



Standards Aimed at Producing Technological Advances Are the Basis of Modernization and Innovative Development of the Russian Economy

Eyvaz A. Gasanov*

Introduction

Modernization of the Russian economy could become possible if and when innovative technologies are required by all economic and social entities. Modernization should be founded on a regulatory and technical base that contains: progressive standards, rules, and regulations for product testing and certification; warranty, insurance conditions, and standards for the protection of intellectual property; and information support for products and services.

Global economy as a basis for globalization of standards

In the near future, the general, dominant ideas on world development will be determined by the demands of the information and technology revolution. The information and technology revolution not only helps to remove resource, distance, and time barriers, but also to change scientific, industrial, financial, and informational processes. Global economic integration is accelerated under the influence of the world information network. As a result, more countries and regions of the world are becoming involved in global development processes.

Global economic integration is based on the following factors: further intensification of the international division of labor; the need for worldwide technical and economic infrastructure; the unification of transport and communication processes; weather and ecological services; and standards in information and technology.

A new stage in global economic integration is connected with the transformation of multinational business entities into one of the basic development factors, by strengthening their role in spreading scientific and technical achievements, by standardizing production and control

* Eyvaz A. Gasanov, Doctor of Economics, Professor at *Economic Theory* Department, Khabarovsk State Academy of Economics and Law, 134, Tikhookeanskaia Str., 680042, Khabarovsk, Russia. Tel.: +7(4212)76-54-49, E-mail: eyvaz_gasnov@mail.ru

methods, by liberalizing trade, and by creating national economies.

The emerging 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 in the volume and importance of information and financial flows;
4. growth in inter-country capital flow;
5. rise in the number of new participants in intercultural economic relations.

Deep integration of a national economy into the world economy means the national economy's entry into world development. Free movement of trade, informational, financial, and technological flows presuppose the formation and, moreover, functioning of a global market. Interconnection and interdependence lead to bigger technological similarities among countries, to their convergence at the level of economic and technological growth. Interconnection and interdependence also favor countries' switch to an 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) or political and financial organizations.

In the near future standardization will become a part of global policy: adoption of an official standard as an international one opens wide opportunities for product realization in the world market; however, this also closes this market to products that are out of line with the standard. For many countries, a policy of standardization and certification of goods and services became the instrument for solving such complex problems as the improvement of environmental protection, health care, information security, and the protection of consumers' rights.

With the development of the information economy, serialization of industrial products is declining in connection with the individualization of consumers' demands. According to some estimates, the production chain in developed countries is less than or equal to one third of all production; the remainder is small-scale production (from 10 to 2,000 items) aimed at small groups of consumers. As a result, the relevance of standardization rises. Standardization has become not only a means of cost reduction and improvement in the quality of goods and services, but also a factor in the increased effectiveness and compatibility of the national economy. New standards and trade names help entrepreneurs understand the range of manufacturing capabilities and consumers know the goods and services market. Both for entrepreneurs and consumers, standards are additional characteristic features of goods and services.

Technological restructuring and adaptation to standards can influence the development of

national manufacturing.. Complication of technologies and a rise in the volume of informational flows became additional factors of standardization, because information brokers search, select, and spread information about products at an increasing rate.

The convergence of information technology and communication technology provides an opportunity to decrease paperwork and to widen electronic data usage. As with many other aspects of information technology, usage of official international standards in electronic data exchange is of critical importance. In many countries, organizations are recommended to use UNO EDIFACT, which includes agreed-upon international standards and principles for electronic data exchange.

Many countries draw serious political and economic conclusions from this situation. Russia is not an exception. The Federal law entitled "On Technical Regulation" from July 1, 2003, is aimed at aligning the Russian and international systems of technical regulation. It facilitates easy entrance into the global market, increased compatibility between the Russian and international systems, and formation of new market conditions for business activity. This Federal law prescribes the creation of a two-level system of normative documents: technical regulations with obligatory demands, and standards carried out on a voluntary basis. The Federal law further provides an opportunity to realize the principle of "one product - one certification - general access to the global market". The introduction of a binary control system by means of state norms and certificates of international importance will create a pathway for Russian goods to enter the global market. Russian technical regulations will be based on international standards.

Russia's entrance into the world information community and into the global market started fundamental reform of the present system of technical regulation. The legal basis of this reform is found in 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").

Standardization as a need for the development of the information economy

In dynamic information and technological revolution, modernization of the Russian economy cannot be effectively implemented without open standards. In an innovative economy, the problem of standardization is more acute (Kastels, (2000), p. 42). In Russia today there are a number of factors that presuppose the development of innovative economy. The first factor is the development of knowledge-intensive industries, as well as the Russian Internet. Knowledge-intensive industries require adequate open standards that are the basis of integration and cooperation. Therefore, standardization acts as a requirement of knowledge-intensive industries

and the Internet, as the growth condition for 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 modernization of Russia should become the basis for the development of an innovative economy, because no other type of economy is competitive in the context of globalization. In order to provide an environment for long-term innovative development, it is necessary to change the existing correlation between sectors of the economy to increase industrial effectiveness and its innovative capacity. Russia is now considered a country with a high science and human development index. This is a potential advantage for Russia on a global scale, and it could be the basis for modernization and the impetus for the development of an innovative economy.

A new, high-tech state of the Russian economy can only be reached through the following measures: the implementation of an exclusive, innovative project; sound breakthrough in major technological directions; and a structural transformation, based on new technology.

Russia can avoid some of the negative effects of innovation development by taking into consideration the experience of developed countries. With the development of the innovation-based economy, the problems of intellectual property rights, access to information, and information inequality gained increased importance. Here the role of the state is to regulate, coordinate, and promote the development of innovative processes in order to use limited economic resources more effectively. 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.

The great importance of social problems in innovative economy and the growing importance of the quality of life, shows Russia's orientation to international standards and trends.

The information economy as a cohesive and sustainable system became a reality in developed countries in the 80-90s of the twentieth century

At present the technological basis of the information economy is undergoing the changes of "technological modes". A "technological mode" is technologically interconnected manufacturing with 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 databases, informational languages and information processing software. Such a mode is connected with an extensive use of computer technology in manufacturing. Such computer technology provides industrial information processing and implementation of necessary regulating actions in real-time. Development of an information economy can change the structure of the economy itself. The result is the rapid growth of manufacturing capabilities within the society.

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

Development of CALS-technologies has resulted in a new method of carrying out large-scale projects. This virtual enterprise can be considered a contract-based union of all enterprises that support production in each stage of its development. It works on the basis of a general system of standards of information interaction.

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

Russia's current strategic goal is to establish and develop an information economy and its major technological modes. The *Federal Special Purpose Program* projects, which are now being realized, create a technological foundation for further implementation of information technologies in the economy and society. Russia plans to finance scientific works, in accordance with a national standardization system and information technology. Developing an information economy should protect the processes of manufacturing, distribution, exchange, and information consumption. The quality of information technologies is measured by their adherence to standards. But in order to use the information in a constructive way, we need a special system of standards and rules. Standards are a set of criteria for high quality goods; certification is the confirmation that goods adhere to the standard. The situation can be complicated, because the

effective period of information technologies is short. Such technologies are outdated even before they begin to depreciate. Endless changes, software updates, growing requirements in memory, discs, and networking equipment, viruses, security leaks, and data abuse are everyday events. All this has become a problem not only for the engineers who work with information systems, but also for entrepreneurs and managers. Specialists demand more new information systems because new applications do not work on old systems. It is impossible to foresee such demands. Recently, more Russian entrepreneurs have become interested in integrated management systems. Therefore, a lot of questions have arisen about facility standards, choice of supplier, system maintenance, and system modernization.

Great demand for information technologies and resources should be supported by special normative and technical information bases, by informational monitoring of goods and services. But received information can be inconsistent on international, interregional, and intergovernmental levels. In the future it could become a barrier to the development of technical equipment and programming tools. The transfer of semantics into digital code consistent with software and hardware tools is very slow. Information development demands the transfer of semantics into digital code of certain spheres, for example economy. It presupposes internationally consistent classifications describing entrance into certain classification groups and definition dictionaries. Such work has already been started by the UNO and EU.

The standard way of transforming information into Web is XML (eXtensible Markup Language). Use of XML and XML-applications' syntax has become increasingly common. One of the standards-developers in this sphere is World Wide Web. The main purpose of XML is describing a document's structure and semantics. XML is often used for data exchange on the Internet. But since it does not protect the data themselves, one should use an electronic digital signature and data encryption.

The creation of a unified classification and coordination system of national information systems

After the adoption of a Federal Special Purpose Program "Electronic Russia", the problem of organizing information in information systems has become increasingly pressing. In order to provide effective access to informational resources according to the Federal Special Purpose Program "Electronic Russia", it is necessary to create a portal for developing an electronic information resources access system. But this is a difficult issue, because Russia already had pre-existing 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.

A unified system of classification and coding of technical and economic information adopted in the USSR is still used in the Russian Federation. Despite this system's profound improvement between 1992 and 1995, it still requires serious modernization to take into account new tasks and conditions.

The transition to an information economy and all associated problems presupposes the creation of a unified classification and coordination system of national informational resources. Such a system will be harmonized with similar systems of other countries. It is important that the public part of national informational resources should be compatible with the state informational resources. There are a great number of different informational and communicative technologies that cannot be combined. It is clear that many barriers appear in the process of creating integrated technologies. It is very hard to create communication systems appropriate for everyone.

The International Standards Organization (ISO) assumes the lead role in creating unified standards for coding audio-visual information. Its expert group has had a considerable impact in the 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 United States, simplification of standards development is an indirect way of scientific process regulation. Growth in the number of commercially approved standards promotes innovations and market development. The projects that created a profound RTD (reliability technical directive) support system were supported. An RTD-system is applied to a wide sphere of normative documentation development systems that regulate each stage of product development. In general, an RTD-support system has created the basis for industry's modern informational infrastructure, as in the United States. The basis includes: standards, product testing systems and their certification, warranty rules, intellectual property protection rules, obligatory or recommended delivery contracts conditions, leasing, and even utilization processes. Without obeying similar rules, products can lose their compatibility in developed markets and be pushed back to marginal consumers.

The 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 the effectiveness of the Russian technical regulation, standardization, and certification

systems.

Unification and standardization of electronic document flow

Realization of the Federal Special Purpose Program “Electronic Russia” should result in a decrease in the number of paper documents by up to 30 percent. It presupposes the integration of informational resources into a unified intergovernmental system, and the unification and standardization of document exchange on the web. With the development of Russian informational infrastructure, it is necessary to increase the level of safety 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 characteristic of the existing workflow is regional and departmental informational isolation and inaccessibility. There is duplication of workflow in regional and departmental information space. Although government agencies abide by the standardized state rules, their internal requirements are different. Current workflow standards cannot apply to electronic documents. There is no unified policy or methodology; existing systems do not allow for easy changes in document processing or data protection. Implementation of electronic workflow and new technologies will allow for immediate access to necessary documents. In Russia, each region and each establishment created their own databases and uses their own software.

Unified standards are very important for solving such tasks as document workflow support, archiving, distribution in geographically-widespread organizations, and creation of a 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 complete an application for employment, personal welfare, or state pension, fields for name, surname, and address are organized differently in different establishments. There is no unified, standard page design. But it is necessary not only to digitize paper documents, but to create a unified standard. Software that is used in information systems should work on the majority of hardware.

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

Standardization of information as a basis of integration of informational and communicative technologies

Industrial economy, based on the 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. A new, informational type of economic growth is seen. This type of growth is characterized by a reduction of traditional resources and a growth of informational resources. The level of expended resources contained in gross domestic product decreases, while gross domestic product itself grows.

The major characteristic of an information economy is the transition of information into a main industrial resource. Under these circumstances, production and further information processing become the basic purpose of human labor, and information volumes in manufacturing and financial processes increase.

In contrast to other traditional economic resources, information can be easily reproduced.

There is one very important principle - new information appears at a speed that is directly proportional to collected information that is actively used. This provides for quick growth of informational resources. It is obvious that countries that started to use electronic data bases much earlier will gain an edge in the competition.

The “space of flows” is represented as a basis of information economy. According to Manuel Castells’ theory, the “space of flows” is material organization of time-sharing social practices. Social practices can be any real project with a realization deadline and a web-based organization plan, which provides trade, technological, informational, and financial flows functioning.

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

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

Information flow is defined as directed movement of something relatively coherent (for example, resources, processes, etc.) in an informational system. Information flow became very intensive. Nowadays the effectiveness of information from different informational systems rapidly decreases, while business and the volume of rapid information increases. Data incoming from

different information systems can appear to be inconsistent or just inaccessible at the necessary time, because workers from different structural units used different information systems and input inconsistent 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 problems such 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 standards allows savings in all kinds of resources, including human capital. Structured information provides inner order and organization of an economic system. The order of an economic system rises 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 a decrease in entropy within an economic system.

Standard forms of providing information accelerate the integration of electronic means of creation, movement, and information storage. At the same time, integrated databases and open-source software should be used. *Sap* and *Oracle* enterprises make their ERP-bases more open, in order to provide compatibility with other software. Creation of an integrated information system, based on the integration of various kinds of software became a necessity. In order to solve the problem of information inconsistency, new programs are being developed. Recently, new software programs called *Enterprise Application Integration* instruments came into use. They connect programs in the information web in such a way that they work as one whole application.

A major technological problem for business entities is the impossibility to easily exchange information. This problem can be solved by complete correspondence among technologies of gathering, 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 for the transfer of information into appropriate forms for active consumption.

Knowledge-intensive sectors' development and the imperfection of statistical base

An innovative economy is a system that seeks to get the most out of new scientific knowledge, analyzes this knowledge, and uses it for the 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 an unstable state, and its parts, under the influence of frequent innovations, are being continually changed. Such changes are connected with the search for the newest processes in the information 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., Gasanov M., (2009), p. 54).

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

The industrial sector is focused on the development and production of substance and energy processing technologies, and the production of material welfare.

The service and humanitarian sector produces and reproduces human capital, carries out and sells services and spiritual values, and creates comfortable living conditions for people.

Economic growth can be achieved in the context of dynamic interaction among these sectors and by seeking new combinations of resources (with scientific knowledge playing the dominant role). Implementation of new combinations helps to minimize the use of limited economic resources and provides economic security. Fundamental changes in of the interaction of economic sectors initiate the restructuring of the social division of labor system. Under these circumstances, a new growth model is formed as the product of endogenous economic structures, competitive advantage, and information infrastructures.

National Information Infrastructure (NII) serves as a technological basis for feedback in 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 an increase in the effectiveness of intellectual labor.

Lately, the number of radical innovations, which formed the basis of the fifth technological mode, has decreased. Since the late twentieth century, 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 information and technology sector has a transformative impact on all sectors, domestic industry branches, infrastructure, and social spheres (Kelly K., (1998), p.5). This sector

converges and integrates business processes; binds production, management, purchasing, and sales; and creates new operating principles of a dynamic market.

Informational and industrial technologies are being digitalized, closely integrated, and moved into the mainstream. The characteristic feature of this flow is a tendency toward “self-acceleration”, meaning continuous development of economy’s technological basis and permanent change of the leading technological mode, based on the innovative standards.

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

Permanent modernization of the 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 information and technology sector increases. Comprehensive analysis of the information and technology sector is complicated by the imperfection of its statistical base. Sectors and sub-sectors of the information and technology sector are scattered throughout the branch classification and are often included in other sections of economic activity. However, global practices developed a classification base for this sector, indicators, and a 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 the creation of international standards according to information and technological sector statistics. The United States has the most experience in this are

Classification of the information and technology sector favors 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 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 thanks to complication it is possible to extend functional capabilities, intensify innovative processes, to arrange interactions ties, and save economical resources.

In order to provide complex and accurate statistics and observations, the United States adapted a statistical classifier to the realities of the information and technology sector. However,

even the last functional standard of branch classification and North American branch classification system, adopted in 1987, failed to clearly define the boundaries of this industrial sector. As a result, companies producing hardware and software, as well as companies that provide various services, were erroneously classified in this sector (Pokhorovskii A., (2002), p.9).

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 D., (1999), p. 393). The main directions of its operation in the US since 1997 are represented in the branch group of new classification scheme - the "Information" (Gasratyan K., (2001), p. 84). 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 (Pospelov D. A., (2000), p. 12). Search of adequate statistics and accounting methods continues.

Global standards for the protection of intellectual property rights as an activator for innovative economy development

Countries that more dynamically implement innovative technologies take leading positions in the global economy. In the modern 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, make the security problem of intellectual property rights current (Velf A., (2010), p. 31).

At the same time, a market economy is "essentially a statutory construction" and an effective system of property rights acts as the basis of innovation economy development (De Soto E., (2009), p. 37-38).

The development of innovative business involves changes in society's attitude towards intellectual property. Switching to 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.

Another important issue is 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. The availability of open standards for all businesses and the technical neutrality to each of them provide extensive application and licensing according to special rules.

Problems surrounding the protection of intellectual property rights have become

particularly topical in global trade. Products of the information and technology sector are strongly affected by violation of intellectual property rights. The emergence of 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 for 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 intellectual property rights protection leads to an increase in the number of new working places, an increase in fiscal performance, and growth of opportunities for attracting domestic and foreign investment into the innovation sector.

Industries that fall under the protection of intellectual property rights are one of the most dynamically developing in the economy. Costs to develop and implement new products and to protect intellectual property rights are very high (USA international trade commission about intellectual property rights protection, p. 3, 4, 5, 16). 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 methods for protection of intellectual property rights are technological innovations that create technological barriers and impede the spread of illegal products. But there are also "Internet treaties" establishing international standards on the protection of intellectual property rights for digital electronic products.

Standards of Internet technologies and the Russian model of Internet regulation

The Internet has become part of the 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. Not only new technology is crucial; so too are universal technical standards, which allow everyone to communicate at virtually no cost and which form the basis for Internet technologies. These technologies have the properties of complementarity, compatibility, and regularity. Complementarity means that consumers in the market buy technologies that are used only in conjunction with other technologies. Technically, complementarity means compatibility. It requires such technologies to work according to the same standard (Strelets I.A., (2006), p. 12). Internet market demands a broader and more precise application of standards. Companies that ignore this trend can easily loose demand, and their market share will decline.

Internet service consists of different technological levels. They are based on standards and communication protocols, which allows for easy exchange of information between different applications. Such structure provides a much more efficient means of 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 a reduction in demand for outdated technologies.

This structure 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, the 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 for a reduction in maintenance costs.

A dominant factor for the development of the Internet is the creation and distribution of the most up-to-date open standards. Realization of Internet opportunities requires the use of open standards and compatible technologies. Unjustified diversity of standards for Internet technologies increases the production cost, and creates great difficulties in operation and maintenance. Standardization of products and components is the best way to achieve effective production, improvement of quality, dynamic renovation of products, and remodeling. The market requires the use of open standards in order to prevent its monopolization.

Different standards help to provide compatibility. Among such standards we can identify *de facto* standards, industrial, and *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 the developed of the modern concept of open standards (Agamirzyan I.R., (2005), p. 55-56). 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. Open industrial standards should be applied voluntarily. Open standards are technical specifications, which are developed and supported in an open process based on consensus.

Due to such standards 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 the transfer of open industrial standards and protocols into global ones, the

connection between applications becomes possible without additional programming.

Development of collective Internet service structure 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 structure. 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 (Arabov P., (2010), p. 2).

Project implementation 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 secure Internet model and insisted on developing global rules. In the event of the implementation of the Russian Internet model, the Internet will become more safe and secure.

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