carried out in the form of traditional cash payments (Fig. 5.2). «According to data of the Russian and foreign analysts, the leader in the market of electronic payments are cash cards. They are followed by electronic money, online banking and mobile payments. Characteristics of the Russian market of electronic payments are strong positions of the electronic payment systems (EPS) and existence of the developed nonbank terminal network intended as for realization of electronic payment, and replenishment of purses of EPS.»

Bitcoin — the peer-to-peer system of electronic cash using the digital currency of the same name which is called often crypto currency or virtual currency. The network is completely decentralized, has no central administrator or his any analog. In a number of the countries it is forbidden to use due to the lack of the legal status. (Source: Analyst's Cnews. In the Russian market of electronic payments cash cards are in the lead. [http://www.cnews.ru/reviews/free/banks2013 /articles/ na_rossijskom_rynke_elektronnyh_platezhej_lidiruyut_bankovskie/](http://www.cnews.ru/reviews/free/banks2013/articles/na_rossijskom_rynke_elektronnyh_platezhej_lidiruyut_bankovskie/))

5.2. Electronic payment systems based on «Client-Bank» and online banking

We understand the program complex used by clients of bank for remote interaction with bank as Client Bank system i.e. for automation of document flow between bank and its clients. A basic purpose of systems of this type is to reduce number of visits of the client to office of bank and to formalize process of an exchange of documents, and, therefore, to facilitate conducting accounting as to the client, and bank. It is important to note that the client of bank the organization (legal entity) or the citizen (individual person) with whom at bank the contract for bank service is signed is considered and within this contract the settlement account, reflecting financial operations of the client, is open.

By means of Client bank system the client of bank can manage the accounts, opened in bank, he can support the document flow, perform

financial operations and receive the demanded information. Actually the process of interaction of bank with the client is partially transferred from the bank office to the office or the house of the client.

As an automation equipment of calculations the Client Bank system provides with payment orders preparation by the client of bank of payment documents of various types (the payment order and its analog for the international payments, letters of credit, etc.) and transfer to bank, and also receiving from bank of statements of the account and reports on execution of payment orders. In bank the Client bank system is integrated with the banking information system (BIS), namely — with a subsystem of operational and registration works (so-called BackOffice), which provides the execution of payments and formation of necessary output (resulted) information.

For safety and the legal importance of documents, payment documents and enquiries in bank are to be signed by the electronic and digital signature (EDS) of the client. Modern Client bank systems for the organizations and individual entrepreneurs, as a rule, support integration with systems of accounting (at least with popular 1S through a file format of data exchange, and at large they contain the description of API interfaces for integration with any information systems). Besides, the system usually provides receiving various reference information by the client (for example, the reference book of BIK of banks, a classification of currencies, reference books on currency control and other).

The organization of the remote bank service (RBS) for the Client Bank technology has the advantages and disadvantages. For bank these advantages are as follows:

- reduction of operating expenses as the employee of bank doesn't spend time for reception and processing of paper client documents anymore;
- reduction of mistakes in the course of document flow as bank can deliver to clients the reference books facilitating input and the subsequent processing of documents;
- obtaining competitive advantages due to granting more various number of services to clients;
- receiving profit due to providing additional service to clients is possible.

But the introduction of Client bank system has also the shortcomings, which entails additional costs of acquisition or system development, and also increase in expenses on the support of banking information system, providing communication channels and safety of the data transferred on them.

For the client of bank it is possible to mark out the following advantages of use of Client Bank system:

- carrying out payments and access to bank accounts from the workplace or the house that leads to essential saving of time;

- the choice of bank regardless of a territorial sign, i.e. it can serve as the main criterion of the choice of bank: its stable situation and/or favorable tariffs for service;
- prompt of receiving various reference information from bank;
- the convenience of drawing up payment documents combined with decrease in level of mistakes in the course of paperwork.

Costs of introduction of system and retraining of the personnel, and then regular expenses on payment for use of system become the back of use of system for the client of bank. It concerns mainly clients of bank, the organizations and individual businessman. Lately the increasing number of banks refuses the collection of payment from individuals for use of Client bank system, as advantages of the automated exchange pay back the missed income.

By means of Client bank system the bank can render remotely enough full range of services among which are most popular:

- opening of accounts in various currencies (as a rule, deposit);
- obtaining information on current state of bank accounts and payment documents of the client;
- receiving the statement of the bank account for any period;
- preparation of payment documents, including for individuals — on payment of various services (for example, communication services, housing and communal services);
- commission of conversion operations (purchase/sale of currency);
- receiving reference information from bank (reference books for filling of payment documents and reference books about the rendered services and tariffs for bank service);
- check of the condition of the obtained credits, settlement and credit cash cards;
- money transfer between customer accounts (for example, from the card account on deposit);
- creation of templates of payment documents on often repeating payments of the client, and also creation of regularly repeating payments (so-called «autopayments»);
- other operations (for example, preparation of documents for granting the credit or production of the cash card).

The generalized architecture of Client Bank systems consists of three subsystems (Fig. 5.3): bank (sometimes it call server), client (i.e. a workplace of the client) and communication (or transport).

Generalized architecture systems «Client-Bank»



The bank part of Client Bank system in principle has to automatically (without participation of the employee of bank) to carry out all actions for reception and processing of payment documents. Also bank part of system has to be supplied with the data transmission device for communication with communication channels (transport part of system). Functionally bank part of Client bank system provides:

- authentication of the client of bank and reception of information from it;
- interpretation of the accepted information and check of a digital signature of the client;
- transfer of payment documents in ABS of bank;
- acceptance of requests for a statement of the account and formation of answers;
- generation of enquiries to various subsystems the ENCORE of bank according to the inquiry accepted from the client;
- formation of the response message to the client and signing of its ECP of bank;
- enciphering and transfer of the proceeding information to clients.

Ensuring normal functioning of client part of system requires existence both: the hardware platform ensuring functioning of the program module, and data transmission device together with the communication channel; the possibility of connection to system program and/or hardware of cryptography is also necessary. The program installed at the client (client part) is urged to carry out the following set of functions generally:

- formation of payment documents and other messages in bank;
- imposing of a digital signature on the created documents;
- enciphering of outgoing documents and messages;
- transfer to bank of payment documents and messages;
- reception and information processing from bank (decoding, check of ECP, the printing of documents and so forth).

Considering communication part of Client Bank system, it should be noted that data transmission devices between bank and the client can be almost of any type. The choice of such device in each case is individual and depends on the existence of already available communication channels. The defining role at a choice of a communication channel is played by its capacity, availability, simplicity and cost of operation. Initially as communication channels the switched and allocated communication lines were used. At the moment practically all the interactions of banks with clients are based on the use of the Internet. It is connected with high availability and relative low cost of a similar way of communication, and also with development of the means of information security allowing guaranteeing the demanded data security level in networks of the general access.

On the structure the Client bank system represents the distributed system of data processing. Proceeding from it, two approaches to the creation of similar systems are allocated: on the basis of information technology of «the fat client» and on the basis of technology of «the thin client».

In case of the creation of system on the basis of technology of «the fat client» the Client bank system, from the point of view of the client, is as if part the BIS bank and it demands the installation by the client of bank the special software consisting of a database and the program of processing these data. This software is provided by bank, and maintenance it is also carried out by the bank staff.

In this case the interaction of the client and bank is carried out as follows. The client in the autonomous (off-line) mode forms the payment documents, post messages and other enquiries intended for sending to bank. The bank part of system works in a waiting mode of connection with the client until the client doesn't establish connection via the communication channel between devices of data transmission of the client and bank. During a communication session the bank carries out authentication (i.e. authenticity check) of the client, initiates transfer of information, which is prepared in advance for the client, and prepares for reception of new information from the client. During this communication session the client software receives information from bank and in reply transfers, and then there is a rupture of communication. The bank accepts, and then processes the information received from the client in the off-line mode. All transferred messages (both in bank, and in client parts) are ciphered and certified by the digital signature (DS).

As the communication channel during the work on the described technology channels X.25, radio channels, the switched telephone lines usually were used before. Application of the allocated lines from bank to the client (fiber-optical lines, satellite communication) in this case is unprofitable, because of their high cost at the small volume of the transmitted data and rare communication sessions. Recently as a communication channel the Internet is even more often used, but its use carries session, not constant character. This means that the client part of system initiates the communication session with the bank through the Internet only for time necessary for an exchange of information packages.

Advantages of Client bank system on the basis of technology of «the fat client» are as follows:

- low cost of communication channels and devices of data transmission;
- support practically any transport protocol for transmission of messages;
- relative simplicity of bank hardware-software part;

- autonomy of preparation of documents by the client, i.e. in the offline mode;
- existence of archives of documents both on the server of bank, and on the computer of the client enterprise;
- high extent of protection of bank part against unauthorized access;
- the acceptable extent of protection of the transmitted data;
- ability to integrate client part of system with other software for — automatic formation of documents (for example, with the system of accounting used by the client of bank);
- possibility of realization of a large number of support functions in client part of system.

However use of technology of «the fat client» isn't deprived of shortcomings which are expressed in the following:

- need of preliminary installation and the subsequent support of the software on the client's computer;
- difficult diagnostics by the client of the movement of the financial documents;
- the difficulties of addition in system of new forms of documents demanding updating of the version of the software on the computer of the client of bank;
- the certain complexity of the software on the party of the client consisting as in increased requirements to a hardware platform, and in need of training of the client of bank in work with the software established at it.

Above-mentioned aspects caused that fact that on the basis of systems of «the fat client» only large and medium-sized enterprises really can use the services of banks in remote control of the account. For the organizations, which daily register many payments, the gain in the speed and quality of bank service is comparable to costs of introduction and maintenance of client part of system. As for the small enterprises and private clients, to them it is often economically unprofitable to install similar systems.

Unlike the considered technology of «the fat client» the creation of Client bank system on the basis of information technology of «the thin client» doesn't impose to the equipment of the client of bank any requirements, except the existence of the devices of data transmission compatible with bank, and the terminal supporting protocols of an exchange and information security according to the protocols of an exchange and protection supported by bank. In this case the technology of interaction of the client with bank is realized by the following stages:

- the client starts the program terminal (most often the ordinary browser) and establishes connection with bank;

- after communication establishment the bank sends to the client request for authentication;
- the client enters information for authentication and gets access to bank part of Client bank system;
- the bank sends to the client of a form of input of payment documents and inquiries which are filled with the last in the on-line mode;
- the bank sends the client the information created at the request of the client in the on-line mode (for example, the statement of the account, the status of processing of the payment document);
- when all the information is entered by the client and received by bank, the client can break link with bank.

Basic feature is that all information is transferred at once to bank in process of input it the client. The client part of system is organized in the form of the specialized or multipurpose program terminal focused on viewing of documents (usually in this role use any Internet browser).

If as a communication (transport) subsystem protocols of the Internet are used, the client of bank establishes IP connection by means of the data transmission device with the provider and, using the HTTPs protocol, contacts the web server of bank. All work happens in dialogue on-line mode: the client can transfer documents to bank and receive response information from bank.

Advantages of creation of Client bank system on technology of «the thin client» consist in the following:

- simplicity of introduction of new forms of documents to system as it isn't required updating of the software from clients of bank, is enough to update of it only on the server of bank;
- convenient work of the client of bank with the program terminal if as the last the standard Internet browser is used;
- simplicity of introduction of client part of system (this procedure is almost absent and it is reduced to registration of the client on the server of bank);
- data storage and work with databases directly on the server of bank;
- constant operating control the client behind destiny of the financial documents;
- possibility of simultaneous work of a large number of clients without additional expenses from bank;
- low cost of the software for the client of bank;
- lack of need of additional service of the software established at the client of bank.

Thanks to such organization of work of Client bank system there is a possibility of merger ABS of bank and Client bank system in the on-line mode. But the same leads to emergence of the negative moments, namely:

- need of additional system of protection of banking network against penetration into it through the Internet;
- need of strengthening of protection of web servers of bank against their removal out of operation malefactors;
- risk of insufficiently stable relation during data transmission between bank and the client;
- increased requirements to hardware of bank part of system;
- impossibility of work of the client without bank and a communication channel (i.e. in the off-line mode).

The low cost and simplicity of connection to system made it available not only for the large organizations, but also for the medium-sized and small enterprises, and also for individuals. Application of technology of «the thin client» means today usage as the communication environment of the Internet, which does the client of bank even more geographically free, than in using technology of «the fat client». The client can always have the computer with him and connect Network through mobile communication, but can contact the web server of bank and from any Internet cafe.

Considering Client bank systems as a form of remote interaction of bank and its client, it should be noted that historically the first there were systems of remote management of the bank account by phone. the banks of the USA were the first to begin to offer the clients the similar service in the 60-70th of the last century (among Americans this way of remote bank service kept popularity about one today, but instead of ordinary phone it is used cell phone). Then banks began to make solid investments in development and deployment of systems on the basis of such information technology of the distributed data processing as «the fat client». The services provided by means of these systems received the name PC banking (Personal computer banking — «computer banking»), today they are «classical» Client bank systems. Application of technology of «the thin client» and rapid development of the Internet caused emergence of such type of bank service as Internet banking in the late nineties of the XX century.

As the certain direction developing together with Client bank systems it is possible to consider telephone banking, i.e. management of the account and receiving reference information by means of phone. Much later than an operational stage of ordinary phone, mobile and IP phones became mass, transfer of the human speech from usual began to pass into a digital format and additional opportunities — in particular reception and transfer of short text messages (SMS) began to appear in the phones.

The statistics of the last years informs about the steady growth of number of banks, which try to introduce new information technologies of remote service in the daily practice. More than a half of the accounts opened in banks in the territory of Russia are accompanied by remote

access on the Internet or mobile means of communication. Thus the tendency towards the increasing use of Internet channels of communication is observed. The analysis of structure of the non-cash payments made in the territory of Russia shows that the main part of such payments among the organizations (in banking practice called «legal entities») happens to use of client bank systems.

And it is characteristic for comparisons of both: by number of the executed operations, and on the volume of the transferred money. Concerning the payments made by private clients of banks (so-called «individual persons») — statistics is so far on the party of paper documents.

5.3. Electronic payments via bank cards

Payment cash cards serve as means for implementation of clearing settlements in the course of commercial activity (sale and purchase). Activity of the credit organizations for the organization of clearing settlements by means of payment cards is regulated by the legislation, in particular the Statement of the Central Bank of the Russian Federation No. 266-P of 24.12.2004 «The provision on issue of cash cards and on the operations made with use of payment cards», according to which the cash card is «a type of payment cards as the tool of clearing settlements intended for commission ... operations with the money which is at the issuer according to the legislation of the Russian Federation and the contract with the issuer». In essence, the cash card is a technical tool of access to the account opened in bank. «Activities for issue of cash cards, opening of accounts and settlement cash to customer service at commission of operations with use of the cash cards issued to them» are called as issue of cash cards, and «the credit organization (branch) which is carrying out issue of cash cards» — the issuer. Issue of the cash card to the client called by the card holder is carried out only on the basis of the contract between it and bank issuer. Thus on the cash card there have to be a name and a logo of bank issuer. Important feature is that according to one bank account of the client operations with use of several same cash cards (settlement or credit) one or different rationing payment systems can be reflected.

Cash cards are distinguished on character of the contract between the holder and card issuer on carrying out payments. According to this sign of classification cash cards can be: credit, settlement (debit), pre-paid.

Settlement (they are also called «debit») cash cards give opportunity to dispose of the money, which is on the account of the card holder, within an account limit for payment of goods and services and/or receiving cash. The account limit is usually set within the rest on the customer account, but by the contract for service of the bank account of the settlement card also existence of «overdraft», i.e. the loan granted by bank to the client at insufficiency or absence on the bank account of money can be provided.

The credit card means that its holder can carry out operations at a rate of the credit line provided by the issuer and within the account limit set by the issuer. A basis for crediting is the contract between the card holder and bank in which are usually specified: the most admissible of the loan granted by bank; percent of payment of the credit of bank; rules of calculation of the monthly sum of repayment of the credit and percent on it. In Russia such cards were initially released only on bail of the insurance deposit and long time remained are unpopular; however now credit cards are included into the list of banking products practically of each bank which is engaged in issue of cash cards. The main property of credit cards consists that the holder of such card pays goods and services (or receives cash via the ATM or branches of the bank) not with the means, and at the expense of the bank loan which will be repaid at the end of the settlement period determined by the contract.

The prepaid card is intended for commission by her holder of operations calculations, on which they are performed by bank issuer on its own behalf, but at the expense of the money provided, by the holder.

The most widespread now in Russia the direction of use of cash cards — salary cards. According to the scheme of work with salary cards the bank opens for each employee of the enterprise the bank account and issues a plastic card (the scheme when each employee independently signs the contract with bank is also possible and opens the account, transferring then information on an account number and requisites of bank issuer to accounts department of the enterprise employer). The technology of work with salary cards looks as follows. The enterprise provides data on employees by which cards will be made in bank. The bank opens accounts, makes cards then transfers them together PIN codes of administration of the enterprise. After that the enterprise with the got frequency transfers in bank the amount with the indication of its breakdown on each employee. The staff of the enterprise can withdraw the funds enlisted on bank accounts in branches of the bank or via ATMs. Thus, as the salary cards the settlement cards are issued (sometimes with possibility of an overdraft).

Classification of cards by the categories of the clients is widespread (it concerns, as a rule, bank and discount cards). Distinguish the «ordinary» card intended for the ordinary client; the «silver» card — for representatives of a so-called «average» class, the «business card» intended for the staff of the organization representatives to spend funds from the account of the company in the set limits, and the «gold» card intended for the wealthiest (VIP) clients. Similar division is peculiar to the majority of the cash cards emitted within the international and national (local) rationing payment systems.

Today physically cash cards can be issued as in the form of magnetic, and a type of smart cards.

Cards with a magnetic strip (magnetic cards) appeared in the 60 th years of the XX century. Information which allowed increasing security of the card began to register in magnetic strips and provided carrying out financial (payment) operations. With the advent of a magnetic strip for each card holder became possible to define his personal identification number — the PIN code on the basis of which the security system is under construction during the work with magnetic cards. Transfer of the PIN code for check of safety assumes use of telecommunication channels for carrying out authorization (on-line authorization). It should be noted that it is rather easy to forge magnetic cards. Cash cards with a magnetic strip have to conform to the international standards which define:

- card size;
- an arrangement of a magnetic strip on the card;
- structure (format) of record on a magnetic strip; • a place and a form of the embossed symbols on the card.

The smart card (or the chip card, the card with a microchip) represents a plastic card with the built-in chip, which can allow not store information, but also carry out operations on its processing. The increased information volume allows to store in memory of a microchip as data on the holder of a card and his account, including the available rest on the account, and about rather big (to several hundred) number of the operations made with use of a card. In addition smart cards possess, in comparison with magnetic cards, higher degree of security. It is almost impossible to forge or pick up them to them the PIN code. At the moment there are two types of microchip cards: contact and contactless. On a surface of contact chip cards the so-called »sockets» or «contacts» defining a way of the room of such card in the device of reading of information from it (card reader) are visible. Proximity cards contain a microchip in themselves and for their use it is rather simple to bring the card on a short distance to the device of reading of information.

Smart cards as a technical element of the payment tool can act as usual cash cards (calculations with their help are made similar to calculations by means of magnetic cards), and as cash cards with off-line the mode of authorization which features will be described later. Besides, technical characteristics of a smart card as reliable and safe data carrier allowed organizing on their basis of system of calculations by digital cash.

The organization of calculations by cash cards requires existence of the special infrastructure uniting all participants of card calculations. Equipment of all participants, and standards and rules of their interaction belongs to this infrastructure as technical (and corresponding program). All this together forms the rationing payment system (RPS). Generally the rationing payment system can consist of the following types of elements

(participants):

- The issuer is the bank (the credit organization), which is carrying out issue of cards.
- The holder of the cash card, i.e. the natural person using the cash card on the basis of the contract with the issuer, or the individual person is the authorized representative of the client of the issuer.
- The acquirer is the bank (the credit organization), which is carrying out acquiring. Acquiring is understood as the activity including implementation of calculations with trade enterprises (services) in the operations made with use of cash cards, and implementation of operations on cash disbursement of money to holders of cash cards not being clients of this credit organization.
- Trade enterprise (services), which according to the agreement with the acquirer signed by it, accepts the documents made with use of cash cards as payment for the provided goods (services). The individual person is the individual entrepreneur can act as trade enterprise (services). It is possible to meet definition of the similar enterprise as «points of sales» — POS (Point of Sale).
- The processing center is the legal entity or its structural division providing information and technological exchange between participants of calculations. Activity of the processing center is called processing and it includes collecting, processing and mailing to participants of calculations (settlement agents, issuers and acquirers) of information on operations with cash cards.
- The settlement agent is the credit organization, which is carrying out mutual settlements between participants of calculations for operations with use of cash cards.

Are distinguished from technical providing participants of rationing payment system as widespread means of storage, processing and data transmission (the high-performance servers with database management systems interconnected by various data links), and the special devices, such as KPS. Devices of the acquirer are the ATMs, electronic (POS) terminals, imprinters and other technical devices intended for implementation of operations with use of cash cards by the acquirer. The ATM is the electronic software and hardware complex intended for delivery and reception of cash, drawing up documents on operations with use of cash cards, issues of information on the account, implementation of non-cash payments, etc. The electronic terminal (POS terminal) is the electronic program and technical device intended for commission of operations with use of cash cards at trade enterprise (services enterprise). The imprinter is the mechanical device intended for transfer of a print of relief requisites of the cash card on the document made on paper (it is used by trade enterprise).

Operation of payment of purchase by means of the cash card is possible only in case of existence of the relevant contract with bank acquirer at

trade (services enterprise). In such contract the standard of cards and the terms, on which the card is valid, are usually specified, also the acquirer provides the staff of trade enterprise with the instruction on authorization implementation. For carrying out operations with the help of cash cards the enterprise opens the settlement account, on which the acquirer includes means on the basis of the documents made by the use of cash cards.

At the time of purchase payment by the cash card the employee of trade enterprise carries out authorization, i.e. the check of possibility of commissioning operation (as the enterprise is paid by the acquirer and from the card holder money will be charged off later). Upon purchase the check, in which all requisites of payment and a code of authorization are reflected, is made out. The check is made out in duplicate: one is given to the card holder; the second copy is left in trade enterprise. Within the terms stipulated by the contract for merchant acquiring service the trade enterprise submits to the acquirer the electronic report (the register of payments) with requisites of transactions of cash cards for a certain period. After checking the records of the electronic report the acquirer pays them no later than the next working day. For service from trade enterprise the acquirer charges the fee.

Then through the settlement agent the acquirer carries out interaction with the issuer and collects from the issuer the means in the account of trade enterprise, and also a certain commission for this operation. After calculations with the acquirer the issuer charges off money from the account of the client (in case of the settlement card) at once, or exposes to the client bank statement with the requirement to repay the loan (in case of the credit card or the settlement card providing an overdraft).

Upon the purchase paid by means of the card, special importance is given to authorization procedure. At its carrying out by the cashier (the employee of trade enterprise) the following sequence of actions is performed:

- The cashier checks the card for compliance to requirements of the acquirer, checks period of validity of the card.
- The cashier carries out request for authorization in the processing center, reporting number of shop, number of the card and the sum of purchase.
- In the processing center there is a check: whether such shop is registered, whether there is a card with such number, whether there is no its number in the list of the cards forbidden to use (stop-list), whether the required sum corresponds to conditions of an account limit of the card. If all conditions are satisfied, permission to carrying out transaction is given and the unique confirmation code (an authorization code) is formed. Thus in a database of the issuer on the customer account the pro-authorized sum is blocked. A final write-off fund

happens after sending to the issuer of the payment the documents confirming operation.

After receiving an affirmative answer from the processing center the cashier makes out the check on which the client puts the signature. The cashier validates payment by own signature and reports to the client the copy of the check together with purchase.

Authorization can be voice or automatic. The cashier transfers information in the first case to the processing center for phone, and then at an affirmative answer «rolls» the card through an imprinter and forms the check with a card print, so-called «slip». In the second case authorization is carried out by means of the electronic terminal (POS terminal) which reads out data from the card, forms inquiry, contacts on communication channels the processing center and accepts the answer.

Depending on type of the plastic card used as the cash card, the scheme of carrying out authorization can differ. In case of work with the magnetic card it is necessary to check a state of the account before carrying out each operation, contacting the processing center as on the card only identification data are written down, and all information on the movement and account balances is stored in a database of the issuer and/or the processing center. At the time of operation commission the electronic POS terminal reads out information from a magnetic strip of a card then the cashier enters an amount of payment, and the buyer (the holder of a card) enters from the keyboard the PIN code. After that the POS terminal carries out transformation of information and its transfer on communication channels in the on-line mode in the processing center, where there is a processing of this information. At the first stage there will be check of the PIN code, which is stored in a database of the center, with number of the card, read by POS terminal. If the PIN code is entered incorrectly, carrying out operation becomes impossible. If information coincides, check of a state of the account of the card holder is made and at positive result is granted permission for carrying out operation.

It should be noted that the greatest time at implementation of card purchases with a magnetic strip is spent on carrying out authorization that results in big inconveniences in case of acquisition of inexpensive goods (for example, food). A way out from such situation is the permission of carrying out purchases for the small sums without carrying out authorization. For each trade enterprise the bank determines the sum called by unauthorized limit. If the sum of purchase is less than set limit, the seller has the right to issue purchase without carrying out authorization as the bank guarantees payment of such purchase irrespective of a state of the account of the card holder.

In case of use of a smart card two modes of carrying out authorization are possible: on-line peculiar to magnetic cards, and off-line. Information

on a state of the account and the PIN code are stored in memory on the smart card therefore authorization can be carried out as in the on-line mode, and off-line one. In the latter case authorization happens without communication with the processing center as all necessary information it is stored on the card and in the POS terminal. In bank issuer on the corresponding card account the sum, which is previously written down on a smart card is blocked.

This blocked sum is available to write-off from the account only according to the paper and electronic documents created by means of a smart card. It should be noted that in bank issuer the account balance isn't always equal to the balance, which is stored in memory of the card. At payment of goods or services by means of a smart card, the seller performs operation of authorization of a card by means of the special POS terminal. After check according to the stop-list there is a processing of payment in the off-line mode in the course of which the data on made operation are registered in memory of a smart card, reducing the rest of means, available on the card, and at the same time in memory of the POS terminal. After successful authorization, as well as in case of the magnetic card, the check is printed out. The trade enterprise periodically «collects» the electronic report of operations in bank acquirer. On the basis of the electronic report the bank issuer charges off money from the sum, which is previously blocked on the bank account. Not blocked balance sum on the bank account is replenished when the funds inflow into the customer account, from this sum write-offs at the request of the client are also possible, for example, for implementation of utility payments — such type of the card received the name «electronic purse» (there are also other types of «electronic purses» in which memory digital cash is stored).

At the time of commission of card transactions only check of «an electronic purse» is carried out. Correction of the balance on the card account happens in a database of bank issuer therefore for replenishment of «an electronic purse» from the account the client needs to be in office of bank issuer, where procedure of record in memory of a smart card of the new available means will be carried out (besides to «blocking» of this sum on the account). Thus the part of means on the card account will be again blocked.

It should be noted that until recently schemes of work with magnetic cards were most widespread. However it becomes more and more obvious that the technology of calculations by smart cards is perspective, therefore the majority of the international KPS began transition from technology of magnetic cards to smart cards. In 1994 Visa International, MasterCard International and Europay International formed the working group for the purpose of development of the EMV (Europay-MasterCard-Visa) specification on a smart card. In 1996 the first version of specifications — the

standard of the banking sector on the card with a microchip, such card application and the terminal working with the chip card was issued. Specifications are aimed at providing compatibility — the major for practice of payment systems of property of cards correctly to be served on various terminals and properties of terminals it is correct to serve various cards.

For the date of 1.01.2014 in Russia 923 credit organizations carried out issue and/or acquiring of payment cards, from them issue was carried out by 633 credit organizations, services of acquiring were rendered by 590 credit organizations. Until recently, despite mass volumes of issue of cash cards, volumes of operations on payment of goods and services significantly conceded to operations on cash withdrawal of money via ATMs. Holders of cards used the cards mainly as means of receiving a salary and/or various grants. As the payment tool the cash card was used seldom. From the fourth quarter 2012 in Russia in structure of the operations made with use of payment cash cards the tendency of excess of number of operations on payment of goods and services over operations on cash withdrawal of money is observed.

With development of network sector of economy and increase in turns in online stores the aspiration of payers and buyers looks quite logical not only to conclude bargains in an electronic form, but also to carry out their payment with use of habitual payment tools. It is possible to refer payment by the cash card to the last. In this regard online stores try to render to the clients service in reception for payment of cash cards. Procedure of payment by the cash card in principle is similar to payment in usual (traditional) shop: the buyer after a choice of goods declares to the seller desire to use the cash card (for this purpose on the site of online store special «button» — «Payment by the cash card» is, as a rule, provided). Further the shop needs to carry out authorization of the cash card. For this purpose it is necessary to find out data of his cash card (number of the card and validity period) from the buyer, and then, having added the code and the sum of operation, to send this information to the processing center.

To learn data of the cash card, there is no need of personal presence of the card holder at the time of authorization. Transactions with similar authorization received the name CNP (Card Not Presented). The first services of the order of goods by mail and to phone when the buyer chooses goods according to the catalog or from TV commercial began to apply such way of authorization in the USA, and then calls the operator of service, for example, and reports data of the card (such payment procedure MO/TO — Mail Order/Telephone Order call). Having received requisites of the cash card, the employee of trade organization can contact the processing center for carrying out voice authorization or enter data into the electronic POS terminal.

At online store unlike traditional trade enterprise of feature of reception for payment of cash cards consist in a way of receiving requisites of the cash card (number of the card, a name of the owner, validity period) at payment of the ordered goods for the subsequent carrying out authorization. This stage can be carried out in two ways:

1. The buyer transfers data on the card directly to online store which then transfers them to the KPS processing center for carrying out authorization. Here are possible or sending data of the card by e-mail, or filling of a special form on the site of shop. This way is unsafe as swindlers can get access to the data which are stored in online store. Also existence of the so-called «short-lived shops» collecting in the course of payment data on cards for the purpose of their further roguish use isn't excluded. Also the buyer isn't insured from the sellers, who aren't fulfilling the obligations on delivery of goods and services. Besides, the online store can't carry out authentication of the payer: if data on the card were stolen, and at the time of payment wasn't issued the check with signatures of the card holder and cashier of trade enterprise, in case of refusal the card holder from perfect operation the online store can suffer essential losses (the mechanism of use of stop-lists allows to reduce this risk, but the card holder can be not always sure that data on his card didn't fall into hands of malefactors). In view of specified now such way of calculations on the Internet by cash cards I didn't gain broad development.

2. The buyer transfers data on the cash card not directly to shop, and to the server of the intermediary (for example, bank acquirer or payment Internet system which then contacts the KPS processing center within which the cash card is emitted). Data transmission thus considerably reduces risk of obtaining data on the cash card by the third parties or deception by the seller. It is reached because data aren't stored at the seller any more, and transferred to the server of the intermediary which supports the high level of safety of the data stored and transferred on a network.

For work on the second option the internet-shop has to be registered and make setting up the software for connection to the server of the acquirer or one of payment Internet systems previously. When the buyer decides to make payment of purchase by the cash card, he will automatically be redirected on the server of the intermediary (at the same time on this server identification data of shop and the sum of alleged purchase arrive). Then the card holder enters data of the card. On the server there is a check of authenticity of online store from which the buyer then the request for authorization in the KPS processing center is automatically formed «came». The result of authorization arrives also on the server of the intermediary who tells it to the buyer and the seller. In case of positive result there is sending goods to the buyer.

Feature of payments with use of cash cards on the Internet is the absence of paper copies of documents as all of them are initially formed in electronic form. Copies of electronic documents on all operations remain on the server of the intermediary and can be available to sellers and buyers at any moment.

The payment Internet systems rendering services of the intermediary at authorization of cash cards usually are peculiar technological locks (so-called payment interfaces) at once to several international and local KPS. The last property allows the online stores registered in these systems to accept for payment cards of various issuers that contribute to the convenience of financial interactions of online stores and their buyers.

5.4. Electronic payments via digital cash

The digital cash (DC) is understood as electronic analog of paper banknotes. Digital «note» represents a set of the figures (bit) which are written down on an electronic medium of data. Each such «note» contains data on face value and the issuer. As the issuer of digital cash there is the bank, though the organizer of system of calculations by digital cash also can carry out this function. The issuer can form itself digital notes, sign them with the digital signature and send on communication channels to participants of calculations. But also other way of issue is possible: the client of bank (or simply the participant of system of calculations) creates the digital banknote of the face value necessary to it, sends it to bank (or to the organizer-issuer) where there is a verification of the customer account and signing of the banknote by the issuer. After returning to the client bank note signed by digital signature, this banknote can be used in calculations, i.e. it is transferred to the seller of goods/services or other recipient of money.

From the legal point of view digital cash isn't official means of calculations and isn't regulated, for example, by a banking system of the country represented by the Central bank (today neither in Russia, nor in the world there is no the special legislation regulating issue and the address of «digital money»).

On a way of storage of digital bank notes it is possible to allocate two kinds of systems of calculations with the digital cash (DC):

Systems in which DC are stored on smart cards. Calculations in such systems require existence at payers and recipients of special devices for record DC on a smart card and transfer of DC from one smart card on another. The devices allowing looking through data on DC which are stored on a smart card received the name «electronic purses. Depending on system «electronic purse» can carry out function of transfer of digital notes from one smart card on another, i.e. directly carry out procedure of calculations.

The systems providing storage of DC in the form of files on the standard store (the hard drive, a diskette or other fashionable means storage such as, USB drive, various Flash-cards rewritten by CD, ...). For work with such systems it isn't required to buyers and sellers of any special technical providing, except standard personal computers.

At once it should be noted that storage of DC on a smart card doesn't exclude possibility of their use in the systems based on data processing with use of personal computers at all. There are systems which allow by means of such device as the card reader, connected to the personal computer, to read out information from a smart card and to transfer her on computer networks.

Not all systems of calculations by digital cash completely repeat technology of calculations by paper cash, i.e. they operate with separate digital banknotes of in advance recorded face value. Now the majority of systems of calculations of DC, as a rule, don't make preliminary (i.e. prior to procedure of performance of payment for the concrete transaction) issue of digital bank notes. The organizer of payment system (or on smart cards) stores data on in a processing subsystem within, what sum each user of system can pay off. And, the user is understood as the separate identifier, and the specific payer can possess any number of such identifiers. The payer at the time of carrying out payment generates digital cash of the face value demanded to it. Thus, the issue of exchange of banknotes is resolved. This fundamental difference of similar systems from calculations by paper cash: the payer doesn't have need in advance to look for the note or a set of notes for the payment sum, and the recipient of money gets rid of need to have a stock of notes on a delivery case.

It must be kept in mind that in the considered systems of calculations participants receive in the order though «digital», but «cash» which, as well as usual paper notes, it is possible to lose. For example, if the computer store «burns down» or it will be stolen, the owner will lose all money, which is transferred to the computer and he didn't manage to spend. It is even simpler to lose a smart card. On the other hand, by no means the issuer of digital cash can't prevent the owner of DC from spending the means, which he managed to transfer to a smart card or other carrier, unless having stopped all payments in system. This property makes cash calculations a very attractive form as the bank account can be blocked, for example, by a court decision.

General scheme of calculations by digital cash is the following. To have opportunity to pay or accept for payment digital cash, it is necessary to be registered, first of all, in system and to receive the special equipment (for work with smart cards) and/or the special software (for work in the systems using computer Internet networks). Only the registered participants of concrete payment system can carry out calculations of DC. Further it is

necessary to receive digital cash that is carried out by converting of real money in the digital. The list of ways of converting is various in separate systems, but, as a rule, possibility of a bank transfer on the settlement account of the organizer of system with the indication of the identifier of the client of system with the subsequent receiving digital cash on a smart card or the personal computer is provided everywhere. Here the analogy to paper cash is looked through: theoretically we can't pay off with domestic bank notes, being outside the country. It is necessary to convert previously (from a cash or non-cash form) one currency in another, i.e. to some extent to become the temporary participant of foreign system of calculations by cash.

After the buyer and the seller agreed about the payment method, there is a movement of DC from the carrier (a smart card or the computer) of the payer on the DC similar carrier of the recipient. The way of movement of digital cash depends on concrete system, as well as a security system of transmitted data. Procedure of calculations by digital cash can repeat many times. And the recipient of digital cash at some point can act as the payer (and vice versa — the payer in other situation can appear the recipient of digital cash).

When someone from participants of system decided to stop calculations in a digital form, or it there will be some need to transfer part of digital cash to usual money, there is a converting of digital cash. This procedure is the return one to receiving digital cash on the connection to system. Various options depending on concrete system are here too possible, but usually digital cash is written off from a smart card or the computer, and the amount equivalent to them in real currency is credited on the bank account specified by the participant of system. From this bank account it is already possible to receive paper cash or to carry out clearing settlements according to traditional schemes (for example, by means of payment orders).

Technical characteristics of the smart cards used in systems of calculations by digital cash in many respects are similar to the smart cards applied in clearing (card) settlements. The smart cards storing in the memory of DC received the name of «electronic purses». As a rule, money for a smart card registers by means of the special terminal (ATM) belonging to the organizer of system. The client of system opens the settlement account in the bank serving system and then by means of the special bank terminal (a kind of the ATM) transfers money from the account to a smart card. The same procedure in some systems can be executed and by means of the special phones supplied with card readers. It is important to note that by means of the ATM the demanded sum is charged off the bank account of the client and registers in available balance on a smart card. This operation can be repeated for replenishment of the rest of cash on

a smart card. By means of the same ATM it is possible to receive paper cash or to transfer funds from a smart card to the bank account. As information on quantity of digital money is stored only on a smart card (on the account these means aren't blocked, and are at once transferred to the bank account of the organizer of system), loss of a smart card result in full loss of the money stored on it.

This property of technology of calculations of DC allows providing anonymity of calculations: at the time of carrying out payment the holder of a smart card can pay off, knowing the PIN code of access to memory of the card. Essentially other means of protection of information and authorization it isn't required.

Carrying out calculations by smart cards with DC requires existence of the special technical device into which the smart card of the payer and the recipient's smart card is inserted. After input of PIN codes of the payer and the recipient, and also the sum of the transferred funds there is a reduction of balance on the card of the payer to simultaneous increase in balance in memory of the card of the seller. In shops POS terminals in which input only of the payer's smart card is provided can be installed. DC accepted by shop remain in memory of the terminal and it can be written down later on a smart card or other store, and it also are transferred in bank on communication channels for their exchange for real money which the bank enlists on the settlement account of trade enterprise.

Unlike the systems founded on smart cards payment Internet systems digital cash allow the participants to perform financial operations only among the Internet. It should be noted that in similar PIS all clients of system are equal. It means that to receive or send payments it isn't required to receive previously the special status, for example, of the seller. For carrying out calculations the buyer and the seller use the special software called in some systems by «Purse».

For calculations of DC the organizer of payment Internet system supplies the participant of payment with the separate account. This account can be anonymous as for access to it is required to know only identifying number and the password. To have opportunity to generate digital notes, the client of system needs to transfer usual money to the settlement (bank) account of the organizer of system (it becomes by a bank transfer or through purchase of sketch-cards of the face value necessary to the client). In the course of transfer of money to the organizer it is necessary to specify the account identifier which the client learns in the course of registration in system. After that the organizer of system notes the sum of means within which the client can create digital cash in the account. In the course of implementation of calculations at a stage of check of authenticity of digital notes on the server of the organizer of system there is a change of the remains according to accounts of the payer and recipient

towards reduction and increase respectively. At a transfer of cash from a digital form in usual the client specifies a way of withdrawal of money (for example, transfer to the bank account or receiving cash in office the organizer of system); at this moment the rest on the account is also corrected towards reduction or the account is closed at the request of the client.

5.5. Internet payment system based on virtual accounts

Payment systems on the basis of virtual accounts are a peculiar hybrid of bank technology of management of the account by means of payment orders and technology of a safe exchange of financial messages according to the principles of Internet systems of calculations by digital cash. The virtual account is understood as the account (account) on the server of the organizer of payment Internet system. This account contains data on the client of system and the size of an equivalent of money, within which he can make payments. In fact, the virtual account is similar to the bank account, but it opens and served by the non-bank organization, and, as a rule, not monetary units, but some conventional units act as units of account. Opening of the virtual account is understood as an institution of the account and assignment of the identifier by it, and as service — change of the rest of available means on operations (receipt/write-off on payments), storage of history of the operations which changed an account balance, formation and granting extracts to the client of system on transactions of the virtual account.

The organizer of PIS on the basis of virtual accounts carries out the following functions:

- institution of accounts;
- accounting of incoming payments (input of means);
- the accounting of operations of calculation (money transfer from the account into the account);
- accounting of outgoing payments (withdrawal of funds);
- storage of history of credit and debit transactions on the accounts;
- change of the rest of available means;
- formation of system of extracts on transactions of the account.

From the point of view of payers and recipients of money work in similar systems looks similar to calculations by means of systems of Internet banking. Future participant of calculations (payer) is registered in the system; the account is opened to him, into which it is necessary to bring some sum of money. Depending on features of procedure of registration in similar system opening of the virtual account can happen along with transfer of funds for it (i.e. initial input of money in system is followed by obligatory registration with an account institution). Then by means of specially made out instructions it is possible to make payments, but feature consists in isolation of similar systems, i.e. payment can be registered only

in favor of the recipients (similarity to systems of digital cash), who are registered in the same system in advance.

The registered, i.e. having virtual accounts in these systems, trade enterprises are interested in participation in similar systems as can quickly learn a condition of the virtual account in a section of separate operation. Thus, it is possible to define almost instantly that the buyer paid purchase (money transfer for virtual accounts) and to make shipment of goods or rendering service. Then the seller can bring the earned money out of system by delivery to the organizer of system of a special assignment. In this case the bank transfer from the settlement account of the organizer of system on the settlement (bank) account of trade enterprise will be executed. Generally systems of virtual accounts allow accelerating processes of interaction between the buyer and the seller, but thus real financial streams aren't accelerated (time expenditure on input of real money in system by the buyer and the subsequent conclusion by their seller is required).

It should be noted, that the payment Internet systems functioning on the similar mechanism do not always use the term «virtual account» for designation of the account of the client; but, nevertheless, the mechanism of carrying out calculations such is.

Today in Russia for payment means of virtual accounts are used by not only the sellers working in network sector of economy (online stores, marketplace, etc.), but also the firms rendering services in traditional sector (for example, mobile operators, municipal services).

There are kinds of similar systems determined by their organizers. These features are caused by technical capabilities of the organizer in safety and legal full value of payments, and also the speed of processing of transactions (i.e. money transfer from one account to another). It is possible to carry to these features:

- The supported ways of input of money in system, i.e. their preliminary transfer into the virtual account of future payer. Here options as classical bank transfer on the settlement account of the organizer, and issue by the organizer of special sketch-cards are possible.
- Existence/lack of differentiation of the statuses of the participant of calculations on the seller and the buyer, i.e. the system can support only the specific modes of service of virtual accounts of payers and recipients. It means that from one virtual account it is only possible to make payments, and on another — only to accept payments (and in order that both to accept payments and opening of two virtual bills or double registration in system with the different statuses is required to pay purchases).
- Providing the virtual account to possibility only of single use (not recharged), i.e. every time, entering money into the system, to the payer in system the new account is got. It is especially characteristic

for the systems using as a way of input of money in system only sketch-cards.

Conclusion

Participants of electronic business in the course of the interaction face a natural problem of the choice of the way of carrying out payment. Modern technologies of electronic payments provide enough alternatives to all segments of electronic business. Besides decrease in transaction expenses when carrying out electronic payments in comparison with traditional, payment systems have wide opportunities on integration with the information systems of the participants of electronic business. Thus the issue of increase of convenience of carrying out payment is resolved. Now the payer and the recipient of payment don't have to meet face-to-face to transfer cash or to visit the bank office for transferring payment orders and obtaining bank statements. All information exchange accompanying payment procedure happens remotely on the protected communication channels (mainly through the Internet).

All modern forms of electronic payments in essence are the automated types of traditional payments. But in one cases emergence of these electronic forms went on the way of direct automation of process of performance of payment, and in other case electronic payments «model» traditional technology of payment with the help of information technologies. The technologies of electronic payments considered in the head («client bank» and Internet banking, bank payment cards, Internet systems on the basis of virtual accounts) are the cornerstone of creation of the modern payment systems forming National Payment System of Russia.

Self-examination questions

1. What do the concepts of payments (calculations) and their participants mean? Describe classification and give the characteristic of basic forms of payments (traditional payments).
2. What does the concept of electronic calculations and EFT (electronic funds transfer — a wire transfer of money) mean?
3. What is the concept of Client Bank systems? What is their functional purpose? What types of Client Bank systems are usually defined?
4. Describe the general architecture of Client Bank system. What is functional purpose of subsystems (parts) of Client Bank system?
5. Describe the technology of carrying out electronic payments with use of Client Bank system.
6. What does the concept of the card payment system (CPS) mean? Describe the structure of participants of CPS and the program technical infrastructure of CPS.
7. What does the concepts of cash cards, settlement and credit cards mean? What similarities and distinctions in bank technology of service of settlement and credit cards can we mention?
8. Describe the technology of carrying out payments by bank magnetic cards.
9. Describe the technology of carrying out payments by bank smart cards.

10. What is the essence of the payment Internet systems on the basis of virtual accounts? Give your own examples of such systems and describe the technology of carrying out payments.

11. Describe the technology of work of payment Internet system on the basis of cash cards. Give the examples of the Russian Internet systems on the basis of cash cards.

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MANAGEMENT OF THE VIRTUAL ENTERPRISE

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Abstract

New information and technological way of society resulted in the new type of «a virtual enterprise». In this chapter key characteristics of the virtual enterprise, and also the features of management of the enterprises in the global virtual society are considered. Issues of the virtual society development are often simplified to the level of use and penetration of information and communication technologies into professional and everyday activity of people. However the problem of development of virtual society stipulates the search for the decisions on the fundamental problems connected with the informatization of society. In this chapter the tendencies and fundamental problems of informatization of society are examined.

Key words

Globality, exterritoriality, general availability, interactivity, virtual enterprise, distribution, globalization, business reengineering, cloud technologies and rent of SaaS; «mobilization» (BYOD); virtualization (geographical and cloud), network globalization and distribution on the bases of dividing competences and outsourcing; BigData network economy.

6.1. Virtual enterprise, electronic business, electronic commerce, model of management, manager

The virtual enterprise can be defined as a set of territorially separated employees, who exchange products of the work and communicate with each via other exclusively electronic means (at the minimum or completely absent personal contacts). The ultimate case for such wording, when the enterprise has a legal address, but it has not general physical address for common placement of the employees. That is the virtual enterprise, i.e. the enterprise using in production management and business network communications, the relations and technologies. In English it will be Network organization [24]. Spatial and temporary dissociation of producers and consumers leads to a number of important problems for the enterprises: who will provide delivery of goods and how it will be done; who will provide the promotion of the goods into this or that market and how; what financial, commodity and information streams will be expected; hoe the feedback from the consumers to the producer will be provided. Answers to these issues define the way of creation the system of distribution. Effective organization of this system substantially defines the success of activity of the

enterprise in the modern market. Thus in the virtual enterprises there are two types of components and the capital: physical components, which it is possible to touch, and also the virtual space created on the basis of information technologies, where the collective knowledge is stored, transferred, transformed and used. Knowledge of the virtual enterprises becomes the most important resource for their competitive advantages.

The purpose virtual the enterprises, as well as any business in general, is receiving profit or the material income in a monetary or equivalent form (acquisition of property, securities, information product, etc.). The virtual enterprises, owing to the technological basis, have a number of problems which reflect such specific risks as risks, connected: with global nature of business, with speed of changes of economic situations in this sector, with insufficient information security, with technical and technological difficulties of service of economy, with poor quality of services, from not created legal base of the field of activity connected with a network. These problems are considered to be the following:

- some mistrust of the mass population to the virtual enterprises, shops and systems of electronic calculations (in general to virtualization in a broad sense). Society was divided into «youth» which easily perceives the services of mobilization and «not youth» for which use of modern »gadgets» is a problem;
- lack of the developed infrastructure of electronic business, regulations, standards though traditions already are;
- emergence of new technologies of fraud;
- discrepancy of level of management and the time of decision-making to speeds of change of economic situations and conjuncture in the network;
- need of scalability of systems of network economy (turnover can grow suddenly much)
- possibility of parent organization quickly to dispose of means on accounts of the companies entering into company group (cash pooling — the centralized management of cash flows in the whole group). The organization of a real pool assumes transfer of funds from the accounts of its participants to the master account at the end of bank day and redistribution of these means between accounts of participants according to their requirements.

Therefore for steady work of the virtual enterprise the following principles have to be considered:

- introduction of new information and administrative technologies for increasing of stability of the enterprise to changing the environment;
- flexibility of business processes that corresponds to maturity model;
- risk management and their modeling in connection with geographical distribution;

- continuous updating technical means and software (including means of information security).

However the analysis of specifics of the enterprises management in the network economy [11] shows that in comparison with the previous forms of the government, for the virtual enterprise the following features, which we can consider as competitive advantages, take place:

- use of in-house information space for collaboration, discussions and decision-making at the new qualitative level;
- collective formation of the information resources making a common information space (for example, CRM, SCM, PLM etc.);
- in-house coordination of management in real time;
- business globalization;
- decrease in expenses owing to reduction of a rent due to regional placement of the company divisions; decrease in expenses on the organization of workplaces owing to mobilization of employees (remote desktops);
- increase of flexibility of management and emergence of opportunity to offer the goods in various regions at the same time, and importance of a physical arrangement now influences productivity much less;
- distribution of assets and their simultaneous centralization as they can be operated from «mother country» in real time.
- high speed of exchange of information via the network channel allows employees to work in team (collaboration), even if they are divided by time and distance. During collaboration managers can use cases for the solution of tasks with clear aims and not clear ways of their achievement. By means of cases work on the solution of a task of certain employees or group of employees can be organized — it is possible from different divisions of the organization.
- scalability of staff, on the basis of outsourcing;
- possibility of the round-the-clock customer service through a corporate portal and increase in loyalty of the personnel, at the expense of the flexible hours of presence adapted for each employee personally.

Thus it is inevitably for the questions of the following character to occur:

What changed in the processes of preparation and formation of administrative decisions?

What modification of the methods and tools is required for effective service of the virtual enterprise?

What it is necessary to undertake at the enterprise so that ways of the management were adequate to processes of changing the priorities of the virtual enterprise?

How to change staff training?

How to organize a unified exchange of the documents and other objects (graphic files, audio and video files)?

Network cooperation of the persons making the decision reveals the new problems which are already shown in the course of a redesign of control systems on the basis of information technologies (reengineering of business processes) today.

In most cases the managers in the course of the activity use three groups of methods:

- focused on reflection of the laws and the developments of production and additional services;
- reflecting psychological, physiological and biological characteristics of the person of this or that region;
- reflecting political, national and social relations of the person of this or that region.

The tendency of today is in increase of the role of the information streams which are essential for improvement of processes of interaction between producers and consumers of production. Modern information technologies, especially mobile, created opportunity for a wide range of producers (including completely virtual enterprises) to get access to ultimate consumer of the production that allows to avoid creation of multilevel system of distribution and to establish cooperation with consumers at the level of direct marketing in some cases.

Naturally, thus this tendency is caused by the general economic benefits, received by the participants of electronic business for the account of:

- global presence in all markets of suppliers and global choice of customers;
- continuous operating mode of staff of the enterprise and consumers of production who can be worldwide;
- favorable possibility of continuous increase of sales volume and the range of the offered goods and services;
- rather high potential for development of new segments of sales markets;
- providing to almost identical technical technological capability access to the market for both large corporations and medium-sized and small companies;
- considerable reduction of costs of carrying out advertizing;
- essential reduction of operational expenses and costs of creating necessary infrastructure;
- personalisation of the process of consumer service;
- receiving real possibility of effective management of processes of implementation of activity from any place of the planet.

- considerable decrease in the expenses connected with information exchange between manufacturing firms, virtual sellers and buyers due to using cheaper means of communication;
- creating favorable conditions for restriction of scales of criminalization of market processes and capital leakage of the capitals abroad owing to ensuring their rather high transparency;
- reduction of transportation and other overhead costs;
- reduction of the transactions cost of transactions.

Modern information and communication technologies are a technological kernel of the virtual enterprise. Thus, the virtual enterprises allow to concentrate basic competence every employees of partner team and to create the most dynamic economic structure. Virtual enterprise in computer business are the most striking examples of practical realization of ideas association of efforts of the Apple and Sony companies during the work on the Powerbook project, and also the Sony and Toshiba companies in joint development and coproduction of the game console PlayStation3 during the competition in the market of optical drives (Blu-Ray, HD-DVD) at the same time. Examples of realization of the virtual enterprise in real sector of the sphere of high technology business are the European consortium AIRBUS Industries making the airbuses A-310, and also the enterprise for creation of the Internet sites which use computer communications (computer networks). Problems of management can be briefly formulated in such a way:

- need of increase of payment for improvement of the quality of the works;
- need of development and development of new intelligent tools and goods;
- need of development of new segments of the market,
- need of payment for research project;
- division of responsibilities and definition of admissibility of strategic management intervention in work of any elements of organizational structure of the virtual enterprise.

Because management of purposeful process, and the taken decisions are to consider the specify of the virtual enterprises, the tool which would provide, and on the one hand, use of all groups of methods of management is necessary, and this would allow to solve complex problem of management in the conditions of the distributed business processes. Therefore emergence of the virtual enterprises, demands change of the methods and the ways of management, when using them the dosed centralization and decentralization of management, and also creation of a new paradigm of management, both control systems of risks and document flow. It has to be necessary for information and enough for prevention of risk event.

Development of virtual society creates conditions for globalization of such processes which still remained local in most essence. There is, for example, an opportunity to graduate, being far from the best universities of the world and other training centers. Many countries, mainly all developing ones, find access to knowledge and opportunity to increase quality of the human capital on the basis of the Internet. A by-product of the Internet expansion is distribution on the planet of English as global means of communication that also facilitates the international communications. De facto it is the rule that for effective use of computers it is necessary to know English well.

Development of virtual society is characterized by growth of volumes of new information and knowledge and a so-called problem of information crisis. It is about the statement of a number of scientists and experts in the field of information. So, for example, James Martin, the veteran of the IBM company, specified in the works that now the mankind reached such level of knowledge when the amount of information, coming to the industry, management and the scientific world, reaches disturbing proportions. Also it is not simply information explosion as explosion quickly stops the rapid growth, in the long perspective the growth of information never stops, but only increases more and more. According to G.R. Gromov, the total amount of human knowledge changed earlier rather slowly; by 1800 it had doubled each 50 years; by 1950 it had doubled each 10 years, and by 1970 — each 5 years [5]. Growth rates of global information fund are characterized by the following indicators: in 500 years of publishing from Gutenberg up to now the world book fund reached the volume of 10^{13} symbols whereas only in 30 years of development of computer facilities the volume of machine information fund made not less than 10^{11} symbols. It means that now or in the short term volumes of the information resources concentrating within information systems will repeatedly exceed paper data files.

Urgency is confirmed also by statistics of introducing innovations in everyday life of people which made us think on extent of influence of information technologies: for the telephone it took 38 years to reach 50 million users; for television it took 18 years to reach 50 million users; for the Internet it took 4 years to reach 50 million users. Since 2000, each 5 years there is a doubling of knowledge. The volume of technical information increases twice each two years. For the student, who is trained, it means that a half from this he studied in the first year, will become outdated by the third year. New communication technologies conduct to origin of the new world, and also to serious reevaluation of values and requirements of the modern market. Today knowledge is good, which is demanded more and more every day. It is now insufficiently simple to know, it is necessary to constantly refresh the knowledge as the speed of its emergence is enormous — they

double each 72 hours. And during the era of virtual society generally it is connected with introduction of new technologies, such as the Web 2.0 which in turn are a key factor of delivery of actual knowledge to pupils.

Therefore the manager has to retrain on the workplace, but not fundamentally, of course, but according to the situation. If the manager can't distinguish the situation (the first stage of decision-making), its adaptation to the situation, that is its retraining has to occur on a workplace according to the scheme EPSS. At the stage of development of alternatives (the second stage of decision-making), TRIZA methodology can be applied.

What is technological structure of the organization of remote control management, on the bases of which the knowledge is stored?

From the point of view of a tendency of globalization of business and development of the IT environment, an effective way of placement of knowledge and in general content, in particular in the conditions of emergence of the virtual organizations, is cloud technology. Virtualization, SaaS and cloud placements of products, content and data coincides with the tendency of decreasing expenses in IT, and with interest in those decisions, in general, which possibilities of growth of business provide and offer obvious ways of cutting expenses — now or in future (Lean technology). And the main channel of access to the content is the Internet. The organization using a portal in management process relies on the communications based on computer networks. Thus the uniform point of access to content has to provide possibility of adaptation under various mobile platforms and integration into a control system of content taking into account requirements of information security on the basis of the «thin» client. Therefore the distributed management as development subject and information technologies influences remote processes of decision-making. It is caused by the chain: the manager — the channel — object of management.

6.2. Manager

Existence of the access Internet, possibility of mobile work which is formulated as BYOD now — bring your own device (instead of Bring your own bottle) has an impact on the manager's status. Thus, it is technologically important that the manager had access to the network and the mobile interface. Use of broadband access would be ideal option. But it will change the situation in the market of telecommunication services. So mobile operators can appear out of work as they will be replaced by Skype which is providently bought Microsoft, or Skype's analog. In this regard the Russian mobile operators will re-orientate themselves in Internet service providers today. In Russia there is a problem of digital inequality for the remote areas and the region of the Far North, and today it can be partially solved on the basis of GPRS within mobile telecommunication. It is important that Russian the Internet the audience by the end of 2014

will grow by 30 million people, and penetration of the Internet among the 25–34-year-old and 35–44-year-old will reach the maximum value (97–99). Distribution of mobile communication in Russia corresponds to the world tendencies. By the end of 2013 the number of subscribers of networks of mobile communication in the world had reached approximately 6 billion people. Thus it is expected that growth of volumes of mobile information: (information volume in mobile networks) by 2015 it will grow by 26 times, and video content will occupy about 60% of all traffic. In the USA, in 2011 penetration of smartphones made 40% of all mobile devices. And, if the western market of mobile technologies are quite developed, in Russia it is not so. Though the tendencies speak for themselves: by estimates of «Beeline» Business of Vypelcom, penetration of smartphones in the B2B-segment in Russia makes about 18% today, but the lag from the western market can be overcome within two years if the war of sanctions ends. In general, among mobile gadgets the segment of smartphones grows. By the beginning of 2014 the penetration of smartphones into B2B reached 36–40%. Growth of mobilization became the international tendency in the sphere of IT, on more exactly with cloud computing. In 2016 about 60 % of mobile workers will use smartphones and tablets, thus, mobile will be 40% of all workers. One more research -State of mobility survey covered 6 257 enterprises from 43 countries (including 100 enterprises from Russia). It gave the following results: 71% of the enterprises plan projects on introduction of mobile applications, 59% of the enterprises provide access to business applications from mobile devices and 41% consider mobile technologies as one of three key sources of risks.

6.3. Channel

There is a problem of quality of the channel and the problem of transition to broadband access. It is necessary to remember the statement of the chairman of the board of directors of the Google Company, the member of council on science and technologies at the U.S. President of Eric Schmidt in 1993: «When the network becomes as fast as the processor, computer hollows out and spreads across the network». And already now Chrome OS doesn't demand HDD from Google. The number of users of mobile broadband networks in the world for January, 2009 was 100 million people in comparison with 1.1 billion users of broadband access in the fixed communication networks. It made approximately the sixth part of the population of the planet.

6.4. Information environment. Knowledge

Development of society is characterized by the growth of volumes of new information and knowledge that can't but please and disturb. So James Martin, the veteran of the IBM company, pointed in due time that

the mankind reached such level of knowledge, when the amount of information, coming to the industry, management and the scientific world, reaches disturbing proportions. It is impossible to call it information explosion as explosion has short-term character. But the growth of information in principle has no end. Here, in our opinion, there is a vicious feedback, which is expressed that growth of volumes of information generates growth of speed of computers and their general power, and it gives the chance to increase information volume. Business reached the situation, that the necessity of processing large volumes of information for real time (BigData) became an actual problem of computer sciences. And here the matter is not only about large volumes, and that they can't be processed precisely in time in the traditional ways. So in the telecommunication companies the petabytes of information is formed somewhere in five or ten minutes. And according to some data, by 1970 the total amount of human knowledge had begun to double each 5 years. If thus to remember Moore's law, the picture develops apocalyptic, considering that Moore noted that physical limits of speed and miniaturization will be reached soon.

Placement of knowledge is carried out today technically through educational portals and databases and knowledge which become non-uniform [2]. The enterprises which are on the threshold of the accession to Petabyte club began to reflect, whether it is worth spending money for storage often not of the necessary information which simply nobody rejected (it after all too costs money, and such profession and a position isn't present so far). It changes structure of cumulative cost of possession of information system. There are also other ideas: but whether not to sell this information if it is so?

The question of access to this knowledge on the one hand has technological character, and, on the other hand, the semantic. After all world tendencies became: deepening of specialization of workers that leads to narrowing and deepening of competences and need of integration of works. Business processes «are smeared» over the countries (the so-called virtual enterprises) and globalization amplifies, generating new and new risks. And what is trainee? The person who wants to gain new knowledge differently treats the ignorance. Someone can tell: «I don't know that I don't know. Therefore define that it to be necessary for me in a frame of a desirable profession, specialization». And someone will tell: «I know that I don't know and therefore I am interested in quite concrete things».

6.5. Problem field

The problem field is the sphere of professional duties corresponding to the position and the level of competences of the manager.

For the solution of problems of the manager problem field in his automated workplace the software supporting those stages business of pro-

cesses are fixed (in an ideal — duty regulations). According to the definition, which has been used before recent time, the automated workplace is the complex of software necessary for professional activity of the employee and established on his computer, that is, on his workplace. Now it is absolutely untrue. First, it is unclear, where this is a workplace, as it is virtual one. Secondly, owing to use of cloud technologies, the software can be placed in the unknown for the user place. Therefore the virtual workplace in the form of ultrabooks and tablets, smartphones turns into the certain materialized opportunity to operate the object, at any time, to be in any geographical point and to use software. The working place is located in unknown place, but it is available 99.99% of time a year. Instead of an automated workplace we use MWP abbreviation — a mobile workplace. But here it is necessary to speak and about the negative moments of such interactions. Team building is absent. Managers are divided by geography, time, cultural traditions, mentality. Therefore it is difficult to reach normal interaction. It generates the conflicts and misunderstanding of the partner. So in the European division of Cisco operating in the territory of 21 countries, nearly 10 thousand people work, and the human resources department of the enterprise made for them the basic principles of group work in geographically distributed groups. The key question when forming virtual collectives — the question of mutual understanding and trust as the trust creates psychological comfort of relationship and unites people in a whole. Therefore, virtual work and virtual (partially or completely) the enterprise demand a new paradigm of management. For ensuring mutual understanding and trust at the virtual enterprise, heads have to explain constantly to performers of their task and purpose. Otherwise there is a feeling of virtual dissociation and estrangement interacting without face-to-face meetings [25].

However as our colleague working in such multinational collective notes, there is a continuous misunderstanding of each other at the participants of the project, who are in different geographical territories. The solution of similar problems, requires training of the personnel in collaboration through a network. Or refusal of the distribution in particular caused by «mobilization» of employees. So the management of Yahoo in July, 2012, decided that at head office there are free dining rooms, and also reorganization of workplaces will be created in order that «to improve cooperation conditions». Communication of employees in uniform space can lead «to inspirations during the work on a product». The same opinion belonged to Steve Jobs and the management of Google [26].

But, nevertheless the movement in the direction of virtualization can't be stopped. For example, banks which traditionally the first try to use innovation IT, began to introduce mobile services. But understanding the difficulties and vulnerabilities arising from the BYOD model decided to go

on other way: to buy such devices all together and to give out them to the personnel. So the Russian bank «Home Credit» got Samsung Ativ tablets with Windows 8 and Microsoft Office 2010 for creation of mobile workplaces. These devices ensure information security and are compatible to the available equipment and services. Tablets can be connected safely to the Internet, to synchronize data with the server, and also to expand functionality of MRP with means of business analytics online [27].

Management of the virtual organization represents the complex task, it differs from management of the traditional companies, but not completely, really, the same are important known tasks long ago — marketing, accounts department, management of finance, operation or the personnel. However the organization of the solution of these tasks in the virtual organization changes, demanding an additional set of functions; that is the most important — the management of knowledge and competences is necessary here. It is connected with «geographical outsourcing», in the relations of participants of decision-making. Here questions of distribution of competences, their deepening and global integration become obvious. That it is more dangerous: failure in development of the new technologies necessary for the virtual enterprises, or misunderstanding of that the skills acquired earlier, abilities, competences become vital for success of the virtual enterprise. It is necessary not only continuous training and development of workers, formation at them for internal motivation, change of organizational structure, but also creation of new human relations. Changes of organizational culture, behavior of people and their relations at the enterprise change thinking of managers. Formation of regulations and standards of virtual relationship — a basis of creation of uniform culture for the virtual enterprises.

Self-examination questions

1. Define the main characteristics of the virtual enterprise.
2. Call the features of management of the virtual company.
3. What features of business management in the conditions of global virtual society.
4. Define the requirements to creation of the virtual enterprise.
5. Call negative and positive of informatization.
6. Technologies of mobile devices control (Mobile Device Management, MDM): main functions.
7. Call what risks and problems the virtual enterprises in the activity have.
8. Define technologies, which will define further development of information industry.
9. Call the enterprises, which affected a current state of society and economy.

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INTERNET MARKETING

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Abstract

Internet marketing is part of electronic commerce. Very often it is called marketing «online». Electronic commerce, internet marketing and advertizing are integral components of effective development of business. The purpose of any marketing is the increase of business profit. The segment of internet marketing and advertizing develops quickly and becomes popular among consumers. This shows the appearance of a large number of online stores.

Key words

Internet Marketing, e-commerce, Internet, Internet technology, industry, individual e-business, corporate e-business, e-commerce security.

Introduction

The main advantages of internet marketing are considered interactivity, the most accurate targeting, the possibility of positioning products and services, possibility of post-click analysis, possibility of post-click analysis, which leads to the maximization of the various parameters (for example conversion of the site and ROI of online advertising).

7.1. The concept and structure of the Internet

Marketing

For a commercial Internet project it is not enough to simply place a web site: it is necessary to carry out advertising actions, to attract special audience, to create communities of consumers and etc., i.e. to engage in internet marketing.

Internet Marketing is a set of methods of internet commerce, aimed to increase the economic efficiency of websites.

- market research, including competitive intelligence on the Internet;
- Internet advertising and other forms of attracting visitors;

- methods of visitors retention on the site, ensuring that they will acquire goods or services, which are offered on the site or performing other actions (registration, subscription to the news, etc.);
- methods of creating a permanent audience of the site and (or) a network community.

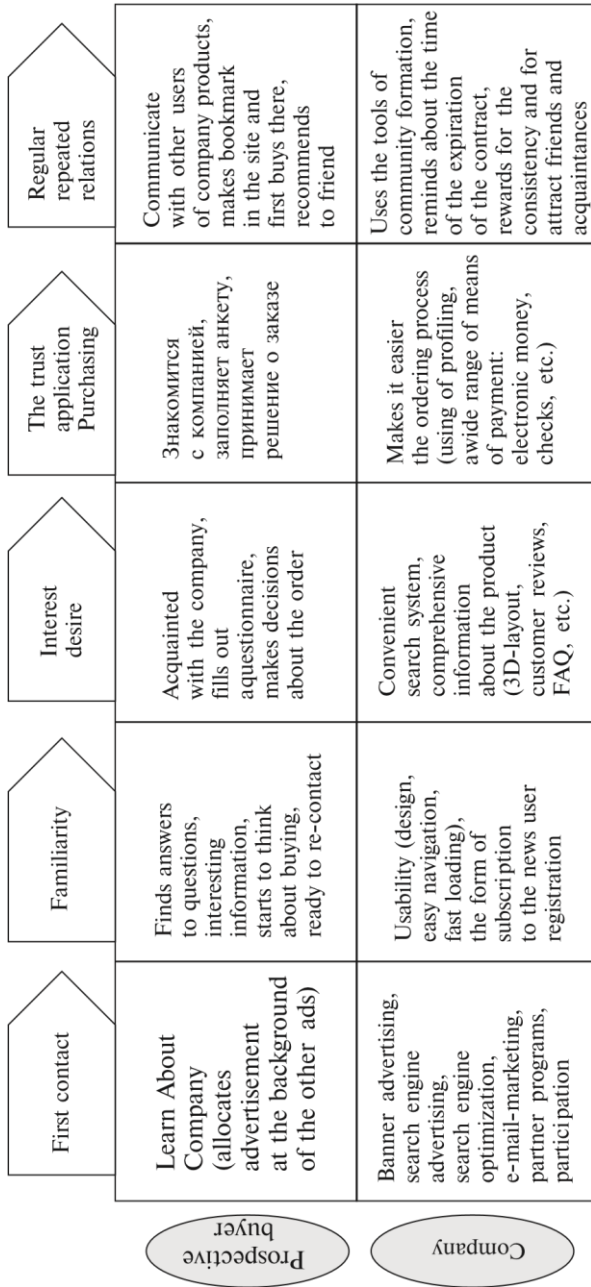


Fig. 7.1. An algorithm for constructing the relationship between the company and customers in internet marketing

Experts in the field of e-commerce should skillfully use all available tools of internet marketing. Only their complete using provides a significant competitive advantage (Fig. 7.1).

In this chapter are noticed the main methods of internet marketing in their chronological sequence. The first are the methods resorted to in the initial stage of internet marketing of Internet project, when the website is just created and nobody knows about it. Further, according to phases of development of the Internet project, will be given other methods of internet marketing.

The structure of the head visually reflects classification of means of internet marketing. On the basis of classic definition of advertising (as impersonal means of presentation of goods, services, businesses) we can conclude that the establishment of partnership programs, the formation of the permanent audience, building online communities, etc., as part of internet marketing can not be directly attributed to online advertising. However, the technologies of virus marketing constructed on use of e-mailadvertising, announcement of websites in search engines, participation in ratings, registration in catalogs can be a component of Internet advertising.

7.2. Market research on the Internet

Subject area of market research on the Internet affects in the first place, the automated analysis (real-time):

- demand for goods and services, and also offers of related goods and services (based on the analysis of statistics of search queries and attendance of websites offering relevant products);
- dynamics and causes of changes in the market position of competitors (the position of competitors' sites in search of the answer sheet, etc.) of their competitive advantages and weaknesses (competitive investigation on the Internet);
- dynamics and causes of changes in the market position of the company conducting market research, its competitive advantages and weaknesses;
- other environmental factors on the basis of the use of information and analysis, expert systems and content analysis.

Let's consider the contents and methods of carrying out different types of market researches on the Internet (Table 7.1).

Competitive intelligence is a necessary part of marketing research on the Internet. Competitive intelligence on the Internet — continuous of the work on automated data collection, processing and analysis of information on the dynamics and causes of changes in the market position of competitors in their competitive strengths and weaknesses. Competitive intelligence on the Internet carried out in the following directions:

Table 7.1

Content and methods of the different types of market research on the Internet

Direction of researches	Purpose of researches	Procedure
Size of a market	To show limits of expansion of activity of the organization in the market. To define limit possible values of growth of market potential	Use of programs of collecting and analysis of statistics of search inquiries. Analysis of attendance of sites of key «players» of a certain market. Studying of habits of shopping by consumers. Determination of the amount of the competition
The market share	To Identify the position of the competition	The automated calculation and the analysis of data about «visibility in search engines» each company working in concrete area (with splitting on market segments). Data Aggregation site traffic of key «players» of a particular market. Carrying out Internet polls
Dynamics of the market	To Identify sales policy on the market.	The automated review of statistical data of supply and demand, due to the direct analysis of information of leading search engines and the catalogs of the Internet which are in details characterizing this market. Analysis of changes in advertising costs of competing companies. An online survey of users, distributors and suppliers of the market. Conducting focus groups with experts in the industry, having information about the market
Product distribution channels	To Identify the most effective means of bringing a product to market	Automated analysis of the effectiveness of the cost of online advertising and other ways the marketing mode of the real-time (the realized trade margin on each fact of sale of goods is compared with costs of involvement of the buyer). Internet user survey to determine where they buy goods and why they chose this channel of distribution of goods. Analysis of the distribution channels of the goods of competitors

- studying and the analysis of dynamics of changes in the market position of competitors in search engines of the Internet in all segments of the target market;
- analysis of competitors site traffic;
- collect information about goods and services of competitors, their quality and price (including by means of visits to sites of competitors as a customer);
- analysis of price and assortment policy of competitors;
- the analysis of advertizing policy of competitors on the Internet (a format of snippets and banners, targeting of banner and search advertizing, use of the characteristics of other types Internet advertizing);
- collection and analysis of other competitive information through the use of information and analysis, expert systems and content analysis of published free information on the Internet;

Continue of Table 7.1

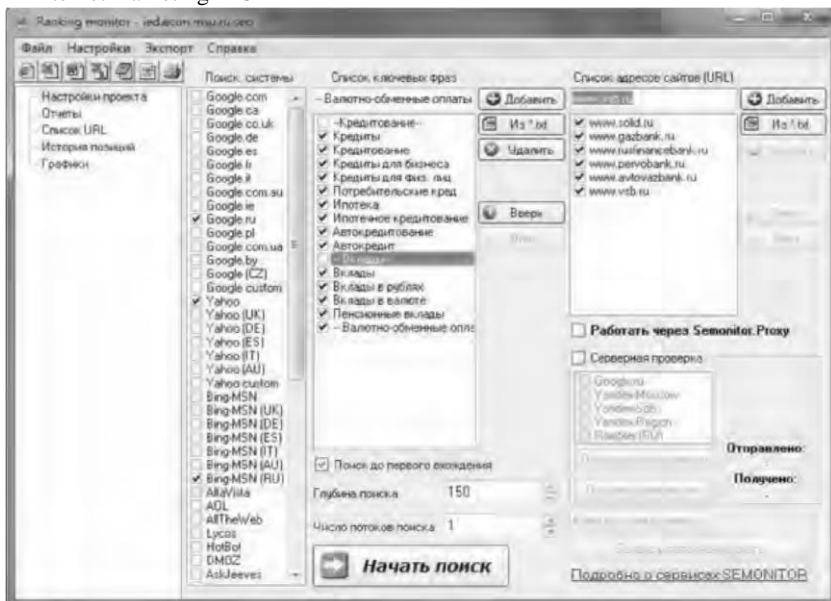
Direction of researches	Purpose of researches	Procedure
Consumer decisions	To Identify how the decision was made to purchase the product (for understanding on who should be sent marketing activities)	Tracing the paths of buyers on the site, become familiar with the range and conditions (finding «points of decision») must begin with an analysis of sources of visitors (for example, if a visitor came from a search engine — automatically stored information about the query in a search engine he asked, if from a participating site of the partner program — remains the format of the link which brought the visitor from a partner site). Internet survey of buyers and middlemen. Monitoring the impact of price changes and tools to promote the product to the value of its sales volume
Prices	To Identify competitive prices. This information is necessary to determine the level of profitability of this market.	Getting the list prices (if they are published on the websites). Internet user survey to determine the »fair« price by users, the willingness to pay more than the current price level, the relationship to the various schemes of price discounts
Product promotion	To determine how to promote products on the market a variety of vendors and how the products known themselves in the market	Analysis of the traffic Generator statistics (sources of visitors / customers), analysis of these partner programs. Internet user survey about where they got the information about the product. Figuring out how many other companies are spending on the promotion of the product, or by their survey, or by calculation, or publications

- SWOT analysis of information received as a result of competitive intelligence;

It should be noted that in the above list of activities on a competitive intelligence on the Internet are not mentioned methods of mathematical modeling of the analyzed processes. Mathematical modeling is very difficult in the traditional market research, however, most of the obstacles that impede its implementation are absent in internet marketing. It creates possibility of development scientific researches and development practical tools in this direction. The prerequisites for the development of these scientific studies of the environment are fundamental differences, which are carried out market research on the Internet from traditional media marketing studies (Table 7.2):

- difficult study of object of traditional market researches, existence of threshold effects, temporary logs. In particular, reaction of consumers to traditional advertizing often has a time log therefore it is difficult to define efficiency of such advertizing. But in most cases

of use of technologies of Internet advertizing (search advertizing, banner advertizing, advertizing in partner programs, mailing lists, etc.)



Example settings determine the position of the bank site in search systems on keywords of bank subject in Semonitor system

efficiency of each advertising appeal unambiguously pays off and can automatically be analyzed;

- difficulty of measuring marketing variables in the traditional market research. It is difficult to measure consumer response to certain stimuli, such as advertising. However, in internet marketing it is possible to track the user's personal reaction that in cases of online advertising has led to a more than twenty primary and secondary indicators of the effectiveness of advertising, the calculation of which was not possible before the advent of e-commerce environment;
- the instability of marketing interrelations caused by changes of tastes, habits, estimates, etc., bringing to fast obsolescence of results of market researches and the mathematical modeling carried out on their base. In internet marketing there is a possibility of continuous conducting market researches in real time (marketing monitoring) which eliminates influence of this factor — these researches can't become outdated because they are constantly updated;
- high cost of detailed market research, due to the necessity of manual work which is impossible to automate. In internet marketing it is initially possible to consider behavior not a random selection of buyers, and all at once in an automatic mode that considerably reduces costs of collecting and processing information;

Table 7.2

Advantages of market research on the Internet to traditional market research

The fundamental problem of the market research	Traditional market research	Market research on the Internet
The complexity the object's of study	Existence of threshold effects, temporary lags	All the actions the objects of study are formalized in the form of technical phenomena and easy to complete and thorough accounting and analysis, there is no a number of the technical problems which create time lags in response to the impact of marketing
Difficulty of measuring marketing variables	It is difficult to measure the response of consumers to certain marketing incentives	It is possible to automatically track the measurement of marketing variables with any degree of detail of the results
Instability marketing relationships caused by changes of tastes, habits, assessments, etc.	Leads to fast obsolescence of results of marketing researches and the mathematical modeling carried out on their base	There is a possibility of continuous conducting market researches in real time (marketing monitoring) — these researches can't become outdated because they are updated constantly
The high cost of marketing research	The need for manual labor, which cannot be automated	Automated collection and processing of marketing information in real time, which greatly reduces the costs of marketing research Market research on the Internet
The fundamental problem of the market research	Traditional market research	
Human factor	The relative incompatibility of staff involved in the marketing and use of quantitative methods in research	All collecting and information processing is carried out automatically. It eliminates a human factor

- relative incompatibility of the staff which is engaged in marketing and application of quantitative methods in its researches. First priority is given to informal methods, the latter — mathematical modeling. In internet marketing, the entire collection and processing of information is carried out automatically. It eliminates a human factor.
- The differences stated in the table are largely due to the fact that traditional marketing deals with human behavior, instead of with the technical phenomena. In internet

marketing specific actions of consumers are expressed in unambiguously defined and automatically considered technical phenomena: clicks, Clicks-Through, orders, payments, inquiries, registration, visits, demonstrations of advertizing appeals, etc.

Therefore, in the conditions of profound and fast changes of environment internet-marketing provides to the researcher much more opportunities of studying of the market.

7.3. Internet advertizing

It is time to gradually change the priorities. Internet is a progressive advertizing platform where we can approve new courses where we aren't afraid to experiment approaches and audience. It is bright difference the Internet from the main advertising medium — the television. With all the variety, it is too conservative, too tight in the scope of the traditional rules and conventions.

Marketing Director «Procter & Gamble»

Jim Stengel 7.3.1. The concept of Internet advertizing

A significant part of potential buyers get the information about the products on the Internet. Their share is growing. The bulk of Internet users are young people with incomes above the average, that is extremely attractive to advertisers population category.

Advertisement like many other technologies of the traditional economy, when passed into the environment of Internet and online advertising has become, acquired new that did not exist before her qualities. Modern advertising messages on the Internet are interactive, they allow the user to select interesting features of the product and initiate the implementation of the economic transaction. With the help of personalization technologies and profiling modern Internet advertising has acquired the personal nature (which is contrary to the classical definition of advertising as impersonal presentation of goods, services, or enterprise customer and addressed the mass of the nature of persuasion).

This is the traditional understanding of advertising is undergoing major changes due to the advent of online advertising with its technologies targeting, tracking the interests and preferences of the consumer, etc.

Online advertising is a representation of the goods, services or company on the Internet, addressed to the mass customer and has the character of belief. As a rule online advertising has, two-stage process. The first step — outdoor advertisement, placed by the publishers advertiser. Among the possible types of advertising can select banners, text blocks, bayriki, mini-sites, Interstitials. These advertising usually has a link directly to the advertiser's site (the second stage).

Web Publisher — the owner of an advertising platform, which can be a website or other electronic edition, for example, a sheet of mailing, publishing advertising.

The Advertiser (network synonym — sponsor) is a physical, legal or virtual person (virtual agent), place advertisements on Web sites advertising the publisher. As a rule, the advertiser has a web site on which the link with the publisher hosted advertising (banner, text box, etc.).

Compared with traditional advertising online advertising feature the following characteristics:

- the ability to automate the analysis of deep and operational analysis of publicity. Based on modern computer technology, Internet advertising enables extremely accurate and efficiently evaluate the effectiveness of advertising campaigns;
- operational and economic change and adjustment of promotional activities. The information which tends to give the company in advertising, often changes. There are new products and services, price changes, etc. Shootings of the new commercial for television, the printing of new booklets demands from the advertiser of big time and material inputs. Internet advertizing gives the chance to change the maintenance of advertizing appeals extremely quickly and with the minimum overhead costs;
- user feedback, the ability to obtain and process its response;
- effective way of focused impact on the target audience and the specific users (targeting and personalization) showing advertizing on specific thematic servers showing only to users in certain regions, showing only at a certain time and with a given intensity, etc.;
- high quality of the contact is established through the network to the target audience. Advertising specialists argue that consumers 'love eyes': it is best seen animated advertising, easily distributed through the network.

Because the modern technology of profiling allow you to automatically collect information about Internet users (subjects of interest, identifying characteristics), advertisers have an opportunity to focus an advertizing campaign on extremely narrow groups of consumers.

Convenience of access to the target audience allows advertisers to greatly reduce the cost of achieving the goals in front of an advertising campaign. Advertising campaign on the Internet consists of media planning, campaigning (with correction plan as needed) and evaluate the results.

Media planning is a plan of campaign. The plan specifies the types of promotional materials, advertising platforms, dates and types of accommodation to them, the options pricing of advertising, the final cost and the estimated effectiveness of the campaign.

Methods of advertising through banner exchange system (see section 7.2.4) can save a lot of time in planning and implementation of the campaign. Owners of such systems typically offer advertisers a choice from tens or hundreds of web sites that may be posted ads, as well as provide technical placement of banners and daily reporting on the effectiveness of the campaign. The presence of such reporting is a unique feature of online advertising that allows you to quickly replan advertising campaign depending on the achieved its effect.

Sponsoring is another technique of doing online advertising campaign (sponsorship is common in the web term for paid advertising) Web sites

that target the same audience that is targeted advertising campaign, as well as search engine advertising (see section 7.2.2). For example, the optimum scheme of advertising services for the delivery of flowers may be methods of banners and links to specific web dating sites, gifts, and search advertising at the request of «flowers», «gifts».

7.3.2. Announcement of the search engines and search engine optimization. The concept and purpose of search engine optimization

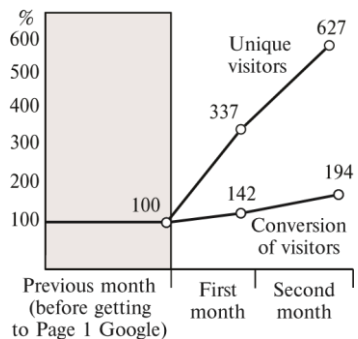
Announcement of the search engines is the initial stage of internet marketing. Action of announcement is based that search inquiries of users is a real expression of user demand for information on the Internet (about 85% of users use search engines to find necessary goods, services and information). Therefore, search engines are the natural bridge that connects the supply and demand, and they are the leaders of the generation of traffic for most sites (Fig. 7.3).

Attracting visitors using search engines is one of the lowest cost and most effective ways of internet marketing, the cost of the tool of internet marketing is minimal. In addition, visitors who are involved in such a way, usually it's target audience because they are looking for exactly the information or products that are on the site.

Search system is a tool for search and delivery of information on the Internet. Typically, the search engine work consists of two stages. Special program (search robot) is constantly passes the network and collects information from Web pages (indexes them) and store in a database of search engine. When a user formulates a query, the search goes on the pre-built index to the database. Search result is search delivery. Search delivery is the list of links to documents (web pages) which correspond to inquiry.

Links to documents in search results are sorted (ranked) at least match the query. For ranking pages in the search results use text criteria, reference criteria and user evaluation.

Changes in the volume of traffic and conversion of visitors to sites that have come on the first page of the search engine Google (results of an independent study)



Text criteria determine the relevance of the document by matching words and their combinations in the query and in the title and text of the page.

Relevance of the document is an indicator that reflects the extent to which the content of the document corresponds to the specific request of a search engine. Search engines rely on the relevance of the document, the frequency range of the system found in the pages of words and phrases that match the query user. More often they occur in the document, the more it gets relevant with respect to the user request.

The method of computing the relevance is a proper «know-how» of each search engine, so by issuing the same request in different search engines may differ significantly.

By each inquiry the search engine finds all web pages which contain them in the indexes. There may be thousands of pages, and, therefore, the next objective of the system is displaying them in order of decreasing relevance. The task of the expert in internet marketing is to ensure that, regardless of the query building, web pages fell into the front ranks of search results and the range of words and phrases by which it can be found, was quite wide.

Search engines display results by page request in chunks of 10-20 references. According to marketing research data about 60% of users are limited to the first page of search results, and almost 90% of users are limited to the first three pages. It follows from this task to ensure that the pages of the website were in the first 10–20 search results. You need to know the principles of search results in search engines to solve it.

G. Lun developed Assessment of the relevance of text fragments. He proposed to evaluate the fragments of the text in accordance with the parameter: $V_{fr} = N_{kw}^2 / N_w$, where V_{fr} — value of the fragment; N_{kw} — the number of keywords in this fragment; a N_w — the total number of words in the fragment.

Automatic identification of key words commonly used statistical frequency analysis (method B. Purto). Suppose that f is the frequency with which there are different words in the text, and u is the relative utility value (importance), c is a constant that determines the ratio of the frequency of words and their usefulness. Then the dependence of $f(u)$ is approximated by the formula $f(u) = C/u$, that is the product of the frequency of meetings of words and their value is constant.

Then the dependence of $f(u)$ is approximated by the formula ie constant is a multiplication frequency of meeting of words and their usefulness. This hypothesis is used to display the investigation of the existence of two thresholds of frequencies. Words with a frequency less than the lower threshold are considered too rare (not able to reflect the meaning of the document), and with a frequency that exceeds the upper threshold words are considered common, do not carry meaning. Words frequency lying midway between the thresholds, the most part characterized by a specific content of the document.

According to the reference criteria for the ranking of the document s carried out taking into account a citing index. Citation index is a measure of fame site on the Internet, which is determined by the number and importance of links to other sites on the desired resource. The total number

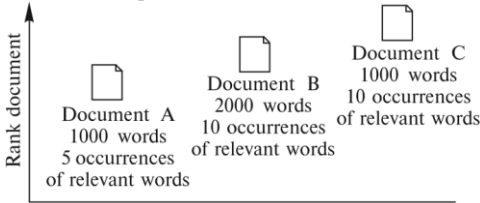
Table 7.3

Text criteria ranging of search results in search engines

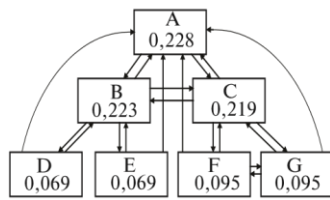
The criterion	The logic of ranking
«The density» of the word	The higher the frequency (absolute and relative) repetition of a word in a document, the greater the rank of the document (see Figure 7.4). The exception is when a keyword is repeated too often, which could result in work «spam filter» of a search engine and the page will not get into the issue. The optimum keyword density is 3–7%. The optimum keyword density of 3–7%. It should also be borne in mind that the optimum density for a variety of different search terms, ie «ideal» keyword density does not exist. To automate the analysis of keyword density is used special software (see Figure 7.6)
The relative position of words	Accounting for a complete coincidence, or other such phrases (e.g., order and proximity of words to each other). The ideal option is considered when the search phrase appears in the text as an exact match
The position of the found text in relation to the document beginning	It is consider that the information is located closer to the top of the document, the higher the value
The presence of the query words in the selection and Titles	Highlight notes the most significant fragments. Therefore the importance of detection of the required text in the specified fragments is considered higher, than in the usual text. It belongs to headings too
The coincidence a page theme to the theme of the query	Use in the text of the page of the words which aren't containing in the text of inquiry, but corresponding to a subject of inquiry increases a document rank
The coincidence of the domain name or the name of the file Web pages with keyword	In some cases, search engines give extra «weight» of the pages in which the domain name or a file with the same keyword. This ensures a thematic affinity
The coincidence of the search query with the description of the catalog	Many search engines create their own catalogs. Website gets a higher rating if the word search query matches the description of the catalog. Some search engines additional weight gives to a site the fact of presence at the catalog, as it will only include links to quality pages
The importance of rare words	The greater the significance of each of the search terms, the less frequently it occurs in the documents. Accordingly, the web pages that contain rare words of the question, get priority over pages containing Multipurpose DDC

of inbound links to your site is not suitable as a criterion for calculating the citation. The importance of links to the unpopular resources is very small compared with the value of links from known sites.

In determining the citation index it is considered not only the number of inbound links to a site, but also citation index of sites that link to this site. At calculation of «weight» of the page is taken into account compliance of the text of the link to inquiry and the general thematic



Ranking of search results by the «density» of the word



An example of the distribution of PageRank

#	Word	Count	Weight	Density	Text
1	Одно	63	101,914	4.25%	52
2	Остекление	17	19,968	1.33%	16
3	области	16	46,425	1.28%	16
4	Пластиковые	17	45,048	0.92%	11
5	конструкция	9	8,414	0.75%	9
6	наших	9	4,672	0.75%	9
7	конструкция	8	15,567	0.66%	8
8	Наша	8	20,861	0.66%	8
9	компания	8	17,466	0.58%	7
10	ПВХ	9	13,851	0.50%	6
11	профиль	5	3,120	0.41%	5
12	двери	5	6,826	0.41%	5
13	SOX-5	5	9,382	0.41%	5
14	Розжи	6	8,126	0.41%	5
15	-	5	1,928	0.41%	5
16	Республика	5	11,538	0.41%	5
17	Самара	4	15,020	0.33%	4

Analysis of the «density» of words in HTML Analyzer

orientation of the referring page. For example, if search query of the user is: «Renault Megan», bigger «weight» has the link to a site with the text «Sale of the Renault Megan car», than simply link: «Wide choice of cars». The most «valuable» references it is the links placed on the head page of high-quoted sites, thematically connected with a search query.

In general, each direct link to the web page increases its citation of an amount proportional to the citation referring page and inversely proportional to the total number of links on the referring page. In the search engine «Google» this value is called PageRank, the search system on «Yandex» she called WCI (Weighted citation index). The higher the value, the higher in the SERPs is the site.

Google’s Inc. Company Search technology PageRank operates on an established principle of the link structure of the web, and then ranks each individual page based on the number and importance of links to it on other pages (an example of the algorithm in Fig. 7.5). In an article published by Sergey Brin and Larry Page, shows a recursive formula for determining PageRank web page:

$$PR(A) = (1 - d) + d \sum_{i=1}^n \frac{PR(T_i)}{C(T_i)}$$

where: $PR(A)$ — the weight of the PageRank of page A ; d — the attenuation coefficient, which is usually set to 0.85, on Pozvolyaet to limit the amount of computation as reasonably practicable; T_i — page containing a reference to the page A ; $PR(T_i)$ — PageRank of pages T_i ; $C(T_i)$ — the weight of the ratio of the total number of pages T_i reference to the number of links of this page to page A .

To calculate the index of citing Google regularly scans the very large matrices relations between Internet sites by counting the weight of the reference and authority resources. To do this, Google uses its own system, which includes about 10,000 servers.

In 2000 Krishna Bharat (Krishna Bharat) suggested to improve algorithm of PageRank. Bharat established that for determination of «weight» of links it is necessary to consider thematic relevance of referring web pages. These «thematically relevant» web pages he called «expert documents», and the sum of «scales» of links from these web pages he called «an assessment (level) of authoritativeness».

When you calculating the citation index, does not take into account site link to message boards, forums, online conferences, directories, and other resources, which are online marketer can add a link to your site on their own. Leading search engines and Internet marketing companies offer specialized software tools, called toolbars to determine the performance of marketing websites. Figure 7.7 shows a pop-up window that appears when you click on the toolbar button (RDS-bar), it presents the most important information, such as citation indexes (TCI and PR) of the analyzed web site, the number of indexed pages in the most popular search engines (Yandex and Google), the number of inbound links to your site to Google and independent Internet services, and also the presence of a site in the leading web directories and a number of other parameters.

According to criterion of the user assessment for ranging of pages in search delivery is used the system of quality assessment of pages by users. In the simplest case, this system is based on user's vote of a specific search engine that reflects the user ratings on the visited pages.

Systems are collected More objective data about user preferences on the basis of that assumption, if a user clicks a link it means he found it interesting, and if not long returned to the search engine page it means his expectations were confirmed. These systems are based on the assumption that if a user clicks a link it means he found it interesting and if he not returned long time to the search engine page it means his expectations were confirmed. Exactly these criteria formed the basis for the equalizer Relevance developed by DirectHit: the number of clicks on the link, stay time on the page and returns to the search engine.

An example: to rank search results in response to a search query Rambler search engine use not only the traditional methods of determining the relevance, but also the so-called coefficient of popularity, determined by the number of users who viewed this page for the past few weeks.

For online marketers search engines offer a mechanism of self-inclusion of information about the advertised site in the search engine database (the self-registration, the sequential filling special forms).



Type of a toolbar RDS-bar with a popup window which reflects the main marketing indicators of the viewing web page and a whole site

The main criterion for searching in the database of search engines is a key that most typical of the described site. Therefore, it is necessary to formulate the list of keywords before giving of request for site inclusion in a database of the search server (independent registration) and short, in two-three phrases, the site description. The laconic description must devote all sites related topics.

The great value for increase of relevance of a site has also site heading, its description, each word in names of separate pages of a site and in the first paragraphs of the text on them. The heading has to consist not less than of five words, together with the page beginning it has to serve as its accurate summary and attract potential visitors.

Displaying search results of search engine users not only shows links to selected resources, but also a brief description of the resource. Issued information consists of three main parts:

- The title of the site;
- A brief description of the site;
- The address of the site.

All of this is called a snippet. Snippet is a description of the site, which is issued to the search engine in the search results. This description is very important. If it fails, then the users will prefer the competing resources,

№	Бюджетное слово	Страница	Сниппет (Snippets / Title / Description)	Рейтинг
1	avent	Сайт:avent.ru	Интернет-магазин "Наша Мама" Продажа товаров для детей, беременных и кормящих мам mamama.ru + category/1/vendor/5/ Санда колготки шить	0
2	avent	Сайт:avent.ru	Интернет-магазин "Наша Мама" - Аксессуары для мам и малышей Рядом AVENT - единю продуктов марки avent - производителя аксессуаров для малышей. mamama.ru + category/1/vendor/5/ Санда колготки шить	0
3	avent	Сайт:avent.ru	Интернет-магазин "Наша Мама" - Аксессуары для мам и малышей Молокоотсос Avent ручной и электрический. Гарантия производителя. Конструкция и отзывы. mamama.ru + category/1/vendor/5/ Санда колготки шить	0

The analysis of snippets using the site Seopult.ru

even if this site will have a higher position in search results.

Internet marketer need to ensure that the information is derivable looked impressive, adequately reflect the content of the web page or web site and attracted the attention of the user. The author of a Resource can not directly influence the description issued, however accurate editing of text pages, management and analysis of the history snippets allows more attractiveness of description.

Example. Fig. 7.8 is a work with snippets web page for the keyword «avent». As can be seen from the figure, the first version did not contain the keyword. A later description contains the keyword, but is less informative. Last snippet contains not only the word, but also the main commercial information describing the product offering on this page.

Many search engines are combined with a directory service, for example, Yahoo (www.yahoo.com) or ratings, for example, Rambler (www.rambler.ru), so by registering in a search engine, you can register and in the catalog (see 7.3.3).

There is special software (robots registrars) to automatically register a website with a large number of search engines. Typically, these programs are scrambled, and their betas work with only a few tens of search servers.

Most of the search engines will take some time to respond to the submitted application for registration.

It should be noted that to the businessman it is important, to monitor the search inquiries which are carried out by target consumers, not only on a site of the businessman, but also in search engines. Formulations of inquiries can show the unknown aspects of the interests of the audience, promptly report their changes.

Methods of search optimization

Increasing of Web Resource Relevance

Basic concepts and recommendations to increase ABILITY-relevant web resource

Search engine optimization is the process of content management and links to it from other sites to increase relevance pages searches containing certain keywords and increase the citation index for these keywords. The purpose of search engine optimization is to improve site ranking in search results.

To achieve the stated purpose uses a number of techniques that are based on the assumption that there are search engines and keywords and phrases specific to certain groups of potential customers.

Keywords it is words which are refer to domain specific website or web page and are used by audience when you search the information that is presented on this website. Keywords which are asked most often by target audience and with the bigger competition from similar web resources, form a semantic kernel of a site.

The semantic core of the site is a set of keywords the target and accompanying phrases, selected and ordered on the basis of the qualitative and quantitative analysis of the search importance of words and the expressions used by target audience.

For optimization of a site it is necessary to study «language» of visitors, to understand, what ways they use by information search, what is their interests, that it is possible to offer them in addition. It is necessary to expect their intentions. Will They buy something or not? This interest is permanent or one-time? In the traditional economy, the answers to such questions can only be obtained through offline expensive marketing research.

The main ways to search for information by the users of search engines and their corresponding actions on search engine optimization are presented in Table 7.4.

One of the leaders of the Institute of search and text analysis that goes into the research unit IBM, Andrei Broder, believes that all requests can be divided into three categories: informational, navigational and transactional. Transaction requests contain the name of any product or service, for example, «PowerBook G4 Titanium». Information requests contain the names of the processes and phenomena for which the user wants to obtain information such as «atrophy of the muscles.» Navigational queries contain names or other attributes of the network resources, such as the «official site of NBA». Specialists in internet marketing can analyze them and draw conclusions about the intentions of the user.

Search engine optimization involves the widest possible use of keywords when you write texts of the site in the title and text of links to the site during registration in catalogs, paying special attention to putting down of phrases from a semantic kernel in headings of web pages.

Keywords for inclusion in the semantic kernel should be chosen based on the probability of their use of the potential audience. Usually, people use the first words come to mind: for example, wanting to find a seller of roller skates, they are gaining in the search bar «rollers». it is necessary to focus by these words.

The highest relevance of the document request occurs when coincide not separate words, and the whole phrases. In this case, it is desirable that the key phrases entered keywords only. The size of the key phrase is dependent on volume of the potential audience. Than the longer phrase

Table 7.4

The main ways to find information and the corresponding actions on search engine optimization

Methods of information search	Brief description of the method	Advice on search engine optimization
-------------------------------	---------------------------------	--------------------------------------

<p>Consistent clarification of the request</p>	<p>Inquiry words are consistently entered. After input of the next word the list of delivery is looked through and the following word specifying inquiry is entered if it doesn't satisfy the user</p>	<p>Selection of key words and phrases for optimization is performed using the statistical software queries that allow to analyze the sequence and the requested original and refined version of the query</p>
<p>Putting the question in natural language</p>	<p>Request is formed by all the rules of the language of everyday communication with the necessary auxiliary words and punctuation</p>	<p>Generally, by search optimization, there is no sense to stake on auxiliary words and to use them widely in site texts. However, it is good to apply these words in heading which is displayed on the page of search delivery</p>
<p>Enter a set of words</p>	<p>Enter the words (often synonyms or close meaning) without attention to their order, case, numbers. This behavior is typical for special terms or reference information</p>	<p>It is necessary that all the words that are specified in the requests of the target audience is widely used on the site</p>
<p>Search catalogs and collections in a subject</p>	<p>This type of behavior can be seen in two cases — when the person has not found any interesting resource on the subject, or when it is necessary to carry out an extensive comparison in a certain subject domain, ie to get maximum information</p>	<p>It is inexpedient to consider the first case if the subject domain has commercial value, in the subject area will be competition, and therefore worthy of attention resources. In the second case, the visitor can be a specialist or very interested in this field. This group of people should pay special attention to creating pages that are optimized for their needs</p>
<p>Product Search with a view to buy</p>	<p>The query «buy» is not the most typical of the potential buyers. Programs of inquiries statistic allow to make the conclusion that often the inquiry can correspond not to purchase, but clarification the conditions of purchase. The most characteristic words in inquiries of buyers are «the prices, cheap to order»</p>	<p>Search engine optimization will give maximum effect which is expected for combinations of the words «price, order,» and the words of the subject area of the resource, for example — «the prices of cars», «an audio equipment price»</p>

the document is optimized, the lower the level of competition, but also the size of the audience is less.

Level of relevance of the competing resources (on the chosen to keywords) due to a number of external factors (popularity, the number of inbound links, etc.) The level of relevance of competing resources (by se-

lected keywords) can be valued more highly by the search engines. In this case, you can use synonyms or words of similar meaning. For example, in a situation of strong competition by popular keywords several dozen pages on the site can be optimized under not very popular requests, that in the sum will bring more visitors.

Before starting text filling of a site it is necessary to define accurately a circle of search inquiries by which will be optimization is made. Lowrelevant keywords and words with a frequency of inquiries below threshold value are rejected at once. For the most popular phrases should be assessed the level of competition and to choose from them on what the newly created website will be able to reach the top positions in search engines.

To assess the level of competition can be used by several factors: Citation Index competing pages.

- These parameters are numerical estimates of the importance of the resource;
- The number of inbound links to sites of competitors. Not take into account the quality of links, but indirectly indicates the popularity of competing resources;
- The total number of pages that are found by search system. The higher the number, the generally superior to the competition ; The presence of sites of competitors in various
- prestigious catalogs and the ratings, such as DMOZ, Yahoo and Yandex. Not directly related to the positions in the search results, but indirectly characterizes the level of competition.

The Example. The program «Key Collector» allows you to analyze the level of competition for your selected keywords. Fig. 7.9 presented a review of the level of competition on a number of key words. Here, the «Source» is the name of the source from which the program received the data (by competition) in this case, red histogram — Yandex.wordstat; «Frequency» is the total number of requests, which include among other words, the word which is specified in the beginning of the line in all cases and numbers in any order, «Frequency» « » is the total number of the inquiries made of the word/phrase specified at the beginning of a line in all cases and numbers and in any sequence; «Frequency» «!» is the total number of requests that are identical to the word / phrase specified in the beginning of the line (the so-called «exact match») without change of case, number or sequence of the words (in the case of combinations of words), «Season» is the dependence of the number of queries formulated in a month of the season, «Competition in the search engine Yandex» is the number of relevant pages that are issued on the request of the search engine Yandex, «Competition in the search engine Google» is the number of relevant pages that are issued on the demand search engine Google.

The following figure (Figure 7.10) is a detailed analysis of the list of sites that occupy the top 10 places in search engine Yandex for «furniture manufacturers.» Here CY is a thematic index of citing Yandex, Google links is the number of external links on the version of the search engine Google, Yahoo links — number of links on the version of the search engine Yahoo.

However it is necessary to consider that at a deviation from group of the most popular keywords the target audience has a significant decrease of the size of audience, sometimes in hundreds and even thousands times.

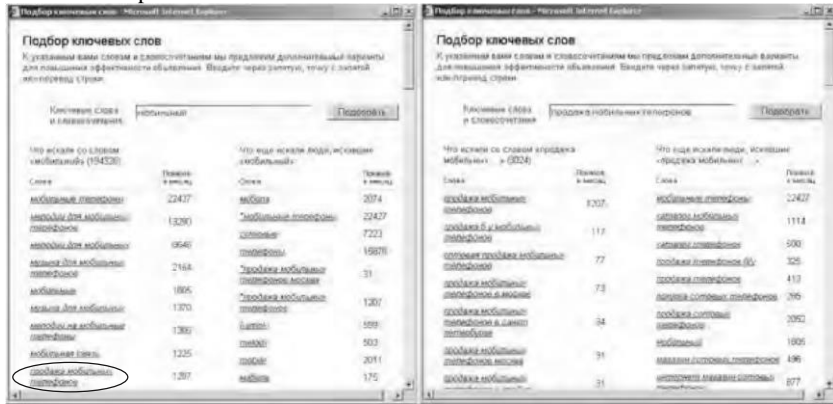
№	Ключевое слово	История	Популярность	Актуальность	Частота	Средняя стоимость	Конверсия в РС	Конверсия в РС/С
1	мебель	ad	01.12.2012	507292	53879	30783 да		120200/200
2	интерьер мебели	ad	01.12.2012	309714	13060	15262 да	51 630/200	9 780/200
3	детская мебель	ad	01.12.2012	287034	38078	53385 да	111 000/200	14 780/200
4	матрасы мебель	ad	01.12.2012	282034	9179	2651 да	129 000/200	34 800/200
5	картасы мебель	ad	01.12.2012	213952	29031	13712 да	185 000/200	20 000/200
6	кухонная мебель	ad	01.12.2012	162124	38481	5480 нет	178 000/200	90 800/200
7	интерьер кухни и	ad	01.12.2012	158872	23433	10594 да	160 000/200	19 700/200
8	мебель для ванной	ad	01.12.2012	138523	20260	32705 нет	12 000/200	4 340/200
9	мебель для ванной	ad	01.12.2012	124943	20988	2 нет	92 000/200	7 150/200
10	постельная мебель	ad	01.12.2012	120775	4388	3073 да	20 000/200	6 540/200
11	постельная мебель	ad	01.12.2012	120158	4385	25 да	14 000/200	12 800/200
12	мебель кухня	ad	01.12.2012	118278	458	334 нет	153 000/200	4 800/200
13	кабинеты мебель	ad	01.12.2012	111520	4463	3468 да	20 000/200	6 820/200
14	мебель фото	ad	01.12.2012	108886	1294	834 да	102 000/200	80 800/200
15	мебель на заказ	ad	01.12.2012	107941	12793	17719 да	81 000/200	5040/200
16	спальня мебель	ad	01.12.2012	99517	18941	14461 да	81 000/200	9 100/200
17	мебель для гостиной	ad	01.12.2012	96897	11752	11286 да	20 000/200	2 340/200
18	мебель для гостиной	ad	01.12.2012	96782	11752	228 да	20 000/200	2 330/200
19	ванная мебель	ad	01.12.2012	92740	4442	4207 да	104 000/200	80 000/200
20	корпусная мебель	ad	01.12.2012	85717	7266	7191 да	16 000/200	4 540/200
21	корпусная мебель	ad	01.12.2012	83590	7365	4 да	16 000/200	4 340/200
22	мебель для спальни	ad	01.12.2012	81371	595	457 да	89 000/200	30 500/200
23	сайт мебели	ad	01.12.2012	81017	506	281 да	228 000/200	18 800/200
24	большая мебель	ad	01.12.2012	79124	14856	9 нет	86 000/200	73 200/200

Analysis of the level of competition in some key words in the Key Collector program

№	URL	PR	СУ	Google links	Yahoo links
1	www.samara-mp.ru/	0	10	0	0
2	Mebel-Imperia.ru/proizvoditel/	0	0	0	0
3	mebelinok.ru/board/mebel_rossii/samara/143	/	10	0	0
4	www.relax-meb.ru/	0	0	0	0
5	www.bereg-mebel.ru/	0	10	0	0
6	absolut-samara.ru/	0	10	2	0
7	Samara.tiu.ru/Obivka-mebel.html	0	70	0	0
8	www.eurostyles.ru/	0	20	0	0
9	vestnik.asu.samara.ru/articles/95_s.pdf	/	70	0	0
10	www.vrsamara.ru/detskaya-mebel	/	20	0	0

Analysis of the sites which occupy the top 10 places in search engine Yandex for «furniture manufacturers» in the Semonitor program

Otherwise, it is possible that the page is not focused on a very significant audience. The use of common words (a car, a book, commerce) covers almost immediately all web users, who are looking for information on these words. But, in this case, the site should compete with all resources on this subject. More specialized words (the carburetor, the encyclopedia,



Statistics of search queries in Yandex.Direct (clearing) will reduce competition level, but also the size of audience will decrease.

It is advisable to choose keywords for optimization, so that the first lines of response search engine for those keywords were present resources, some of which, for whatever criteria positioned inferior to the site. For this it is necessary to analyze the ratio of number of searches for a keyword in a given period to the number of quality web resources that respond to your request. The successful positioning of the site theoretically has the greatest prospect of attracting visitors by those words for which the figure reaches its maximum values.

Example. The phrase «car sales» is used when you search for on a search engine Yandex twice less than the word «cars», but gives eight times less sites in a search result.

Most of the search engines provide information on the number of user-defined search queries that contain the word or phrase (Figure 7.11). The specialist in search optimization needs to choose target inquiries.

In Figure 7.12 clearly shows that the word «mobile» can be ineffective in search engine optimization and advertising for the online mobile phone shop site. Some of the audience uses the query when searching for ringtones and pictures for mobile phones (see the second column, «What else is looking for people...» in the figure). This means that they already have phones and they are not the target audience. As a result, of keyword selection was chosen the phrase «sale of mobile phones» (see Fig. 7.11). It is advisable to use a search engine advertising and optimization, as the interests of defining this inquiry audience completely correspond the interests online store (right window in Fig. 7.11). Another Russian search engine provides the statistics of search queries in a different form (see Fig. 7.12) This form allows to estimate the geographic segmentation of the audience, the level of competition (number of hits on the pages of search results), the use of different declinations of speech, etc.

Depending on the level of competition and the task, the number of keywords that are optimized for the web page, can range from one to ten. Than minimal number of keywords document set, the greater the frequency of these keywords can occur in the text, and the higher the relevance of the document.

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Регионы	Число	Процент	Всего	Словесные задачи	101673	151353
Московская обл.	2754	(54,3%)	10056	око	55889	88515
Ленинградская обл.	515	(10,1%)	10056	око	624	870
Самарская обл.	237	(4,7%)	10056	око	2295	2723
Свердловская обл.	220	(4,3%)	10056	око	1885	2108
Нижегородская обл.	197	(3,9%)	10056	око	2075	2336
Кированской край	154	(3,0%)	10056	око	10056	11882
Воронежская обл.	136	(2,7%)	10056	око	2241	2680
Респ. Северная Осетия	123	(2,4%)	10056	око	661	594
Ростовская обл.	121	(2,4%)	10056	око	36085	39739
Хабаровский край	117	(2,3%)	10056	око		
Приморский край	117	(2,3%)	10056	око		
Пермская обл.	106	(2,1%)	10056	око		
Тамбовская обл.	106	(2,1%)	10056	око		
Респ. Татарстан	102	(2,0%)	10056	око		
Новосибирская обл.	89	(2,0%)	10056	око		
Страны:						
Россия	7989	(83,8%)	10056	око		
Германия	1220	(11,9%)	10056	око		
Украина	1101	(10,7%)	10056	око		
США	254	(2,5%)	10056	око		

Statistics of search inquiries in Rambler

Search engines index all the pages, but in the search results give a link to only one most relevant request. Therefore, content analysis is used to determine the correspondence between the pages of a site and requests for which they should be optimized. It is based on the ability to search within a website, which provides the major search engines, showing all the pages relevant to the specified query. Exactly the first of a list of pages on the site will be mentioned in the search results for this query. It is most expedient to fight For increase of its rating.

It is necessary to observe the following rules In order that the page was the most relevant to inquiry:

- inquiry, under which page is optimized should not be very broad and cover a large area;
- a separate page is not appropriate to write all of the keywords (the only exception to this is the main page of the site). The same applies to the text page. It should be devoted to a single topic;
- link text should be readable phrases that trigger the desire to click on them. Therefore, each use of the word of semantic core in a link should be a single complete sentence;
- in headings need to use certain words and phrases from the semantic core. Headings can be many and it can be used. You can split the text into fragments and precede each title;
- in the texts of the site will also need to use the largest possible number of words from the semantic core (not very often, about 5% for each target word). Highly relevant Web pages are usually guided by two, three keywords, each of which is found in the text of the ratio close to 5%. The key word in the text more frequently, can be perceived by search engines as spamdexing;
- it is desirable a presence of links to sites on the subject of the page with keywords in the link text;
- search engines higher value on websites that are updated regularly. They are trying to consider the sites in terms of users, and users

appreciate the updated information. But the regular site updates are not enough. It is necessary to inform the search engine and to carry out reindexation. Important to re-index the date of creation or last modification of web pages and the fact that they update. These factors can be manipulated to speed up the re-index the site; it is desirable to be guided at an optimization of pages by average data (for example, a share of keywords on the page) highly ranged pages in this sphere.

- It is important to know how well the search engines have indexed the page when it was optimization site. Indexing means that the search robot visited the site and he brought the information about them in the search engine database (index). If the page is present in the index, it can be displayed in the search results. If the page is not indexed it can not use information from this page in response to user requests by the search engine. As a rule, it isn't difficult to get to an index of a search engine. In the majority of cases for this purpose you not need to do anything, you just having inbound links from other already indexed resources. In some cases, you must manually tell search engines about the new site. It is enough to specify the home page, the others pages will be found by the search robot on the links.

Updating the database of search engines is an ongoing process, the records in the database may change, disappear and reappear. Therefore, you should regularly check the website pages indexed. you can do it about 1-2 times monthly.

The more there are external links to your site, the more the search engine spiders will re-index the resource

Most of the search engines provide an opportunity to check the indexing of the site with the help of special language operators. For this purpose, you can use specialized software that lets you check the indexing of the site at once in a large number of search engines.

Application of the proposed guidelines for the following search engine optimization can help increase a website's visibility in search engines.

Visibility of a website in a search engine is a measure of the effectiveness of search engine optimization, which is calculated as the ratio of the proportion of hits to the sum of all impressions provided by specialized queries in the search engine. Impression Share provides links to a site that hit the top ten search results.

Creating an optimized website content, development of text links and descriptions

You can set the quantitative relationships between words and phrases in the subject area of the site user requests, divide users into groups and determine the qualitative characteristics of each group using appropriate software tools that are used for the purposes of search engine optimization. Existing query statistics provide two pieces of information (the sample program of this class is the «Yandex-Direct» — <http://direct.yandex.ru/>):

The first type of information is the query statistics. Search statistics is the frequency of the use of certain words and phrases in search queries. It is used for the direct analysis of the interests of the Internet audience and measurement quantification of demand (for information or goods). Usually also gives a list of the most common phrases with the entered text query (not just the number of precise queries, but also a list of all queries

Phrase	Total	Google	Yahoo	Live/MSN	Yandex	Rambler	Mail.ru
Total	754	201	1	0	518	4	30
электронная коммерция	20 (2.65%)	12	--	--	8	--	--
приглашение на конференцию	9 (1.19%)	7	--	--	2	--	--
путяи	7 (0.92%)	2	--	--	5	--	--
рыба пикассо	6 (0.79%)	--	--	--	5	--	--
свинорот кальдвыи	6 (0.79%)	--	--	--	5	--	--
хасанши штыдар антарович	6 (0.79%)	5	--	--	--	--	--
вид с башии гединамаса	5 (0.66%)	5	--	--	--	--	--
путяи самара официальный сайт	5 (0.66%)	--	--	--	5	--	--
проект теприк esomnis	5 (0.66%)	5	--	--	--	--	--
esomni.russia.ru	4 (0.53%)	--	--	--	4	--	--
егр системы	4 (0.53%)	--	--	--	4	--	--

Analysis of the list of search queries in the module «Log Analyzer» program Semonitor

that contain a given query), and «close» words on the subject and assess the frequency of their request. These data allow us to estimate the total being asked of words and phrases;

The second type of information is the frequency of the pair occurrence of queries, which shows the relationship between successive search queries of the same people. This information allows us to understand the logic of the sequence and refine the query. It is used in the analysis of the search for the most successful positioning of a web project in the results of the sequential search. The main use of this information is consists in dividing words used to search for regions of interest of the audience. It allows you to split dictionary search engine optimization of phrases specific to each group of potential consumers. Then you can position them to a web resource by selecting some of the most suitable groups of potential consumers as a target. With this information it is possible to find previously unknown area of audience interest.

Query statistics Programs are used to optimize the Web resource content. Programs query statistics are used to optimize the content for the Web resource. They provide quantitative and qualitative information on the commercial potential of the requests. There are programs that allow to combine statistical data of user requests from multiple sources (search engines) to analyze them.

it is useful to use the log analyzers For formation of a semantic kernel. They allow, for example, to determine the most effective searches for a given site. List of search queries in the program Semonitor printed in a format which greater than the programs query statistics (Figure 7.13).

Optimization of a content of a web resource consists of the following steps:

Step 1. Drawing up a semantic kernel. Its methods:

Create a dictionary of search queries. At the initial stage, generally known small number of words that characterize the potential audience

searches. With these words, the search starts of close and related words and phrases using the program query statistics. As a result of the analysis from received information target inquiries are allocated, synonyms of keywords are defined. All chosen information is supplied with frequency characteristics;

Dictionary search queries can be divided into three parts for the selected topic:

1) the individual words on the topic. Only in very rare cases, by themselves they can give an idea about the intentions of the visitor. For example, the word «buy» is a little significant for a bookseller. It covers a very wide potential audience. But the word «encyclopedia» may be useful.

2) the phrase on the topic. For example, «buy the encyclopedia.» interests of the visitor are determined by phrases much more precisely.

3) Related words and combinations (words companions). It is not thematic, but frequent companions of keywords, not thematic phrases that are often present in the target query. When they are used in the texts of the site there is an opportunity to attract visitors who are interested in the basic theme of the website, with accompanying phrases. At the same time, visitors, attracted by the target's phrase, will find there are other interesting topics to him, that will increase value of the resource.

The dictionary search queries must enter:

- variants of the name of goods or services (slang, professional, abbreviated), synonyms, translations, transliterations;
- variant names constituents product or service — if these parts can be offered to the consumer separately;
- versions of the name of larger goods or services, which structure includes proposed product or service;
- formulations of tasks and problems of the buyer;
- options of wrong writing of above-mentioned terms (for example, there exists a 6 spellings of words yogurt, the word «optimization» in the Latin keyboard layout «jgnbvbpfbwz» looking at Yandex 100 times per month and on the first page of this request only 2 sites offer services to optimize sites, i.e. the competition is low) or slang.

The analysis of interests of audience (selected words are analyzed for compliance with the interests of users of the Web project objectives. According to the sets of words that used in a query, the potential audience is divided into groups. Of these groups are selected target groups, and according to a used set of words a Web resource is configured and optimized);

Analysis of competition (the level of competition is analyzed according to the specified list of words and phrases in the search engines and the ability to hit the site in first number of the search results. Therefore, it is possible to detect a weak offer for some phrases, and even its total absence, and correct the site dictionary with particular emphasis on data combinations);

The quantitative assessment of attendance (on selected target words and phrases evaluated the possible attendance on the basis of data on

the total frequency of queries, provided by the query statistics software. Most common query language should be used in the texts of links and page titles);

The qualitative analysis of the dictionary (the selection of stable demand trends, basic formulas and typical designs of search queries that can be effectively positioning (with regard to the factors of competition, the size and quality of the audience, etc.) As a result of these actions semantic core is formed. Semantic core is a list of words and phrases that used in search engine optimization. Semantic kernel should be used wherever there is a text of the company — owner of the site: in the correction of texts of the site, in the annotations for directories and ratings, at creation of new pages, in the texts for search advertising, etc.).

- Step 2. Adjustment of the structure and the texts of the site, text links to your site consists of the following steps:
- the analysis of the texts of the site, the selection of relevant terms for each Web page; determination the appropriate amount and frequency of keywords and synonyms in the pages;

- determination of the optimal distance between keywords;
- adjusting the structure of the site, text, titles using semantic kernel based on the frequency of the generated rules, the optimal distance between keywords in the pages; creation of annotations and registration. New annotations are written and registered on the basis of a semantic kernel for directories and ratings.

We can suggest the following steps in the development of the structure of the site in accordance with the formulated semantic core:

- to break targeted queries into thematic groups, each of which devote a section of the site (subdomain);
- to break inquiries in one subject into subgroups according to competition level on each of subgroups;
- to correlate levels of competition on individual requests to the position of pages in the site hierarchy (the main page, sections and sub-sections): the higher the competition on demand, the higher level of the hierarchy;
- to optimize the page under one competitive «the main word» and some less competitive phrases with its participation.

Step 3. Escalating of volumes of content. The most lasting effect gives the building site's content based on the use of the wording of the semantic core. The main methods of increasing the amount of content: creation of advertising pages input (doorways), for example, with the

- description of a particular product and an invitation to go to the main area of the site. Pages are focused on low-frequency demands of potential customers. These pages do not violate the rules of the search engines and deceive users;

- creation of new pages and web resource sections by the created rules of use of a semantic kernel.

Advantages of a content optimization of a web resource:

- increased relevance and citation index pages, the volume and quality of site content;
- pages are beginning to appear in the first places in the query results for selected keywords. The number of visitors is automatically increased;
- high attendance allows the site to take the first position in the rankings, which also increases the number of visitors.

Increasing the citation index

The mechanism for calculating the citation index is based on a calculation of the number and importance of links to web resources. Text of links to a site that will be used during the registration in catalogs and link exchanges should be carefully prepared:

- group of words must be carried out in such a way as to form the most Asked phrase of semantic core;
- text of links is desirable to limit the symbols 75-90, breaking long texts on a number of different links;
- texts of links have to contain as little as possible synonyms or they should be spaced far apart from each other;
- if possible, all the words of the text links should be targeted, not only nouns, but also adjectives, verbs, which are needed to write a coherent text. The same applies to the description of the site. Only there the length of the text is more: 200-300 characters. Long text links and descriptions are typically used during registration in catalogs.
- The easiest way to increase the citation index is the exchange of links between the sites at which necessary to consider the following rules:
 - sites that are selected for a link exchange should have a high position in search engines for key words and not be in direct competition on the subject;
 - sites subjects to which links are exchanged, should correspond to the web resource topic;
 - it is desirable that the site with which exchange links, was on the paid server and (or) it was registered in the catalog connected with any search sitemy;
 - priority in exchanging links should be given resources of a second-level domain;
 - search engines suspect in spamdexing the page which consist only of links. It is advisable to place a link on the page that contains not more than 7 links;
 - the higher page is situated on a link, the more weight it may receive;
 - at placement of links it is necessary to consider that some search engines may be less sensitive to the mutual (cross) links.

- There are other ways to increase the citation index:
- pre-licensing of content is permission to use (reprint) the materials for free on other Web resources, but with a requirement to establish a link to the source;
- the creation of Partner Program: partner sites (places a link to this web resource) can have a similar theme and contain similar key phrases on their pages;
- organization such site structure that on all pages the user could get no more than 3 clicks away from the home desired page (some search engines index web pages to a certain level of nesting);
- placing messages with links to the guest book sites that are similar in theme;
- to participate in forums, relevant by topics. The presence of links to the forum may be counted by some search engines. The advantage of the forum similar in theme is that it contains key words and their synonyms that match the content site;
- placing messages with links to Free for All (FFA) pages and message boards are sometimes counted by search engines. It is advisable to use the message boards, which are involved in the ratings, and have your mailing list.

One of the incorrect («gray») ways to increase the citation index of Web resource is buying links for positioned resource on the pages with a high citation index. This service is provided by the SearchKing company, which offers a paid service to place text links from pages with high citation index.

More detail the process of exchanging links is described in Section

7.3.5.

Use of methods of a spamdexing

Spamdexing is unethical methods to improve the position of links to web resources in the answer sheets of search engines.

Basic methods of spamdexing:

- manipulations with the text of a site (keyword stuffing). Usually it is attempts to deceive search engine with colorless or very small text (the indiscernible by users), which contains the most popular words on the web, creating a reference «pages-steam locomotives.» Modern search engines calculate the frequency of the use of keywords in the text and exclude pages from «unnatural» (usually more than 5% of the text), the frequency of the search results. Using the indiscernible by users of text is also monitored and carries penalties by the search engines;
- input page with a redirect (door way). Placement of the pages on free hosting servers or your own server with a list of keywords and automatic flipping visitor (redirect, from the English. Redirect) to the site without his desire;



The page of links on resources not connected with subject of a referring site

- page variable (cloaking). Tuning in to a search engine is recognition of the robot index search engine and give it the wrong villages, which the user sees;
- indexation of copies pages under different names (flood) is attempt of «flooding» of the search server;
- swapping (code swapping) is optimization of pages for achievement of the top positions in answer sheet of a search engine with the subsequent replacement of the contents when desired position of the page in the index is reached;
- strategic spamdexing is the creation a network more than one corporate site, which differ from each other by design, text, structure, but offering the same products or services. Each of the sites is prescribed in all the search engines and directories, and it satisfies the full range of search engine optimization. As a result, from a commercial point of view the most attractive search queries in the top ten search results appear several links leading to different sites of one company, and the first response page search engine can turn into advertising one of the company (this is the only one of the methods, ways of dealing with that is not found);
- Nepotism is the installation of the authors of the documents of reciprocal links (not relevant context documents) in order to raise your rank in the search results (see Fig. 7.14). There are community sites, which organized this exchange of links between different web resources.

The effect of traffic growth from the use of these methods is achieved quickly, but has short-term character. In contrast to the methods described in the previous paragraphs, developers of search engines consider methods

of spamdexing as deception, a price markup and fight against their use (excluding offenders from the search engine's index.)

Igor Ashmanov [9] identifies the following problems of use of a spamdexing:

creation of illusions. Even in the apparent success (hit on the first page) spamdexing actually

- creates the illusion of success, since attendance is not guaranteed and is not fixed, and attracted an audience is not the target; the possibility of dangerous consequences for the business. For the use of questionable methods site may be excluded from the search engine index, and the rapid consideration of the problem and nobody is guaranteed the restore ; the low efficiency. usually There is no significant sales growth After this optimization.

Methods of spamdexing violate the provisions of Article 5 of Chapter II of the RF Law «On Advertising»: advertising should be recognizable without special knowledge or without the use of technical means exactly as advertising at the moment of its presentation, regardless of the form or on the used media distribution.

In practice, advertising agencies can combine the use of elements of both ethical and unethical search engine optimization. Even in the calculation of the short-term perspective, most of the spamdexing methods may do more harm than good, so it is not recommended to use them, however, it is helpful to know about their existence.

Thus we can conclude that search engine optimization is an effective internet marketing tool that requires continuous monitoring of changes in market conditions and reconfiguring of optimization parameters.

7.3.3. Search Engine Advertising

An effective means of internet marketing is the use of search advertising, which allows you to get a significant influx of target audience.

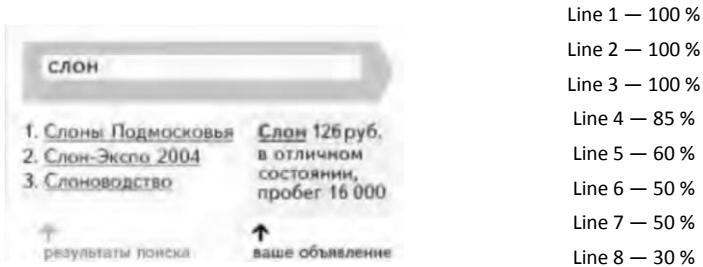
Search engine advertising is a context sensitive advertising placed on search results pages, issued by the search engine. In this case, the advertiser «buy» into a search engine for certain keywords. While performing the search query that contains any of the keywords, the user will see relevant advertising (banner or a text box) advertiser (Fig. 7.15).

In 1997, American businessman Bill Gross, the founder of the Internet incubator «idealab!», Invented to provide services in placing links and advertising blocks in the search results. In 2002, the market capitalization of the company Overture amounted to more than 1.2 billion dollars that was created for this project. The company serves such portals like Yahoo, Cnet, Lycos, MSN, Altavista. On the researches Google in England, the average price of establishment of contact (purchase, a call, the filled form) as a result of search advertising makes 0,27 pounds sterling against 9 pounds sterling in traditional paper «Direct Mail».

The relevance of search advertising is confirmed by analysis of an array of search terms, which shows that 35% of them are commercial or commercializable queries (they can be used successfully for the offer and

sale of goods and services). Three out of four people are beginning to search for products through a search engine.

According to research the distribution of the target audience, there is a rule of the «golden triangle» when you click on the links among the search results. in 60% of cases, the user selects one of the first three links in the natural search results, and 85% of the selected one of the first three positions of the search advertising (Figure 7.15). Visibility range of links on a page of search results decreases down the page. For the fourth reference visibility is reduced to 85% and then drops sharply.



Example of demonstration Line 9 — 30 % of contextually dependent advertisement Line 10 — 20 %

The second «the gold triangle» is in the right column with advertizing links. In the first of the links 50% of the audience is focused view, and on the 6th, 7th and 8th link only 10% of the audience is focused view (Figure 7.16).

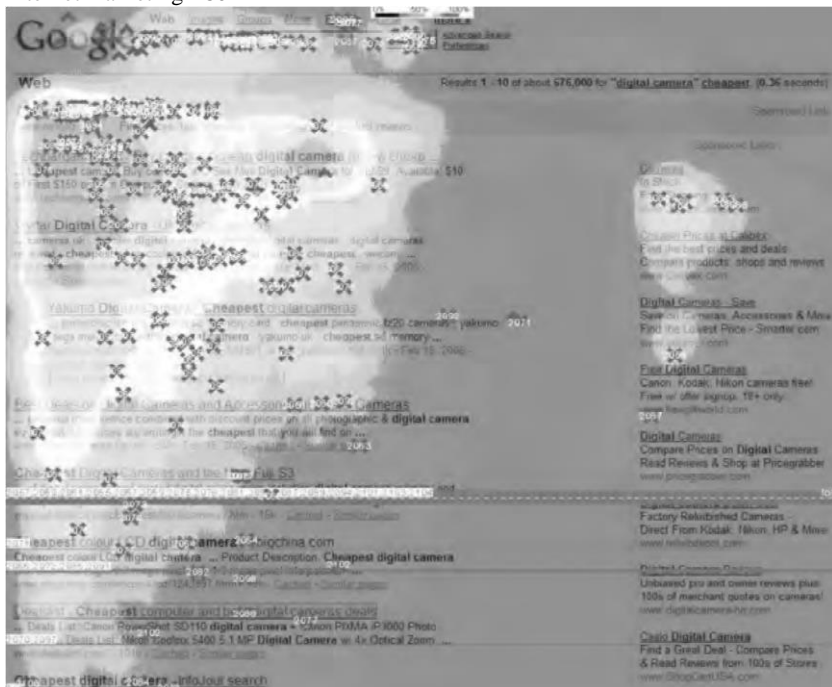
For placement of a contextual advertizing in search engines can be used the auction principle of payment for a place in sheets of answers to search queries. Advertiser independently sets a price you are willing to pay for advertizing. The higher the rate, the higher is the advertiser’s advertizing regarding others.

- The most search advertising systems offer the following types of advertising campaign settings:
- the choice of keyword and phrases. The advertizing will be shown to the user, if these words and phrases will be in the query; the choice of « the minus words» The advertizing will be not shown to the user, if these words and phrases will be in the query (for example, the word «free»);
- Setting the time and geographic targeting;
- CPC (at the auction type of work of search advertising).

Example. If hosting services are advertised, the negative keywords should be: free, cheap, that is, low-cost, etc. If hair dye is advertised, the negative keywords should be: powder, acrylic, road etc.

Search advertising is often shown with the morphology of requests. It is important to consider all possible requests, such as the word «spew» has 166 forms. 152 of them in modern grammatical rules. 14 forms outdated.

Benefits of using the search advertising:



The distribution of the audience's attention on the page of search results

- Targeting — search advertising is aimed at the target audience, which leads to its high efficiency and reduces the negative audience reaction, which is peculiar to advertising

(message is not perceived as hype, but as the information required); low cost of using — minimum initial costs may be equivalent to the sum of 10–40\$;

- the relatively low cost of attracting the target audience;
- the convenience of placing and corrections — with help of your plastic card or electronic money, you can place your advertising in just a few minutes. Similarly, simply change the advertising and features its demonstration (eg, targeting) to increase CTR.

Exact targeting on schoolchildren of the 7th class (by whom was guided the advertising campaign «A leather ball of Danone») was reached by inquiry purchase the request «essay Bulba.» Advertising ball that showed the greatest efficiency, said: «You are 13-14 years old? Freebies is here!!!».

Choice of words for the search advertising can be done with statistics query programs. It is important to focus not only on the most frequently used word forms, but also thematically

narrower requests in the amount capable to bring more visitors (Table 7.5 shows that low-frequency queries

Table 7.5

Statistics query with the word «conditioner» in the search engine for the month

The text of request	the number of requests per month	The share of the total requests with the word «conditioner»
conditioners	415700	21,98%
floor conditioners	32100	1,70%
mobile conditioners	28200	1,49%
lg conditioners	27400	1,45%
conditioners for sale	26100	1,38%
.....
Total requests with the word «conditioner» (per month)	1891300	100,00 %

with the word «conditioner» constitute 78% of the total number of requests).

In order to improve the effectiveness of advertising appeals it is necessary to form an advertising for each keyword or phrase text and to use the words of a user request in your advertising. In the advertising text enumeration of all goods prevents the user know that he offered the product or service that is directly related to its request.

CTR increased on average by 10% if one or more of the query words appear in the text of the advertising, by 15-17% if these words have in the advertising title, by 25% if the title begins with one query word, by 7-10% if you use the targeting, shared use of targeting and inquiry words in the text of the advertisement raises CTR for 30-35%.

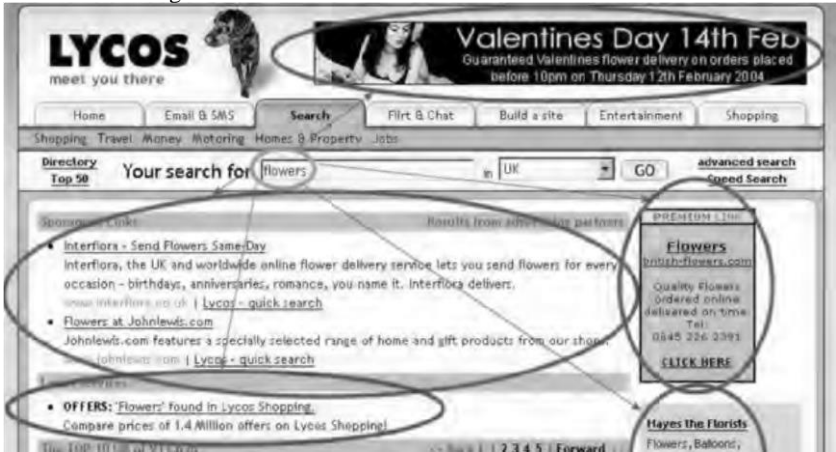
In the selection of keywords and phrases it is also desirable to use selling supplement showing user's desire to make a deal: buy, sell, purchase, sale, wholesale, price, shop, salon, recruitment, selection, comparison, test, testing, rating, cheap, delivery and etc.

Scope and intensity of demonstrations search advertising has its limitations. Fig. 7.17 shows an example of search results page, which is almost entirely composed of search advertising. This abundance of advertising appeals has the clutter effect which significantly reduces the impact of advertising exposure.

Clutter is spraying attention of potential consumers during a massive advertising exposure.

It is important to focus on the task of setting the transaction requests (query statistics programs help to reveal their) and use:

- not only nouns, but also adjectives, verbs (eg, construction, building, build);
- synonyms and the words of similar meaning or category (air conditioner - split, Turkey —
 - Antalya); typos and slang — in some cases requests with errors in more than queries with the correct spelling (eg, most of the queries with the phrase «marriage agency» traditionally written with errors).




An example of search results page on request «flowers»

Examples of typical errors at setting parameters of search advertising.

Example № 1

Advertising banner:

	All buyers HP ProLiant Server series ML3HH from June 1 to July 31 will receive a gift!
---	--

Was shown on pages containing requests with the words: «server».

Negative keywords: free, mailing, gaming, dating, proxy, ftp, anonymous, web, wap, internet, smtp, news, counter, strike, client, quake, warcraft, travel, medical, musical, apache, screen, icq, screen, proxy, emule, mp3.

During the month following results were obtained:

impressions — 3022; Click-Through — 3; CTR — 0,10%.

Explanation of the error:

Advertisers have tried to «cut off» by using negative keywords all requests that indicate that the user is looking for not that server. They remove the word «free», but there is a user who needs «fre server.» In this case (if it is clear that negative words can not cut off all non-target users) is better not to «cut off» query but specify the query. For example, In this case it would be better to use not just the word «server» but «server HP», »multiprocessor server», «high-performance server,» etc.

Example № 2

Advertising banner:

Local radio communication Radio communications equipment with delivery to regions. Alinco, Kenwood, Motorola.
--

Was shown on pages containing requests with the words: service center, simplex communication, motorola, alpha, kenwood, antenna, trunk, filter, radio, 433.

During the month following results were obtained:

impressions — 1087; Click-Through — 1; CTR — 0,09%.

Explanation of the error:

Radio stations are advertized, but words are taken very «wide». Any large producer has a service centers, the simplex is a mathematical method, communication is very wide

subject, Motorola in consciousness of consumers it more likely mobile phones, instead of radio stations, Alpha is the abbreviated name of the group of special forces or Alfa-Bank, users are interested in water filters more often, 433 is the frequency of the processor Pentium.

Example № 3

Advertising banner:

Juridical services

Juridical assistance to enterprises on any matters real estate registration

Was shown on pages containing requests with the words: yekaterinburg, sverdlovsk region.

During the month following results were obtained: impressions — 1056; Click-Through — 0; CTR — 0 %.

Explanation of the error:

Advertisers want to advertise legal services in the Sverdlovsk region. However, if you look at the statistics of queries called any city, you can see how diverse interests of users looking for: weather forecast for the city, local businesses, shops, services, contacts, train schedules, etc. juridical services are looking quite rare. Mistake is obvious, it was necessary to specify all legal terms as keywords (services provided at the firm) and use geo-targeting to the Sverdlovsk region.

Search engines provide a convenient tools for managing of search advertising campaigns, that allow:

- to analyze the effectiveness of advertisements, purchase requests, geographic targeting;
- to distribute funding between different locations placing of advertising. In Fig. 7.18 «СП» is a special accommodation, it is a place in the page design search results, which attracts relatively more user attention. «ГП» means guaranteed impressions (in the auction form of advertising impressions search engine automatically determines the lowest possible rate of CPC at which the advertising gets to the page of search results);
- to distribute funding between different search queries redeemable (at the auction form of advertising display the advertiser can set a maximum price of a click);
- to suspend advertising campaigns or to change other their settings.

The rules of shared use of search engine optimization and search engine advertising:

- in search engine optimization you need to focus on the most frequent queries, the low-frequency queries better to involve in using the search advertising;
- to monitor the the impact on basic requests and to seek additional requests;
- to develop the content on the site;
- dynamically respond to changes in search results and actively manage an advertising campaign in search engines.

Статистика кампании «От 500\$ за сотку» № 2136587

Начало: 03.11.2009 Сумма: 10 987.56 у.е. 2003320р.
 Клики: 39679 Осталось: 655.22 у.е. (116.40 руб.)

Статистика по дням Общая статистика Фразы по дням По рекламным По площадкам Мастер отчетов

Период: 18 дек 2012 — 17 дек 2012
 (всего: 18 дней, 7 дней: 18 дней, 30 дней: 30 дней, 90 дней: 90 дней, все время)

Показать дополнительные настройки
 Детальная статистика по объявлениям

[Показать](#)

Всего по объявлению	Ср. расход за день	Показы	Клики	CTR (%)	Расход всего	Ср. цена клика
с 15.12.12 по 17.12.12	16.83	54571	124	0.23	50.50	0.41

Суммарные данные по кампаниям

Дата	Показы	Клики	CTR (%)	Расход всего	Ср. цена клика
18.12.2012	1520	20	1.30	49.22	2.41
16.12.2012	15311	33	0.20	31.40	0.95
17.12.2012	24602	59	0.25	24.78	0.42
Итого:	54571	124	0.23	50.50	0.41

№ 1-0200000 - Рекламный кабинет - учётная запись

Осталось всего 140 участков!
От 16 000 руб за сотку Санкт-Петербурга

Все объявления: 3 **Активные: 4** На модерацию Отклоненные Остановленные: 1 Архив Частично активны

Считать все объявления на странице

Установить цену клика для всех фраз на странице

Для активных: на поиске назначить цену 1-го места

№ 14-0200000

Осталось всего 140 участков!
От 16 000 руб за сотку Санкт-Петербурга

Редактировать объявление: Символ в области...
 Редактировать объявление: виды участков - земельный
 Копировать объявление: земельные участки в Ленинградской области
 Остановить: Милус-слов на объявление

Фраза *	Показы	Клики	CTR	Цена клика на первой странице, у.е.	Цена клика, у.е. на поиске	Охват
Для всех фраз на поиске:						
инды земельного участка	117	0	0.00	0.05 0.12 0.37 0.37	0.32 0.12	100%
виды участков - земельный	50	0	0.00	0.63 0.20 0.48 0.48	0.05 0.04	100%
земельные участки в Ленинградской области	49	6	12.24	0.13 0.68 0.18 0.50	0.50 0.50	100%

Management of the search advertising Campaign

7.3.4. Participation in the rankings and registration in catalogs

For participation in a rating it is necessary to install the counter of visits on a site.

Hit counter is a service designed to measure attendance of sites, which has an independent nature. Usually visitor counter consists of two parts:

- the code which is placed on the pages of the participating sites for data collection;

- software mechanism (robot), which stores information about the visits of sites participating in the database on the server, processes it, and presents it in the form of statistical reports.

Table 7.6

Comparative analysis of search engine optimization and search engine advertising

-

Counters of visitings provide information about:

- visitors who came to the site (its IP-address, browser, operating system);
- referrer — the page from which a visitor came, the possible options:
- type-in-traffic;
- Clicks-Through from the search engines (together with the name of the search engine, as a rule, the search phrase is registered);
- Clicks-Through from advertising materials — Advertising parameters are specified;
- referrals from other sites — keep as a referrer link with reference;
- Clicks-Through from saved pages (link was clicked in a Web page stored on the computer locally);
- Clicks-Through from mailings — the Click-Through occurs on the link from the message.
- overall statistics of attendance considering the time of visits, residence time, geography and returning visitors;

266	Search engine optimization	Search engine advertising
	<p><i>A</i> • the value does not depend on the number of queries directly;</p> <ul style="list-style-type: none"> • basic funds are invested in the development of the site, not in the development of the search engine; • the result will be felt for a long time; • Site optimized under all search engines directly 	<p><i>advantages</i></p> <ul style="list-style-type: none"> • it is possible to work with micro budgets; • campaign can be run and complete efficiently; • does not require special knowledge of the search engines; • the payment is made for the result — the click or impression; • there are guarantees
	<p><i>Dis</i> • low efficiency — the result will be obtained in 1-3 months;</p> <ul style="list-style-type: none"> • it is unprofitable, if inquiries are low-frequency; • the recommendations are often paid, but not the result; • there are no guarantees; • because the rules are indistinct, there is a risk to be excluded from the search engine index 	<p><i>advantages</i></p> <ul style="list-style-type: none"> • if the topic is popular and competitive, the budget can be quite large; • traffic stops as soon as money will run out on the account; • it is necessary to conduct a separate campaign for each search engine; • does not give a large influx of visitors; • not effective for image advertising purposes; there is a risk of cheating by competitors

- implementation of targeted actions by visitors.

As a rule, hit Counters used by the Web resources are involved in any rankings. The main difference the web resources catalogs from ratings that ratings constantly sort sites by a certain quantitative criterion. Usually, it is attendance of a site. However, there are other ratings. In These ratings sorting is conducted not on attendance, but by other criteria, for example,

in descending order of audience sympathy (for each of the participating sites is available the form for voting). Such ratings require more active visitors, so they are less common on the Internet. The overwhelming majority of ratings require installation on the site own buttons or graphic logo.

In catalogs the resources displayed thematically, and within each theme category the resources are displayed either alphabetically or by date, or by subjective assessments the catalog editor.

From the standpoint of internet marketing the main difference between the ratings and catalogs that the position in the ranking can be improved by changing the site traffic, the position in the catalog does not depend on the participating sites.

Leading position in the catalogs and ratings can give your website a significant flow of visitors. As the incomes site owners are directly dependent on site traffic, the organizers ratings regularly encounter and struggle with incorrect ways to improve the ranking (see section 8.1).

In the Internet spread out sufficiently large number of ratings, but users rarely use more than one rating — except purely thematic. The user typically selects one particular rating for evaluating sites. The Register in thematic rankings and directories attracts attention of the target audience. in some cases the registration in the rankings and directories combined with the search engines, improve the position of the Web site in the answer sheets of search engines.

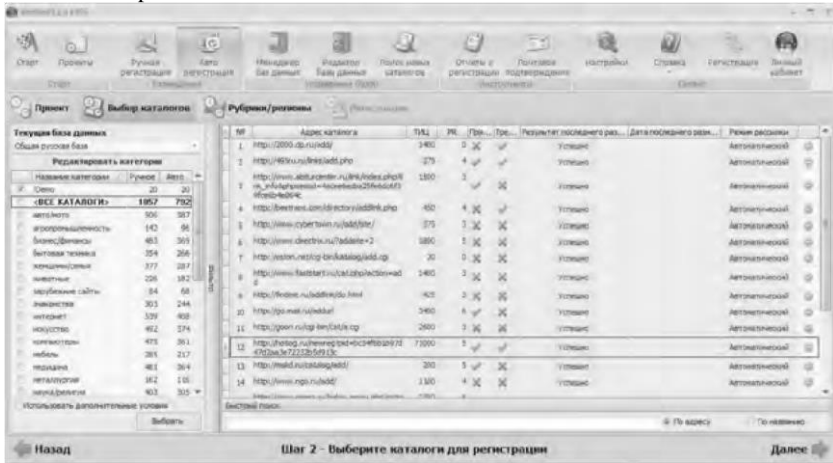
The Participation in the thematic rating makes sense even if the website is not able to reach his first position. Since finding the site in a certain ranking leads target audience to his page.

Besides attracting visitors rating can be regarded as an independent auditor: for example, attendance site can be used to determine the value of advertising on this site.

Catalogs are used differently. Catalog Services (or just Catalogs) is thematically structured and having separate headings collection of links to online resources with their descriptions. there are comprehensive (horizontal) or target highly specific at specialized sites (vertical) Catalogues.

It is beneficial to the web publisher that in catalogs will be placed the reference to it. At the same time, it is beneficial for catalogs that as more sites can be registered in them, so in addition to the search for new resources on the web editor of the catalog, they provide for site owners self-service check-in. Some links catalogs published immediately after completing the relevant form, in others — initially checked by the editor (by the moderator).

Editor of the catalog visits the site during the registration moderated catalogs before making a decision on inclusion in the directory to check whether the chosen category or the section suits it, whether the name and description of the site content proposed for registration, whether it has



Program dialog box of automatic registration site in search engines, rankings and thematic catalogs Internet AddSite

actually. If the proposed description of site for registration does not match of its content, the moderator can independently change the description or deny registration. Therefore, moderated catalogs, using methods of spamdexing immediately gives negative results.

In addition, the catalog can use their own criteria for assessing the site. To register successfully, it is necessary to observe the following rules:

- it is desirable to use your own domain of the second or third level — in some catalogs biased towards sites that are located on free hosting;
- the title and description of your site should not sound as encouraging advertising. Moderators have negative relation to catalogs that headlines not having a descriptive nature and may refuse to register;
- it is necessary the existence of full contact information on a site;
- if necessary (use of online customers’ personal data, the implementation of financial transactions, etc.) should be a system security and protection of the site from cyber criminals;
- it is necessary to put links to the authorship while using objects of copyright.

As in the case with the search engines, there are web resources that provide services automatic registration site in a large number of directories. Such services are usually free, but there are also freeware or shareware web resources with the possibility of trial registration in a limited number catalogs (usually 10–20). In Figure 7.19 is an example of the dialogue program automatic registration site.

Is desirable to record not only the home page, but some of the other main pages of the site, varying keywords and descriptions. In this case, the probability of finding a page of a Web site increases.

With regard catalogs acts the same rule efficiency finding site in the beginning of the list, and that in relation to search engines. Most of the directories in each thematic section has sites in alphabetical order, respectively, the problem of getting on the first page can be solved by giving the name of the site, starting with the first letters of the alphabet.

However, there are catalogs that sort registered sites based on the calculation of citation index. Usually, it is catalogs, combined with search engines. It should be noted that the major catalogs are usually offered to choose a sorting criteria, for example, alphabetically, by date of registration, by popularity, etc.

The user can search for information in the catalogs in two ways: by following a hierarchical system subdirectories or using the internal search engine. In the second case, the search engine is looking exclusively for a brief description and keywords of Web sites listed in the catalog system at registration. Therefore, you must carefully pick up and write a description of the keywords based on as users will build queries to find out which keywords or phrases will thus most likely.

The advantages of using catalogs and ratings:

- obviousness — a way understandable for any user;
- attraction of target audience — the placement link at the desired category of the catalog using the description of keywords leads to the site target audience;
- growth of citation index site — the registration site in directories and ratings can affect the growth of citation index, which increases the position of the site in the query results in search engines. In addition, some major search engines use the bases to supplement catalogs search results.

7.3.5. Banner advertising. The notion of banner advertising banner advertising is the most common form of online advertising, it is algorithms quite well developed, and the possibilities are well known to advertisers.

The banner is the advertizing graphic block connected by a hyperlink with the advertized website or the page (Click-Through hyperlink is called «Click-Through banner»).Form of advertising appeal on the Internet, the most common today. It looks like a rectangular image or text. The size of banner on which depends the probability of falling into the field of view of the consumer is important.

There are two basic ways to organize banner advertising:

- individual arrangements with specific sites (or paid on the basis of mutual exchange banners);
- appeal to an agency of internet advertising which will offer accommodation at a number of sites.

Statistics visiting pages site counterparty is one of the important indicators that need to be taken into account in a mutual exchange of banners. In certain cases placement of banners on specialized thematic sites can be organized for free (as an exchange of links between thematically close partner sites). Such banners bring on a site not casual, but the interested visitors — target audience.

If a site is representative of a large firm, the banner campaign charge to specialists — Internet advertising agency.

According to research Advertising Research Company, which was conducted in six months with the involvement of 7000 AOL Server users, banners are not inferior to television commercials performance level. After a single viewing of television advertising 41% of the audience remembers it. 40% of viewers were able to recall a static banner after a single display. A week later, every 30% of users who saw the banners, remember them.

Order to place your banner on a little-known site in popular sites with tens of thousands of visits a day, necessary to apply to the mediator — service for the exchange of banners or banner network.

Banner network is an advertising network that involved advertising platforms, banners showing each other on the basis of pre-agreed and common to all the rules (usually not receiving payment for it.) Banner network are used for the implementation of online marketing of the participating sites of the system. Participants of banner exchange networks simultaneously act as advertisers and in the role of publishers. The participating site which has shown on the pages a certain number of system banners, are entitled to expect that its banners will be shown on other participating sites. For this service banner network retains a certain number of hits (typically 10 to 30%) that can be used at their discretion (within the advertising policy), for example, to sell to advertisers. Participants in the network have the right to control the display of their advertising: use the funds targeting to change the banners, and view reports on advertising in real time, as well as sell banner impressions accumulated. Most banner exchange networks are open, ie any site that does not contradict the advertising network policy can become a member.

banner exchange network can be classified according to the following criteria:

- on the thematic focus:
 - the general — are accepted sites of any subjects. Restrictions only for sites with very low attendance or a banner network with forbidden topics (eg, sites «adult», political and others); the thematic — include only sites on a given topic. For example, automobile, erotic, etc.
 - on geographical prevalence:
- regional — combine web resources of a given region. Resources can be devoted to either the region or their creators live in this region;
- national — combine web resources of a particular country;

- international — the geography of participants is not limited.
- on supported formats of banners: supported formats for banners: number of networks trying to maximize the list of used advertising media formats. Other services strictly specialize in any particular format.

Member of banner networks may suspend showing his banners, and continuing to show banners of exchange network banner, to accumulate a certain number of shows on the account in banner exchange network (it is an account, which takes into account impressions accumulated and spent by participant in the network). Later banner impressions can be sold, exchanged or used for own advertizing company.

In most cases it is expedient to specialist in Internet advertizing to work with one network of an exchange of banners, and with the most famous. This gives the best exchange rate (it depends on the amount of traffic that is not divided between multiple networks)and also gives a large area of propagation banner and reliability. Exceptions of this rule are cases of major resources advertising when insufficient scale and scope of target audience banner by particular exchange network can be a limiting factor.

As advantages of advertizing in networks of an exchange of banners, in comparison with advertizing directly on concrete sites, can be called as follows:

- banner exchange network can involve hundreds or even thousands of sites on a given subject, ie the breadth of coverage of leading banner exchange networks significantly outperform even the most visited websites;
- the arrangement of advertisement through banner exchange nets for free for members of the network. At purchase banner displays in banner exchange networks their cost may be lower than at placement of banners directly on given sites;
- local systems of advertising on individual sites can not compete with campaign management systems of leading banner exchange networks, which offer the opportunity to analyze the course of advertising campaign promptly, to adjust targeting, to change banners, intensity of their display, etc. When advertizing on sites directly similar changes are made usually by the administrator, but any delay can be a day or more, which significantly reduces the operational character of changes. Exactly banner exchange nets provide the most complete records during the advertising campaign, statistics for each banner: the dynamics of hits, clicks intensity etc.

Technologies of banner advertising

Definition of target audience has to be one of the first decisions in advertizing campaign. Exact its definition will allow to pass to the following

step — a choice of sites or banner exchange systems, and installations spanning audience targeting.

Targeting is a software mechanism that allows to distinguish from all the available advertising audience only the part that satisfies the specified criteria (target audience), and display advertising for her.

The simplest and most popular form of targeting is achieved by simply selecting advertising sites so that audience is matched with target on interests, age, location, etc. Currently there are four main types of targeting:

- geographical targeting allows to address only to inhabitants of a certain region;
- time targeting allows you to apply only to users in the network at a certain time. It is based on the assumption that at different times different categories of users with different interests are active in Internet. Time targeting indirectly allows separate those who use the Internet at work, from those who go online from home. Naturally, the focus is available on certain days of the week or month;
- the most common type of targeting is a theme type of targeting. Advertiser can select category of sites on which will showcase his banners;
- targeting on display frequency — AD Frequency (restriction of number of repeated advertising appeals) and on number of unique users to which advertising — AD Reach (R&F) was shown.

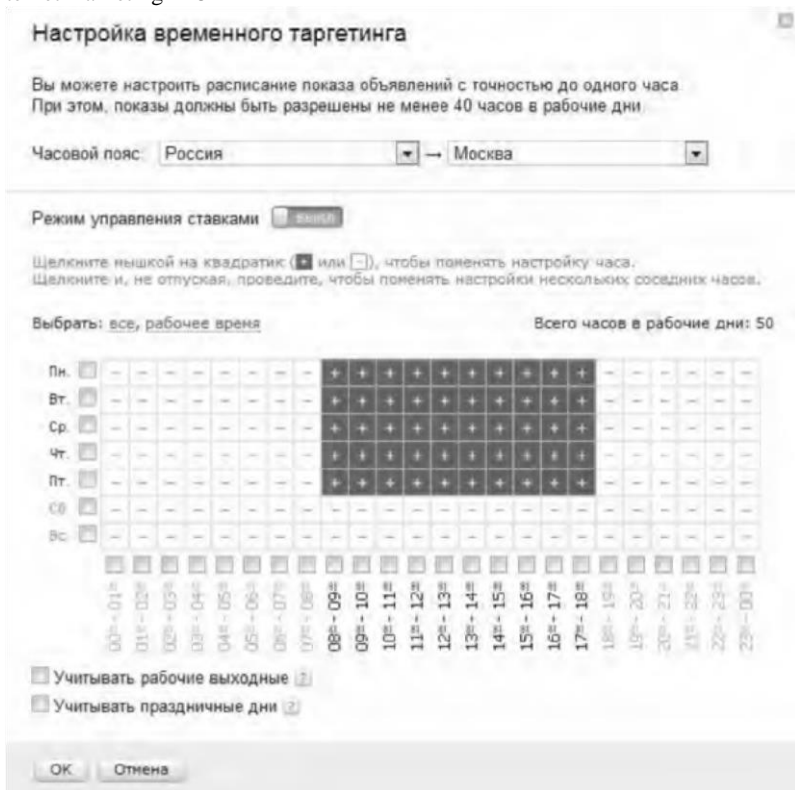
There are other types of targeting, for example targeting by user operating systems and browsers (brief information of hardware and software on the client computer indulge with requests to Internet servers, and may be used by them)

All listed types of targeting belong to direct targeting which allows the advertiser to determine parameters of selection of audience for demonstration of its advertising. In contrast to the direct targeting there is an inverse targeting, which allows the publisher to determine selection parameters of advertisers banners. This is useful, for example, to prevent the showing of his competitors banners on the publisher's site or compromising character banners.

Comparative analysis of different types of direct targeting is presented in Table 7.7.

Among other technologies of banner advertising can select a full-scale banner campaign. For a new site it implies that advertising should see at least every second user of the network segment (eg Russian Internet). The large banner campaign which has been carried out at start of a new resource, will give at once to a site good start, instead of long accumulation of audience.

Another variant of the effective use of a banner advertising it impulse support resource. Using this technology, the site owner demonstrates



The time targeting dialogue of Yandex-Direct system

Table 7.7

Advantages and disadvantages of different types of direct targeting

Type of direct targeting	Advantages	Disadvantages
Thematic temporal	<p>Selection of a limited number of resources, which place advertizing</p> <p>Possibility of advertising exposure on a geographic basis</p> <p>Concentration of advertizing on a date, a day of the week and time of day</p>	<p>Complexity of focusing at universal subject of an advertized resource</p> <p>Lack of consideration of territorial displacement and random visits</p> <p>Distinction of temporary user preferences of the Internet use</p>

banners on pages network while accumulating banner impressions (ie, do not show his banners and accumulate banner impressions in his account). Thus, the publisher is dialed a certain number of hits. This advertizing stock can be used for massive advertizing of new sections or the materials appearing at the publisher on an advertized site, directing a flow of visitors

from banner exchange network on these new sections. Thanks to such a promotion is achieved splash of attendance, which terminate with the flow of banner impressions, leaves the overall small gain of permanent audience.

Supporting campaign is called so because it supports existing and already well-known trademark, it is stable and has low intensity banner displays. For example, when a Web resource exists for quite a long time, it is impractical to organize millions of banner displays because the site has seen a lot of people and re-advertise for people who have seen, it does not require advertising.

Supporting campaign, as a rule, works on the image of the site. Supporting campaign, as a rule, works on the image the site. Banners designed to support campaign should include: company name, logo, website address, slogan, ie it is branding banners. In addition, at a small amount of hits you can expect a higher response to advertising, as there is no frequent repetitions.

In certain cases when advertizing a little-known resource traffic redistribution is used. It is applied in a situation when the publisher has one resource with a big traffic (entertaining or information) and, for example, just created little-known online store. The publisher can direct the banner impressions accumulated by a powerful resource on advertizing of a new resource.

Redistribution of traffic is the most successful use of free banner exchange. In the case of sale banner displays banner exchange networks is unprofitable, the possibility of accumulation and redistribution of traffic is the only thing that motivates many major publishers to participate in it.

Organization of a full-scale web project banner campaign can be carried out not only through the use of banner exchange networks, but also by referring to the specialized agencies that are involved in commercial placement banners on the instructions of the customer. Certainly, in it are engaged as well the networks of an exchange mentioned above in banners, but when carrying out a serious advertizing campaign more effective to order it in specialized agency of Internet advertizing which if necessary agrees with networks of an exchange of banners and directly with suitable sites. Besides, the agency will organize also not banner advertizing.

Unlike banner exchange networks Agency does not provide free services. If the front of the web resource task is to make money from display advertising, and in this case, it is advisable to turn to advertising agencies in the Internet to Banner brokers too and although working with them less profitable than directly with the advertisers, but almost always more reliable.

Banner Brokers is an Internet advertising agency that sell banner advertising on areas directly redeemed them from the publishers. Web publisher can look for sponsors and by himself. The complexity of this approach

is that it is necessary to negotiate personally in each case. Most major advertisers awards contracts for as banner advertising mainly with brokers, private contracts are concluded with websites with very high traffic.

Besides banner brokers in the Network there are also brokers of advertising platforms. Brokers of advertizing platforms it is the organizations that perform the registration of sites that are ready to place paid advertisements. Data about advertising platforms are collected in specially designed database, where they can find a potential advertiser.

Networks of banners purchase Slightly (from positions of the advertiser) differ from banner brokers. In the relations with advertisers they also act consolidated, unlike brokers of advertizing platforms who give to the advertiser opportunity to agree with publishers independently.

The network of banners purchase is the advertizing network, which participants (advertizing platforms, publishers) receive payment in proportion to number of the banners shown on their pages. As a rule, this payment is less than market cost of advertizing therefore participation in such networks is favorable generally to platforms which can't or don't want to be engaged in sale of the spaces independently. Usually networks of banners purchase have the closed character, owners of such networks make careful selection of platforms which join in number of participants.

It is Necessary to consider following points when the publisher chooses the mediator between him and the advertisers:

- reliability (on broker site must be licensed real business address, phone number and other details including names of the managers);
- the number of advertisers, which a mediator has at the moment;
- level of payment (it should be at a higher level. Unfortunately, a large number of «Cheaters» in the Russian part of the Internet (see section 8.1) led to a reduction in the cost of banner advertising);
- the ability to manage the banners (it allows to exclude banners which don't correspond to design, subject and (or) ideology of a site of the publisher from display. It can lift CTR indirectly);
- the minimum payment sum (the sum with which the mediator begins to convert accumulated on account banner impressions in the money and pay them to the publisher.)
Practice of banner advertising use

To understand the banner exchange networks technologies give the results of an advertising campaign, the purpose of which was to increase sales.

Book.vsem.ru Bookstore carried out an extensive advertising campaign through banner exchange nets. During the three-month campaign, it has been shown over 126 million advertisements. Banners were placed in seven networks: universal (RLE Gold, IR Business, LBN, TBN, TBN

Table 7.8

Indicators of the effectiveness of advertising banner exchange networks campaigns

Network name	The format	Network orientation	Impressions (one thousand)/sale ¹	The cost of a single sale EUR ²
IR Business	468×60	business	308	46, 2 16,56 (552)
LBN	468×60	universal	184	8
RLE Gold	468×60	universal	100	12 (122)
TBN	468×60	Specialized	80	no no
TBN Shop	468×	(online shopping)	42	
TBN Shop (100×100)	100×100	Specialized (online shopping)	83	3,4 (27,12)
TBN Text	Text	universal	226 in thousands.	for example, for one to show 100 000

¹ Number of displays sale to the user attracted banners.

² Column contains the (it is the market for exchange networks forbid network. Therefore brackets are specified the cases when this information

necessary for one sale, with advertizing in value based on the resale accumulated to resale the acquisition of banners in official prices of is openly published

So, RLE Gold, it is necessary approximate price of the displays). Rules of the banner at the prices lower such a way is always networks of an exchange on a site.

«secondary» market majority of banners than prices of the interfaced to risk. In by banners for those

Text) and specialized (TBN Shop and TBN Shop 100) (network TBN, and store Book.vsem.ru, are owned by Agava).

Target during the campaign was not carried out, the number of advertisements shown was about the same for each banner network. Repeat visits are counted - the purchase was added to the asset of the network to which the person came to the site for the last time. Advertisements were as simple as possible: user reported where it gets when clicked, it wasn't applied any «art» receptions on increase of efficiency of banners. Results of experiment are reduced in table 7.8.

It is possible to make the conclusion about low efficiency of advertizing campaign By results of this advertizing campaign. It is explained by disproportionately big scales (more than 126 million advertisements were shown). The Russian segment of the Internet was estimated approximately in 8 million people at the time of research. If we consider all users Russian Internet as potential book buyers, the result of an advertising campaign for each user account for 16 banner displays (hereinafter will be shown that the effectiveness of the impact of banner advertising on the user is significantly reduced after 3-5 hits).

From table 7.8 it is clear that for involvement of the buyer who will make the order for 300-500 rubles (standard «basket» of bookstore), it is necessary to spend, at least, 100 rubles. It is in a situation if to get impressions in the secondary market, with risk to face fraud, or a situation in which the network of an exchange of banners can nullify the account for purchase and sale violation of the rules.

Official prices for banner exchange networks is much higher. Such advertising perhaps, suitable for increasing brand recognition for selling expensive goods (in the case of luxury goods ratio impressions / purchase will be different), but for trade in inexpensive goods it is unprofitable.

By results of experiment it can be concluded about bigger efficiency of specialized networks. So, for involvement of one buyer, it is necessary to show 42 000 banners in TBN Shop and almost twice more — in the most effective of all-thematic networks participating in research. This is understandable if we take into account the fact that in specialized «store» advertising networks demonstrates to people, most of which went to the site with the motivation to make a purchase, or at least find out the prices. Therefore, effectively we can implement the advertising potential of the online store in a specialized network, such as TBN Shop or not mentioned in the study Allshops (www.allshops.ru).

Of course, for different online stores the effect of participation in the exchange of banners will be different. Benefit of seldom visited online shops (a few hundred and several thousand visitors hits a day) is not too large. For example, with 300 visitors a day and placing four banners TBN Shop on all pages (two banners 468x60 format and two banners 100x100 format), in best case shop will receive one additional order in the week. « in best case « — because in the Books.vsem.ru study considered sale matter what the person remember the address indicated on the banner. With limited campaign this effect difficult to achieve. benefit of Visited resources from participation in a specialized banner network is more palpable.

Banner exchange nets have the property not only give the client, but also to divert customers from the site. Therefore, to publishers is necessary to watch from time to time: Does not appear in the online shop competitor advertising that sells the same, but cheaper.

To better understand the mechanism of online advertising is useful to read the report on the results of a study HotWired and Millward Brown International. The study was devoted to what extent banner display for promotes branding. Below is a diagram of the study.

The first day

Step 1. A random sample of users who have visited the server HotWired, were invited to participate in a small survey «to help get to know your audience.» 38% agreed.

Step 2. Participants filled out a small demographic profiles, which in no way alludes to the purpose of the study.

Step 3. After filling in the form the user is returned to the home page HotWired. Randomly selected group of users (test group) showed one of the three test of advertising banners (for which the study was conducted), the other (control group) saw the usual banner (not coinciding with the three test).

Table 7.9

The probability of purchasing a product of this brand at next purchase of products of this category

The category	Increase the probability for the test group
Menswear	+ 54 %
Internet service provider	+ 33 %
Web Browser	+ 8 %

The second day

Step 4. Study participants were sent an e-mail thanking them for participating in the first survey and the invitation to participate in another survey (with the opportunity to win \$ 100). 61% received a letter agreed to participate in the second survey.

Step 5. Members of the test group was offered a questionnaire pertaining to the category to which the goods of the test banner. Members of the control group was offered a questionnaire pertaining to a random selection (of three) categories.

Thus, both questionnaires filled 1232 persons. One of test banners advertized brand of men's wear, another — Internet service provider, the third — the web browser. Results are reflected in Table 7.9.

In addition, an attempt was made to find a correlation between how many people clicked on the banner, and what opinion about the brand they have formed. The answer to this question is as follows: the number of clicks reflect momentary interest human in products of this category and has no relation to the formation of the image of the brand or the probability of selecting products from this brand with the next purchase. Thus, we can make the following conclusions:

- impractical endeavor to a large number of banner impressions;
- more effective coverage of the target audience exactly;
- specialized banner exchange networks are better suited than the universal banner exchange nets to reach the target audience;
- banner advertising works, even if it is not clicked. Click on the banner reflects only the degree of short-term interest in the subject. The basic idea, as reflected in the banner (if it is) anyway remembered.

Advantages and disadvantages of banner exchange

One of the main arguments in favor of the banner exchange is its zero cost. However, in some cases, for online marketer is advisable to buy the required number of banner displays than to engage banner exchange.

If the potential advertiser is the owner of a noncommercial resource, for him is really possible the placement of an advertizing banner of banners exchange network. If the potential advertiser is the owner of a noncommercial resource, placement of an advertizing banner of a network of an exchange by banners for it really is possible. But the cost of a place is only

one of components of the general cost of a banner exchange. The banner increases the volume of sent information, overloading communication channels and reducing patience of users who expect web page loading.

In addition, it is necessary to take into account the loss of visitors at the incorrect appearance of the site: for example, when on the site of corporate representation will appear frivolous content banner. This can lead not only to certain image losses, but also financial losses.

Another important indicator is the Commission which impose banner exchange network for their services. For owners of commercial advertising site to indirect costs, which are inherent to the non-profit web resource is added the cost of seats allocated under the banner exchange network.

For example, the publisher puts advertising with CPM \$ 1. We will calculate that it would receive if, instead of advertising banners will put exchange banners — $1000(100-15)\% = 850$ hits (cash-network — 15 %), which gives, according to statistics, of 3 to 6 users, and, these visitors, as a rule, will be inappropriate.

In addition, each visitor comes at cost of (CPV) from 17 to 33 cents (in more detail about indicators of efficiency of Internet advertizing see item 7.3.10). There are many methods of organization targeted traffic at a lower cost.

Unlike any other option of advertising using universal banner exchange networks user often does not represent about what we can go on the site, where he had been and to what subject this site adheres. In this case three quarters of visitors simply leave, without having started at all studying of the site which led banner of a exchange network banners.

To reduce number of the visitors who have left a site because of incomprehensibility of its subject, users direct not on the title page of a site, and on specially created «entrance» page (Dorvey). The main content of this page should be a brief introduction explaining the user features and theme of the site. Otherwise, part of the user leaves the main page, entangled in a large volume of information and interactive controls.

From all above-mentioned it is obvious that the traffic which the website receives from a network of an exchange of banners, not free, simply the advertiser doesn't pay for it with «live» money. However, for this traffic he can pay in time (or its employees), the appearance of the site reputation, which can result in unplanned financial losses. Therefore, joining to the banner exchange network for commercial resource requires a thorough analysis of the situation and determine how much the potential costs are additional visitors to the site.

Among other drawbacks of the method should be mentioned:

- method is not effective for sites with low attendance — the number of visitors attracted by this method is limited attendance site. And as a percentage the number of visitors attracted to the total number of visitors is usually small;

- reducing the attractiveness of the resource because of the pressure site by banners;
- damage from the actions of competitors — a demonstration banners of competing companies can «steal» potential customers.
- Nevertheless, the efficiency of mass demonstrations that have accrued in the banner exchange network is large enough to make sense to use it.
- It should be noted that the list of proposed services banner exchange in networks is expanding. Recently in the Runet there was an opportunity to pay by banners displays saved up on accounts of banners exchange networks for goods, production of banners, work of designers, etc.

Effect of burning out of banner advertizing



In process of banner display in a certain banner system or on a certain website the probability of display of this banner to the same user several times increases. It leads to falling of coefficient of passableness. Falling of CTR is defined by rejection of advertizing by the

passableness coefficient on the consumer. The dependence CTR on the numnumber of advertising displays

Dependence of the CTR on the numnumber of advertising displays looks as it is reflected in Figure 7.21. From a certain point, the effectiveness of advertizing begins to decline sharply.

This Reduction is not momentary, but at high intensity of advertisements display, it may be significant [15]. As a result, the effectiveness of specific advertising material decreases to a minimum level at which further demonstration of advertising is not effective. Otherwise advertising can lead to negative consumer reaction.

Such decrease in the efficiency of the advertising material is called «burnout» or «burning» of advertising. Speed of burning out of a particular advertising material and all advertising campaign as a whole — it is one of the most important parameters which needs to be considered when planning and carrying out any advertizing campaign.

From the schedule in Fig. 7.21 it is possible to conclude that after the advertiser spent a quantity of money to show the banner to the majority of visitors, further costs of display don't make sense from the point of view of advertizing payback. Restriction of number of displays for one user releases the space for demonstration of new advertizing appeals without increase in the general attendance of a site.

Speed of burning out of a banner depends on the volume of audience, intensity of display of advertizing (Ad Frequency which depends on two parameters — Ad Reach and Ad Impression) and qualities of the advertizing material. At calculation of speed of burning out of the advertizing

Table
7.10

Dynamics of changes in the flow of visitors to the site						
Catalog	1 week	2 week	3 week	4 week	5 week	6 week
63.ru	33	15	11	7	3	1
Samara24	24	9	12	4	1	2

material also it is necessary to consider the type of media (banners, text references, etc.), the speed of updating of audience, etc. It is Not so obvious that within one type of media can also occur delineation for speed. Thus stationary banners 468×60 format burn faster than the 88×31 buttons, although they both belong to the same type of advertising information. Reasons for this difference lie in the original signature of the media.

It is obvious that because the speed of burnout of advertising depends on the volume and dynamics audience updates, this value will be unique for of each individual advertising platform. Some of them, especially large or specialized advertising platforms (in this case, the amount and direction of the audience is usually more accurately known) pre-determined rate of burning of advertising and they give specific recommendations for improving the effectiveness of advertising campaigns. for example, so do all the big and banner exchange nets banners brokers. For other platforms rate of burning out determined only empirically or calculated approximately on the basis of data on the size of the audience.

Burnout problem applies not only to banner advertising. Burn out any promotional materials: text links, publications in periodicals, etc. Eventually promotional material, in whatever form it may be, is losing its effectiveness. Proper assessment of burn-up rate of advertising material helps to define the schedule of production and release of new media advertising better.

Directories that have a fairly constant volume and composition of the audience are good illustration of the process of burnout. It looks like the dynamics of change in the flow of visitors from the two regional directories on the site (see Table 7.10). It is clearly seen as in 4 weeks after placement the link burns out, and in the Samara24.ru catalog burning out happens within three weeks as its audience is less.

It is possible approximately to estimate the Speed of burning out of advertizing using data on the size of a captive audience. It is possible to use a number of empirical regularities. In particular, among advertisement makers situation according to which for achievement of the purpose (ie, to reach the moment when the user will necessarily make the desired action, or has never do it) it is necessary to show 2–3 times a text reference, 4 times a usual banner and 6-8 times image advertizing enjoys popularity. Thus, we can estimate the rate of burning out of advertising for the advertising platform audience knowing the volume and intensity of the show.

For Banner exchange network the basic unit of account is not the volume of the audience, which is very difficult measured for it, but the number of banner impressions. And the depletion of advertising material is converted to the number of impressions. Therefore, empirically established number of some banners impressions which recommended to update of advertising material by the system.

The simplest and most effective way to fight with burnout — is a regular exchange of advertising material. However, this method is also the most expensive.

It is obvious that each new advertising campaign is more effective to conduct with new set of banners. This is especially important in advertising of new materials because the user must provide by the content of the banner with which hi deals. In connection with this burden on the publishers increases because there is a need for frequent changing of banners. Internet newspaper apply the original technology of this kind, every day when advertised a new set of banners with the current news. In this case, the user sees every day the latest news, instead a banner with a picture and creates the effect when clicked on the news exactly, and not on an ad banner. However, these resources operate with tens of thousands of banner impressions per day, so for them frequent change of banners makes a literal sense. For a resource which generates some hundred displays of banners a day, it is unprofitable to develop every day a new banner.

Majority of advertizing agencies in traditional advertizing Regular replacement of advertizing materials recommends and practices for which practically there are no other alternatives. Regular replacement of advertizing materials recommends and practices the majority of advertizing agencies in traditional advertizing for which practically there are no other alternatives. However in the virtual world there are other laws and the principles of interaction with consumers. For virtual advertizing replacement of the advertizing material is not the only way of fight against audience exhaustion unlike traditional advertizing. First of all it is connected with dynamic Internet development.

The average Internet user knows and attends a few hundred sites. This is only a fraction of a percent of all the variety of the Internet (the audience of the Internet is extremely segmented). These audience qualities (intensive growth and segmentation) provide online advertising specialists an opportunity to combat burnout. The easiest way is not to change advertising material and audience. However, this method is not suitable for full-scale advertising campaign.

Sometimes for attraction of new users it is sufficient to change the location of the links within a website. Especially it concerns polythematic sites where audience of two sections may not intersect.

It is possible to give a rating as an example «Rambler the Top 100 ». Many sites registered in it, can be referred, to two various categories at least, but rules allow to be registered only in one category. Then, after some time, which depends on the rate of depletion of the advertising impact on the audience for this rating category, reducing the flow of visitors starts. Easily transfer site from one category to another attracted a new audience. Thus, the periodic movement between the site suitable headings helps to overcome the effects of burnout in the rankings.

This rule does not apply to brand resources that moving to another section is impossible.

Speed of burning out of advertizing is one of key parameters of the advertizing material and an advertizing platform. For advertisers the knowledge of speed burning out of advertizing can increase advertizing efficiency and value of these advertizing platforms.

To increase the effectiveness of banner advertising advertisers need to change banners and the sites on which they are located, while monitoring the changes in attendance at the log files on the server. It is necessary to develop new, more effective for this particular situation, banners and their position Based on these results.

Improving the efficiency of banner advertising

CTR is the main criterion for evaluating the effectiveness of the banner. Every system of banner advertising conducts the statistics of this parameter (for example, banner exchange network). On average this indicator ranges from 0.1 to 8%, depending on the subject, quality of manufacture of the banner, its page placement, etc.

It is obvious that the establishment and use of banners should be developed rules by internet marketing. Advertiser can violate them only with compelling reasons for this.

Various authors give similar recommendations to improve the effectiveness of banner advertising. Double Click published 10 recommendations to improve the effectiveness of banner advertising network. Rip is the President of Corporate Development, offered recommendations to improve the effectiveness, Infoseek Corporation has formulated 10 tips on this issue. Below is pooled analysis of these rules, supplemented by the author's recommendations.

1. «Click here.» According Infoseek, the phrase «Click Here» increases the number of clicks by 44%. In addition, it is proposed to use arrow, keys and other means to increase interactivity. This is one of the most famous councils of this kind, published in the Double Click in lesson №8, which reported 15% increase in CTR.

2. Using animation. Movement attracts the eye. Animated banners demonstrating simple story as animation, increase CTR. This is required because CTR difference between static and animated banners can be triple.



Example of the interactive banner, allowing to choose travel parameters. Not animated banner stands out web pages less, and therefore passed by a majority of readers. This corresponds to lesson №2 Double Click, which reported an increase in click ratio by 25%.

First this method was recommended by C_Net.

3. Use of interactive banners. Infoseek advises to use interactive elements in the banners (scrollbars, switches, buttons, drop-down lists, etc.). This allows you to create interactivity.

Bonzi Software Company, which used a simulation interface of Windows in popup advertising windows was forced to abandon the threatened court. Many users took Bonzi Software advertising appeals for Windows system messages and clicked on them. As a result, through the courts, the company were filed a claim of unfair advertising and introduction of user confusion, so that people were forced to interrupt the work in response to «the system» message. As a result of the trial has appeared a serious precedent limiting the actions of online advertising specialists.

4. Using funds targeting. This means a precise definition of the target audience and targeted work precisely with potential customers using targeting technologies. Double Click is mainly focused on the possibility of its «DART» system, therefore puts this advice № 1.

System DoubleClick Dart, in addition to standard features targeting provides features such as:

- A ban on the display of companies competitors banners on the same page with the data;
- A ban on the display of banners on web pages of companies with the potential negative associations (an example: advertizing of the automobile companies won't be shown on pages where is possible the publication of news about road accidents);
- distribution of banners to certain banner places within the page;
- planning and assessment of possible volumes of advertizing;
- monitoring of the advertising campaign;
- The ability to change settings quickly, etc.

5. Systematic variation of parameters. According Infoseek, this is the most important rule. Double Click In Lesson №9 does not recommend to show the same banner to the same

audience more than 4 times. Systematic variation of the parameters of banner advertising (image, text, websites, hosting the banner), must be accompanied by tracking and analyzing

changes in responses to advertising. To implement this recommendation, you can use rule «of coordinatewise» descent, based on the change of one parameter at a time.

6. Orientation to target audience. This advice is similar to advice № 4 Double Click — to place advertising not on the main pages, but on the pages suitable on the contents.

7. The organization of competitions is ineffective. Company Infoseek analyzed 2000 banners and 500 million hits and found no improvement of CTR when using banners calling to participate in the competition. However, this approach is not shared by all experts in internet marketing.

8. The best price is «free.» It is possible to implement a pay related products and services.

9. Use of elements of high interest. Great interest among users cause banners of sexual content or intriguing, puzzling that report interesting and useful information (exposure, riddles, puzzles, tests, etc.). Specific facts are better than the well-known statement. Advice to use questions corresponds to lesson №2 Double Click, advice to use cryptic messages corresponds to lesson №8.

10. Limiting the volume of the banner. Almost all banner exchange nets impose an upper limit on the volume of one banner. This is done not only for the order to protect the server from overload, but also for faster downloads advertising. Banner exchange network carried this control automatically. Small size of the banner becomes especially important if the banner is located at the beginning of the page, because the user is automatically scrolls the page to remove the banner from the computer screen, so advertising should be loaded instantly, faster than everything else.

In order to be sure that the banner will be displayed, its volume should not exceed 10-15 kb. Most banner exchange networks introduces such restrictions. In this regard, it is useful to use the minimum color palette. According Infoseek, the probability of being in sight decreases with increasing size of the banner exponentially. This is advice № 3 Double Click. Of course, this advice comes into conflict with the advice to use animation.

11. Conciseness of the banner text. It is necessary use the site to transfer complex advertising messages. Banner is a small volume advertising appeal, and the less information it contains, the better it is absorbed by readers. The fewer the words, the bigger you can make them, the more likely that they will notice. However it is impossible to use many reductions — the banner has to contain intelligent information.

12. Small color scale. On such small space which represents the banner, there are enough three-five different flowers. It improves perception of information, and the large number of flowers irritates an eye. Besides, reduction of chromaticity reduces the size of a banner and saves time of loading of the page.

13. Restricting the use of graphics. As well as words and colors, pictures can arrange advertising, to give it structure and properly direct the reader's eye. But there is a danger of overload banner by large number of drawings, making it difficult to read. In general, in one frame should be no more than one picture. If frames of animation more than two, there should be one general constant element that will properly align the visual range of the banner.

14. Use no more than 3-4 frames. The user will not see the animation more than a few seconds. Therefore, each frame must be a full-fledged advertising, or the whole «cartoon» should keep up play for five to seven seconds.

15. Is impossible mislead the user. Banner should reflect the theme of the page to which it leads. At the beginning of the page referenced by the banner it is necessary to provide at least brief information related to the theme of the banner. Not finding the advertised service or information, visitors may leave the page.

16. Demonstrate the company address. If one of the banner frames demonstrates the firm address, thus CTR increasing indirectly. Naturally, the address must be short and easy to remember, it is also desirable address associated with the site subject. If the provider can not provide such address, it is recommended to use the services of free services forwarding.

17. Accommodation in non-standard locations. Location banners at the bottom or the top of the web page is used often enough. However, users are accustomed to advertising and automatically skip the top and the bottom of web pages. Users will not miss banner when Read the text in the middle of the page.

18. Create a sense of urgency of action. Banner must create at the visitor the feeling that the information posted on the banner is more important than that the visitor makes now. This uses phrases like:

- 1) «The offer is valid for several days! Hurry! Only until.... number»;
- 2) «The number of copies is limited! Get (something) until it is over!»
- 3) «If you become one of the first ten buyers, then...» etc.

As noted in lesson № 10 Double Click It is important to understand that, not all clicks are future customers. New or occasional Internet users click more often. Therefore, CTR is higher on sites where new users come to.

7.3.6. Link Exchange

One of the ways of attracting visitors is to exchange links with sites visited by the target audience. This method provides a good basis for the expansion of permanent audience. Businessman finds a site where would like to see a link to his web resource, negotiates with publishers and puts a link to this site at the following page. In response in the partner website appears link on the site owner.

Table 7.11

The most popular sources of information on the web-site	
Source of information	Percent of visitors who use this source
Links from other web pages (including pages of search engines and directories)	95 %
Journals	65 %
Friends	53 %
Electronic newsgroups	47 %
Newspapers	32 %
Email signature	29 %
Other sources	32 %

This allows to get visitors not only from partner sites, but from search engines. Link Exchange raises the value of the citation index (it is used as the criteria for matching search queries), and thus increases the position of a website in search engine responses.

To demonstrate the effectiveness of this method, we present independent research data.

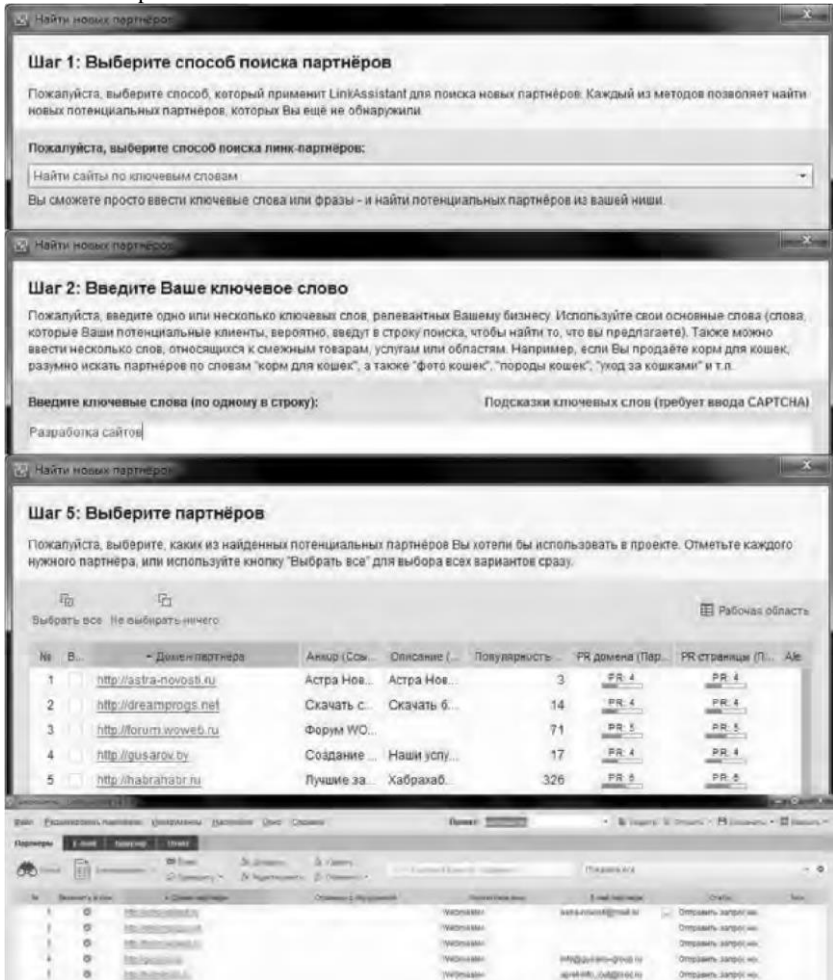
In some cases, in order to attract the attention of visitors in text links the effect of understatement is use. Desire to go further on the link can be formed among readers by Proper selection and placement of phrases (eg, paragraph interesting to visitors).

There are two approaches to the organization of an exchange of links. The first is the mass link exchange with others interested in this web resource. Typically, there are special pages for this purpose «our partners» or «recommend to visit.» The number of links in such pages can reach several hundred, but the effectiveness of their placement is low. As for the search engines, they «have adapted» and, in the calculation of citation index, they give a much lower priority for links that are in the list of links than links which are located separately in the text of the page. This method of exchanging links s labor intensive.

For most web projects is impractical to exchange links with all known sites. In this case use second approach — selective link exchange. It is less labor intensive and may be more effective for many sites. Essence of it is that thematically related resources exchange links or banners, advertising each other (often on the front page). Typically, resources with similar attendance and

non-overlapping range exchange the reference. The disadvantage of this method is limited scope. Firstly, the main page can not be crowded references to partners. The disadvantage of this method is limited scope. Firstly, the main page can not be crowded reference to partners. Secondly, there are difficulties in finding websites to exchange: site should not be a competitor, and should have a similar attendance.

There are special services providing for the organization of a link exchange (they can be free and commercial). For link exchange can also



The search dialog of partners in LinkAssistant

be used specialized software (see Fig. 7.23) and free mailing of proposals for a link exchange where you can place your ad or read other sites offers about link exchange.

One of the ways to find partner websites is as follows. The list of the keywords characterizing a site is formed. Then the inquiry in a search engine is used, and the first 15-30 search results are analyzed. Further suitable pages are selected (on design and the contents), and data on them are entered in the table. So, passing from one search engine to another, and

touching keywords, the list of sites who can offer an exchange is formed. Next to them is sent a message by email.

The letter to the owner of an estimated partner site has to be short, rather informative, and personal. It is necessary to send the letter in which it is specified, with which of sites

Other way of obtaining information on the user is the analysis of behavior of the user on a site. Obtaining such information means that on a site there are mechanisms allowing to trace and analyze: what sections the user visits on the site, what actions carries out, what is the time carries out on each page, the frequency of the appeal to a resource for a certain period. All of this information may be collected automatically. Technology «cookies» and special software that allows you to use these data is used to collect information.

In some cases, the users databases are based on the acquisition and additional information from other sources. This is one of the areas of direct marketing on the Internet. database Owners often increase the value his base by buying and combining it with information from other databases, thus adding together demographic and behavioral data.

It's not so easy to do within the e-commerce, where the site often receives only a user's email address, and not really a decisive information like name and address of residence.

Example. Scandal over acquisition of the offline direct marketing company Abacus by the network advertising giant of DoubleClick inflamed because of violation of the rights of users on frequent life. This might be due to sharing anonymous data about user behavior on the Web and data defining a particular person.

Personalization is the provision of personal content to the user depending on the pre-collected information about the interests and preferences of the user. For example, when a user enters the online bookstore him meet the recommendation of some book on the basis of a profile of the user.

For the sites earning money on advertizing, the profiling is opportunity to deliver to the user the focused advertizing. In the near future the situation when thanks to a profiling web publishers will precisely know, what advertizing to show to the visitors is possible. It can increase advertizing efficiency that in turn will increase profits of advertisers and web publishers.

Currently, in most cases, the personalization of advertising occurs differently. Web resources use data about customer behavior, and a technique called «total filtration» to create personal content. In a situation where it is not possible to create a personal advertisement for each new visitor, used association of people into different groups depending on the preliminary information, which gives hope that the relevance of the displayed to them advertising increases.

For example, if the hypothetical profile contains the information that the user last week visited sites with information on parenting, child nutrition and tales, chances are that he has children, are quite high. He is placed in the «parent» group. Now he will show advertising of children's products. In this situation, the assumption of consumer interests soundly last activity on the web.

is convenient to use a multidimensional matrix model of data for analysis of the structure and development of the site's audience aimed at certain

groups of visitors effects. In this case, each selected audience group described by a set of parameter values corresponding to all the dimensions of the matrix.

Depending on the specifics of e-commerce possible to identify different sets of indicators that characterize the audience. Nevertheless, there are some common characteristics:

- frequency of visits;
- time conducted on the site;
- geographical origin of visitors;
- users income;
- level of spending on services or products offered by the website;
- belonging to a certain age and sex;
- use of information obtained on the website (professional or personal use).

Consider some of the parameters specified in more detail. Data on the frequency of visits to the site, the level of users income and expenses allow to generate tariff policy for the services of a web resource or may be used for the presentation of an advertising platform for potential advertiser.

If a visitor uses obtained on the web-site information in their professional activities, it can be considered experts in advertising. In this case, visitors tend to pay less attention to direct advertising, but much more trusts hidden advertising (expert assessments, recommendations, etc.).

Geographical origin of the user depends not only on the relative time of his work on the web, but also its activity, and often his financial position. Geographic segmentation of users extremely is essential to advertising sites. In addition, user geography is a key information for owners of online shops, as it affects the operation of the shipping service.

the audience Divided into groups represents a great interest for specialists in advertizing as it allows to organize more exact targeting.

The technology of search advertizing or advertizing on thematic resources in comparison with advertizing on the basis of a profiling doesn't give a clear understanding about social and demographic status of the user (eg sex and age) and therefore can not be used in an advertising campaign with the necessity of targeting by age, gender, hobbies, habits.

Long-term goal of profiling is much broader than the construction of assumptions based on past user behavior on the Web. it consists in use of predicting model. Theoretically, if it is possible to analyze enough of statistical information on behavior of users in the Network, it is possible to predict not only where they were but also where they will go most likely.

For example, if the user has just visited gaming sites, predictive model of banner network can assume that in the next 15 minutes, the user can go to the site with music and automatically display relevant advertising.

In some studies on Internet advertising asks the question: whether is the profiling violation of the right of users on private life? Complaints of invasion of privacy of users begin when web publishers pass the line between user friendliness and persistence. Then appear ideas about disabilities Internet advertisements track user behavior on the Web. But the analysis of user data will always exist, so expert in online advertising is necessary to think about the consequences.

7.3.8. E-mail-advertising. Basic concepts and advantages e-mail-advertising

Many popular broadcast media on the Internet are based on the mechanism of e-mail. These include mailing lists, discussion lists, and individual e-mail messages. E-mail-advertising is an effective internet marketing tool if used skillfully.

There are two basic approaches to the organization of sending advertising messages by e-mail. Opt-out method implies the possibility of a consumer failure from receiving further messages after he got the first one, ie by this method, the message will be sent as long as the recipient will not refuse of the messages.

Practice that a potential customer has to perform any action (for example, click on the link) to prevent further distribution of letters addressed to him, based on the principle of passive consent. In this case, if the required action is not performed, advertisers see it as permission to add an address to the mailing list.

When using the opt-in method consumers initially did not receive advertising messages as long as they do not express their consent to receive them. The consent of the recipient opens the possibility of targeted advertising. Otherwise advertisement sent by a broader but less ordered list of addresses and recipients may perceive it as spam.

Double Opt-in is a method of organizing the distribution of advertising messages, at which use, it is necessary to perform the procedure of its confirmation.

Companies that are engaged in e-mail-advertising, use personalization actively. They integrate their e-mail-addresses database with detailed database of user needs and preferences. It is possible to send messages to potential customers, the most suitable for their content Through the use of software based on the creation of consumers profiles, behavioral analysis and elements of artificial intelligence. Personalized e-mail allows to establish close links with potential customers.

Example. The company Xchange has developed CallMail technology By integrating online service of work with clients with e-mail-advertising. This technology allows the recipient of emails to signal the company office manager to call them on the phone by click at the bottom of the message. Thus, the marketer can gather more information about customers and evaluate the effectiveness of the promotion.

Radical Mail Company has provided consumers the opportunity to order restaurant guide company Zagat Survey LLC directly from the company in an email. According to the company, this method almost tripled the number of sales the directory, reducing the distance between the first impression and the act of purchase.

Sufficiently detailed description of the principles and methods of email-advertising given in the book of Timothy Bokareva «Online advertising Encyclopedia» [13]. Further, with the consent of the author will be used material from this book.

Benefits of e-mail-advertising:

- e-mail, which appeared before the creation of the Internet, used in almost all users of the Network;
- works directly and reaches a particular user, which enables personalized address;
- it is possible to influence the target audience through a clear thematic division of mailing lists and discussion lists;
- interesting message from the recipient's point of view can be extended to colleagues and friends;
- many Western experts agree that the response to the correct placement of advertising in e-mail is higher than the response to banners, and most importantly higher quality of attracted audience to the advertiser's site (more targeted visitors, higher CTI and CTB).

According to Western sources Mailing list costs the company 25 cents per address, while delivery by ordinary mail costs \$ 1.2. By Google Research in England, the average price of making contact (purchase, a call the completed form) in search advertising costs 0.27 to 9 in a traditional paper «direct mail.» Besides, according to the observations of researchers, the percentage of responding to e-mail advertising ranges from 6% to 20 %, while the effectiveness of banners is only about 0.5-3%, and the efficiency of direct mail by ordinary mail is 2-4 %.

There are several effective methods of use e-mail (Netiquette) as a tool of advertising that do not violate ethical conduct.

Individual letters

Mailing individual letters is a very labor-intensive occupation that requires a lot of time. It is preceded by painstaking work of collecting addresses. At the same time the letter gets to that user in whom the advertiser is interested. Businessman can find e-mail addresses of interested people on the subject of their web pages, in their letters, business cards, in advertising brochures of their firms, in conferences, discussion lists, in specialized databases, etc.

There are a number of recommendations on how to get e-mail-addresses of users:

- carrying out competitions, totalizers or granting discounts to the registered users (at registration the e-mail-address is specified and the question is set: «Whether You agree to receive company news?»);

- registration in the section of a site closed from ordinary users during which it is necessary to fill a form in which the user specifies the e-mail- address;
- offer of free programs for users, which is included in the interface issue advertising. In order to remove the ads, the user needs to register and enter your e-mail-address;
- the proposal to keep e-mail-address for customer support information or additional services.

In compiling the letters are advised to follow the following rules:

- it is desirable that at the beginning of the letters stood a direct appeal to the person by name;
- it is necessary to specify the reason for referring to the message recipient. For example, «I read your letter in the discussion sheet NN, dated ... and I think that you may be interested...». It is desirable to agree the offers text with what is known about the recipient;
- text of the letter should not be made in the form of direct advertising but in the form of a proposal, which is useful to the recipient;
- in the recipient line should be only one address ie every letter sent individually;
- e-mail-address obtained on free mail servers is not used as the return address;
- letter have to be signed and include contact information.

If sending advertising letters is not welcome by Web users, unobtrusively in a few lines businessman can signature to advertise himself, his website, or even his company products and services. When sending a letter not to a specific recipient, and, for example, a conference or a discussion list, a signature may see thousands of readers.

What is recommended to use the in the signature:

- active URL and e-mail-address of the site make it possible to click on them with the mouse;
- name of the writer, and not just the company name. Users prefer to receive letters from people and not from the mail robot;
- besides the URL is necessary to mention the name of the website or company listed on the network at this address. It is advisable to place a small text or slogan, giving an idea of the web site, company, services, etc. For commercial sites, it is desirable to include phone and fax numbers, postal address;
- is desirable to limit size of the signature 5 strings. Large signature containing advertising, may be negatively perceived by the recipient, and it is regarded as intrusive way to express yourself. The conference moderator can delete the signature which is too long;

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because businessman limited of small size of the signature, it is useful to have several different options for signatures and use them depending on the situation.

Mailing Lists

Besides banner ads, there are other methods of advertising, using the principle of payment according to the amount of audience, for example, advertising mailing lists.

Mailing in online advertising is the spread of the message by email according to the list of addresses

The list of mailing is the mechanism which allows to dispatch the message to some group of subscribers. There is a mailing as a broadcasting when only the organizer of mailing has the right to send information and as group communication: all subscribers can send messages. In the latter case mailing has a group address: the messages sent to it, receive everything subscriber s. Thus the organizer of mailing (moderator) defines the rights of participants — who can read only mailing and who to send messages.

History appearance of mailings. In 1979, two graduate students at the University of Duke University (North Carolina, USA) suggested the use of UUCP protocol for information dissemination. Thus was born the bulletin boards USENET. There were other networks using different protocols, but offering the same — many discussion groups. In Russia, the most well known network is FidoNet, formed in 1984. Such networks became the progenitors of mailings.

Mailing lists can be public or private. Closed distribution is collaboration tool, they are usually created and managed within a particular company. For public mailings, usually defined subscription rules and abandon it (unsubscribe) and communication in them.

There are websites that offer the appropriate web service — it is server subscriptions. In such sites, anyone can create their own mailing. Usually mailing from these sites do not imply the group communication and work only in broadcast mode.

One of the disadvantages of such systems that to the mailing organizer are not available e-mail-addresses of readers, and the server may close the mailing on his own. Another disadvantage is that the organizer will not be able to control the distribution, the content of advertisements placed in the letters. So after opening the mailing on the server mailings is necessary allow users to alternative subscription directly.

About 2 to 5% of visitors sign up to receive by email applications to the site (in the form of distribution), and this number increases to the upper limit at the time of advertising campaigns and falls at other times.

To advertise mailing list can be used informational support when the organizer distribution negotiates with the other web resources about placing them on the form to subscribe to the mailing. And sites that attract subscribers (Media Sponsors), regularly advertised in the mailing.

High efficiency of mailing lists as a marketing tool due to the fact that they usually represent a means of communication designed for specific target groups, and often have thousands of subscribers. Benefits of mailing list Organization:

- effective way to remind users about the site (delivery helps to ensure the return of visitors to the site);
- high predictability of the effect of mailing (after a few issues, you can easily determine how many new purchases causes each letter).
- Disadvantages opening the mailing list:
- need to ensure the regular access (breaks in release mailing lead to a significant reduction effect of exposure on the audience at the resumption of issue);
- the limitations of the process (the number of people involved with this method is limited by the number of list subscribers. Eventually there may be a reduction in visits and purchases. Reduction of visits may be due to the fading of user interest of letters topics or decreased quality of content mailing. Reduced purchases can be explained by saturation audience demand of mailing).

There are several ways To put ads to a mailing list. Their choice depends on the policy administration's list:

- to place paid advertisements;
- to write useful material for mailing after spending indirect advertising (mentioning your company, sign, etc.);
- to place advertisements for free persuading administrator of mailing list to use this event to subscribers.

Subscriptions to news announcements, articles and other information is a very important element of online marketing for content projects. Mailing lists have been successfully used by many commercial web projects. As material for letters can serve data on receipt of new goods, news about carried-out marketing actions, etc.

Online store is advisable to restrict the publication of a weekly schedule of information about their new products, more frequent publication of materials may irritate subscribers.

For Site of corporate representation it makes sense to link the output mailing with the advent of company news.

Some recommendations on the organization of a mailing list:

- it is necessary to provide to users accurate information on subject, a format, frequency of the list of mailing. In the future it isn't necessary to deviate these characteristics without consent of subscribers;
- is important to provide a convenient and intuitive mechanism for the implementation of subscription and unsubscribe from the list (cases of use of the return technology complicating the formal reply are known. If the procedure is not obvious, the user will continue to

receive messages, even if the subscription is lost for him the former interest, but the value of such recipient plummets);

- is necessary that confirm the subscription comes directly from the address of the recipient, otherwise the situation may arise when a user sign all his friends (or enemies) to a mailing list without their knowledge. They can relate to this ambiguous;
- a list of e-mail-addresses of subscribers can not be used for purposes other than business mailing. For example, to send of advertising only. Is impossible give or sell a list of e-mail-addresses to third parties;
- preliminary testing of commercial messages sent out is an important element of mailing. For this purpose two-three versions of the message which have the different contents can be used, but are aimed at one influence. Further the message are tested by sending them a test audience, and then verified by the level of response of each message individually. In sending for mass audience uses the most effective communication;
- the digest of this list can improve the user convenience in studying mailing;
- placement on the website archive of mailings is an effective tool for attracting visitors.

Web projects providing services can offer information support to users through their inclusion in the list. If the enterprise plans to extend paid advertizing through the mailing list, it is possible to find advertisers through the Internet advertizing systems, allowing to sell and exchange text references. Thus it is necessary to be written off at first directly with advertisers and to warn them that their advertizing will be published in the mailing list.

In mailings PPL systems are used (Pay Per Lead is the program of payment for action of the person who has come to a site of the advertiser from the page of the publisher on the corresponding advertizing placed in it), including percent from sales. Conversion of visitors of mailing can reach percent and more, the similar indicator of a site seldom exceeds 0,2-0,5%.

In a situation when for a short time it is required to notify target audience of a web resource about any event, it isn't enough to publish this information on the website: will pass a lot of time before all regular customers of a resource will visit it. Mailing of this information will give to subscribers fast effect, having captured not only regular customers of a site, but also those who comes on it rather seldom. Mailing represents the good PR tool In combination with information web resource.

Also in the references possible to add advertising banners from banner exchange networks. If there are more than a thousand subscribers to the mailing list publishing an advertising banner in it gives thousand impressions (or about 10-30 visitors). In this case, the novice web publishers need to get in touch with customer support banner network, obtain its agreement

and only in this case, to publish advertising, otherwise, the publisher can achieve cancellation.

Regularly going out mailing list of website is a very effective means of advertising. After the publication of the mailing (within 1-3 days) on the site comes up to 40-50% of subscribers, increasing traffic, plus follow-up visits. They can be divided into three main groups:

- 1) repeat visits from people who are interested in the site;
- 2) visit from archives of mailing;
- 3) visits from search engines, indexed to this list.

One of additional opportunities of mailing lists is composing a portrait of audience of mailing on the basis of biographical particulars of subscribers (it is desirable to ask users at a subscription to fill in the small questionnaire). First of all, it is useful for organizer of mailing to know who is his subscribers. Also this information will be extremely important for resource presentation to the advertiser, the investor or the auditor. Thus it is necessary to consider, what not each subscriber will provide information about yourself, and everyone has the right to remain anonymous. In the portrait of an audience can enter the following data:

- socio-demographic characteristics (distribution of subscribers by sex, age, presence of children, education, field of activity, status, occupation, income);
- have access to the Internet at home and at work;
- frequency of Internet use;
- area of interest and other data used in profiling.

This information allows to build a web project strategy development based on objective data. Outside the sphere of e-commerce only specially conducted marketing research can give data about socio-demographic characteristics, areas of interest, etc. The cost of such research in some cases can significantly exceed the cost of creation of the site which audience should be investigated.

7.3.9. Discussion lists

Discussion lists are created for the exchange of information, discussions on certain subjects. Unlike most lists to write in a sheet can not only its creators, but all participants. As a rule, before the message is sent to all participants of the sheet, it passes verification by editor — moderator.

It is possible to use discussion lists Effectively, carrying out the following rules:

- while participating in discussions is necessary to follow the rules Netiquette (see section 1.8.6) ;
- subscription to discussion groups, which are of interest in terms of acquiring new visitors. It is possible that among the existing discussions

there are such discussions, in which you can participate, referring to the site as a source of additional information;

- not to send direct advertising to similar sheets. Subscribers entered a list for an exchange of opinions and obtaining new information, instead of reading advertising;
- before sending the first letters to a list, it is necessary to study attentively its rules, to read list archive not to bring up questions to which it was paid already much attention earlier. In the beginning it is desirable not to show some days activities, and to study the general atmosphere of a list and the main speakers;
- the employer can calculate the potential customers and contact them directly through analysis of published posts;
- taking an active part in the discussion of their competence and proved itself in a sheet as an expert in a given area;
- initiate new discussion topics (not to mention at the beginning of the advertised site), in the course of which it will be possible to mention the relevant page;
- not using the return address, e-mail-addresses received on free mail servers. This can cause distrust because they are often used by spammers to not advertise their real email address.

Additional positive feature of active participation in the sheet that is often popular and authoritative discussion lists are viewed as representatives of specialized press, and it is likely that the sent message in the discussion list will be quoted on the pages of these publications.

Spam

In a review of methods using e-mail as a means of online advertising is necessary to say about spam.

Spam is the messages sent to recipients from unknown addressees to which recipients didn't provide on it permission. Most often the term «spam» is used that is «post spam». As a rule, spam is mass mailing on a large number of the addresses, containing advertising or offers, and also «happiness letters», etc. Usually such letters don't contain the personal address, but have deliberately intriguing headings, such as «Earnings without leaving the house» or «Urgently!! Unique offer».

Main signs of spam:

- mass mailing of post messages to the users who haven't expressed desire to receive similar correspondence, and it makes no difference whether it is commercial advertising or simply useful information according to the sender's;
- posts, the subjects of which has no direct relationship to the addressee;

- placement messages in conference, discussion list, guestbook that are not related to a particular subject (off-topic), or messages that represent direct advertising (unless permitted by the established rules).
- On the Internet As spam spreads advertising of systems multilevel marketing («pyramids»), etc.
- Usually Spammers collect e-mail-address using special software robot or manually from the following sources:
 - webpage of corporate and personal sites;
 - conference;
 - electronic bulletin boards; • guest books;
 - chats.

Using a simple program spammer automatically bypasses Web pages and collects email addresses, which the authors of sites left as a contact. Thus collected addresses either directly used by the collectors, or sold to a third party.

A user's provider is the first barrier to spam. There are «black lists» in which providers are entered spammers. Their messages are automatically detected and destroyed before entering the user's mailbox.

The user can write the letter with the complaint to provider of the spammer. Guilty of spam sending can seriously warn, or close its account.

Relation of the majority of users of the Network to spam the extremely negative. According to the researches Gvu (<http://www.cc.gatech.edu/gvu/>), only 9,2% of users read similar messages. Thus this figure is created in many respects thanks to users beginners. From those who works with the Internet more than 3 years, spam is read by only 5,4%.

The majority of experts doesn't recommend to use spam as the instrument of Internet advertizing, as:

- it violates the ethics network (netetiquette);
- can cause negative criticism, mail bombs addressed to the spammer, the complaints to his provider, etc.;
- spammer earn a bad reputation;
- spammer address fall into the black list of providers and even his ordinary letter may not reach the addressee;
- at inept use similar advertizing possesses low efficiency and does harm to the advertiser. it is established that negative reaction to advertizing with ease can pass and directly to an advertized product.

In recent years, many countries have stepped up the development of projects of laws relating to the fight against spam.

Example. In May 2004, Howard H. Carmack, sent more than 850 million unsolicited advertising letters, was sentenced to seven years in prison (the maximum possible the sentence in the U.S for this type of crime).

In August 2005, Microsoft has made resolving proceedings initiated in 2003 against Scott Richter head of the e-mail-advertising company OptInBig.com (sends tens of billions

of e-mail messages). Under the agreement on the settlement OptInBig.com will be obliged to pay to Microsoft \$ 7 million and pursuant to the federal anti-spam law the U.S. not to send promotional e-mails to anyone who has not given prior consent to receive such communications.

However, not everything in this spam interpretation is uniquely. Until recently, there were no laws that would have condemn spam. The fact that spam is primarily sending e-mail correspondence, which protects human rights in the free flow of information, and this approach is supported by legislation in most countries. The majority of experts in virus marketing appeals to this principle, justifying the activity. While the Russian and world legislation won't come to a certain opinion that is spam, the spontaneous development of the services market of unsolicited mailings will continue.

7.3.10. Virus marketing. Concept and principles of virus marketing

Virus marketing is the method of marketing using for transfer of the marketing message communication channels independent of the businessman, on a nonprofit basis. Is based on encouragement of the individual to transfer of the marketing message to other persons creating potential for the exponential growth of influence of this message. The motivation of the individual can be as material (opportunity to receive a discount/privilege/gift) and non-material (desire to share the content causing keen interest). Like viruses, such technologies use any favorable opportunity for increase in number of the transferred messages.

Some authors define virus marketing as process in which goods, service or their advertizing have such influence on the person that it «catches» idea of distribution of this product and to become its active advertizing medium.

Out of the Internet to methods of virus marketing there correspond actions usually called by «gossiping», «network marketing». Hotmail.com is company strategy The classical example of strategy of virus marketing (one of the first free electronic e-mail servers):

- 1) e-mail services provided to users for free;
- 2) every free sent message is supplemented with the phrase «Get your free personal mailbox on www.hotmail.com»;
- 3) with letters of users hotmail.com offer diverges exponentially (part of recipients' clients also becomes hotmail.com);
- 4) The result is large audience that enjoys this server and sends letters added at the end of the line advertizing. String contents fully controlled Hotmail.com.

There are six basic principles that it is desirable to consider in developing a strategy virus marketing:

- 1) free distribution of goods and services;
- 2) the ensure transmission without hindrance of a marketing message;
- 3) quick zoom of translational system;

- 4) reliance on simple human needs and motivations;
- 5) operation on the basis of existing communication networks; 6) use of resources belonging to other subjects.

1. Free distribution of goods and services.

«Free» is one of the strongest arguments marketer. In most programs, viral marketing to attract the attention are freely available goods and services, having a certain value: free e-mail services, free information, free software. The second law of Wilson internet marketing (<http://www.wilsonweb.com/wmta/basic-principles.htm>) reads: «Let Him and sell.» Characteristics of the «cheap» and «inexpensive» cause some interest in the product, but for «free» customers react much faster.

Virus marketing is also practiced deferred payment or receipt of bonuses. But «Free!» Always catches the eye. After glance translated into other useful objects that are offered for the money. With these interested views businessman receives e-mail addresses, advertising opportunities, audience, etc. This recommendation can be stated as — given away for free at first, and then sell.

2. Ensuring the unimpeded transfer of the marketing message.

Used information channel should easily pass a marketing message in a large number of copies, such as e-mail and website. Viral marketing works freely on the Internet, because of the technical capabilities of the web instant communication easily available and inexpensive. Digital format facilitates replication.

From a marketing standpoint, the message must be very simple and concise, to prevent loss of meaning when it is transferred. For example, the classic «Get your free personal mailbox on www.hotmail.com» firstly briefly and clearly formulated, and secondly, guaranteed to read a large number of people because of a successful choice media distribution.

3. Fast increase in the size of transmitting system.

translational channel should provide quick increase in message passing. Weak spot Hotmail model is that for the provision of free e-mail requires a separate mail server. If this model works very well, the number of mail servers should grow rapidly, otherwise the service will begin to falter. Everything should be planned so that there were no problems with addition of new mail servers. It is necessary in advance to provide extensibility of viral model.

4. Reliance on simple human needs and motivations.

Reasonably plans composed of viral marketing are based on the most common human needs and motivations. People motivated by the desire to satisfy the physiological and spiritual needs (see «Maslow pyramid» in marketing literature). The desire to communicate creates millions of websites and billions of e-mails. Most effective marketing strategies based on common human needs and motivations.



Interface of free games that have advertising character

5. Functioning on the basis of existing communication networks.

Sociologists argue that the normal human range of communication consists of 8–12 his friends, relatives and colleagues. Advanced social circle can consist of dozens, hundreds or even thousands of people depending on the social status of the individual, his ability to build relationships. Viral marketing programs are actively using it. The entrepreneur achieves message rapid spread if he know how to post a message in the system of existing connections between people,.

6. Use of resources belonging to other subjects.

The most creative viral marketing specialists use other people’s resources for information dissemination. for example, Affiliate Programs placed from others websites text or graphic links to the resource of program organizer. Authors distribute their free videos, graphics, games or articles, are also trying to put them on other people’s websites. New press releases can be placed in hundreds of periodicals, creating the possibility that thousands of readers will read them. That is owned by other people mailing and websites broadcast message marketing of entrepreneur. In this case all distribution costs borne by the resource owners.

Example. Distribution Microsoft software first used the basic idea of viral marketing. Formally, as well as major competitors, the company does not recognize the unlicensed use of their own products corporation actually contributed the maximum its dissemination. In this case the use of copyright and combating piracy of programs discussed only for users in countries where there were conditions for mass purchase and license software. But even for countries that do not pay enough attention to the legal regulation of this issue, Microsoft anyway establish national versions of its products and facilitate their dissemination. Thus, corporation in the shortest terms created the unique international market. And users who have mastered MS DOS because of counterfeit versions of the program, began to buy new versions officially.

Besides, the Microsoft corporation extends the Windows operating system at the symbolical price if it is established by producers or sellers on new computers.

Options for implementation of viral marketing methods:

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creation and distribution of free e-book or game (Fig. 7.24) that contains advertising information;

- distribution screensaver containing reference to the company;
- offer to other web resources of organization service of their guest books for free. Each free guest book will contain a link to the creator's guest book; distribution of free digital postcards. Giving visitors the ability to send digital postcards and greetings, containing a link
- to the server by providing a service, etc.

Virus marketing and rights of users to privacy

The method of «tell-friend» is a new trend of viral marketing, where consumers have an incentive to deliver advertisements among their friends. As an embodiment of this method it is possible that the advertisers are asking users to give their friends and acquaintances e-mail addresses, and then send advertising messages on behalf of a friend. Alternatively, the visitor of online store site are invited to participate in the raffle of something or getting gifts if he will send recommendation to visit the online store to a certain number of friends. Sometimes gifts are promised also for friends.

Viral marketing was born from the idea that the company should encourage existing customers to disseminate information about the company among friends and acquaintances. In the early 90s the U.S. company MCI conducted an advertising campaign «Friends and Family». Company intercity communication persistently offered to consumers to report the names of their friends in exchange for a discount on telephone calls. On the one hand the program MCI was a breakthrough in the field of direct telephone marketing and it has brought to the company more than 10 million of new clients, but its success has led to the spread in America annoying advertising calls.

According to researchers, more than half of U.S. companies, such as Tupperware, Banana Republic, Barnes & Noble and Victoria's Secret increasingly prefer viral marketing as a means to keep in touch with customers, acquiring new customers and increase of online sales.

For example, the advertising campaign, which was held on the B2B site Office.com, offered visitors report addresses of five of his friends in exchange for the opportunity to win a million dollars or a car «Mercedes». In the column «sender address» of such sales letters is written e-mail friend, although they are sent to the company. Moreover, in the email there is a form that allows the recipient to forward it to someone else, so the potential to be a wave of further distribution of information.

The advertizing broadcast through consumers always is most effective, and information about the shop, received on the Internet in the «private» way, gets absolutely other shade.

Lately, because of frequent complaints and litigation regarding the rights of users to privacy, the legality of e-mail-advertising methods has undergone scrutiny. Popular Destinations «tell a friend» creates some tension between buyers and sellers. Response of users to advertising campaigns shows their growing intolerance for the invasion of privacy.

Example. In spring 2001, the company «IKEA» informed customers that anyone who will send an email to 10 friends announcement about opening a store in San Francisco, will

receive the discount. sellers prefer to roll the campaign when they received in response to this offer only a dozen complaints instead of support.

In the company advertisements has not been clearly stated that in the future will happen with the provided email address. All correspondence with consumers must be conducted very correctly. Entrepreneur must show to the consumer that he appreciates those trusting relationships entered into by the consumer. «IKEA» could not create a trust relationship because not clearly explained its intentions.

Thus, you can the use of viral marketing, it is an effective means of attracting customers. However, the campaign strategy should be developed with great care, because users won't forgive rough invasion into their private life:

it is necessary to give to users a clear idea of how addresses of their acquaintances will be used

- further which they will bring in a form on a site; number provided for participation in the action addresses of friends need to limit 5-10, otherwise advertising is likely will get to random and unfamiliar people who consider it as spam offer should be advantageous for users who have agreed to participate in the program of viral marketing, it is necessary to
- articulate on the site and e- mail-letter conditions of receipt of remuneration or participation the prize draw; is necessary to provide receive benefits not only for the first user in the messages chain and for the recipients following e-mail-message, otherwise marketing
- campaign can not be considered a viral because it will cease to exist in the first stage. Many people feel embarrassed, earning some privileges by using their friends and acquaintances. To help them overcome this awkwardness it is necessary to offer benefits to friends, receiving a letter (as in the case of a marketing campaign « allocate-friend» the company Fogdog, when you need to choose your friends, which will be sent a check for \$ 10 that allows to buy something in this shop); in order to there was a chain reaction, it is necessary to put in the e-mail-message, the same form for sending messages, as on the site with the same description of bargains; is necessary to come up a form for sending letters on the site. If it possible, to make a separate column for the user's signature at the bottom of the letter. When a message is received friends saw a familiar name not only in the title, but in the message text. You can also make a available space for welcome phrases or personal comments, but it is necessary to be careful because it is hardly possible to control how users will comment the proposal of the organizing company; is necessary carefully analyze what is happening and adjust the course of the campaign. At the time of the campaign need to place the on the site a questionnaire «How did you hear about this site.» In order

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to be able to receive feedback directly from users involved with viral marketing, you can specify a contact e-mail in text messages

Sponsor's programs and other directions of use of virus marketing methods

Methods of virus marketing are used also in advertizing campaigns based on payment to Internet users for advertizing viewing sponsor's programs.

Sponsor is 1) a common name advertiser in the Internet, unlike traditional publisher, the sponsor may pay for advertising by services or by the transfer of material assets (eg, providing Internet access, server space, etc.), 2) advertising agency, which implements the Sponsor's programs by collecting promotional offers from advertisers and demonstrating them for participants of sponsorship program.

Sponsorship program is a form of cooperation based on payment organizer sponsorship program to its participants for viewing ads or participating in marketing research (B2C sector). Participants of the sponsor program on a regular basis are watching a commercial sponsors and get for it money or use the free services (eg, free internet access). Sponsor's programs are often based on the creation of a virtual community of users-Participants and based on the principle of the financial pyramid, using multiple levels of referrals.

The referral is the buyer or the new participant of the sponsor's or partner program who has specified the identifier of the participant of the program who attracted him during purchase, registration or commission of other actions. To the source of information which has attracted the new participant, pay in advance stipulated money for everyone a referral. Most often, sponsorship programs for attraction of referral charge money in a fixed rate or a percentage (percentage of income of each referral), but can use standard units, such as Points which are considered on your account. Referrals are divided into direct and indirect. Direct referrals for the publisher is the one who registered directly on the link the publisher. Indirect referral is the one who checked on the link of direct or indirect referrals.

Browsing advertising through ViewBar is the most popular way of earning money on the web among the users. The technology of sponsor programs of this type of income is that the user agrees, for a fee (eg, \$ 0.5 per hour) to view ads. To do this Internet user downloads a small program and installs it on his computer. The program puts a small window on the screen («viewBar»), which while you work in Internet advertising banners are displayed. Usually the payment is made per hour viewing for clicks on these banners and for attracting new members (referrals) in the program.

Sponsoring company (intermediary between the advertiser and the program participant) take from publisher of 12–15 dollars Per thousand ad impressions. In the advertising window «viewbar» banners are updated every 20 seconds, so that the user views 180 banners per hour. Consequently, he brings sponsoring company income equal 1.6 — \$ 2.2 per hour.

Advertising in the advertising window appears in accordance with the interests of a particular user, which are known from the registration survey

data, ie advertising goes on the target audience (however, survey data may be intentionally distorted at cheat see section 8.1), which is more effective than simply advertising on websites.

The next way to organize sponsorship program is a payment for receiving promotional emails. The bottom line is that to the program participant mailbox send advertising messages and for viewing them are paying a specified amount (eg, 5 cents for each letter read), and to the letters, which the user sends advertising sponsor is attach.

Earnings which is based on receipt of advertising messages, requires less effort from the user. Devote a minute of time to read the letter and click on the link in it (this is used to verify that the letter is read). There are also paid work on attraction of subscribers — referrals. A variation of this method can be considered a payment for receiving advertising messages on ICQ.

The third method involves payment for users for their participation in various studies, online conferences, focus groups. The initiators of this research are interested in obtaining useful information about the market to promote their products. This work is paid between \$ 5 (small questionnaire for 10 minutes) to \$ 60 (participation in an online focus group of about 1-2 hours).

Registration of participants has the same form as in the previous cases. After registration, the user about once a month comes notification of online availability of a new study. At desire he can visit the company's website and go through the procedure of questioning or to participate in the online discussion, after which his account will be credited the amount earned.

Among other methods that are accessed by a viral marketing experts may be mentioned the payment:

- for surfing on certain sites (which advertising demonstrates);
- for the use of a specific search engine. Until the user uses a search engine, for him actively demonstrate advertising. In addition, the first in the query results are given links to advertisers and search advertising is used;
- for installing advertiser screensaver. During operation, to user screensaver ads is display;
- for Chat, such a program can serve two purposes: 1) the demonstration of advertising banners, 2) support the chat 'vitality' (because chat is meaningless without visitors and potential customers do not stay in it);
- for fact of Internet connection through a particular provider. Information is collected about the user's surfing;
- for registration addresses being advertised resource as a browser start page;
- for the use of a specific mail server;

- for the use of certain online radio stations (where often transmitted advertising), etc.

Often the same companies offer payment for surfing, reading emails, participating in special voting, filling in forms, etc.

One of newly emerging way is to take part in promoting various projects. Participants are encouraged to bring to any project of new users and receive payment for doing so. In 1999 there were sponsor's programs of online stores which before the opening are engaged in creation of a network of users. To these users after opening an online store come promotional mailings, and amounts for attraction of other users. Such methods are called referral-program. The company pays the sum for subscriber of his income (as a member of the program), and to the person who attracted this subscriber company pays an additional amount of their funds.

This system of payment reminds a financial pyramid. The participant earns not only at the rate of executed by him paid actions, but also earns interest from the earnings of their program members. The similar principle is used in other sponsor's programs that allows them to extend in the relevant groups of users.

The disadvantage of this type of advertising is a low level of income of the target audience. People who commit expensive purchases (cars, real estate, jewelry, etc.) will not waste time in reading the daily 5- cent advertising messages.

These methods of virus marketing should be applied with care in Russia. Level of solvent demand of the Russian users of the Network is significant below, than, for example, at the American. The programs connected with payment to the user for acquaintance with advertizing, in Russia cause a great interest in swindlers (see item 8.1).

7.3.11. Other methods of advertizing

Briefly we will list methods of Internet advertizing less popular and covering smaller audience.

Advertizing use in web conferences. On very large number of thematic sites there is corresponding to them on a subject a set of conferences so the businessman can begin their search with the large websites concerning his business. For example, on the www.auto.ru server there is the largest meeting of the conferences devoted to cars.

Advertizing on bulletin boards can bring on a site of the company of visitors too. Bulletin boards are grouped in subjects and work by the principle of newspapers of free announcements. Unlike discussion lists and conferences on bulletin boards it is possible and it is necessary to publish advertizing, for this purpose they and were created.

It is necessary to give preference to the most visited bulletin boards, which:

- are related to this advertizing;
- aren't overloaded with spam and are quickly corrected by the moderator.

You shouldn't send the announcement to one board more than once in day. The announcement has to be not too long (no more than four lines are desirable). From time to time it is possible to change the announcement text. If on a site the analyzer of log files is installed, it is possible to define, this or that text of the announcement and a place of its publication (on number of Clicks-Through from it on a site) is how effective.

7.3.12. Analysis of efficiency of Internet advertizing

Main terms and indicators of efficiency of Internet advertizing

The analysis of efficiency of Internet advertizing is part of the analysis of efficiency of the internet marketing which purpose is increase of efficiency of functioning of a site. Four stages of interaction of a site with the visitor are presented: awareness, attraction, conversion, deduction) in the course of which implementation the site has to keep interaction with the largest number of users.

hit and host are primary indicators used in the assessment of the advertisement site traffic and analysis of the effectiveness of Internet advertising.

Hit it one showing a single web page. Number of hits on the site per unit of time gives you the opportunity to evaluate the advertising power of the site. As a rule, number of shown advertizing proportionally to number of page impressions.

The host is the computer connected to the Internet. In Internet advertizing it is the user who is looking through pages (doing the hits, loading pages). The most widespread and at the same time most inexact way of definition of number of unique users is based on calculation of unique hosts. In this case the unique IP address of the computer from which access is carried out associates with the unique user.

The following group of indicators used at an assessment of advertizing efficiency has relative character and reflects efficiency of influence of an advertizing appeal on audience.

CTR is an indicator of efficiency of the Internet advertizing, measured as the relation of number of pressing the advertisement (clicks) to number of impressions of this announcement. CTR sometimes is called as «response» or coefficient of permeability. It is usually expressed as a percentage and it is one of the most popular ways of measurement of advertizing efficiency.

CTB is an indicator of the effectiveness of online advertising, measured as the ratio of the number of visitors commercial web resources, attracting by advertising and make a purchase by the total number of visitors attracted by advertising. The indicator reflects the conversion of visitors and in some cases is called conversion coefficient.

CTI is a measure of the effectiveness of online advertising, measured as the ratio of the number of visitors commercial web resource involved by advertising and interested by server (visited a few of the pages), to the total number of visitors attracted by advertising.

The CTR depends on the advertisement (eg banner) and the circumstances of his show, CTB and CTI also depend on the advertiser server.

V. Kholmogorov notes in the book «Internet marketing. Short course. The 2nd edition» [25, page 154–158], that above-mentioned coefficients don't give the specialist in Internet advertising exhaustive information on economic efficiency of the posted online advertising and degree of payback of advertising capital investments. All these values determine the «return» of advertising in the form of conditional coefficients, but this is not enough. To the company's management decided to finance an advertising campaign, indicators must be submitted in cost units.

To do this, we first consider several auxiliary indicators used for intermediate calculations. AD Impression, determines the number of banner impressions (downloads users' computers advertising media identified in the server log files) for some time. AD Reach defines number of unique users to which the banner (repeated advertising appeals are excluded) in a definite time was shown.

The third indicator is AD Frequency which determines the average frequency of display of a advertiser banner the to one user. It is calculated as the relation of total number of impressions to number of unique users: $AD\ Frequency = AD\ Impression / AD\ Reach$.

As an example of the use of these indicators in the analysis of the effectiveness of online advertising we give the following figures. Suppose that according to the visits meter page has 5,000 hits and 1,000 hosts per day. With a certain error, it can be assumed that the banner arranged on the page was displayed 5000 times ($AD\ Impression = 5000$) to one thousand unique users ($AD\ Reach = 1000$) and correspondingly banner was displayed for each user on average 5 times ($AD\ Frequency = 5$).

FFA and CPM it is indicators which are used in online advertising, primarily for the purpose of pricing. They form a distinct group of indicators.

Fixed charge for advertising (FFA) is the simplest method of pricing in advertising, in which the advertising is paid, excluding the number of impressions and the reverse reaction of the audience. The actual cost of such advertising depends on attendance pages, server themes ads location on the page. In fact this method of pricing is very close to CPM as determination of the sizes of the fixed payment usually happens on the basis of attendance of pages on which advertising takes place, i.e. the number of impressions of a banner to users is considered.

CPM is a method of pricing in advertising, in which the price is calculated with respect to advertising thousand impressions of advertising media.

This kind of pricing is the most common in online advertising. CPM can be used as an indicator of the effectiveness of advertising. For example, if the payment to the publisher for advertising is performed as FFA. Typically, specialized websites focused on a narrow segment of the audience have a higher CPM than the resources devoted to all web users.

Using the indicators of AD Frequency, AD Impression, AD Reach, and data on the cost of advertising and the audience reaction to it constructed a number of indicators of economic efficiency of online advertising.

CPC is a measure of the effectiveness of online advertising. Specific cost of clicks, measured as the ratio of advertising expenses to the number of clicks on the advertising appeal. Method of calculating the CPC can be used as a method of pricing in advertising in the case of advertiser payment for clicks on their ads directly. If you use this method of pricing there is a conflict of interests of the publisher who is interested in return growth from an advertising platform and interests of the advertiser who is interested in reduction of publicity expenses. The advertiser can use image or tightly thematic advertising with traditionally low CTR.

CPV is a measure of the effectiveness of online advertising, the unit cost per visitor, measured as the ratio of advertising expenses to the number of attracted visitors. The method of calculation of CPV can be used as a pricing method in Internet advertising if the advertiser conducts calculation with the publisher who has placed advertising, based on number of visitors who were attracted by the publisher. It is similar to the CPC, but has more difficult mechanism of calculation of visitors as account can be kept only directly on the party of the advertiser.

Difference CPV from the CPC is that the number of clicks on a banner ad, recorded by the server that placed this ad, usually differs from the actual number of users who have visited the site advertised because part of visitors can «get lost» on the way to this site because of communication failures or forced stop loading a web page.

CPA is a measure of the effectiveness of online advertising, the unit cost of the target action is measured as the ratio of advertising expenses to the number of the advertiser acts committed advertising attracted visitors. The method of calculation of CPA can be used as a pricing method in partner programs if the advertiser conducts calculation with the publisher who has placed advertising for specific actions of the attracted visitors. For example, calculation can be made for number of the completed questionnaires, for a subscription to certain services, for filling of demands etc.

CPB is an indicator of efficiency of Internet advertising, specific cost of the order, is measured as the relation of publicity expenses to number of the buyers attracted with advertising i.e. visitors chosen goods and issued the order. The method of calculation of CPB can be used as a pricing method in partner programs if the advertiser conducts calculation with

the publisher who has placed advertising based on number of the orders issued by attracted visitors. Presence of the buyer doesn't mean automatic implementation of the transaction. For various reasons purchase can not take place.

CPS is a measure of the effectiveness of online advertising, the unit cost of purchase, is measured as the ratio of advertising expenses to the number implemented purchases by attracted clients. The method of calculation of CPS can be used as a pricing method in partner programs if the advertiser conducts calculation with the publisher who has placed advertising, on the basis of number or an amount of sale to visitors who were attracted by the publisher. Difference CPS, as the pricing method of CPA and CPB is the account not only the fact of making a purchase, but the purchase amount. Accordingly, the payment can not be fixed price action, but a percentage of sales.

Values AD Impression and AD Reach provides advertisers by resource administration. As well such statistics offer virtually every banner network. However, in the calculation data values are inevitable errors due primarily their counting technology. For example, information that AD Impression value has increased by one, recorded in the log file of the server on the fact of downloads an advertising banner by the client browser. However it yet doesn't mean that the user saw a banner: the graphic file containing it can be transferred to the client program from the server, but it is displayed on the screen with a delay. Without having waited for the end of loading of the page (including emergence of a banner), the visitor can leave a site.

The same thing happens if the banner is placed at the bottom of the page, hidden abroad visible screen area: to see advertising, the visitor will have to «scroll» web page down to the end. However, considering its estimated content, the user can close the browser window or click «Back» button. A certain number of hits, on the contrary, the system is not fixed: once downloaded banner can be automatically placed in the browser cache and will be removed from it at the opening of the next document without accessing to the server. A certain number of hits, on the contrary, the system is not fixed: once downloaded banner can be automatically placed in the browser cache and will be removed from it at the opening of the next document without accessing the server. In this case, the banner impression actually take place, but the data of the event server will not receive.

In calculating the number of unique users (AD Reach) unavoidable errors due to other causes, such as identity of IP-addresses of users accessing to the Internet through a proxy server or through internet providers, prescribers to customers dynamic IP-addresses. Methods of determining the «personality» of the advertising site visitors using cookies technology is also not without its flaws. This scheme means transfer by the server to the client browser of the special identification files containing information

on time of visit by the user of a site, and also other data according to which the server program will be able «to identify» the visitor at the time of the following entrance on the server.

At each appeal to the website the server requests the corresponding identification file and if such information is found from the browser, visit is considered repeated. For fear of infection with the viruses disguised under identifying files, some users disconnect function of reception of cookies because of what a certain part of «captive audience» of an advertizing platform drops out of the general statistics in settings of the browser.

Unlike value AD Impression, reflecting the fact of transfer from the server banner client program AD Exposure indicator reflects the number of users seen the published advertizing. The size AD Exposure doesn't give in to an exact quantitative assessment, however on the basis of statistical data provided by authoritative advertizing agencies (in particular, Promo.ru agency), AD Exposure averages 70% of the size AD Impression.

Now, we can formulate some more indicators of efficiency of Internet advertizing:

CPE is an indicator of efficiency of Internet advertizing, specific cost of the reached advertizing appeal, is measured as the relation of publicity expenses to number of advertizing appeals which have actually reached the consumer.

CPUU is an indicator of efficiency of Internet advertizing, specific cost of contact with the unique user is measured as the relation of publicity expenses to number of the unique users who have seen advertizing (repeated advertizing appeals are excluded).

CPAW is an indicator of efficiency of Internet advertizing, specific cost remembered an advertizing appeal, is measured as the relation of publicity expenses to number of users remembered an advertizing appeal.

The last indicator is Effective frequency received by an empirical way.

Effective frequency is a parameter reflecting the optimal value of the frequency advertizing appeal impression. frequency is considered optimum if the advertizing appeal reaches a considerable share of target audience of a web resource. Thus the number of influences on the average on each user is considered sufficient for making decision on that, to use or not offered service or goods (usually from 3 to 5 impressions).

7.3.13. Methods of the collection of information, used for the analysis

Data to analyze the effectiveness of online advertising campaign can be obtained in different ways, their choice depends on the requirements for accuracy and detail of report. Among the methods of data collection are the following:

	Сегодня: 06.12.2014		Вчера: 07.12.2014		Позавчера: 06.12.2014		Всего (47 дн. 3ч.)	
Сессии:	121	15*	270	19*	293	32*	171768	17896*
Посетителей:	171	18**	270	16*	394	32*	171711	1403*
Новых посетителей:	171		270		294		171171	
Хостов:	129	15**	180	18**	206	31*	60857	2386*
Кликов:	393	770*	625	84*	847	56*	485635	76937*
Аналитические параметры								
Посетителей за день:	265.36							
Внимательность:	2.71(4.37%)							
Активность:	=0							
Новых посетителей:	99.99%							
Возвратность:	0.87%							

* - исключены посетители рекламной кампании

Статистика	Графики	Финансы (ROI)	События	Точки входа	Точки выхода
Финансы (ROI)			Финансы (RUR)		
Затраты:				12000	
Доходы:				54483	
Прибыль:				22483	
Рентабельность (ROI) (%)				1.87	
Цена за переход (CPC):				37	
Цена за посетителя:				36	

Presentation and analysis of statistical data in the of advertising campaign efficiency «Bitrix Site Manager 12.5 »

- collection of statistical data by monitoring software (log files analyzers; hit counters; programs, combining technological approaches counters and analyzers log files, for example, Bitrix — see Fig. 7.25) ;
- obtaining data from publishers (display advertising chart, performance AD exposure, AD reach, AD frequency, AD impressions, CTR);
- sociological polls among Internet users. In this case it is possible to use data of professional research agencies. The value of their data is, first, that they obtained independent and reputable companies in this area, and secondly, that the data presented in the form, which are used to traditional advertising agencies and most major advertisers;
- obtaining additional data about visitors (registration data, completed questionnaires). These indicators specialist in internet marketing can obtained by placing on the server several special programs and linking them to a database on the activity of visitors to the site;

- receive data within a company advertiser;
- conducting focus groups before and after advertising campaigns.



Map of the distribution of attention of the main page in Yandex.Metrics

Modern statistical programs allow to estimate not only the number of users who visited the site, but also information such as: from what city they are, according to what link they visited the website, what pages saw, what is the time carried out on these pages and many other things. It allows to define degree of popularity of site sections, degree of efficiency of links, statistics of geography of visitors. On the basis of the obtained data it is possible to make quickly changes to a site, to redistribute advertizing budgets, to plan site development.

One of the types of programs to obtain statistical data on the site is the log file analyzers. The operation of these systems is based on an analysis of the standard information collected in files of the magazine of registration of the web server. These programs can be configured to track virtually any action that interest internet marketer (sales, registration, etc.).

Server log files are special files in which all actions are recorded on the server. In the server log file records information about the place where the visitor came from, when and how much time he spent on the site, what there had downloaded what browser he has and what IP-address of his computer, etc. Each entry in the log file corresponds to a particular hit because server can fix request to one of the elements of the site. Analysis of log files, allows you to get totals user activity, study the patterns of behavior of groups of users and to evaluate the effectiveness of an advertising campaign.



Analysis of site's audience activity in the context of its age and gender structure of the in Yandex.Metrics

Another type of site statistics collection programs is hit counters (see section 7.3.3).

But in contrast to log analyzers counters do not provide information about downloading programs, multimedia files, flash files and other objects that do not contain the code.

Log analyzers inferior to counters in identify individual users. It is connected with the fact that at identification of the guest to the IP address there are difficulties of the accounting of the users going on-line through the proxy server or receiving from provider the new address each time. For identification of such visitors counters of visits cookies are use.

Hit counters offered by major search engines — Google (Google Analytics), Yandex (Yandex. Metrics) — may offer a more complete functional than log analyzers. For example, In the list of search queries each inquiry is supplied with information on number of loadings of pages, hits, number and the average duration of sessions, a share of loadings by this inquiry to the total mass, parameters of the user systems, geography and traffic sources. Except the list of search queries Yandex. Metrics can show the map the distribution of attention of the main page of the analyzed site (by clicks and scrolling, Fig. 7.26), the audience demographic characteristics (age and gender characteristics, determined by technology «Matriksnet» a proprietary algorithm machine learning Yandex company, Fig. 7.27), loyalty (the frequency of visits, etc.). Yandex. Metrics indicates the page number of search results, which is located on site In the analysis of search queries, generating traffic for your site. In other words, hit


counters from the major search engines offer more informative tools with the ability to obtain statistical information sections of different species.


Technology «Vebvizor» allows Yandex. Metrics users to analyze the behavior of visitors on the site in video format and know what they are doing on each page, how to navigate, move the mouse, click on links (Figure 7.28). Detailed analysis of visitor behavior helps to identify problems in the navigation logic and usability, and as a result increase the conversion of site.


Symbolic designation «Play» in Table Fig. 7.28 runs a video presentation of surfing and user clicks.


Rest of the icons on the left side of each line allow you to see the most significant visit properties:


1. Type of traffic:


 — Advertising. Visitor came to the site to link with paid advertising systems Yandex, Begun, Google AdWords, etc.;


 — Search. Visitor came to the site by a link sent on request in the search engine (Yandex, Rambler, Google, etc.);

 — Reference. Visitor came to the site using the link on another site (this category does not include advertising links, banners or Teasers published in paid advertising systems);

 — Direct. Visitor came to the page by specifying the exact address in the browser address bar, or through a bookmark in the browser;

 — Internal Click-Through; — Click-

 Through from saved pages; — Not determined.

2. Country, where  access the site was made.

3. The operating system type.

4. The type of browser.

By pressing button to the left of every line of the list of visits, it is possible to look at the list of pages on which the visitor went to (see «the list of viewings» in the middle of the table fig. 7.32). For each page visited by the user, are specified:

- heading;
- URL;
- time of stay of the visitor on this page;
- the color scale displaying activity of the visitor on this page;
- the external page with which the visitor went to this page of a site.

On the right side of a group of icons in each table row displays information clarifying nature. By default, the following information is displayed:

- Start — the date and time of entry to the site;
- Duration — the duration of the visit;

- Views — number of pages viewed
- Request — search query text with indication icons search engine;
- Click-Through the site — the website address, from which there was a transition;
- From the last — time elapsed since the last visit to the site visitor (when he went to the site more than once);
- Ne visit — number of visits to the site visitor;
- Tags — displays advertising tags (Openstat, UTM, from);
- Goals — goal achieved when user visits a website (must be pre-determined by a specialist in internet marketing). Icon displays the number of goals achieved during the visit.
Precise information with the names of goals achieved is in the tooltip;

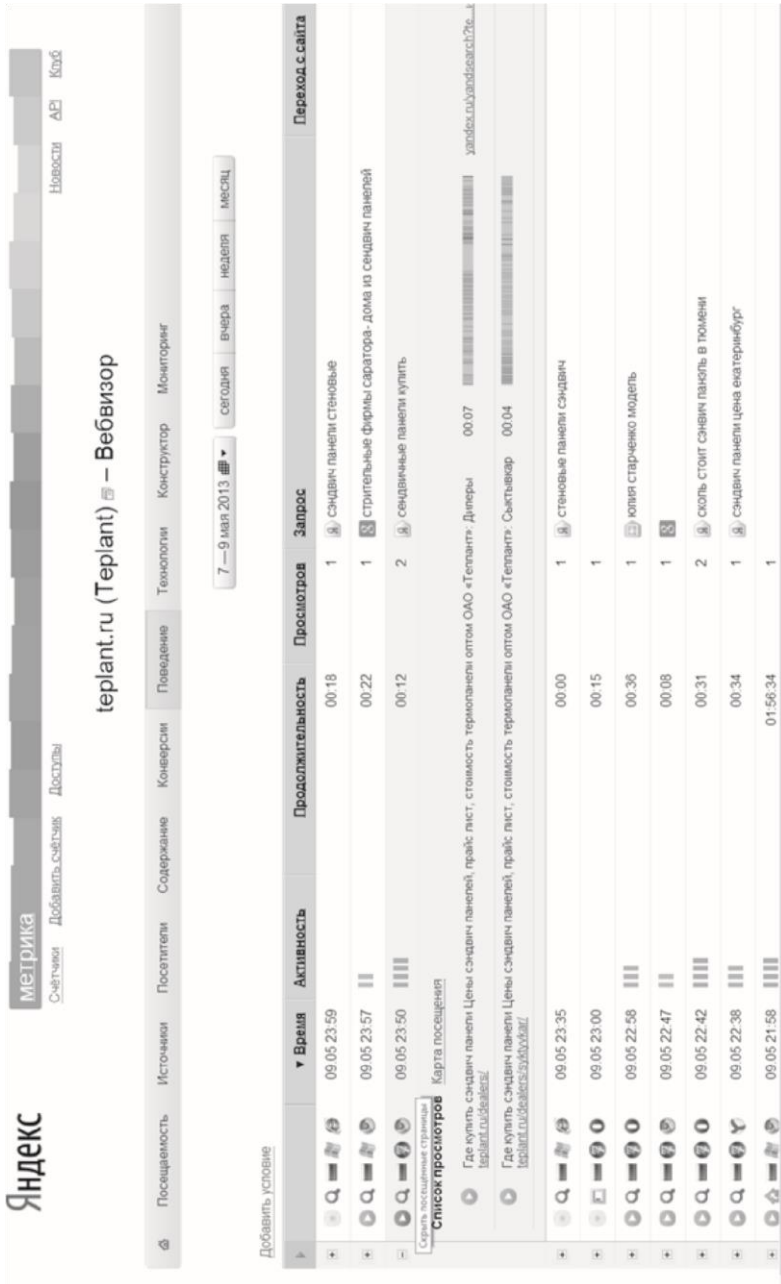


Fig. 7.28. Analysis of behavior of Visitors on the Yandex.Metrics site

- Activity — the activity shown by visitors. This parameter indicates the active interaction of the visitors to the site and take into account: mouse movements, clicks, scroll pages, keystrokes.
- Besides, the following information on each visit is available:
- The screen — resolution of the monitor of the visitor;
- The entrance page — the URL page with which visit began;
- The exit page — the URL page on which visit came to the end;
- IP address of the visitor;
- IP network — the name IP of a network of the visitor;
- Name of a host of the visitor.

There is a range of highly functional hit counters that can be used as follows:

- advertiser can determine attendance of resources that placed his advertising. For the control the advertiser can compare readings from independent counters visits with data provided directly to web publishers;
- publisher can identify a number of own site attendance.

Counters of visits can be classified by the following principles. On placement on a site counters of visits are divided:

1. hit counters, standing on one particular page. Typically, this is the most visited page, the home page of the site. Because the most people start with a visit to the home page with this counter can estimate traffic to the site as a whole. Although, it should be borne in mind that the some users visiting the site can begin immediately on the inside pages, and not to climb up on the home page. They will not be taken into account, which will cause an error in the calculations;
2. hit counters placed on all pages. In this case much more representative picture it turns out: attendance is determined on all pages.

As belonging to the treated site hit counters are divided into independent (external), located on separate servers and counting with both service and internal counters, whose serving counters program, located directly on the server owner of the web resource. content management systems carry out Function of the internal counter.

There are two main criteria for evaluating hit counter. The first is the accuracy of the count. The second is the amount of data collected, detail reporting, etc.

- Data obtained by counters and log analyzers allow to build reports: about dynamics of visits (visits of unique users and time of their stay are counted. Thus it is necessary to consider that if the person left and again returned on a site new visit will be included. Besides, as show data of the log analyzers, the considerable percent of visits is necessary on robots of search engines);

- the most popular site pages and visitors routes;

Table 7.12

The data used in the analysis of an advertizing campaign

Data type	Description
<p>Graph placing of advertising</p> <p>Actual time of placement is not always exactly the same as planned, so the to the advertiser important to obtain accurate data when its advertising has been demonstrated, under what scheme if there were «gaps» in impressions (for example, due to technical problems, etc.) The number of impressions, must inform an advertiser number of ad imof impressions, clicks, CTR or other advertising media and separately for each of the allocation schemes. Additionally, you can get the data: AD exposure, AD reach, AD frequency</p> <p>Results of the and in which the routes on the server</p>	<p>At a minimum, a publisher impressions and clicks on it.</p> <p>• assess the dynamics of site visits; analysis server • determine what action, order the user makes them; log files of • identify the most popular routes on the server entry and exit points of advertiser visitors;</p> <ul style="list-style-type: none"> • identify the most visited sections; • know the depth of the interest of visitors, ie the average number of pages is read how much time is spend on the site; • detect errors in the site navigation, broken links, etc.
<p>Data obtained conwithin the ad ertvertiser com pany</p>	<p>Among them may be information about calls received demands, tracts, sales, etc. In order to more accurately determine the number of clients involved with the help of the web, you can use special offers or pany discounts to site visitors. Some businesses generate special code or special coupons that you can print out and come with them to the store. If the orders are formed on site and the payment is made by traditional method, within the company is possible to determine how many of these orders have been brought to payment</p>

- about traffic generators (pages from which visitors come. If they come from a search engine, it is possible to learn how they make inquiries and to estimate, whether they get where want, whether are late on a site. It is useful for the analysis of efficiency of search optimization and search advertizing);
- characterizing visitors (data on geographical dispersion of visitors: country, region, city; about an operating system, the software of visitors, browsers which they use, a display resolution of their computer. It allows to estimate availability of design of a web resource).

It is necessary to consider in more detail Part of the data used in the analysis of an advertizing campaign.

Criteria for evaluating the effectiveness of advertising

Considering the effectiveness of advertising methods it may be noted that Internet advertising has obvious advantages (see table 7.11), which are inaccessible to traditional means of advertising and is free from many of the drawbacks of traditional advertising.

There are two directions of evaluating the effectiveness of advertising: communicative (informational) advertising effectiveness allows to establish how effective a particular advertising appeal transmits to target

Table 7.13

Comparative characteristics means of advertising

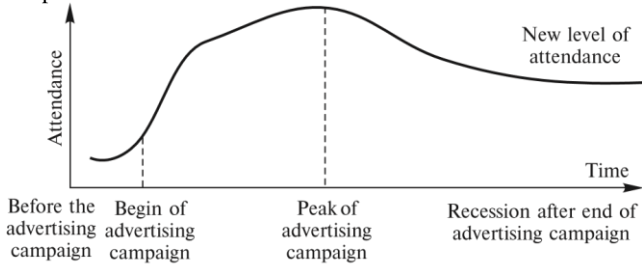
Means of	Advantages	Disadvantages advertising
Newspapers	Flexibility, timeliness, high coverage of the quality, local market; wider audience	Fragility, playback low «secondary» audience, the relatively high cost
TV	The combination of image and sound in the dynamics, high level of attention, high coverage, high level of confidence	High cost and saturation; transience of contact; lesser degree of selectivity audience
Direct mail setadvertising about this form	Selectivity audience; flexibility, lack of advertising competition within a given means of advertising, targeting	The relatively high cost; cluttered opinion «waste paper»
Radio	Grassroots, high degree of selectivity geographic, demographic and cultural characteristics, low cost	Perception by ear; attention level lower than the TV appeals; a short term exposure
Magazines	A high level of geographic and demographic selectivity; trust and prestige, high-quality reproduction, long life; «secondary» readership	Big breaks in time between graphic the advertisement; high cost; high-no guarantee timely appearance
Outdoor Advertising	Flexibility, high rate of repeated contacts, low price, the lack of competition	Lack of selectivity of audience; static character of the image; creative restrictions
The Internet	Possibility of targeting, low cost, the ability to accurately determine the operational advertising campaigns and the implementation of its corrections, the interactivity of advertising, no geographical restrictions	Audience coverage is

audience the necessary information or creates the desirable point of view for the advertiser. It characterizes the coverage of the audience as a whole. Study of the communicative effectiveness of advertising allows us to conclude about the possibility of improving the quality of content, location and form of presentation of information;

- economic efficiency of advertising is determined by the relationship between the result obtained from advertising, and the amount of advertising costs (material, financial) for a fixed period of time. •
- The index of awareness AW is The primary criterion for the effectiveness of

advertising of communicative. Awareness is needed to the advertiser to achieve following two main objectives:

- attracting visitors to the site advertised (the user can not get to the site, fill out a form, make a purchase, etc. without the awareness of this possibility);
- promote the company's brand, products and services, web site, etc. Awareness index numerically equal to the ratio of users who are aware



Dynamics of site attendance

of the content of advertising, to the total volume of target audience. Within the Internet AW counting is problematic enough, but there are some parameters that unlike AW, amenable to more accurate estimates.

Method of technological monitoring is the most affordable and most accurate Besides simply counting the number of sale. In the graph of the average advertising campaign (Fig. 7.29) it is clear that the period of rapid growth in attendance during the advertising campaign followed by a period of relative calm after it but with a higher average attendance than before the campaign. This graph indicates that the campaign has successfully managed to attract new visitors (which does not mean that the campaign was successful.)

It is possible to see coherence of passing of advertizing, and also correlation between investments and attendance. If detail the schedule of dynamics of attendance on days and impose on it the plan schedule of an advertizing campaign. Attendance is not an adequate criterion for measuring the effectiveness of advertising, but it is an important tool for the assessment of the site of the advertiser.

The next stage is to check the quality of traffic, ie the adequacy of the audience provided by advertising platforms. Quality of an entering traffic should be checked separately concerning sites sources (sites of web publishers for which the traffic is proceeding) where the advertiser placed advertizing. Separately, in the study of site attendance quality of the traffic from other sources is analyzed, provided that they make a significant contribution to the total traffic to the website, even if they are not placed advertizing. This is especially true for search engines, directories and ratings.

Checking the quality of traffic from search engines give a lot of useful marketing information. For example, an advertiser can determine the discrepancy between the keywords and content. Usually Such discrepancies are not obvious: thus users will be coming to the site in droves, but not to buy anything. This suggests the wrong positioning of the project, attracting untargeted audience into it.

It is necessary to define quality of a traffic in various ways, depending on site type. Qualitative traffic for online store and a qualitative traffic for a news line this not so same. Thus, before analyzing quality of a traffic it is necessary to establish criteria of this quality.

The criteria for characterizing the quality of attracted clients include the following:

- the volume of orders goods or services. The specific value of this indicator can be compared with data about captive audience;
- depth of interest — how much time the user spent on the site, how many pages he looked, what pages and sections of the server he visited, etc. High depth of interest speaks about display advertising to target audience. Site can continue to work on brand promotion without sales growth. In the case of branding exactly «depth of interest» on the site is the main indicator of the effectiveness of advertising. The one who attentively studied a site, will remember offers more long, than the one who simply saw a banner or limited the visit by the main page of a site. In most cases it is useful to analyze a share of the «lost» visitors (the relation of number of visitors left from the first page of a site or carried out on a site less than a minute to all visitors);
- percent of returns (in some sources the frequency of returns, dynamics of returns, stability of audience and other). Return of visitors to a site is a sign of interest of users to offered information or services. The analysis of frequency of returns of audience and its dynamics shows relevance of a site. This parameter is important for a site at representation to his customer or the investor;
- feedback — what tools located on a site users used (special web forms, votes, polls, conferences). Further it is necessary to define, what directions of internet marketing brought visitors which weren't limited to passive visit of a site, and provided valuable information, opinions and wishes, entered interactive dialogue, etc.

Advisable to systematize collected data in the table, consisting of the following columns: the place and the type of advertising, the cost of placement number of attracted buyers, turnover and profit with buyers attracted by this direction. This table shows what advertising and what a publisher makes the greatest profit.

For Webshops problem of choosing evaluation criteria the effectiveness of online advertising is solved quite simply: the larger the volume of orders from attracted visitors, the better quality of the traffic. At such approach, it is necessary to consider the users who are remembered the address of a site and coming back to it after a while. The share of such users (and, respectively, buyers) can make in certain cases to 60 %.

For Content projects quality of the traffic is determined by two parameters: percent of returns and depth of interest. Each of these parameters

is important. The percent of returns depends on quality of materials and site navigation, on its structure and convenience of use (usability), and depth of interest depends on primary interest of the user in offered information, ie on degree of its compliance of target audience. In each case it is necessary to carry out an expert assessment of a resource to define, what parameter of quality of a traffic plays more important role.

Methods for analyzing the effectiveness of advertising

The calculation of conditional activity of visitors coming from the test traffic generator is methodically, the simplest traffic quality technology of analysis of that provides Internet advertising.

Conventional activity is simple and clear indicator of traffic quality. Conventional activity is calculated as the ratio of the number of user actions (navigating the site, fill out the forms, purchase orders) to the number of visitors. Conditional activity of visitors from a particular site is compared with the mean conditional activity around resource. Special case of this method is the calculation and use of the indicator CTB. This method is suitable for any type of site.

Exploring ways of visitors coming from a particular source it is more accurate method used to analyze the effectiveness of online advertising. The possibility of such analysis provides a log analyzers and counters (counters only in case of installation their code on all pages). After analyzing all the routes of users coming from a specific source, it is possible not only to determine quality of the traffic, but also to optimize a website for user groups according to their source.

If you have information about the preferences of groups users and to know the composition of the audience of advertising platforms from which these visitors come it is possible to offer to each group of users a suite of products and services in accordance with their purported purposes and habits.

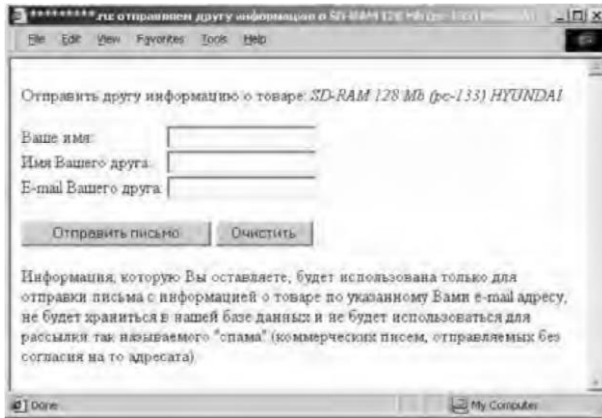
The development of this method is a method of tracking routes of visitors coming from a specific site, taking into account the return of visitors to a Web site for a predetermined period of time. Important parameters of this analysis: the percentage of returns, their frequency, the percentage of users in the audience constant, repeated routes of visitors on a site, etc.

Processing the received data possible to assess which areas of the site interesting for the audience and with which the intensity people visit these sections. Comparing the path of a captive audience with ways of random audience (users who visit the site once in a few months), you can see which parts of the site are not attractive. That is, whether there are such sections or pages which are visited by casual users (and from which they leave) and which aren't visited by constant users.

In Fig. 7.30 is visible abnormally low conversion of visitors from a search engine Yandex in the online store. This can be explained by analyzing the page indexed by search engines



Example of the statistical report on efficiency of functioning of a site



The page indexed by Yandex search engine

(Fig. 7.31) on which Yandex Visitors come from. This page is auxiliary, doesn't contain information on the price of goods and elements of the management, allowing to order it, is deprived of navigation elements which would help to get to the main window of online store, the browser address bar, etc. The user who hasn't found ways to the page of the order, will simply close this window.

Any qualified web programmer or the HTML designer can correct this situation: in the robots.txt file of the server of online store it is necessary to forbid indexation of pages of this type.

Segmentation of audience allows you to optimize the system of external links to your site significantly. It is possible to form a variety of audiences, each of these audiences will have its

own behavior If the site contains several fundamentally different content sections. Having segmented audience, it is possible to determine that is required for these groups of audience by the frequency of returns and routes. Allocation

Table 7.14

Some reasons for the loss of attracting advertising audience

Indicator	Interpretation	Reasons and options of reciprocal actions
Big % of viewings of the first page	Leaving from the first page	Information is uninteresting, or the site is badly displayed. It is necessary to use the analyzer of log files, and also to analyze words by which people come from search engines that to find out it. It doesn't belong to a captive audience
Ways of the user on a site are short (1-3 web pages)	Information is uninteresting to the user, or the site is inconvenient in work	which comes to a site to learn about news It is necessary to analyze inquiries by which users come to a site, ways of users and sections which they visit. The analyzer of log files is used for this purpose

from audience of independent groups will allow to offer advertisers better possibilities of targeting.

It is necessary to find out dependence between sources of audience and its ways having defined the main sources of audience. Here the following options are possible:

- the most part of audience coming from the traffic generator (for example, an advertising platform or a search engine) doesn't achieve the demanded objectives (purchase something, the service order, form filling and other). Ie users immediately or almost immediately leave the site and do not come back. It speaks about involvement not the target audience on the site. If the traffic that passes traffic generator based on advertising, it is necessary to revise the advertising policy in relation to this traffic generator;
- significant part of the audience that comes from traffic generator reaches the desired goals in the first or subsequent visits to the site. In this case, we should talk about attracting the target audience and, therefore, it is desirable to try to increase the flow of visitors to this site, for example, to place additional advertising;

- significant part of the audience that comes from traffic generator does not reach the desired goal, although moves in the right direction, ie there is a »blurring» of the audience flow. It is necessary to check what is happening. Perhaps visitors pass part of pages, and then put a bookmark to return to the study of this site later.
- In this case, they have reached the desired target in subsequent visits, and then they can be attributed to the previous group. The situation differs if users don't come back. If visitors from other traffic generators pass this route entirely, it is highly likely means that the site is too complex for this group of users. In this case, it is necessary to allocate visitors of this traffic generator and send them on a separate simpler way in order not to lose this part of the audience.

The analysis of ways of visitors is interesting in dynamics. It is obvious that change of routes of a captive audience without any foreign intervention testifies to environment change. Having analyzed change in routes of users, it is possible to make quickly changes to a site and by that constantly to support a site according to wishes of users.

As in the study routes of users on a site, in the analysis of returns it is necessary to segment audience on nature of returns. At the moment, there are three main groups:

- Refunds by bookmarks. They are characteristic for a captive audience of the project, ie users who do not just visit the site regularly, but also put a bookmark (or typing the address — Type-in traffic);
- refunds by advertising. It is repeated visits by site users through new advertisements. Ie users come to a site, once again without knowing that they on it already were. This situation can occur if on the web several dissimilar banners demonstrates (or other promotional materials.) Also it is necessary to include here users who come back to a site from search engines;
- refunds through catalogs. Visitors who return to the site through directories usually are not included in the active audience, however, they use the information or services provided by the web resource occasionally. For Users who use the site rarely, there is no need to remember or enter the site address into bookmarks if they know exactly where and in what directory they can find it.

This segmentation can be used to analyze the effectiveness of the advertising company. For example, the advertising campaign provides a large percentage of returns, but among them is dominated by the second group of refunds. In this case, after an active campaign will stop refunds and the amount of audience will reduced. Therefore, it is necessary to change advertizing platforms and (or) the concept of an advertizing campaign, as attracted audience is non-targeted.

Dynamics refunds audience is Another important parameter the analysis of the effectiveness of advertising. Here the fact of change of frequency and nature of returns of audience is important. For example, for a site network media decrease in the proportion of daily and more frequent returns indicate a decrease in the competitiveness of publications and trends of outflow from the site of a captive audience. Thus the outflow can not be yet as users didn't leave yet finally, they became simply more rare to visit a site.

Thus, the deviation in the frequency and nature of returns is an indicator of change of character of audience and (or) the relation of audience to the project.

Research of quality of a traffic is useful at planning and carrying out the subsequent advertizing campaigns. However it only part of research of

efficiency of an advertising campaign. Other part of research is studying of influence of an advertising campaign on the volume and structure of audience of a site, its attendance and popularity of a trademark (brand).

The main indicators of attendance of a site it is quantitative characteristics:

- the maximum audience — visitors of a site who had at least single experience of visit for the studied period; irregular audience — visitors of a site, excepting those who had only single experience of visit for the studied period;
- constant audience , in the particular case of weekly or monthly audience — visitors who regularly visit the site with some frequency within a predetermined time, for example, the weekly audience is everyone who visits the site at least once a week;
- active audience — visitors who regularly visit the site and spend there at least one hour per week; the core of the audience — visitors who regularly visit the site and spend there at least three hours a week.

Information disseminated within a particular web project, is available not only for those who visits the site itself for this project. Through personal contacts and communication information is also available to those who did not visit the website, but may be included in the target audience. Thus arises the concept of zone of influence of the web project.

Indicator of maximum audience allows to estimate how many people saw the website. Value of maximum audience, attracted during the advertising campaign, is complete coverage of the advertising campaign. This is one of its main targets. On the basis of these data many cost indexes are calculated: CPM, ROI (indicators of the sphere of the investment design, reflecting the speed of return of invested funds) and others.

Depending on the data obtained work with the audience and the subsequent promotions are built because the degree of familiarity of the potential audience of the proposed product determines the nature of promotional materials.

The resulting separation is important for the analysis of a course of an advertising campaign. For example, if the dynamics of the relationship of these groups to each other shifted towards the casual visitor, it is obvious that the advertising campaign is built correctly.

Example. Yandex.Metrics allows to analyze the behavior of website visitors, to assess the effectiveness advertising campaigns. Advertisers who use Yandex search advertising, Yandex. Metrics allows to know what happens on the advertised site after clicking the advertisement and provides tools for analysis of attracting an audience in the various sections to identify the most effective means of advertising:

- Geographical distribution of visitors to the different sections of the site (ie dependence viewed sections on geography member)and distribution by sections permanent and new



Analysis of the search queries that lead visitors to the site in Yandex.Metrics

audiences. Such analysis is useful for understanding what is more interested in the different groups of users;

- viewing depth and frequency of visitors to the site, depending on the geographic location of visitors and a number of other characteristics. This makes it possible to analyze whether site is convenient for different types of audiences;
- basic queries, leading visitors to the site, depending on the region visitor (see Fig. 7.32) , depth of view website, etc. This helps to identify the interests that led visitors of different segments of the audience to the site;
- main link server depending on the region and the depth of visitor viewing site. This helps to identify the main sources of targeted traffic;
- hosts lists of users the most frequently visiting site;
- frequency of returns and the number of user visits that came from certain search engines and by certain search queries. This helps to identify the most effective attraction of visitors search engines for the purpose and search advertising methods and optimization.

Especially significant indicator of a captive audience for content projects that do not have clear indicators such as sales or registrations. Correlation of growth of a captive audience to the cost of the advertising campaign allows to estimate the cost of raising one user to captive audience. This allows to calculate the profitability of advertising.

Attendance rates are interesting not only for the analysis of all promotion period, but also for any time before and during the campaign. These numbers are used for planning and managing of advertising campaigns and can also be used for representational (presentation) purposes.

Change of a position of a brand is important research which needs to be carried out within the analysis of efficiency of an advertizing campaign. Traditionally, methods of marketing research from focus groups to various types of surveys used for this, however, possibilities of the Internet allow with some assumptions and restrictions to carry out technological monitoring of growth of popularity of a brand too.

The important indicator of value of a trademark is the traffic size type-in, ie it is number of the users who directly gathered in an address line of the browser the address of a site or have passed to it on a bookmark. During the advertising campaign (and during the lifetime of the site), this figure will continue to increase. For some projects it is up to 80% or more of the number of visitors. First of all, it is large catalogs, network services such as email, popular news sources, websites of online brokers and others.

The next important indicator is the citation index. It is inflexible, it is connected with way of its calculation (it changes randomly periodically, depending on the frequency of passage of a search robot on sites). Accordingly for short campaigns citation index probably not will change but within a month from the start of the advertising campaign value of an index of citing has to increase and it is its quality indicator.

Last indicator of change of trademark provision is « requests rate ». Requests rate is number of the inquiries containing a trademark which is entered in search engines for a certain period (for determination of requests rate programs of statistics of inquiries can be used). For new brands in the Network value of requests rate during the first advertizing campaign can change from zero to several hundred a day, depending on intensity of an advertizing campaign.

The specified parameters can't give exact evidences about brand movement, but they are successful estimated characteristics which allow to see the direction and nature of its movement. The disadvantages of techniques that are based on the analysis of these indicators is a small adjustment to the assessment of introduced brands, i.e. using the described techniques it is difficult to analyze development of a brand of the company which is well-known offline, but only starts entering on the virtual market.

Other methods of analysis of the effectiveness of Internet advertising are based on the calculation and comparison of the dynamics of change indicators such as CTR, CPM, CTB, CPB, CPUU, CPE, CPV, CPAW, CPS etc. Here is an example of practical use of these indicators.

Analysis of the effectiveness of advertising campaigns

Using the considered indicators it is possible to calculate efficiency of an advertizing campaign and to prepare the developed report according to the «investment — profit» scheme. We will give an example of the analysis of an advertizing campaign efficiency.

On the information server N were purchased 100,000 banner impressions for advertising of the newly created online store with CPM = \$ 5 Accordingly, costs for advertising totaled \$ 500. After five days, server administration provided the following information to the advertiser: the banner has been demonstrated of 100,000 times, the number of unique users was 40 000, the number of clicks was 2000. We will present these data in terms of online advertising: *AD Impression* = 100 000 ;

$$AD\ Reach = 40\ 000 ;$$

$$AD\ Frequency = AD\ Impression/AD\ Reach = 2,5;$$

$$CTR = 2\ %.$$

At first we will calculate the value of AD Exposure which makes about 70% of AD Impression and in this case it will be equal 70 000. Having defined the relation of total amount which spent for advertising to AD Exposure value, we will receive the actual cost of one advertising contact for this advertizing platform, it will make CPE = 0,007 dollars. Cost of contact with a unique user can be calculated by dividing the cost on the amount of AD Reach. We obtain the sum CPUU = 0,0125 dollars per contact. It is easy to calculate the value of CPC: it is defined as the ratio of costs to the number of clicks and it equals \$ 0.25 (500 doll./2000).

I.e. the user saw advertizing 2,5 times on the average we will assume that it was remembered by 65% of the unique users who have seen it. I.e. we receive 26 000 users informed on new online store (the cost of each one thousand of CPAW = 19,2 dollars).

The actual number of visits of an advertized site, according to the counter of visits on its home page, made 2010: 1990 visits by unique visitors, and remained 20 are repeated visits. We will determine the cost of one thousand unique visitors: CPV = (500 dollars * 1000/1990) = 251,26 dollars.

1990 people visited the advertized website, within five days the order for purchase was issued by 210 people. On the basis of these data CTB and CPB can calculate: CTB = 210/2000 = 10,5 of %, CPB = 500/210 = 2,38 of dollars.

Nevertheless, actually purchase was made by only 200 people: 7 potential clients for various reasons cancelled the order, and 3 clients specified incorrect data at purchase registration. As a result the cost of sale of CPS was equal 2,5 dollars (500 dollars/200). The Average amount of the order made by the user was \$ 50, therefore, the turnover was equal to \$ 10,000. If prime cost of each realized commodity unit on the average is equal 45 dollars, it is possible to calculate profit without publicity expenses: 10000 dollars — (45 dollars * 200) = 1000 dollars. The net profit in this case will make 1000 dollars — 500 dollars = 500 dollars. Having divided profit

into the cost of banner impressions, we can establish that for each dollar enclosed in advertizing the profit of one dollar is got.

The interactive form in which visitors were offered to estimate level of the service offered by this firm, on a five-point scale, and also the e-mail address for sending of suggestions for improvement of quality of service was published on the advertized website. Total 200 visitors took advantage from among those who came to the server from the considered generator of a traffic (thus the conditional price of one response was CPA = 2,5 dollars).

Thus it isn't considered:

- 200 attracted clients who, probably, won't be limited to one purchase and will tell to the friends and acquaintances about a way by which they acquired goods, having provided additional profit;
- pent-up demand — part of potential customers who do not make transactions during the period under consideration, can return to the site later and buy goods online, or apply directly to the offline store of this company by finding out its address in Internet.

Having calculated efficiency of the publication of advertizing on different web resources, it is possible to carry out the comparative analysis of the involved advertizing platforms, and also to remove percentage ratios which define efficiency of advertizing at various publishers in relation to the overall results of the campaign.

7.4. Marketing in social networks and blogs

Blog (from the English blog, from «web log») is an online blog, where other users can leave their comments. It is the medium of social networking. Blogging is characterized by the temporary records of the significance, sorted in reverse chronological order (last entry is at the top).

According to author's structure blogs can be personal and group (for example, corporate). According to the contents blogs can be thematic or the general. According to the placement blogs can be network (located on a blogging platform) and separate. Blogs containing a content, that is placed on mobile devices are allocated separately. Corporate blogs are deprived part of constraints imposed on the company's official website, so you can use them to build a confidential dialogue with consumers. At the same time corporate blogs should have operational moderation of content. This avoids the leakage of information (in a situation where they are not part of a planned marketing company) and reputational losses from unwanted comments.

Social network (from the English social network) is an interactive multi-user web site whose content (information about the participants, their relationships and interactions) filled by the members of the network

in the process of communication. Website is an automated social environment that allows users to form groups of interest. According to content social networks are divided into general and thematic, such as industry. According access opportunities social networks are divided into open and closed social networks.

At institution of personal profile on a social network site, you can specify information (date of birth, place of residence, school, university, hobbies, jobs, etc.), whereby the other participants will be able to find a user account. The user can specify which part of the information of him will available for all users, and what information will be available to users who have established virtual friendships. Social networks offer the possibility of virtual friendship. Users which have established virtual friendships can automatically receive updates about the activity each other, for example, about emergence of new entries in the blog or placement of new photos in its profile by friend on a social network.

Marketing in social networks and blogs (from the English. Social Media Marketing, SMM) is a set of methods of content management, references to it, marketing research and advertising campaigns aimed at online advertising and promotion in social communities and blogs. Marketing methods in social networks and blogs are aimed at increasing popularity of the site (brand) in this environment and they are partly similar to the methods of search engine optimization:

- creation of an attractive free extended content of advertizing character (article, a photo, video, the appendix, etc.) which will use (refer) on social networks and blogs. At a stage of creation of this content it is necessary to put in it characteristics which will allow it to gain the greatest distribution in the social environment. In this case the social network or the blog are one of channels for virus marketing;
- encouragement of those who uses and refers to the branded content (for example, by carrying out competitions with valuable prizes or purchase of advertizing posts in authoritative blogs). Purchase of advertizing posts can be automated partially, using intermediary systems at interaction of bloggers and advertisers. With owners of authoritative blogs it is more favorable to agree personally. In case of the publication in authoritative blogs (so-called »leaders of opinions») of actual information, it is simpler to achieve effect of virus marketing;
- the Internet advertizing directed on users of social networks and blogs, paid advertizing, as a rule, having virus character is the most obvious and expensive method (in some cases expenses are commensurable with advertizing in traditional mass media). Internet advertising is possible in respect of the whole network and separately for any group of participants or social network services (use of targeting). It is assumed that these services are focused on the target audience of the

advertiser company. If there are none, you can create (to program) and offer as a product that increases the utility value of the social network;

- forming its own community of the target audience within the social resource. Numerically, it is usually much smaller than the entire target audience. However, loyalty and level of involvement in the marketing campaigns of the company at participants in this group is much higher than of ordinary users. Constant activity in this group should be monitored and supported by company, this should be one of the directions of Internet enterprise strategy;
- organization of marketing and PR activities. Social networks provide a wide range of opportunities: from the development of the company new products by the users themselves, to directly unrelated to the company's products to mass actions. For example, votes for users who will go to tour over all countries of presence of the company, or the original flashmobs directed on a public response;
- technical simplification of content placement from advanced site in social networks, blogs, RSS-aggregators etc. This suggests a certain functional of site. For example, setting the widget on the site, which invites the reader to become a fan of this page on the social network. To make it, it is enough to press the «Become the Admirer» button on a site. It is possible to leave comments on a company site too, having specified data of the account on a social network. The comment text and a reference to commented page of corporate website published in the profile of the commentator on the social network too. Thus, his friends, in addition to the comment text, will be able to see the name of a piece of text page corporate website that allows to distribute virus content through users themselves.

RSS-feeds are used for easy tracking of changes in blogs, social networks and in the news section of the site. RSS is a standard used to transmit information about updating sites.

Having a similar purpose, techniques for search engine optimization and marketing in social networks are characterized by: search engine optimization is based on the accounting of principles of search engines work but social media marketing is based on the principles of human behavior within social communities. The latter also implies wide use for advance not official press releases, and an original creative content and virus marketing.

Using of virus marketing in social networks and blogs should be based on the account of their specificity, which requires:

- to determine entry points of the virus content, finding in social networks relevant community, and in blogs to find the «opinion leaders» on the relevant topics. Audience analysis of promoted product will help to determine the nature of the motivation to spread virus

Table 7.15

Compliance of advanced production to scope of communication in blogs and social networks

Promoted products	Subject of communication in blogs and social networks
Remedy for acne	Success with the opposite sex
Household chemicals and cos-	Health, personal care and home care, environment metics
Medical Services	Health, good looks, longevity

marketing information from the audience. There are two groups of reasons provoking the viral effect: rational and emotional. Most efficient use of both groups. Most effectively to use both groups. For example, sending the photo for the competition organized by travel company, the person gets chance to receive a prize (the rational reason), and, showing to friends on a social network the beautiful photo with its participation, satisfies the emotional requirements (the emotional reason); to construct the card of advance of a virus content based on the analysis of structure of social networks and blogs; to define probable quantity of generations of translation of a virus content and reproduction level on each generation on the basis of data of authority and types of distributive behavior of participants of

- networks; to pick up relevant sowing tactics and to operate crops and virus distribution.

Constant activity must be maintained In blogs, or in formed by the company community. Otherwise, the community can decay much faster than it was created, and blog visitors may find a new place to socialize. Themes catalysts Must be prepare in advance. They at regular intervals will give the community the way to communicate. It won't be possible to maintain mass interest of users only due to competitions and gifts. Users should realize their need for socialization, communication, etc by having a direct bearing on the production of content. They are not interested to talk about the brand names, such as shampoos or carbonated beverages (see Table 7.15).

Activity in blogs and formed by the company social communities can be supported by the implementation of user-group projects. For example, in a social network collectively written a new story for a book or movie. Prerequisite is to justify the expectations of others — created product should be marketed. In its advertizing company the collective way of its creation has to be mentioned and each participant has to have opportunity to find itself among authors of a product on the corresponding promo-site. Participation in the similar project attracts by participation in something large-scale, significant, than it would be possible to be proud.

Actively developing field of marketing in social networks is the development of software applications that provide social networks with additional functionality. For example, a small program can display on user's profile page the time counter before the summer. Time calculation prior to holiday, selection of last-minute tours by the holiday beginning, etc. becomes its additional opportunity. Such is a way of commercialization of the program on which writing 2 working hours initially were required.

Example. The FedEx company developed the «Facebook Launch a Package» application. It allows users to send each other virtual gifts «wrapped» in FedEx packing. Users receive a gift «packed» and have to «develop» it to see contents. For the first week the appendix was downloaded by 270 000 users.

On the social network Odnoklassniki.ru users can use services of the insurer directly on a site, having insured any of the photos from bad notes. Service is free for all users of «Odnoklassniki». By this action the insurance company seeks to increase brand awareness and attract visitors to the official website of the company.

Development of software applications for social networking online shopping has a high commercial potential. online shop Closely integrated with social networks may request from each participant of social network permission to the ability to send messages to friends about his purchase for viral dissemination of information about himself.

Virus distribution of appendices of entertaining character on social networks is based on stimulation of users to invite friends in them. The game appendix can encourage the competition between acquaintances or the organization of their collective activity. For this purpose is important minimization of number of steps which the user has to pass to invite friends (for example, due to use of importers of telephone books). Thus it is necessary to consider that some social networks impose restriction on number of invitations from one user for each appendix.

Separately it is necessary to mention viki-reference books (the Internet encyclopedias which contents can be edited by their visitors). The moderation in such encyclopedias is carried out by the peculiar communities formed of the most active, proved users. Participation in filling information of entries of the subject domain allows to insert relevant links to own site into these articles of the encyclopedia. The traffic from pages of the most popular viki-reference book «Wikipedias» can surpass a traffic from popular search engines.

There are unethical and often ineffective methods of marketing in social networks and blogs, but because of the newness of the market and the incompleteness of the process of forming its methodological basis, they are well represented and need to be addressed. Spam in social networks is creation of fictitious members of a network and their groups on behalf of which mailings with the invitation to enter their community are carried out. The sole purpose of the existence of these community is promoting a certain brand, company, product. On the consumer cost and usefulness

of an advanced product participation in community doesn't render. Such advance has low efficiency as doesn't consider interests of attracted users. Other option is introduction of fictitious members in existing communities. These participants of network communication give themselves away by frank importunate advertizing, reduce appeal of community to his real members, cause rejection and, as a result, are expelled from this community. The situation with spam in blogs is similar.

For measurement of relative efficiency of marketing on social networks the indicator cost per social action (CPSA) can be used. Social action, in this context is target for marketing campaign of the company action of the user on the social networks which inducing motivation is connected with the specified campaign. For example, when the user enters groups, establishes new friendly connection, creates on a social network a content (English :

user generated content, UGC) — comments, media objects, links, etc.

Advantages of marketing in social networks and blogs over traditional advertizing:

the trust of users is higher compared to traditional advertizing,. It is ensured by the use of social contacts, direct personal communication among users with a predetermined ratios. A direct advertizing appeal from monitored by the company an Internet resource, usually enjoys less confidence than a friendly recommendation or an example of using a new product submitted by acquaintances; extensive targeting capabilities. Social networks have access to the two most important sources of information about users: personal page or profile, ie information filled by the user, the user's behavior in the network, the pages visited, interests, social circle, etc.

Social networks can use behavioral targeting, the interests and activities of other members of the network associated with the user, their reactions to different marketing actions. Because of the large volume of information about the participants of community the targeting can be very detailed, for example, up to display advertizing, for people who work in a certain company or who live in a certain house. Some social networks suggest users to choose fields of activity of the companies which advertizing will show to them.

7.5. Partner programs

In electronic commerce partner programs were widely adopted As methods of involvement of new visitors and increase in sales volumes, on the one hand, and a way of receiving commission charges on the other hand.

The partner program is form of cooperation at which the advertiser pays the commission to the publisher for certain actions of the users who have come to a site of the advertiser on advertizing published on the website of the publisher. The partner program is offered on behalf of the

commercial server to other websites. Payment may be as a percentage of sales or as a fixed amount for a specific action (registration, subscription, purchase, etc.). Calculations in affiliate programs are carried out on the basis of calculation schemes CPA, CPB, CPS or CPS. To implement the affiliate program advertiser should have a tracking system of paid Action and commissions payment system.

The site seller of goods or services and partner sites participates in the partner program. Partners have at logos, banners, search forms, page order particular goods or services, or simply links to seller server. Links of this type are organized on the principle of Direct storefront entry. Direct storefront entry is the process of moving the visitor to a specific page of a site without first passing through the front (home) page.

Site-seller registers orders that made visitors who came from each partner, and transfers partners commission. Web publisher (partner) can view the statistics of orders made and paid by visitors who have come to its website.

Depending on the version of the program commissions may be paid:

- for clicks or for Clicks-Through from partner site to the advertiser's site. This method is most comfortable with partners (because For partners is easy to monitor clicks, unlike sales). There is a variant of this method it is payment for unique clicks, when the first click of unique user is taken into account. The second click of the same visitor from another partner links will not include. The disadvantage of this option is that the advertiser can not control clicks (to him information on Clicks-Through to a site is available) therefore there is an opportunity for fraud (price markup);
- for registration or a subscription — if the user who has come on the partner link, fills in the questionnaire or answers vote questions, a certain sum is paid to the owner of a site. It can be useful to the organization of various market researches, creation of a DB of potential clients, etc.;
- for sale — most suits advertisers option: the partner paid a commission depending on the purchases made by users. Money is charged upon payment of goods.

The same advertiser can use various schemes of payment of commission for different publishers. In addition, some sellers only pay commission on the first transaction, while others sellers take into account and subsequent purchase of the client. For involvement of new web publishers in partner programs multilevel referral program are used.

The choice of the scheme of calculation of the commission in the partner program depends on a type of offered goods or services. Online shops usually pay percentage from the amount of sale, and sites offering subscription services, such as information products, pay for a subscription

to their services, and some sites pay for completing the registration form, others sites pay only after the payment of their services.

Using third-party services to attract new customers is very common marketing technique in ordinary trade. But traditional commerce doesn't possess some opportunities (the operational and detailed analysis and correction of process) which are given by electronic commerce.

Affiliate programs are a synthesis of advertising and the subsequent fee of the intermediary who was carrying out advertising in the case of a favorable outcome (eg, the sale of goods or services). Thus material inputs on involvement of buyers are provided to intermediaries.

At the same time, the transaction is committed on site-organizer of affiliate program. This gives, on the one hand, full control of sales, on the other hand allows to create with minimal upfront costs a network of resellers offering goods to the widest audience of buyers. In addition, every visitor, even those who have not bought anything, still increase the popularity of organizer Partner Program which is becoming more famous.

There is a probability that this visitor will return and something will buy later, or will advise to someone to buy something. In this case, the rewards can be paid not for purchases, but, for example, for every new registered user of the internet store information service etc.

There are following Advantages of partner programs to partner publishers:

- opportunity to generate extra income — you can avoid the complexities associated with the independent provision of additional services to their visitors and receiving payments, which is especially important for site owners with little traffic;
- pay per action, at least an order of magnitude higher than cost per click or banner impression;
- Web publisher which demonstrates advertising always chooses the banner or text link that is very important because it can choose the its advertising accordingly site subject.

For Sellers attractive aspects of creation and development of partnership programs unlike banner advertising is absence of necessity to pay money to get the result (sale of goods).

Unattractive sides of participation in affiliate programs include: for a selling site it is need of use of rather difficult software, and for owners of partner sites it is the fact of sending the visitor on other site from which it can not return.

Some time from the moment of emergence of partner programs there was a trust problem to accuracy of calculations in the relations of organizers with partners. Besides, participation of sites in several partner programs at the same time can bring the additional difficulties connected

with distinctions in methods of calculation and types of provided reports in different partner programs.

These difficulties caused emergence of the independent service partner companies (partner networks) which as the third party are engaged in settlement of controversial questions between sellers and partners. These companies are creating on their servers database of sellers and potential partners, allowing them to find each other, post information about different affiliate programs, often ranking them according to the same criteria. They play the role of a clearing house for sellers and partners, providing estimates of visits, sales, providing uniform reports. They are the organizers of the market, who are interested in providing quality services to the organization partnership for both parties.

The use of partner catalogs created by a partner networks, combined with the ability to automate the invitations to certain sites affiliate program, allows to organizers more effectively manage the affiliate programs, and to participants allows to receive the developed statistical reports on interaction with organizers of partner programs.

Firms organizers of partner programs can transfer to a partner network functions of the organization of calculations with partners that eliminates problems of accounting of numerous micropayments with use of electronic payment systems, plastic cards, etc. Other important advantage of the appeal to services of intermediaries is presence of the independent arbitrator and system of protection against price markups in the partner program.

The appeal to services of a partner network has two disadvantages:

- the «indirect» effect of increase of an index of citing of a site organizer in search engines is lost. When using the specialized systems, all references placed by partners have to indicate a partner network, instead of directly a web resource of the organizer of the program;
- providing important commercial information of the third-party company. Because all information on visits, orders, calculations passes through the intermediary, it is important that it there was a wellknown company with faultless reputation.

The choice of the partner program by site publisher has to be reasonable by web project and market condition analysis, including:

- studying of the existing competition — definition of number of the sites which are taking part in the specific partner program. At this stage it is possible to use search engines, having written in a line of search the address of a site of the organizer of the partner program. Further, it is necessary to write the name of goods in a line of search and to determine possibility of positioning of a web resource among the first sites by this inquiry in search engines;
- the analysis of compliance of a product to interests of audience of a site - – the offer of products and services in subject of a site or

thematically close areas will increase its popularity at target audience. For example, if the site offers services in web-design, he can participate in the hosting provider partner program; analysis of information filling of a site and sources of replenishment of information about product, search

- of sources of information about product; analysis of available methods of marketing: mailing creation, placement of banner advertizing, the publication of press releases on other sites, an exchange of links with sites which are visited by potential clients but who aren't competitors, creation of forums on this subject. Text links recommendations in
- sheets of mailing and forums are considered as the most effective; personal positive experience of the publisher. The majority of experts in marketing claim that the best way to sell products through partner programs is a personal reference. If the participant of the partner program used a product can make the review in which will tell to clients or visitors what exactly he liked in a product, and how it was useful.

- It is desirable that the affiliate program meet the following requirements:
 - the organizer of the partner program has to pay remuneration not only for the first, but
 - also for all subsequent purchases of visitors which for the first time came from a partner site (the size and period of validity of the commissions for repeated purchases have to make a reservation in the partner contract, besides, in the contract has to make a reservation bonus size for involvement of new partners); payment services partner should be constant, for example, hosting services are paid monthly, so a partner receives its commission monthly;
 - organizer of affiliate program should offer a convenient way to track information about
 - visitors attracted partner, transactions that they have committed and earned by the partner means; mailing existence, as tool for professional development of partners. In this mailing it can be told about ways of advertizing of partner sites, various advice to
 - partners can be given, extend information on new opportunities of the partner program.

Non-standard marketing ploy on involvement of partners this carrying out competitions among webmasters. Competitions are held according to the following scenario: the domain names, ready templates of advertizing blocks are distributed to participants, temporary terms, prizes for the maximum sales volume and the best positions on target inquiries in search engines are established. At the same time all the partners are paid commission on each sale, and at the end of the competition sites remain the property of the partners.

One of the main objectives of partner sites is need of increase in percent registered or issued the order rather clicked (chosen the offered advertizing). Even on condition of a free product it is not so trivial task.

Most Internet users are traveling on the web in search of information they want, and finding something interesting or useful, they create a link in the menu browser «Favorites», and then returned to the subject of current interest. Thus, the partners do not receive bonuses, as the log files are not stored by sellers and purchase or registration occur later directly.

Other kind of affiliate programs is to collect email addresses. It is deprived of this problem. Partner sites can attract subscribers to the mailing lists and receive a commission. It looks as follows: partner find a suitable mailing list of his page theme and places link in his own page to the advertiser. Most often, such a reference is a string to enter an email address, sending data button and a small description.

Participate in affiliate programs can improve partner website ranking and the number of services provided to visitors of this site. Users can not only read about new technologies and products, but also make order directly.

7.6. The problem of return visitors and create a captive audience

7.6.1. Statement of the problem of creating a virtual community

The key to success in e-commerce is not only the ability to attract new customers, but also the ability to retain existing customers. The main traffic on the website is provided by repeated visitors therefore to the businessman it is important that clients came back to a site. «Breakout» potential of the majority of online stores ranges from 10-42%, depending on the direction of commodity.

According to the data published by researchers of the Harvard business school, at increase in an indicator of deduction of clients at only 5% — from 90% to 95% — the company profit before payment of taxes can increase for 45 %.

Use of CRM systems helps to organize work with clients. Strategy of many commercial web projects this creation of community (virtual community). Virtual Community is community of the people who are united by the general interest and being not only regular customers of the concrete website, but also communicating among themselves that increases usefulness of services or goods offered on this site. Interactive Network properties to help the user easily to establish appropriate contacts. Therefore, all of the traditional marketing methods which implies the active participation of the user, are very widely used in the Internet.

The organization of any virtual community based on three principles:

- there are common interests of users;
- there is motivation for the exchange of information;
- there is the ability to interact, ie there is access to the web addresses and other community members, and (or) electronic intermediary who

coordinates the interaction of the participants.

Internet users have various requirements and preferences and interest to receiving and exchange of information on a wide range of questions.

Historically virtual communities started being formed round on-line trade service companies (for example, Amazon.com, eBay, etc.), i.e. the firms offering already completed sets of goods and services became organizers of such groups. Now marketing specialists recommend to the beginning companies to arrive on the contrary — to make decisions in dependence not from sales of certain production, and from preferences and interests of concrete groups of potential consumers. In other words, it is better for specialist in electronic commerce to construct at first information Internet platform for interaction of the interested participants. And then, having found out, interests and preferences of audience to offer the corresponding set of goods and services.

For example, at creation of the largest American distribution network of PRODIGY it became clear that clients need more likely a means of communication, than opportunity to make purchases in an on-line mode. This is especially true for such goods as gifts.

Virtual communities have own sites, web pages, and sometimes and printing editions. These information sources which are propagandized by the company and associates, allow potential consumers to see responses of people which already acquired production of this firm and impart positive experience of its use and open unknown before area of its application or new consumer properties.

The objective of these communities is not just retain people who already have purchased the products once, but also to reveal their demand for new products and additional services. As the formation of the community needs of its members become clear. These members «prompt» the companies organizers, what goods and services will make success now, and with what goods it is necessary to wait. In this way it is possible to reach an optimum combination of functions carried out by the commercial enterprise: it will manage to provide realization of the commercial purposes, and communication between associates.

Example. Toyota united the American owners of recently bought cars in community which helps with the solution of daily tasks, advises about possible repair of malfunctions of cars, and convinces all present clubmen to make the Toyota brand the lifelong automobile brand. When it comes time to change the car Most of those who today is a member of the community, will make its choice in favor of cars from this company, especially because this desire is stimulated by a system of discounts.

Formation of steady virtual communities leads to essential modification of basic business models of a segment of B2C.

First, online stores are converted from standard electronic sellers of goods or services in a kind of «value-added nodes», which are able to offer their customers a variety of information and mediation service. Such option isn't excluded: acquisition of profile production for online store

will begin to represent for consumers smaller interest, than possibility of communication and exchange of information on interesting their subjects and receiving accompanying services.

Second, virtual commercial and service enterprises take the additional functions related to the coordination and management of consumer associations (eg, the organization owners club smart phones). Electronic dealers assume responsibility for providing and filling of information, communication and commercial elements of community, and also for interaction support between associates.

Thirdly, on-line trade receives the additional channel for studying of consumers, professional advertizing, the organization of feedback, identification of target segments of consumer audience within community. And this channel is much more effective than traditional forms of marketing because members of a virtual community are ready to provide the seller information needed for his business.

Thus commercial resource, for example, an online store solves the problem of ensuring customer loyalty and achieves competitive advantage in the market because in the eyes of customers, he turns into a kind of «credible expert» on a wide range of issues.

7.6.2. Methods for creating a virtual community

There are many methods of creating a virtual community for achievement of desirable result it is expedient to use their whole range at once.

First of all, it is necessary to estimate for what category of people the site is aimed. This group of people, called the target audience includes candidates for permanent audience. Thus, it becomes very important to the precise definition of the boundaries of the target audience in order to better develop promotional materials and content. This will allow to attract exactly those people who may become members of a virtual community.

To create a captive audience (the first phase of the community) are using various methods. The most common way is to publish thematic news. It may be news about the company, industry activities. Except the publication on a site, news are usually duplicated in mailing. In order to attract maximum number of visitors publish news that prepared professional news agency. Among other methods is the creation of services designed to attract new visitors and provide information.

Methods for creating a virtual community of Internet project

Communication methods

Consecutive interactive discussions. Chain of questions and answers (comments) in discussing the topic with two or more participants. Usually the topic indicated on the site, and then begin to arrive related comments and the resulting new questions. Discussion of interesting questions, the opportunity not only to listen to the opinions of others, but also to express own opinion attracts visitors. Among interactive methods most common various kinds of forums (web conferencing and blogs). Forum is open and multilateral model.

The buyer and the buyer, the buyer and the seller communicate. History of communication open to all and anyone can join the discussion topics. Corporate blogs are designed to break down official barriers between the developers of products and services and consumers. Consecutive discussions allow to define the main preferences of participants so are important for an organizer or coordinator of the virtual community. Studying of discussion materials of community helps marketing specialists to form more precisely offers output to a site and to address them to concrete target audience. In turn, it promotes increase of loyalty of buyers.

Bulletin boards and guest books. Bulletin boards and guest books is open, but unilateral model which doesn't mean obligatory obtaining answers to the published messages. There is no possibility of communication. Guest books and bulletin boards contain separate remarks and statements of buyers and visitors, sometimes with comments of owners of shop. It is important to ensure that this tool worked for the company, not against it. Do not delete negative reviews but correct the deficiencies noted.

e-mail. Address communication between group members or between its representatives and the organizer of the virtual community. As with previous methods, e-mail is asynchronous and does not require the answers. However, it is important for businessman to respond promptly to all emails users and always be polite with them.

Reference services. Online manuals and FAQ lists containing general information and explanations of common problems such as «what to do if I want to remove items from shopping cart.» Technical support use email, telephone, ICQ-consultants. Bilateral and hidden from third party communication model «buyer-seller». Emerging issues are solved individually and confidentially. Customer should always be able to get the information he needs, find all interest to him details. And to make it in the way convenient for him. Seller task — to provide client consultations using all available means.

Chats. Dialogues which conducted in real time. Chats occur less frequently than other methods because they require more attention of the organizers and participants. These methods allow to create a permanent audience independently, only by virtue of its interactivity.

In fact, forum or chat when filtered audience, create an additional incentive for return visitors to the site. Unlike other methods, interactive methods create not just a regular audience, but also the active virtual community. Thus, the entrepreneur has a group of visitors who maintain constant dialogue with him and among themselves. But in order to maintain the existence of this group is necessary to constantly work on it.

It is important that the forum and the chat will not work on their own, they must be constant moderation and support owner constant «selection» for the separation of advertising messages, obscene and non-thematic messages. For Chat moderator is required constantly, regardless of his attendance.

Additional schemes. Carrying out weekly polls of visitors on relevant subjects. Once a week it is possible to report results of poll on a site. It is possible to offer visitors tests, the solution of fascinating tasks and other. Feedback form is working effectively with the publisher, it allows visitors communicate easier and more often with the owner of the resource.

An interesting method creators of Samara paging campaign site use, they use a set of online games to create a captive audience. Having nothing in common with activity of campaign, games attract target audience — youth.

Offline methods. Effective method of maintaining a virtual community is special «live». events This can be conference, simply meeting outdoors or other joint actions, online businessman can invite his visitors to the exhibition, presentation, recital, etc.

Information methods

Publication of news. Placement of the news connected with a subject of a site. For example The dollar rate, world or regional news, weather forecast, TV schedule or broadcastings and other can be a demanded content. Horoscopes, ratings of goods and services,

showtimes and movie theaters «work» worse. Thus, it is possible to offer an additional content to the basic which in itself will be attractive to the visitor. As a result, the person has an incentive to visit the site regularly, even if the main theme of the site is not very interesting to him. This advice is not suitable for corporate offices.

Regular updates. Regular updates on the site. User interested in getting a new (updated) information will come again. Placement on the main page of the latest news of a site is possible, then it will be easier for regular customers to find new information.

Mailing. Because of the list of mailing it is possible to create a captive audience, quickly reporting to users about all updates of a site, to unite the majority of people interested in an advertised product, to inform them all available on a product (for more details see item 7.3.7.3). Besides, the audience of mailing is almost completely personalized. Thus, the businessman has an opportunity directly, without intermediaries constantly to contact to the people who are interested in the offered product.

Registration of users. There are two main options of registration of visitors: registration for identification and registration for access to the closed zone. The first is used for personalization of information and services, registration of orders in shops and other. The second option is used for authentication in various on-line services, for example, sellers of a content. As a rule the registered users are a part of a captive audience, the businessman should encourage registration, offering users additional services.

Reference catalogs. Directories provide links to other sites containing information relevant to the interests of the members of a virtual community of goods and services. Possibility of obtaining comprehensive information increases the value of a web resource in the opinion of visitors.

Ratings. Ratings in goods, services, and any comments about them allow the organizer to learn about the preferences of the members of a virtual community (for an online store this free marketing information).

Design change. From time to time (usually not more than once every six months) should be carried out changing the design of the site (it creates a feeling of constant progress), previously informing users and collecting their suggestions for improving the interface (it is important that improvements were justified and not deterred the conservative part of the audience).

Commercial methods

Selection of goods. Goods and services sold electronic shop in accordance with the needs of members of a virtual community can be one of the incentives for participation in the Community.

Competitions and prizes. For attraction of part of audience it is possible to use carrying out quizzes. The correct answers have to be published on the website weekly. Visitors who participate in quizzes, will come back to a site to see, whether they were right. Contests, sweepstakes and other similar actions attracted the attention not only of potential participants, but also the media. It is important that competitions should be regular, not disposable (we're talking about creating a captive audience) Moreover, experience shows that the optimal interval is 2-3 days. If the prizes are distributed continuously. However, contests often collect a limited number of «professional» members, so the effectiveness of this method is decreasing.

Cumulative discounts. Progressive discounts and bonuses are typical for online stores. With regard to the effectiveness of this method operate the same principles as in the retail trade.

C2C marketplaces. Trading platforms in the form of online auctions help in creating a virtual community, where members of the group are interested in trading or paid exchange of goods and information, both among themselves and with external customers.

Mediation. Mediation in finding customers, design and Guarantee of transactions (more typical for segment B2B, but can be used in the B2C sector, if the members of a virtual community are interested in these kinds of services).

Nonprofit methods

Free services. Providing to visitors free materials and services. A good tool to create a virtual community are services such as free e-mail, web hosting, software, e-books, etc. Free materials must be related to the theme of the site. It will force visitors come back not only for the free services, but also to take part in the main site's activity.

Researches show that sites where visitors come back again are rather visited and profitable. So online marketers should create mechanisms to ensure repeat visits, and makes the site an important communication tool of visitors.

7.7. Off-line support for online projects

We won't stop in detail on use of traditional (offline) advertizing of on-line resources. Many publications are devoted to this subject. Offline advertizing has a number of advantages. It is much more long-term unlike on-line advertizing. One advertising medium (business card, brochure, magazine, etc.) may fall into the hands not only to those who received it directly, but also to his family, friends, colleagues, etc.

Contrary to the relatively high cost of offline advertising, there are a number of its methods and tools that are available, even with a modest advertising budget. Out of the Internet advertizing of a site submits to usual rules of advertizing campaigns. The address of a site is specified on business cards, prospectuses, leaflets, posters, in journal advertizing along with all other requisites of firm.

Psychologically, people regarded with suspicion virtuality. If you give to the virtual project through traditional advertising material, any material features it increases its «materiality» reality in the eyes of the audience. As a result, the visitor more trust information on this site.

The effect of «irrelevance» is of great importance. Its essence in unusual giving of advertizing. For example, a demonstration of the company name in advertising appeal looks natural, but a demonstration URL does not look natural, especially when it is the key information. This can be used, increasing the size of the virtual address relative to other elements of advertising, thereby increasing the effect of inappropriateness, and, consequently, increasing the degree of perception of the new object.

Off-line advertising, of course, is not always applicable. Density of the Internet connection on the territory of Russia is extremely heterogeneous, and off-line advertising is tied to a specific location (the area of its distribution). From the foregoing it follows that it is possible to advertize an Internet resource offline only where concentration of potential clients is highest, differently advertizing won't pay back itself.

Self-examination questions:

1. List the main ways of information search on the Internet and actions corresponding to them on search optimization.
2. How the indicator defined as the relation of publicity expenses to number of actions interesting the advertiser, made by the visitors attracted with advertizing is called?
3. What are keywords?
4. Which indicator reflects the extent to which the content of the document corresponds to the specific request of the search engine?
5. Which indicator demonstrates the effectiveness of search engine optimization and reflects popularity site on the Internet?
6. List the relative indicators the effectiveness of online advertising.
7. What class of programs (internet service provider) lets you know the frequency of use of words and phrases in the user search queries?
8. What main ways of placement of banner advertizing?
9. What is the main difference between the catalogs of web resources on ratings?
10. List stages of drawing up a semantic kernel of a site.
11. Which sections of internet marketing are not included in the subject area of online advertising?
12. How the relation of a share of impressions which provide links to the site, got to the first ten search results, to the sum of all impressions provided with profile inquiries in this search engine is called?
13. What are the advantages and disadvantages of search engine optimization as compared to search advertising?
14. How use of unethical methods of improvement of provision of the link to web pages in sheets of answers of search engines is called and estimated by search engines?
15. What is the swapping?
16. What is the name indicator, defined as the ratio of the number of buyers (service users) to the number of visitors of the trading platform or any other Web resource for a certain time?
17. List spamdeksing methods and give them a brief description.
18. To what groups of audience it is possible to carry visitors of a site who regularly visit a site and spend there not less than one hour per week?
19. What are the advantages of using catalogs and ratings for the popularization of the web resource?
20. What are the advantages of exchanging links?
21. Describe the subject area of internet marketing.
22. What ways of motivation of users to providing personal information you know?

23. List the indicators characterizing the audience web site?
24. What characteristics settings of advertising campaign offered by most systems search advertising?
25. What is the name indicator, defined as the ratio of the number of clicks on the ad (clicks) to the number of hits this advert?
26. In what situation profiling is a violation of user privacy?
27. How the set of target words, target phrases and the accompanying combinations, selected and ordered on the basis of the qualitative and quantitative analysis of the search importance of words and the expressions used by target audience of a site is called?
28. List types of the organizations subjects of the market of banner advertizing and give them the short characteristic.
29. Describe types of targeting, their advantage and shortcomings.
30. What dependence of efficiency of demonstration of the advertizing material on number of the repeated impressions, by what concept it is described?

31. How degree of compliance of documents of information need of the user is called?
32. What tools can find the connection between successive search queries of the same users?
33. On what depends rate of burning out of the banner?
34. What are the advantages placing of advertising on banner exchange networks?
35. What is the name and when used the ban on demonstrations member information or member information service?
36. Why targeting is used?
37. On the basis of what schemes of calculation partner programs function?
38. What is the difference methods of organizing the distribution of advertising messages Opt-in, Opt-out and Double Opt-in?
39. What are the basic principles of viral marketing?
40. How is called and for what permission to use site materials free of charge on other web resources is used, but with the obligatory requirement to establish a reference to the source?
41. What is the incentive mechanism to increase the number of participants in the partnership and sponsorship programs, Does it contain difference?
42. What are the advantages of the organization e-mailing?
43. Describe the subject area of search engine optimization.
44. What is the name indicator, defined as the ratio of the the number of visitors a commercial web resource involved and interested advertising server (visited a few of the pages), to the total number of visitors attracted by advertising?
45. What information hit counters provide?
46. List the primary indicators of the effectiveness of online advertising.
47. Which of the performance indicators of online advertising most accurately reflect the effectiveness of targeted sales campaigns?
48. How identification by a site of the index robot of a search engine and providing pages specially prepared for a search engine to it, excellent what the user sees is called?
49. Wherein advertizing coverage is measured?
50. List the methods of communication to create a virtual community of Internet project?
51. What kind of information can be used to assess the level of competition for keywords in search engine optimization?
52. What are the advantages and disadvantages of treatment services to a service partner company?
53. What term denotes a context-sensitive advertising, placed on the first page of results issued by the search engine?

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REACHING SUSTAINABLE DEVELOPMENT GOALS THROUGH E-GOVERNMENT IN THE POST-2015 AGENDA

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Abstract

The article examines main tendencies of e-government formation in Uzbekistan as a part of national economic and social reforms; e-government definition, functions and stages and global tendencies. Authors stressed out barriers on the way of e-government and e-governance development and problems that should be solved.

Key words

e-government, e-governance, e-Government Readiness Index, e-administration, IT, Uzbekistan

Introduction

In the age of high technologies when almost the entire work flow is transferred to electronic media, the emergence and development of e-government is naturally. The essence of e-government includes the use of virtual space for the service delivery improvement and enhancement of public authorities and institutions' functioning. Creation of national «e-government» in the post-industrial countries is taking place in line with the in-depth reform of the entire system of government. Experience of several countries has shown that the stable financing and effective management of this initiative is able to quickly recoup the money spent. In this case, citizens have a real chance to engage in dialogue with the government, to influence decisions and to put forward their own initiatives, to obtain detailed information on the work of government agencies and monitor their activities.

The value of e-government lies in the specific benefits for citizens and businesses — to reduce costs, to reduce the amount of time and money of citizens and businesspeople and added value, which enable these systems to the public. Therefore, the e-government project is counted to be successful if it brings real benefits for citizens, society and state. E-government has a number of basic advantages that makes it a part of the global sociotechnological paradigm of the new century, it is a specific tool developing the confidence of the people toward power.

8.1. E-government: definition, functions and stages

Modern life is under the influence of new technologically revolutionary processes, hitherto unknown, complex and contradictory, that fully applies to the concept and phenomenon of «electronic government». It should be noted that experts have not developed a unified approach to the definition of «e-government» term. One reason for this is the fact that the definitions of e-government are being developed by various specialists from different principles. Some authors prefer descriptive definitions — types of transformation taking place in society and its' individual structures due to the introduction of e-government. Others define applied aspect of e-government and simply list the different application of its certain instruments. There are technical definitions that focus on purely technological solutions and specific software products used. Besides there are economic definitions mostly oriented on maximum efficiency of government.

UN distinguishes functions of e-government, e-administration and egovernance*:

According to the degree of public participation criteria there are differences between government and governance, between e-government and e-governance respectively.

Substantially, the term «e-government» is commonly understood as a system of governance based on automation of the entire set of management processes across the country using modern information technology and designed to significantly improve the efficiency of public administration and to reduce the costs of social communications for every member of society. The main objective of e-government is provision of information and a specific set of government services to citizens, businesses and government officials, meanwhile personal interaction between government and consumers is minimized. The main areas of e-government operation are following interaction types:

- Government-to-Citizen;
- Government-to-Business;
- Government-to-Government;
- Government-to-Employees.

It should be emphasized that e-government is not a supplement or an analogue of the traditional government, but merely a new way for interaction of officials and citizens in order to improve delivery of public services. Creation of e-government involves construction of public administration system that implements a huge task associated with managing documents and their processing.

* e Source: United Nations, DPEPA, ASPA, Benchmarking E-government: A Global Perspective—Assessing the UN Member States, pp. 54–55, <http://www.unpan.org/egovernment2.asp>

Table
8.1

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Different types of customers share a common desire to obtain more effective means of access to information in order to reduce transaction costs, make the interaction with public authorities easier, faster and more comfortable. The emphasis is being made not only on the technological side of the issue, but also for the change of entire system of government, its internal structure and relationships with businesses and citizens.

Reach of government services	Implementation of e-government	High e-government performance
Coordination and implementation of state policy	Component of public sector management	Promote interaction among citizens, government agencies and elected officials, including processes of public administration and public policy
Development of programmes that are oriented on citizens' interest	Strategic planning for the transition to electronic service delivery	Technologies (particularly the Internet) transform the process of public administration
Stimulation and improvement of citizens' role	Quantitative evaluation of e-forms effectiveness in expenditure delivery service	Electronic federalism (change of relationship among different levels of government); e-democracy (higher level of civic engagement, online voting, ethics, safety and integrity of privacy, increased transparency)
Improvement to the provision of services in online mode by analysis methods and evaluation, performance measurement compared with other forms of services provision and targets establishment	Establishment of targets and performance evaluation	Environment for legislation and public policy development: policy initiatives of governments; the regulatory environment; implementation of initiatives such as the legalization of electronic digital signature; a high level of citizen participation in public policy development (e-democracy)
Assignment of rating to countries (performance assessment): analysis of government web portals, web sites	Issues of human resource management, such as training and recruitment, placement and maximizing available resources	Changes at the international level: weakening of the boundaries due to information exchange; approval of international standards and best practices; information and knowledge management within the framework of e-governments

The e-government formation at local and regional levels also affects other areas: e-services, e-management, e-democracy and e-commerce. It is expected that operation of e-government will:

- increase the effectiveness and efficiency of state's executive functions, especially in regard to public services provision;
- make government more transparent and accountable for citizens and businesses;
- change relationship between government and citizens, which implies

a significant change in the level of democracy and the structure of government.

8.2. E-government: global tendencies

Nowadays most countries in the world understand and accept the fact that e-government proposes use of information and communication technologies (ICT) to transform government with the aim of making it more accessible to citizens, more effective and more accountable. It includes:

- providing better access to information (laws, draft legislation, other regulatory legal acts, forms of the necessary documents, as well as economic or scientific data) via the Internet;
- promoting citizen participation in public life by creating opportunities for a better interaction with officials through electronic channels, for example, possibility to fill in the required documents electronically;
- increasing government accountability by improving the transparency of its operations, which reduces the risk of corruption;
- supporting the implementation of the development goals by reducing time and material costs that small businesses face on the way of communication with government agencies, as well as through the provision of rural communities and other peripheral fraternities with communication infrastructure.

There are a number of factors that impede the development of ICT and the establishment of e-government particularly in developing countries, major of them are given in the table 8.2*.

Table 8.2

Factor	Problem	Consequence
<i>Institutions' weaknesses</i>	Lack of planning, inexplicit goals	Incorrectly designed system, resource overspending
<i>Human capital</i>	Lack of qualified and professional training	Inadequate maintenance of the project, isolation from technology
<i>Financing</i>	Underestimation of projects costs, inadequate supply	Unfinished projects, higher maintenance costs of current expenses
<i>Local environment</i>	Inadequate selection of vendors of technical solutions, lack of backup systems (components)	Unqualified technical support, problems with the implementation

<i>Changes in informational-technological environment</i>	Limitations of hardware/software, too high level of use of applications developed specifically for different customers	Incompatibility of systems, improperly chosen software
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* Source: United Nations, DPEPA, ASPA, Benchmarking E-government: A Global Perspective—Assessing the UN Member States, p. 22, <http://www.unpan.org/egovernment2.asp>

Institutional/operational	Managerial	Policy/planning
Cost of technology and infrastructure	Lack of ability to carry out large-scale IT projects	Lack of coordination and/or strategic planning
Lack of resources for supporting work in 24/7 mode	Lack of understanding the importance of tasks by senior and middle managers	Lack of complexity and duration of the activities / programmes
Lack of innovative initiatives in the public sector	Expectations do not match the real environment of managers	Lack of public policy
Organizational/cultural misunderstanding	Doubts and resistance among the leaders	Organizational/cultural misunderstanding
Lack of institutional support	Opposition from workers and unions	Local government and municipalities are inactive
Poor management of information flows, reluctance of departments to share data	Outdated legal framework for innovation and private sector involvement	Opposition from workers and unions
Lack of public policy	Poor management of information flows, reluctance of departments to share data	

8.3

Obstacles on the way of e-government creation can be identified on different levels: institutional, managerial and policy/planning* (Table 8.3).

Application of best practices of e-government implementation concepts in foreign countries is one of the tools for achieving effective e-government goals in one country or another. Primarily, it is connected with problems of legislation formation in the area of transition to e-government services. Firstly, it concerns the legal status of an electronic document and associated procedures so that the electronic document will carry out all the functions of a traditional document.

The main reasons why people do not want to use e-government services are the lack of skills or the ability to work with a computer and internet, as well as the absence of such need. Similar motifs are more prevalent among older people. Therefore, it is obvious that young people are those who will use these services in the future. They highlight reasons for their interest such as convenience, affordability and simplicity of use, opportunity to save time instead of standing in queues. Thus the motivation for using public services through the Internet among 18-35 aged people is presence of the Internet combined with the need to rationalize personal time. In order to increase the demand for e-services very accurate and adjusted strategy is required to work with such citizens, and especially

Table

* Source: United Nations, DPEPA, ASPA, Benchmarking E-government: A Global Perspective— Assessing the UN Member States, p. 49, <http://www.unpan.org/egovernment2.asp>

with those who in general trust the authorities and visit government offices rare. Specifically this group is mostly interested in e-government. A positive bunch of «expected benefits of e-government — ease of learning new skills» and confidence in technical aspects of the new system should be formed exactly for these people. In this case, even if the e-government would not lead to the ideal bureaucracy, it will at least draw closer.

For full-scale work on e-governance implementation in the life of the state and dialogue between government and society appropriate resource base (primarily — financial) is required. That is cause of economically developed countries' e-government maturity is in the leading positions worldwide. It is also important to define the strategy and priorities for components / directions (e.g., construction of a general security infrastructure, improvement of online services, the creation of gateways and clusters; development of policies, methods and management standards; electronic services delivery; use of knowledge base to create a workplace; technological experimentation; operational efficiency improvement; creating adaptive and robust information communication infrastructure; education in the field of information communication technology; increase the availability and coverage of e-services, their functional saturation; increasing citizens mindshare in e-engagement; enhancing the national competitive advantage; ensuring universal access to the Internet in shortest period as possible; promoting the development of e-commerce and rules of ecommerce; implementation of e-government concept; training highly qualified personnel capable working in a new «digital» era; creation most advanced information and telecommunication networks in the world; training personnel by supporting education and learning; «digitization» of administrative services and availability of high-tech means of communication in public places; guaranteed protection and verification of information transmitted through e-government telecommunications networks; formation of a system of standards and guidelines about the use of ICT in public administration; ensuring effective interagency interaction of information based on ICT.

The introduction of e-government allows to:

- increase the transparency of decision-making and legislative acts;
- reduce bureaucracy and therefore costs for its maintenance;
- considerably simplify all necessary governmental procedures in the provision of public services for citizens and businesses, which significantly reduce the possibility of corruption;
- increase efficiency of public administration and as a consequence the country's international image.

Furthermore introduction of e-government can contribute to economic growth. It can be predicted that in near future e-government and «single window» system will be more accessible and effective in many

The e-government ranking in index scale for the CIS countries in 2014

CIS Countries	Rank	e-GRI	Table
Russian	27	0.7296	
Kazakhstan	28	0.7283	
Belarus	55	0.6053	
Georgia	56	0.6047	
Armenia	61	0.5897	
Moldova	66	0.5571	
Azerbaijan	68	0.5472	
Ukraine	87	0.5032	
Uzbekistan	100	0.4695	
Kirgizstan	101	0.4657	
Turkmenistan	128	0.3511	
Tajikistan	129	0.3395	

countries. It is tightly connected with rapid development of social networks. Such technologies significantly extend capabilities of political communication and allow achieving new forms of integration among government, business and citizens. The use of modern technologies and ensuring transparency of public authorities through the placement of information in the social network (Internet) in many countries is becoming an integral part of organizational and methodological resource of administrative reform and important tool for fighting corruption.

Economic and Social Affairs Department of the United Nations prepares annual rating of countries' readiness to use «electronic government» technology. Development index of «electronic government»: eGovernment Readiness Index (e-GRI) reflects state's technological infrastructure and level of educational background in the field of ICT and indicates the extent to which the government uses ICT potential in the field of economic and social development of the country and citizens. Besides the index allows to compare and analyze development trends of e-government in different countries. According to above mentioned report, the structure of the «electronic government» index has remained unaltered and similarly consists of three sub-indexes:

Table

- Web Measure Index — WMI;
- Telecommunication Infrastructure Index — TII;
- Human capital Index — HCI.

The Republic of Korea is ranked first out of 193 countries in 2014 , while the USA, UK and Japan are in the world's top ten countries with high levels of e-GRI. Most CIS countries are in the group of countries with medium level of E-GRI (Table 8.4).

The process of e-government is often divided into phases or stages of development, that are independent from each other, and for the start of one of the stages the completion of the other is optional. Such break-

down presents a system for understanding goals of e-government, namely *publicity*, *participation* and *online transactions*.

The first stage is publicity — the use of ICT to improve access to government information. Governments usually create a large amount of information that is of great importance for both individuals and businesses. Internet and other modern communication technologies can deliver that information to citizens quickly and more targeted. Strategy for this stage of e-government is very different in its content and form.

Expand of civic participation in government: e-government has potential to involve citizens in the process of governance through their interaction with policy makers throughout the cycle of public policy at all levels of government. Increased citizen participation helps to build up public confidence in the government, because interactive e-government involves bilateral communication.

Provision of public services in online mode: governments can expand their presence in the Internet by creating such web sites that allow users to conduct transactions online. Among major benefits of such innovations are long-term cost savings, accountability (by maintaining electronic records) and increasing productivity. Perhaps the biggest incentive forcing the government to use ICT to provide services is to optimize the bureaucratic and time-consuming procedures that provide an opportunity to save money and increase productivity in the long term. Moreover by automating and optimizing processes and procedures, the government can reduce corruption and increase the level of income, while increasing the confidence in the government especially from such important standpoint of cash flow areas as collecting taxes and fines.

Levels of e-government should also be emphasized:

- So-called rudimentary, when the presence of government in the Internet is provided in the form of several unrelated official websites. Information is only basic, limited and rarely updated.
- Amended — substantive content and information is updated more frequently.
- Interactive — users can «download» forms of documents, contact with officials, make inquiries and make appointments
- Transactional — users can pay for the services or conduct operations in the online mode.
- Holistic — full integration of functions and services of all government agencies presented in the Internet.

8.3. Formation and development of e-government in

Uzbekistan

According to maturity index of e-governments in the world, prepared by the United Nations (2014). Uzbekistan occupies 100th place (in 2008 —

87). Nowadays there are sufficient changes in the sphere of information in Uzbekistan that contribute to the further development and widespread adoption of ICT in all spheres of country's life. Over the past few years there have been significant changes in legal regulation of the information sphere. Information legislation is dynamically developing on a par with active development of e-government, which is considered as one of the priorities of the government. The main purpose of creating e-government in Uzbekistan is formation of government and local authorities interaction mechanism, that will be mostly focused on providing services to individuals and organizations through information technology. From the consumer point of view the introduction of e-government aims to simplify access for citizens to information, public services in electronic format, to increase transparency and power control by society, to reduce the influence of human factor in the activities of the executive office, to involve wider group of citizens into the governance. State programs aimed on addressing information equality are being actively implemented. They are targeted for introduction of information and communication technologies, rise of educational level, reduction of tariffs for the Internet users, computerization of government agencies and educational institutions.

Adoption of development program of telecommunication technologies, networks and communications infrastructure in the Republic of Uzbekistan for 2013-2020, approved by the resolution «On measures for further development of the National Information and Communication system of the Republic of Uzbekistan» dated 27 June 2013, serves to ensure the dynamic development of information resources, systems and networks in Uzbekistan.

In the framework of implementation of this resolution new structures are created under the State Committee for Communication, Information and Telecommunication Technologies — the Center for Development of the «e-Government» and the Center for Information Security Provision. Important goals and objectives aimed at accelerating the development of information resources, systems and networks in the country are set. The activities of the Center for Development of the «E-government» are aimed at developing strategic directions for further development and improvement of the electronic interaction of the state with population and business entities in Uzbekistan. It is designed to provide a single technological approach for formation of this system by involving consistent design mechanism, development and integration of information resources and databases that are used in government agencies. The center will also conduct research and analysis of global trends and experience of foreign countries. The main emphasis in «e-government» development is made on maximum comfort of public services for business entities and population with minimal time consumed and money spent. Therefore, one of the important activities of

the center are systemic reorganization of the functional and operational processes of public authorities, preparation of proposals for optimization, improvement and implementation of innovative mechanisms for managing business processes related to the provision of public services. Aiming this, the center is developing technique for determining key performance indicators of provision and use of online government services, target indicators and indicators of implementation of projects within «e-Government» system.

According to the adopted programme of Telecommunications technologies, Networks and Infrastructure Development in the Republic of Uzbekistan for 2013-2020 the relevant regulatory and legal framework is being improved. Activities for building the relationship between population/business entities with public authorities in electronic form are organized. The principle of «single window» government system is introduced. A number of projects are implemented in the framework of the «E-government» system, as government portal of the Republic of Uzbekistan (www.gov.uz). It is an infrastructure backbone of the electronic information exchange of organizations, as well as between legal bodies and individuals. Each citizen or business entity, representatives of organizations and institutions can get complete information on all elements of state power in the country and send a request to one or another public authority in electronic form. Full registry of basic online state services is also published on the portal.

Web portal «E-Kommunal.uz» is information infrastructure in the housing sector, which facilitates the exchange of information among the public, regulatory agencies and homeowners, as well as community services. Information on all aspects of housing and communal services in Uzbekistan is conveniently presented on this web-site, as well as widget tariffs and even interactive calculator of all community utilities. Anyone can post information, a photo of a particular problem in the field of public utilities that will be considered by the relevant public authorities to take measures to remedy identified problems.

Automation system for collecting and processing statistical, tax and other financial records of the business entities in electronic form are represented on Stat.uz and Soliq.uz. On the website of the State Tax Committee any taxpayer (both legal and physical body) can get a whole range of services from consulting, preparing tax return or declaration of income in electronic form, or even to confirm your Tax Payer ID. Through the website of the State Committee on Statistics each business entity can deliver statistical reports in electronic form, every citizen can avail the electronic reservation of trade names at the time of new business establishment. Currently 101 state statistical reporting forms (out of 141 active forms) are available for registration in electronic form via the Internet. As of

February 1 of this year more than 103 thousand brand names are reserved electronically.

National database of Uzbekistan laws, which contains more than 25 thousand normative acts is in public domain (lex.uz). The main objective of the national system Lex.Uz — improving the legal culture of the population by providing broad access to regulatory acts and advancing work in the maintenance of legal information to population. In this database, the Constitution, all laws adopted from 1990 till present, codes of the country, regulations of the Oliy Majlis, decrees and orders of the President, regulations and orders of the Cabinet of Ministers, normative acts and other documents of ministries, state committees and departments, bylaws of the Constitutional Court, Supreme Court and Supreme Economic Court, international treaties of Republic of Uzbekistan are arranged in Uzbek and Russian languages. The national database Lex.Uz is the only informational-legal system in Uzbekistan that provides free access via the Internet to the regulatory legal acts.

Personal accounts are accessible for electricity consumers, providing personal data to every consumer of electricity (uzbekenergo.uz). Every single company, organization or family is considered as electricity consumer. This project will allow all consumers of the country to monitor electricity usage in convenient interactive way.

There are also online application forms available for foreigners who need issuance of visa of Uzbekistan (mfa.uz). The system is part of Ministry of Foreign Affairs website as a separate web page, which is currently operating in Uzbek, Russian and English, and also planned to be introduced in other languages. It is noteworthy that Uzbekistan became ninth country in the world that have implemented a system of e-Visa, which will undoubtedly increase tourism and business potential of the country.

Single portal of licensee provides information about the list of licensed activities and licensing procedures, required documents for obtaining licenses and permits (license.uz) and others. The list of licensed activities is consistently reduced and procedures for obtaining them is simplified. This project allows getting all the information and reduces the bureaucratic burden in obtaining necessary licenses.

The most promising project of information and communication system in the country provides single portal of online public services in the «single window» mode (my.gov.uz). It operates from 1 July 2013 and serves as convenient and effective tool for collaboration of state agencies with public and business entities.

This project was implemented in accordance with the Resolution of the Cabinet of Ministers «On measures for further improvement of the governmental portal of the Republic of Uzbekistan in the Internet with provision of online public services» on December 30, 2012. More than

170 interactive services in more than 20 sectors can be obtained through it. There are also those that are provided automatically among them. For example: setting telephony connection and the Internet for businesses and individuals, inquiring special form of the absence of taxes from the State Tax Service, obtaining licenses in the field of telecommunications and others.

Special attention is given to population inquiries on the portal. Citizens and business entities may approach state authorities and community administration through it. Reference information can be found, the «Statistics» module also can be used, which allows users to find out the stage of application review to public authorities. District and city khokimiyats (state agency) of Republic of Karakalpakstan, regions and Tashkent city are connected to this portal. Citizens can submit their inquiries according to place of residence that allow issues to be resolved more quickly. It should be noted that a single portal is constantly being improved: new organizations are added, additional features and services are developed, quality and comfort level of work is enhanced. Constant work on the effective use of the portal modules, training sessions and seminars are held with officials from state bodies. Targets and indicators for different types and areas of state services are developed to evaluate the effectiveness of the proposed measures for the implementation of «e-government».

Electronic documents management system is a key element of the «e-government» in the country (Decree of the Cabinet of Ministers of the Republic of Uzbekistan «On measures for implementation and use of a single secure e-mail and electronic documents management systems in public and economic administration and local authorities», № 126 of May 4, 2011). Within the framework of this decree the center «UNICON.UZ» carried out the work to connect ministries and agencies to a single secure EDS e-Hujjat (that unifies more than 150 organizations including government bodies). System that is based on modern industry standards and technologies platform is designed to provide legitimate exchange of electronic documents, improvement and automation of the existing documents management system and decision-making processes in the organization, creating single record keeping system, organizing and monitoring of documents execution.

The platform of the e-Hujjat ensures compatibility with other electronic document management systems and allows flexible integration with both existing and new applications of other ministries, departments and organizations.

Worldwide information globalization processes are dictating not only the need for widespread adoption of ICT in the economy and other spheres of life, but also the conditions for information systems security. Uzbekistan was one of the first countries in Central Asia to join the international

security system in the field of information and communication technologies. Referring to President Decree «On additional measures to ensure the national security of computer information and communication systems,» September 5, 2005, Emergency Computer Response Service «UZ-CERT» was established under the Center of Development and Implementation of Computer and Information Technologies «Uzinfocom». The Information Security Assurance Center under the State Committee of Communications, Information and Telecommunication Technologies of the Republic of Uzbekistan was formed on «UZ-CERT» basis. The main objective of the center is maintenance of information security for information systems, resources and databases of the «E-Government», as well as assistance in the development and implementation of an information security policy of appropriate systems and resources of public bodies. The staff of this center is engaged in the collection, analysis and storage of data on contemporary threats to information security, development of recommendations and suggestions for effective organizational and software solutions that prevent acts of illegal infiltration into information systems, resources, and database system of «e-Government». One of those activities is proposals oriented on the improvement of legal framework in the field of information security for «e-government» system, as well as the national segment of the Internet.

It should be noted that introduction of e-government should not be seen only as a mechanism to improve governance, but also as complex part of the administrative reform. The methodology of e-government as substantial part of the administrative reform could contribute to a more compact system of executive power. It would develop and take effective advantage for mechanisms that protect citizen's rights and legal interests of entrepreneurs. For successful implementation of e-government project there should be a shift from a departmental orientation activities of the state to the needs and demands of citizens. The effective use of modern power of information and communication technology allows moving from the concept of electronic government (e-government) to the concept of e-governance (e-governance). Practical implementation of e-government will require the transformation of government itself, as currently existing power technologies and control will not be able to implement new features. It will also require the formation of new thinking and style of work of officials throughout the state bureaucratic machine from top to bottom. If the e-government concept is based on the concepts of openness of government information and provision of public services online, the new way of thinking and a new style of management must be based on concepts such as collaboration, cooperation, participation and coordination.

Advantages of «electronic government» are obvious: simplification of bureaucratic procedures, a significant reduction in terms of the prepara-

tion of documents, provision of easily verifiable, strict fiscal accountability of businesses and individuals through introduction of a unified system of electronic record-keeping, increase in budget revenues, reducing corruption and consequently, increase of citizens' trust to government institutions.

There are a number of tasks that are actually relevant for all countries to develop e-government:

- Relationship of e-government with the nature of administrative reforms, focus on the needs of citizens as users of public electronic services;
- Improvement of electronic document management and information sharing within the executive branch, especially through «central government — regions/provinces — local authorities — civil society organizations»
- Organization of continuous training for civil servants and introduce this criteria in results of periodic attestation that is statutory incorporated; Unification of public institutions' web pages in the Internet to make information there easier to perceive;
- Formation of national standards of e-government accessibility; • Establishment of administrative regulations to make the applicant aware of his documentation procedure;
- Improving computer literacy of the population.

Introduction of high technologies in all sectors of economy and spheres of life, expansion of the state bodies' cooperation with population and business entities is the key for dynamic sustainable development in the modern world.

Self-examination questions

- How will you define e-government concept?
- What are main functions of e-government, e-governance and e-administration according to the UN?
- What are major obstacles and barriers on the way of e-government formation and development?
- What is e-government readiness index (e-GRI)?
- What are the main challenges that countries facing in the development of e-government?
- How important is the participation of civil society in the development of e-government?

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