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## Information Technologies in Ensuring Continuous Wellbeing of the Person

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### Abstract

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Formation of continuous wellbeing of the person in the Russian economy can be a real prospect in case innovative technologies will be required by all economic and social entities. The accelerated development of information technologies should be based on a progressive regulatory and technical base which contains leading standards, rules, regulations for product testing and its certification, warranty, insurance conditions and standards for the protection of intellectual property and information support of products and services. Socialization of technologies promotes growth of social and emotional wellbeing.

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**Keywords:** Socialization of technologies, information technologies, innovation economy, emotional status, continuous wellbeing, standardization.

### Introduction

In the nearest future general dominating idea of the world development will be determined by the information and technology revolution imperatives. It helps not only to remove resource, distance and time barriers, but to technologically change scientific, industrial, financial and informational processes. Global economic integration is accelerated under the influence of world information network. As the result more and more countries and regions of the world are being involved into global development process.

Global economic integration is based on further intensification of international division of labor, on the need in worldwide technical and economical infrastructure, unification of transport and

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communication processes, meteorological and ecological services, informational and technological standards.

New stage in global economic integration is connected with the transformation of multinational business entities into one of the basic development factors with strengthening of their role in spreading scientific and technical achievements, in standardization of production and control methods, with liberalization of trade and creation of national economies.

Originating global economy is characterized by many features. The main features are as follows:

1. intensification of international trade;
2. rapid development of industrial technological networks;
3. rapid growth of volumes and importance of informational and financial flows;
4. growth in inter-country capital flow;
5. rise in the number of new participants of intercultural economic relations.

Deep integration of national economy into world economy means its entry into world development. Free movement of trade, informational, financial, and technological flows presupposes the formation and further functioning of general global market. Interconnection and interdependence leads to bigger technological similarity between countries, to their convergence at the level of economical and technological growth; it also favours countries' switch to informational stage of social and economic development.

Integration processes are strengthened by international (UNO, IMF, The World Bank, WTO, etc.) and regional (European Union (EU), European Bank for Reconstruction and Development (EBRD) of political and financial organizations.

New conditions turned standardization into a part of global policy: adoption of this or that official standard as an international one, on the one hand, opens wide opportunities for products realization in the world market, but on the other hand, closes this market from products which are out of line with the standard. For many countries policy of standardization and certification of goods and services became the instrument for solving such complex problems as improvement of environmental protection, health care, information security and protection of consumers' rights.

With the development of informational economy seriation of industrial products is declining in connection to individualization of consumers' demands feedback. According to some estimates production chain in developed countries is not more than one third of all production; the rest part is small-scale production (from 10 to 2,000 items) aimed at small groups of consumers. As the result, the role of standardization rises. Standardization has become not only the means of cost reduction and improvement of goods and services quality, but also the factor of increase of effectiveness and compatibility of national economy. New standards and trade names help entrepreneurs to know the range of manufacturing capabilities, and consumers to know goods and services market. Both for entrepreneurs and consumers standards are additional characteristics of goods and services.

Possibilities for the development of national manufacturing are in the sphere of its technological restructuring, in adaptation to standards. Since information brokers search, select and spread the information about the products more and more, complication of technologies and rise of informational flows volumes became additional factor of standardization.

Convergence of informational technologies with communication technology gives the chance to remove significant part of paperwork, and to widen the electronic data usage. As many other aspects of informational technology, usage of official international standards in electronic data exchange is of decisive importance. In many countries organizations are recommended to use UNO EDIFACT which include agreed international standards, reference principles for electronic data exchange.

Many countries draw serious political and economical conclusions from this situation. Russia is not an exception. Federal Law "On Technical Regulation" from July 1, 2003, is aimed at harmonization of Russian and international systems of technical regulation, that should favour easy entrance into global market, rise of their compatibility and formation of new market conditions for business activity. This Federal Law prescribes creation of two-level system of normative documents: technical regulations with obligatory demands, and standards carried out on a voluntary basis. And there is an opportunity to realize the principle "one product - one certification - general access to global market". Introduction of binary control system by means of state norms and certificates of international importance will open global market for Russian goods. Russian technical regulations will be based on international standards.

Russia's entrance into world informational community and global market detonated cardinal reform of present system of technical regulation. Legal basis of this reform is the Federal Law, based on regulations of the Agreement on technical barriers in WTO trade, and Directive 98/34/EU "On the procedure for the provision of information in the field of technical regulations and rules on information society services".

### *1.1. Standardization as a need for the development of the information economy*

In the process of dynamic information and technological revolution modernization of the Russian economy can not be effectively implemented without open standards. The problem of standardization is more updated within the frames of innovative economic development, and the "integrated modernization" is measured by the rate of innovative technologies' diffusion (Kastels, 2000). In Russia today there are a number of factors which presuppose accelerated development of innovation-based economy. First factor is the development of knowledge-intensive industries as well as the Russian Internet. They require adequate open standards that are the basis of integration and cooperation. Therefore, standardization acts as the necessity of knowledge-intensive industries and the Internet, as the growth condition of efficient functioning of all their elements and segments. Secondly, the integration of the Russian economy into the global economy requires standards of global use which contribute to the formation of an integrated, technological and economic area in the world.

The result of the modernization of Russia should become the basis for the development of innovative economy, because no other in the context of globalization is competitive. In order to provide the environment for long-term innovative development, it is necessary to change the existing proportions between sectors of the economy, to increase the industrial effectiveness, and its innovative capacity. Currently, Russia is a country with a highly developed science and human potential. It is Russian global potential advantage, and it can be the basis for the modernization and impulse for development of innovative economy.

New high-tech state of the Russian economy can only be reached by the implementation of an exclusive innovative project, sound breakthrough in major technological directions, structural transformation based on new technological basis.

Russia can avoid some of the negative effects of innovation development, taking into consideration the experience of the developed countries. With the development of the innovation-based economy, the problems of intellectual property rights, access to information and information inequality are highlighted. Here the role of the state is to regulate, coordinate and promote the development of innovative processes in the direction of the effective use of limited economic resources. The most important instruments of influence on the innovative processes can be identified as follows:

- unification and harmonization of legislation,
- standardization,
- licensing and certification of innovative products and services, information systems, technologies and facilities.

Big importance of social problems in innovative economy, evaluation transformations from the level to the quality of life, presupposes orientation to the international standards and trends.

### *1.2. Information economy as cohesive and sustainable system became a reality in developed countries in 80-90s of the XX century*

In modern conditions technological basis of information economy is being undergone the changes of technological modes. Technological mode is a combination of technologically interconnected manufacturing having general technological goals. Currently the leading technological mode in developed countries economies is the fifth technological mode.

A technological mode actively generates the creation and continuous modernization of new machines and equipment, computers' information systems, local and integral computer systems, numerical program controls, robots, processing centers, different automatic devices and data bases, informational languages and information processing software. Such mode is connected with an extensive use of computer technologies in manufacturing. Such computer technologies provides industrial information processing and implementation of necessary regulating actions in real time stipulated by physical, chemical, and biological peculiarities of technological process. Development of informational economy can change the structure of economy itself. The result of it is fast growth of manufacturing capabilities in the society.

Under the influence of information and technological revolution it becomes possible to foresee the sixth technological mode. Formation and development of sixth technological mode is connected with the use of syntactic function of information in national production. This mode is manifested in CALS-technologies - integrated complex of products' electronic description standards. Such description gives united computer based organization of such processes as development and modernization of manufacturing, after-sale service, use of product based on electronic data exchange.

Development of CALS-technologies resulted in new form of carrying out large-scale projects. This virtual enterprise can be considered a contract based union of all enterprises which support the

production on each stage of its development. It works on the basis of general system of standards of information interaction.

Sixth technological mode, which is now developing on the basis of CALS-technologies, combines functioning of science together with projecting, manufacturing and consuming processes. All the participants of manufacturing process can improve the product when needed. Moreover such improvement will be immediately reproduced by the whole system.

Current Russian strategic goal is to establish and develop information economy and its major technological modes. Federal Special Purpose Program projects which are now being realized create a technological foundation for further implementation of information technologies in economy and society. It is planned to finance scientific works on national standardization system and information technologies. Developing information economy should protect relations within the process of manufacturing, distribution, exchange, and consuming if information. The quality of information technologies is confirmed by their correspondence to the standards. But in order to use the information in a constructive way, we need a special system of standards and rules. Standard is a selection of criteria for high quality goods; certification is confirmation of goods correlation to the standard. The situation can be worsened because effective period of information technologies is too short. Such technologies are out of date earlier their depreciation date. Endless changes, software update, growing requirements in memory, discs, and networking equipment, viruses, security leakage, data abuse are everyday events. All this has become a problem not only for the engineers, working with information systems, but also for entrepreneurs and managers. Specialist demand more and more new information systems because new applications do not work on old systems. It is impossible to foresee such demand. In recent time more and more Russian entrepreneurs become interested in integrated management systems. Therefore a lot of questions about facility standards, choice of supplier, system maintenance and their further modernization appear.

Great demand for information technologies and resources should be supported by special normative and technical information bases, by informational monitoring of goods and services. The information itself appeared to be inconsistent on international, interregional and intergovernmental levels. In future it can become a barrier in technical equipment and programming tools development. Transfer of semantics into digital code consistent with software and hardware tools is very slow. Transfer of semantics into digital code of certain spheres, such as economy, becomes a demand of information development. It presupposes internationally harmonized classifications describing entrance into certain groups of classification objects and definition dictionaries with multiple meaning notions. Such work has already been started by UNO and EU.

Standard way of transforming information into Web is XML (eXtensible Markup Language). Use of XML and XML-applications' syntax becomes more and more common. One of the standards' developers in this sphere is World Wide Web. The main purpose of XML is the description of document's structure and semantics. XML is often used for data exchange in the Internet. But since it does not protect the data itself one should use electronic digital signature and data encryption.

### *1.3. Creation of unified classification and coordination system of national information systems*

After adoption of Federal Special Purpose Program "Electronic Russia" the problem of organization of information in information systems has become up-to-date. In order to provide effective access to informational resources according to Federal Special Purpose Program "Electronic Russia" it is necessary to create a portal for developing electronic informational resources access system. But it is a difficult issue because Russia has already had electronic informational resources with millions of documents.

For a start it is necessary to solve the issues with standards. Now it is much spoken about the standards adopted together with foreign computer science and telecommunication systems; but little attention is paid to informational resources standardization.

Unified system of classification and coding of technical and economical information adopted in USSR is still working in the Russian Federation. Despite this system has undergone profound improvement in 1992-1995, it still requires serious modernization taking into account new tasks and conditions.

Transition to information economy and all associated problems presuppose creation of unified classification and coordination system of national informational resources. Such system will be harmonized with similar systems of other countries. It is important that public part of national informational resources should be combined with the state informational resources. There is a great number of different informational and communicative technologies which can not be combined together. It is obvious that a lot of barriers appear in the process of creating integrated technologies. It is very hard to create communication systems appropriate for everyone.

International Standards Organization (ISO) takes the major position in creation of unified standards for coding audio-visual information. Its expert group has considerable results in creation of information and broadcasting data storage standards, while MREG-4 provides users with storage techniques, methods of exchange and interactive use of video materials.

Standardization can be of great help in the process of economy development. In the USA simplification of standards development is an indirect way of scientific process regulation. Stimulation of commercially approved standards promotes innovations and market development. The projects which created profound RTD-support system (reliability technical directive support system) were supported. RTD-system is applied to wide sphere of normative documentation development system that regulates each stage of product development. In general RTD-support system has created the basis for modern informational infrastructure of USA industry. The basis includes standards, products testing systems and their certification, warranty rules, intellectual property protection rules, obligatory or recommended delivery contracts conditions, leasing, and even utilization process. Without obeying similar rules products can lose their compatibility in developed market and be pushed back to marginal consumers.

EU representation office in Russia offered a draft program "Approximation of EU and RF Technical Regulations, Standardization and Certification Systems". Its overall objective is to facilitate trade and support closer economic relations between the Russian Federation and the European Union in the

context of the Common Economic Space by approximating and enhancing effectiveness of the Russian technical regulation, standardization and certification systems.

#### *1.4. Unification and standardization of electronic documents flow*

Realization of Federal Special Purpose Program "Electronic Russia" should result in decrease in number of paper documents up to 30%. It presupposes integration of informational resources into unified intergovernmental system, unification and standardization of documents flow in web. With the development of Russian informational infrastructure it is necessary to increase safety level and support legal protection of information both in business and public access networks. It is also necessary to standardize regional and interdepartmental information exchange. One of characteristic features of existing workflow is regional and departmental informational isolation and inaccessibility. There is parallelism of workflow in regional and departmental information space. Despite government agencies abide the state standard rules, their inner requirements are different. Current workflow standards can not be applicable to electronic documents. There is no unified policy and methodology, existing systems do not allow to easily change the ways of documents processing and data protection. Implementation of electronic workflow and new technologies will allow to get necessary document immediately. In Russia each region and each establishment created their own data bases and used their own software.

Unified standards are very important for solving such tasks as documents workflow support, archiving, distribution in geographically-distributed organizations, and creation of unified electronic environment for cooperative work. The problem is that different systems contain different margins, though the information is displayed in the same way. For example when people fill in the application for the job, or personal welfare application, or application to Pension Fund spaces for name, surname and address are organized differently in different establishments. Therefore there is no unified standard page design. But it is necessary not only to digitize paper documents, but to create unified standard. Software which is used in information systems should work on the majority of hardware.

The country should not be guided by two or three major companies which will force to spend great money on new equipment and software. Microsoft is producing more and more sophisticated software that demands new computer power which Intel company provides. In New Zealand Microsoft was accused of making its users to update their software more often than they want to.

#### *1.5. Standardization of information as a basis of integration of informational and communicative technologies*

Industrial economy, based on extraction and processing of organic resources, gives place to information economy with minimization of traditional factors of production, distribution, exchange and consumption of goods and services. Different economic development goals are formed, fundamental changes are made. New informational type of economic growth is seen. This type is characterized by reduction of traditional resources and growth of informational resources. Level of expended resources contained in gross domestic product is decreasing while gross domestic product itself is growing.

The major characteristic feature of information economy is transition of information into main industrial resource. Under the circumstances production and further information processing becomes the main factor of human labor, and information volumes in production and financial processes grow.

In contrast to other traditional economic resources, information has high reproducing potential. There is one very important principle - new information appears with the speed which is directly proportional to actively used collected information. It provides quick growth of informational resources. It is obvious that those countries which started to use electronic data bases much earlier will gain the edge in the competition.

Space of flows is represented as basis of information economy. According to Manuel Castells' theory, the space of flows is material organization of time-sharing social practices. The example of social practices can be any real project that has final realization time and web-based organization plan which provides functioning of different flows: trade, technological, informational, financial.

The notion process is at the heart of projects in information economy. Since processes in information economy are of unbalanced and dynamic character, they take the first place in new management technologies.

Networks, processes, and flows are the key constituent parts of information economy. Such economy is based on flows' generation and management. In information economy the processes of transformation and transaction become stream ones if they can be structured in the form of regular, homogeneous, repeated elements (documents).

Information flow is determined as directed movement of something relatively coherent (for example, resources, processes, etc.) in informational system. Information flow became very intensive. Nowadays the effectiveness of information from different informational systems rapidly decreases while business and volume of rapid information increase. Data incoming from different information systems appeared to be inconsistent or just inaccessible at necessary time because workers from different structural units used different information systems and set controversial data about the same client or product. In order to use information in a constructive way and optimize the information flows' control systems it is necessary to standardize the information. It has become possible to create systems similar to CALS-technologies, which will solve such problems as exchange of unstructured information, web-oriented relations between suppliers and consumers, support of joint work via virtual operating platforms, support of product lifecycle, knowledge management, etc.

Structuring of information based on certain standard allows to save all kinds of resources, including human capital. Structured information provides inner order and organization of economic system. The level of order is rising under the influence of consistent work of separate elements of the system.

Structured information can be transformed into standards, technologies, procedures, or instructions. Use of such information for regular business activity processes provides decrease of economical system entropy.

Standard forms of providing information accelerate the integration of electronic means of creation, movement and storage of information. At the same time integrated data base and open source software should be used. Sap and Oracle enterprises create their ERP-bases more available, in order to provide their coexistence with other software. Creation of integrated information system, based on various



software integrations, became a necessity. In order to solve the problem of information inconsistency new programs are being developed. Nowadays new software programs called Enterprise Application Integration instruments came in for use. They connect programs in information web in such a way that they work as one whole application.

Major technological problem for business entities is possibility for easy exchange of information. This problem can be solved by entire correspondence between component of gathering technologies, processing, exchange, storage and transformation of different types of information. Combination of all types of information is considered a major criterion of interoperability. Implementation of Information and Communication Technologies (ICT) and new methods development allow to transfer information into appropriate forms for active consumption.

#### *1.6. Knowledge-intensive sectors' development and imperfection of statistical base*

Innovative economy is a system that seeks to get the most out of new scientific knowledge, analyzes this knowledge and uses it for production of economic benefits with the greatest science linkage and response output maintaining and strengthening the system itself. Being an open system it exists in unstable balance state, and its parts under the influence of frequent innovations are being continually changed. Such changes are connected with the search of the newest processes in the informational environment. At the same time characteristic features of the innovation economy as a system depend on occurring endogenous processes. High-tech industries manufacturing highly scientific and innovative products prevail. Such economy is characterized by a permanent modernization at all levels on the basis of innovative, resource-saving, intellectual, and information technology.

We single out the following sectors that form the basis of modern economy: the informational and technological, industrial, service and humanitarian (Gasanov E.A. & Gasanov M.A, 2009).

Informational and technological sector is focused on the development and production of information processing and communication technologies.

Industrial sector is focused on the development and production of substance and energy processing technologies, and production of material welfare. Service and humanitarian sector produces and reproduces human capital, carries out and sells services and spiritual values, creates a comfortable living conditions for people. Economic growth can be achieved in the context of dynamic interaction between the sectors and search of new combinations of resources (with the dominant role of scientific knowledge). Implementation of new combinations helps to minimize the use of limited economic resources, and provides economic security. Fundamental changes in the principle of interaction of economy sectors initiate the restructuring of the social division of labor system. Under these circumstances, a new growth model as the product of endogenous economy structures, competitive advantage and information infrastructures is formed.

National Information Infrastructure (NII) serves a technological basis of positive feedback in the sectors where all systems are bound in networks. Realization of the opportunities that are provided by NII requires universal standards and the use of compatible technologies. Standardization of information technologies simplifies the access to information products and services, and stimulates the increase of intellectual work effectiveness.

Nowadays the number of radical innovations, which formed the basis of the fifth technological mode, decreased. Since the late twentieth century, this development is taking place mainly due to micro-inventions, which form a "critical number" of technological changes, and give rise to new standards, economic opportunities and dynamic competition.

The informational and technological sector has a transformative impact on all sectors, domestic industry branches, infrastructure and social sphere (Kelly, 1998). The sector converges and integrates business processes, binds the production, management, purchasing, sales and creates new operating principles of a dynamic market.

Informational and industrial technologies are being digitalized, closely bound and moved into the mainstream. The characteristic feature of this flow is self-acceleration tendency, which means continuous development of economy technological basis and permanent change of the leading technological mode, based on the innovative standards.

The expansion of the leading mode becomes multidimensional, forming the unity of technological, organizational and social standards of domestic industry, which outlines coming technological mode.

Permanent modernization of structure and technological basis of economy determine the conditions of functional depreciation of standards and the possibility of transition to new standards. There is a tension between the increased variety of innovative technologies and their use. At this stage, the value of the informational and technological sector increases. Comprehensive analysis of the informational and technological sector is complicated by the imperfection of its statistical base. Sectors and sub-sectors of informational and technological sector are scattered throughout the branch classification and are often included into other sections of economic activity. However, global practices developed a classification base for this sector, indicators and methodological basis of statistical service (in the USA, the UK, Sweden, Finland, Canada, Japan, etc.). Organization for Economic Cooperation and Development and Eurostat has a large stock in creation of international standards according to the informational and technological sector statistics. The biggest experience has been gained in the United States.

Classification of the informational and technological sector favours the following strategic objectives:

- development and improvement of standardization in the sector;
- implementation of certification of informational products and services based on humanitarian and environmental parameters;
- updating of the information industries, sub-industries and manufacturing;
- harmonization of the national classification of the sector with the international classifications.

Speaking about standardization as one of the methods of innovative changes it should be emphasized that major development tendency is complication. But the complication as means of the extension of functional capabilities, as the intensification of innovative processes, is aimed at arrangement of interactions ties, at saving economical resources.

In order to provide complex and accurate statistics and observations made, the USA adapts a statistical classifier to the realities of the informational and technological sector. However, even the last adopted in 1987 functional standard of branch classification, and North American branch classification

system failed to clearly define the boundaries of this industrial sector. As the result companies producing hardware and software, as well as companies that provide various services got into this sector. (Porokhovskiy, 2002)

In recent years, there was a shift to a concentrated group of statistic data related to this sector. In accordance with the branch classification of the USA Labor Bureau the constituent parts of informational and technological sector were highlighted. (Tanckott, 1999) The main directions of its operation in the US since 1997 are represented in the branch group of new classification scheme - the "Information". (Tanckott, 1999) The new classification reflects the development of new digital technologies. In statistical reporting of the US and Japan a new separate country for the intellectual systems industry appeared (Gasratjan, 2001). Search of adequate statistics and accounting methods continues.

### *1.7. Global standards for the protection of intellectual property rights as a activator for innovative economy development*

Countries that more dynamically implement innovative technologies take leading positions in the global economy. In modernized Russian economy innovative technological development is of strategic importance. The fifth technological mode and future sixth technological mode, elements of which began to gain technological space in developed countries, makes the security problem of intellectual property rights up-to-date. (Pospelov, 2000)

At the same time, market economy is "essentially a statutory construction" and effective system of property rights acts as the basis of innovation economy development. (Velf, 2010)

The development of innovative business involves changes of the attitude of society to the intellectual property. Transfer to the globally accepted standards of ownership, use and management of intellectual property becomes necessary in the context of globalization. The adoption of international standards regarding the protection of intellectual property will increase the import of new technologies and stimulate the production of competitive innovative production.

An important issue is also the preservation of compatibility and observation of intellectual property rights. At present open industrial standards allowed to combine innovative project and maintenance of intellectual property rights. Availability of open standards for all businesses, and technical neutrality to each of them provide extensive application and licensing according to special rules.

Problems of protection of intellectual property rights have become particularly topical in global trade. Products of informational and technological sector are strongly affected by violation of intellectual property rights. The emergence of the Internet technologies has led to possible and cheap creation of copies of goods protected by intellectual property rights (IPR). The international community has recognized the need of development of global standards for the protection of intellectual property, the establishment of special protection programs and new standards of copyright protection. These standards should be described in the "Internet treaties" signed in the framework of the World Intellectual Property Organization (WIPO).

Global practice shows that strengthening of intellectual property rights protection leads to increase in the number of new working places, increase in fiscal performance, growth of opportunities for attracting domestic and foreign investment into innovation sector.

Industries that fall under the protection of intellectual property rights, are one of the most dynamically developing in the economy. Costs of development and implementation of new products, and possibility of protection of intellectual property rights are very high (De Soto, 2009). These investments are very risky, and the cost of fakes is very low. Various technical, legal and commercial methods of protection against violations of intellectual property rights in the internal and external markets are used in developed countries. One of the most widely used method for protection of intellectual property rights is the technological innovations that create technological barriers and disturb the spread of illegal products. Although there are "Internet treaties" establishing international standards on the protection of intellectual property rights for digital electronic products.

### **Conclusion**

The Internet has become part of global and Russian economies. In almost all countries business entities are forced to adapt their organizational structures to the information flows and develop virtual relationship. Crucial is not only new technology, but also universal technical standards that allow everyone to communicate with virtually no cost and form the basis for the Internet technologies. These technologies have the properties of complementarity, compatibility and regularity. Complementarity means that consumers in the market buy technologies which are used only in conjunction with other technologies. Technically complementarity means compatibility. It requires such technologies to work according to the same standard. (11) Demand of the Internet technology market is broader and more precise application of standards. Those companies which ignore this trend, can be easily deprived of the demand, and their market share will decline.

Architecture of Internet service consists of different technological levels. They are based on standards and communication protocols, which allow to easily exchange the information between different applications. Such architecture provides a much more efficient way IT management. This is due to cost savings in the purchasing of only required functional power, in reducing the number of employed technologies and in reduction of demand for outdated technologies.

This architecture with its standardized nature and principles of "plug and play" greatly simplifies the implementation of effective outsourcing. The Internet provides more flexible forms of cooperation both within the company and between companies and partners.

Through portals of goods and services Internet introduces new standards of competitiveness, costs structure and profit. At the same time the Internet facilitates standardization in the field of software standards and behavioral standards on the web. Standardization helps to reduce the costs associated with the assessment of consumer behavior, and allows to reduce maintenance costs.

Dominant factor for the development of the Internet is the creation and distribution of the most up-to-date open standards. Realization of the Internet opportunities requires the use of open standards and compatible technologies.

Unjustified diversity of standards of Internet technologies increases the production cost, creates great difficulties in operation and maintenance. Standardization of products and components is the way to effective production, to improvement of the quality, to dynamic renovation of products, and to remodeling. Market requires the use of open standards in order to prevent its monopolization.

Ways of compatibility insurance are defined as different standards: de facto standards, industrial, de jure standards. In modern conditions, there is a tendency of transition from historical, legally fixed standards to industrial ones, the de facto standard which influenced on the developed of modern concept of open standards [Strelec, 2006]. In accordance with this concept, a certain model of behavior is created. This model should determine the coordination base for different manufacturers. The concept provides publication and licensing of technologies, the choice of manufacturers that comply with the standards. Use of open industrial standards suggests their voluntary application. Open standards are technical specifications, which are developed and supported in an open process based on consensus.

Due to this basis economic development is dynamicized, process of innovation is accelerated and effective entry into the operating system of products and manufacturers is observed. Standards that define the interaction of business entities become more and more important, and the participation of all stakeholders in the standardization process becomes the main factor of growth.

Due to transfer of open industrial standards and protocols into global ones, the connection between applications without additional programming becomes possible.

Development of collective Internet service architecture assumes control. In the process of virtual interaction between companies with different internal systems and standards it becomes difficult to establish clear authority. It becomes necessary to establish common terminology and concepts. Collective language expands with the growth of Internet services architecture. A new system of addresses is now expected. IPv4 protocol (Internet-protocol of the fourth version) has 4.3 billion addresses. New IPv6 protocol (sixth version protocol) will use 300 million addresses for each person. But not only a person will get the unique name in the Internet, but also the surrounding objects. (Agamirzyan, 2005)

Implementation of the project involves the modernization of functioning information networks. Along with investments for hardware and software, they will need significant additional costs for training, standardization, communication, consultation and organizational adaptation. Internationalization of regulatory processes, the formation of unified standards, rules, and unifying approaches to economic and technological problems is the most important trend of globalization.

There is a global struggle for the right to regulate the Internet. At the conference of the International Telecommunication Union (ITU), Russia offered its secured Internet model and insisted on developing global rules. In case implementation of the Russian Internet model the Internet will become more safe and secure.

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