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CONCEPT INFORMATION KAZAKH SSR

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Among the most important areas of scientific and technological progress of the entire country in general and the republic in particular, the key is the informatization of society. Today, informatization is a process that has covered all spheres of human activity, all branches of material production, industries that provide the necessary standard of living and satisfaction of human spiritual needs. In this regard, informatization Kazakh SSR, with on the one hand, an integral part of the informatization of the country as a whole, on the other hand, one of the indispensable components of the processes associated with the functioning of the republic in conditions of self-financing and self-government. New social, economic and political processes require new information technologies, fundamentally new levels of informatization of society.

The current state of affairs in the USSR as a whole in matters of informatization can be assessed as critical, and in the republic catastrophic. The gap between the Soviet Union and developed and even developing countries in a number of parameters can be estimated at 10-20 years. The republic lags behind the union level by another ten years. Having extremely little investment in the field of computer science in the republic, the available funds were not used purposefully, without obtaining adequate returns from the use of computer technology funds.

Currently, in the republic, the process of informatization is carried out within the framework of the republican program R.0.77.01 "Creation, development of automated systems and effective use of computer technology in the ministries and departments of the Kazakh SSR for 1986-1990 and for the period until 2000", adopted as part of National program.

The basis for the technical support of automated systems being developed and developed for various purposes in the Kazakh SSR is the computer park of the republic, numbering about 3500 computers, including: more than 430 computer systems based on general-purpose processors, over 570 control and computing systems based on mini processors and more than 2500 - personal and microcomputers supplied from other regions of the country. More than 50% of the computer fleet based on general purpose processors are outdated models (EC-1020, EC-1022, Minsk-32, Nairi and

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technicians are lagging behind

technical level of available computing tools
from similar foreign models, on average for 10-20 years in terms of functional indicators (list of services provided, speed, memory, material intensity, manufacturability, reliability, energy consumption and saturation of the computer with the necessary peripheral equipment, teleprocessing tools and reprography tools).

The existing computer park, which is the basis for the functioning of 343 automated systems, is used unsatisfactorily. Low average daily computer load is observed in many computer centers of ministries and departments of the republic. There is no republican fund of algorithms and programs.

The current state of the communications industry, which represents traditional means of computer science (telephone, television, radio broadcasting, etc.), in Kazakhstan is characterized by a low level of satisfaction of the needs of the national economy and population for communication services, television and radio broadcasting, as well as lower levels than in the country as a whole. qualitative and quantitative indicators of their development. Kazakhstan has a serious lag in the development of the network of long-distance and zonal communication channels compared to the growth of local telephone networks. In terms of the share of long-distance telephone communication channels equipped with automatic and semi-automatic equipment, the republic ranks 11th among the Union republics, and in terms of the number of public telephone sets per 100 people, it ranks 9th.

However, until now none reliable methods measuring the level of information technology. Existing statistics in terms of the number form of automated control systems for various purposes, cost indicators on their creation cannot serve as reliable criteria assessments efficiency, therefore, the analysis of the state of informatization of the republic, to a certain extent, relies on expert assessments.

The main factors influencing on lag republics, are the lack of industrial production of SVT, weak scientific and design base and lower level readiness society towards the perception of new information technologies.

Together with However, today's understanding of informatization requires the development comprehensive approach to the formation of information infrastructure, which is the foundation the entire design for effective use computer facilities.

Since the informatization of society is a means without which it is impossible in modern conditions to fully and effectively solve the key problems of the development of society, natural the need for the implementation of a national informatization project in general countries and its regions. This concept is intended to outline the range of problems that arise all along the path of informatization of the republic, to outline the directions of movement and measures that make it possible to carry out the movement. such

The assessment of the volume of resource provision required to achieve the goals of informatization is quite high. The measures proposed in this concept for the formation of state republican policy in the field of informatization, based on the principles of self-development, self-financing and

self-sufficiency will allow reducing the share of state budgetary allocations to a value not exceeding 20-25% of all costs for informatization.

The concept of informatization of the republic considers mainly qualitative indicators; specific measures for its implementation, differentiated by performers, time and resources, will be developed in the preparation of the republican scientific and technical program “Informatization of the Kazakh SSR”.

2. THE PURPOSE OF INFORMATING THE REPUBLIC

The goal of informatization of the Kazakh SSR is, by creating a highly organized information infrastructure, to contribute to a significant increase in the efficiency of social production, increasing the intellectual and cultural potential, quality and standard of living of the entire population of the republic. The introduction of new information technologies should contribute to:

socially:

- ensuring a new quality level of healthcare through widespread use of medical devices, information and diagnostic systems and devices using microprocessor and computer technology;

- improving the quality of education through the creation and implementation computer training systems, special advanced training systems;

- improving the standard of living of the people through the widespread implementation of systems mass services, ensuring the implementation in practice of the principles of social justice when solving problems of distribution of public goods;

- monitoring the habitat for the purpose of operational informing and warning the population;

- development of new forms of leisure and recreation for the population;

- expanding the list and improving the quality of services provided to the population;

- creation of more comfortable working conditions, its intellectualization with the goal of more fully revealing the creative abilities of workers;

in economic terms:

- ensuring structural transformation of the sphere of materialwow production based on the development of knowledge-intensive industries, the introduction of resource-saving technologies;

- acceleration of scientific and technological progress, reduction of time and increasing the level of scientific research and design work;

- intensification production on basis use V technological equipment of microprocessor technology;

- modeling the consequences of large-scale social and economic projects before their implementation, implementation of modern management and forecasting methods based on the introduction of new information technologies and decision-making systems;

politically:

- creating the necessary conditions for access of the general public to information;

- ensuring the possibility of a rational combination of principles self-government and self-financing of the republic as a whole, regions, cities and districts in the interests of the country, the republic and its individual regions;

- strengtheningpolitical institutions of society behind check information technologies in matters of democratization and openness, rapprochement and consolidation of people, reducing tension in interethnic and other social relations.

Informatization is a necessary scientific and technological breakthrough into the future. All developed countries have agreed to this, giving informatization the highest priorities, subordinating the main resources and efforts to this goal.

Possession of information is possession of economic and political power. Possession of information is impossible without ownership or free access to the means and methods of its processing, transmission and use. It should be clearly understood that informatization is a global factor in the economic sovereignty of the republic.

3. BASIC PRINCIPLES OF INFORMATIZATION OF THE REPUBLIC

Taking into account the regional features of economic development and the state of the use of computer technology in the republic, it is advisable to carry out informatization based on the following principles:

1.Principle of coordination with other programs socio-economic development of the Kazakh SSR, which means the interdependence and balance of the development of informatization with the development of the entire national economy of the republic.

2.The principle of self-development and self-financing means that the process informatization should be reproduced on an expanded scale due to the formation of ever new information processes and needs, expanding the process in breadth and depth, ensuring the self-sufficiency of computer science as an industry. Informatization should not appear as an additional burden “imposed” on the economy of the republic and compete with other vital programs. Having and centralized

financing to solve a number of issues, the informatization of the republic should mainly be built on its own resources. Centralized funding in the form of government orders and centralized capital investments is directed toward achieving the strategic goals of informatization (for example: infrastructure, knowledge base, etc.). Applied aspects of informatization are implemented at the expense of state, cooperative and mixed enterprises, attracting financial resources from ministries and regional budgets.

3.The principle of self-government means the development and implementation of one's own republican policy in the field of informatization. Its implementation consists in the creation of a republican industry for informatization, a clear division of rights, responsibilities and functions of the center and the republic, competitive placement of orders between republican, union and union-republican enterprises and organizations, the creation of a system of republican standards and other requirements that are mandatory for all enterprises and organizations, regardless of departmental subordination.

At the same time, it is necessary to develop our own regional policy in the republic. The republic's informatization strategy must be oriented towards the creation of such industries and productions that, firstly, correspond to the own capabilities of the regions of the republic, secondly, are able to compete adequately in the all-Union and foreign markets, and, thirdly, meet the needs of the republic that are not covered by within the framework of the social division of labor.

4. The process of informatization of the republic requiresactive participation Kazakhstan in the union and international division of labor . This determines the need to create scientific, educational and industrial complexes, which should ensure the conduct of fundamental research, end-to-end training and retraining of personnel, the construction of new and the creation of joint enterprises with foreign companies for the production of electronic equipment and telecommunications, the formation of joint scientific and technical programs with the CMEA countries, training of students, internships and training of specialists in foreign universities and research centers.

5.The principle of advanced preparation of the public for informatization should be ensured through the timely and complete satisfaction of the information needs of society, the widespread sale to the population of household PEVs and functional elements of BT tools for the development of individual creativity, the creation of clubs, training centers, game libraries, etc.

In social terms, this is the widespread use of information technology in the field of consumer services and material production, the creation of demonstrative objects of information technology, the disclosure and accessibility of information, the use of the media for campaigning and advertising, computer education to create a favorable psychological climate in the republic.

perception of the ideas of informatization and for the formation of a social order for informatization.

6. The principle of bilingualism (multilingualism) in the development of computer science.

Informatization should have a beneficial effect on solving the problem of interethnic communication. State Kazakh - Russian bilingualism and equal development of other languages of the peoples inhabiting our multinational republic requires solving the following problems of informatization:

- organizing the production of keyboards with Kazakh and other alphabets, adaptation of PCs and other external devices of computer technology to communicate with them in Kazakh and other languages of the peoples inhabiting our republic;

- organizing the transfer of scientific and technical information, documents and letters in the Kazakh language and other national languages on the basis of the Republican Information and Computing Service (RICS) and the information services it provides;

- development and implementation in educational institutions, computer science centers accelerated methods of teaching the Kazakh language using computers, megaphone and audiovisual equipment;

- creation and implementation of PC-based systems that provide machine line-by-line translation from Kazakh into Russian and vice versa, as well as for other national languages.

4. DIRECTIONS OF INFORMATIZATION OF THE REPUBLIC

Providing a qualitatively new level of solution to a whole complex of problems that arise before society, in management, production, social and political activities, in everyday life and in the organization of leisure, formed as the main requirement when solving the problems of informatization, obliges us to identify the key areas of informatization on which to focus attention . At the same time, the fundamental desire should be to direct maximum efforts into the informatization of the non-production sphere and the primary links of the national economy - enterprises, associations, organizations and institutions. This means that the priority that has developed in practice for the development of organizational and economic automated control systems and their upper links within the framework of the RASU is abolished. Informatization from the bottom up is a strategically new look at upcoming developments.

In the diverse process of informatization, three main components can be distinguished:

- creation of functionally oriented information technology;

- creation of information infrastructure;

- development of socio-economic, scientific and organizational legal conditions of informatization.

4.1. INFORMATIZATION OF THE SOCIAL SPHERE.

In the functional direction of informatization, priority is given to the social sphere, in particular the introduction of new information technologies in healthcare, ecology, education, social security, consumer services and culture.

In the field of healthcare, it is necessary to create automated complexes (stationary and mobile) for mass preventive and diagnostic services for the population; automated systems for monitoring and monitoring public health, designed for medical examination of major infectious and cardiovascular, tumor diseases, diabetes; automated control systems for emergency medical care, clinical diagnostic laboratories, clinical hospitals; to develop distributed “health care” data banks, data banks on empirical medicine, etc. It is necessary to develop diagnostic systems at home, to relieve doctors from the routine work of maintaining treatment cards.

In the field of banking services to the population, it is necessary to improve the informatization of savings on the basis of comprehensive automation of banking production technology. At the same time, it is necessary to give priority attention to the creation of new technologies for payment services to the population; the application of economic and mathematical methods for highly efficient management of banking activities, the introduction of modern financial information carriers and the necessary range of specialized technical means. Carry out a phased implementation of standard design solutions for an integrated automated system of non-cash payments to the population for goods and services (CASER).

Informatization in the field of banking services to the population will allow:

- reduce the circulation of cash based on the introduction of new payment funds in the form of credit cards;

- strengthen monetary circulation in the republic;

- improve the quality and reduce the time of service to the population across all types of settlement and cash transactions by trade, utility, household and other organizations.

In housing issues, it is advisable to automate the processes of organizing and managing the solution of the housing problem, including the development of a long-term justified program, linked and balanced with the solution of the main problems of development of regions, cities, districts and villages;

provide analysis, assessment and management of the implementation of a long-term program based on the formation of annual and five-year plans, management of the current distribution of living space; identification, accounting and use of all housing resources; exchange and replacement of residential premises, etc.

In the field of cultural development, special attention should be paid to the informatization of librarianship, film production, organization and functioning of exhibitions, museums, information and reference services to the population, and protection of architectural and historical monuments.

In the household sector, it is necessary to use computer science to reduce unproductive costs for solving everyday problems through the introduction of electronic systems for ordering goods and services, monitoring the condition of household appliances, distribution and accounting of housing stock. It is necessary to solve the problem of creating an information environment for living quarters, saturating household appliances with built-in tools, informatization, as well as organizing training in the use of information tools.

In the field of public life, it is necessary to provide members of society with wider access to various sources of information and to individual means of processing it, including them in the global system of wide unregulated dissemination of information. This will allow the formation of a personality with broad interests, a desire for spiritual improvement and humanism.

4.2 INFORMATIZATION OF EDUCATION, TRAINING AND STAFF RETRAINING

For the successful development of informatization processes, the problems of education and training are extremely important. Considering the urgency of solving these issues, with a simultaneous shortage of computing resources, it is necessary to use a variety of forms of introduction to information technologies, based on computer learning technologies, including interactive automated teaching systems, simulators, expert training systems with knowledge bases, etc. To do this you need:

1. In accordance with the concept of continuity of education, decide issues of organizing “end-to-end” computerization of education along the chain “school – vocational school – university – professional activity”. For this purpose, it is necessary to create specialized classes based on cheap PCs (workstation in universities), integrated into local networks and automated teaching systems.

Widely expand circle work with computers in the Palaces of Pioneers, including district and courtyard computer clubs, expand patronage work of enterprises and organizations with computer technology. Support the creation of commercial computer training and leisure centers.

2. Open departments or specializations in computer science in all universities republics. Pay special attention to the creation of appropriate departments in pedagogical universities.

3. In technical universities, in accordance with their specialization, provide for the creation of local computer networks with distributed databases and target workstations (designer, technologist, agronomist, accountant, economist). Introduce mandatory coursework and diploma design on computer systems, as well as the completion of paid production orders by students.

4. In postgraduate and doctoral studies, provide training for scientific and scientific teaching staff in accordance with priority areas in computer science and computer science.

5. Make extensive use of cooperative and joint ventures (training centers) for personnel training. Practice expanding training and internships for students and young professionals in leading universities in the country and abroad.

6. Develop translators and other means of communication with computers in Kazakh and Russian languages. With the accumulation of experience, as necessary, create translators in the languages of other national groups of the republic (Uyghur, Korean, German, etc.). It is necessary to use computer science tools for mutual translation from one language to another.

4.3 INFORMATIZATION OF ORGANIZATIONAL ECONOMIC MANAGEMENT

Managing a diversified economy in the context of transferring the national economy of the republic to the principles of self-financing and self-government, carrying out economic reform as part of the transition to regulated market relations, democratization of society, expanding openness and independence of enterprises of a diversified economy cannot do without automation of decision-making processes when choosing alternative and agreed upon decisions based on the use of the integral information resource of the republic. For this purpose, in the field of management it is necessary to create and develop an information infrastructure: taking into account the existing management links - at the level of the Council of Ministers of the Kazakh SSR - an Automated Information Processing System for Policymakers (ASOID); at the levels of republican interdepartmental functional bodies: EATP - a unified automated planning technology of the State Planning Committee of the Kazakh SSR, ESIS - a unified statistical information system of the State Statistics Committee of the Kazakh SSR, ASFR - automated system of financial settlements of the Ministry of Finance of the Kazakh SSR, ASFR - Automated system of financial settlements of the Ministry of Finance of the Kazakh SSR, ASU "Labor and Social development" - Automated system

State Committee for Labor of the Kazakh SSR, ACS MTS - Automated system for managing material and technical supplies of the State Supply Committee of the Kazakh SSR, automated systems for banking operations of the State and other banks in the republic; industry automated control systems; information - territorial computing systems national economic complexes, as well as the creation of new automated (information) management systems related to the development of the structure of national economic management in connection with the transition to regular market relations.

Informatization of the management sphere at the enterprise level of the republic is associated with the task of creating information infrastructures of industrial enterprises and associations that provide a qualitatively new solution to the entire complex of tasks put forward by production and aimed at increasing labor productivity, the quality of products, as well as production culture. To do this, it is necessary to create software and hardware tools that ensure the construction of multi-level production and computer networks that unite local networks of workshops, areas and functional services of systems for collecting and processing primary data on the operation of equipment and the execution of production tasks, analyzing the environmental situation and solving other functions of the life of the enterprise. Consistent integration and intellectualization of automated data processing and management systems in the production sector is one of the priority areas of informatization of society, ensuring high rates of scientific and technological progress and the dynamism of its development.

Important place V informatization management takes Creation automated workstations for various management purposes, information and computer networks, telecommunications systems, distributed knowledge bases of enterprises and organizations.

4.4 INFORMATIZATION OF THE SPHERE OF SCIENTIFIC RESEARCH, DESIGN AND TECHNOLOGICAL PREPARATION

PRODUCTION (R&D, PKR and Chamber of Commerce and Industry)

With high demands on the quality of manufactured products, the pace of their renewal, the growth of the product range, the reduction of development time, the creation and development of new processes and technologies, products and materials, as well as the quality of projects, the volume of work in the field of scientific research and design work increases significantly and technological preparation of production. Thus, for the machine-building complex, taking into account the dynamics of indicators for the volume of production of commercial products, the index of changes and updates in the main nomenclature, the share of products and the growth rate of the technical and economic characteristics of products manufactured in the world

level, the volume of work on R&D, PKR and CCI will increase 6 times.

The purpose of informatization of research work, R&D and Chamber of Commerce and Industry is to accelerate the acquisition of scientific knowledge about phenomena and patterns in nature, technology and society; in reducing development time and improving quality at the stages of the life cycle of products and technologies “research - design and construction - pre-production.

To do this, in the field of acquisition, accumulation and use of information resources, it is necessary to create a complex of automated workstations and systems that provide search and analysis of primary sources, automation of research, experimental and design work, documentation, and expansion of the scope of professional communication. The priority direction of informatization of research work, research and development projects and the Chamber of Commerce and Industry is the creation of a system for automating scientific research and knowledge banks, documentary and factual information.

4.5 INFORMATIZATION OF THE SPHERE OF MATERIAL PRODUCTION

Informatization of production systems will occur in two directions: 1) informatization of technological units and processes based on embedded microprocessor tools; 2) informatization of production management.

Usage built-in V technological equipment microprocesses will give it new quality, new consumer properties, and reduce operating costs. Intellectualization of equipment will make it possible to optimize technological processes, implement the principles of self-diagnosis and self-programming of ways out of emergency situations, and create an “intelligent interface” of the operator with the machine system. Information technology equipment will be similar in properties to works. In the field of material production, in addition to robotic manipulators, professionally oriented robots and autonomous intelligent robots will be used for use in dangerous and emergency situations.

The necessary scale of informatization of technological equipment of processes and productions based on the use of microprocessor and computer technology is determined taking into account the achievement of specified indicators for production growth, increasing capital productivity, labor productivity and product quality.

4.6 INFORMATIZATION OF ENVIRONMENTAL PROTECTION

The country does not have a unified environmental protection system, the need for which is extremely important. The implementation of information infrastructures in this area will make it possible to control complex environmental

processes, plan and implement protective measures, develop proposals for the development of productive forces and structural changes in the national economic complex.

To do this, it is necessary to deploy an all-Union and regional monitoring system, including means of express information on the state and dynamics of water bodies, air, soil, systems for modeling meteorological processes, large-scale processes of the impact of scientific and technological progress on the environment, expert systems for diagnosing and forecasting pollution processes - cleaning or destruction - restoration of the ecological environment; unified environmental passport of the regions. It is necessary to use stationary and mobile stations for environmental biomonitoring, including automatic and automated technologies for analyzing data on the state of soil, water and atmosphere; intelligent sensors of characteristics of natural processes; communication and data transmission systems; surface and underwater, ground and space stations; problem-oriented databases and knowledge bases; dynamic models of interacting components of a given region; software systems for environmental and economic modeling, etc.

The creation of a Republican Environmental Control System (RSEC) based on the integration of various mass observation networks should be identified as a priority; meteorological, weather radar, geogeophysical (ionospheric observations, monitoring of terrestrial magnetism, etc.), seismological, etc. Interaction with international networks and databases of environmental and resource nature, such as the International Reference System of Environmental Information Sources (INFOTERA); International Agricultural Science and Technology Information System (AGRIS); Global Environmental Monitoring System (GEMS); International Register of Potentially Toxic Chemicals (MRPTCH), etc.

This will allow:

- ensure the improvement of the environment, human and animal life and flora;

- simulate environmental hazardous situations, field studies which are fundamentally impossible due to catastrophic consequences; plan measures to restore environmentally polluted regions;

- carry out environmental assessment of large-scale projects, programs and plans for the socio-economic development of regions of Kazakhstan;

- environmentally competent placement of newly introduced hazardous industries, and for those operating - to ensure effective control over the cleaning, disposal and storage of harmful and toxic products.

4.7 INFORMATION IN ISSUES OF PREVENTION AND ELIMINATION OF THE CONSEQUENCES OF EMERGENCY SITUATIONS

The absence in the country of a unified system for preventing and eliminating the consequences of emergency situations (ES) predetermines the creation in the republic of information infrastructures in this area in two interrelated areas:

1. Informatization of organizational and engineering-technical measures to prevent and eliminate the consequences of emergencies.

2. Informatization of management of analysis and liquidation processes consequences of an emergency.

To implement these directions, an integrated emergency information system must be created, operating on the basis of the republican information infrastructure.

This system is intended for collecting, processing and distributing information at the republican, regional and district levels in the interests of organizing actions to predict the possible consequences of emergency situations, attracting the necessary forces and means to eliminate the consequences of emergency situations.

At the same time, it is necessary to pay special attention to the creation and development of a republican distributed data bank on emergencies on the basis of regional and industry data banks.

This will allow:

- establish effective information communication of the commission in the republic for emergency situations at all levels with Soviet, economic and military authorities responsible for planning and implementing measures to prevent and eliminate the consequences of natural disasters, accidents, catastrophes;

- carry out mathematical modeling of emergencies to carry out forecasts multivariate calculations and operational assessments of the consequences of emergencies, determining the needs, distribution of forces and means during search and rescue and emergency recovery operations;

- ensure support of applied decisions by emergency commissions; conducting research and training relevant officials on actions during emergencies; automated support of plans for protecting the population in the event of an accident, natural disasters and catastrophes.

4.8. CREATION OF INFORMATION INFRASTRUCTURE

Functional focus process informatization, those fundamentally new information technologies that are to be implemented require a qualitatively new foundation, which has received a capacious definition

modern information infrastructure.

At the same time, the infrastructure organically includes:

- receiving and transmitting medium, including means of communication and transmission data, user terminal equipment and technology for using the environment;

- a system of banks (databases) of data and knowledge, mainly intersectoral applications;

- information and computer networks (local, institutional, regional, republican), combining databases, transceiver and computing environment;

- a set of republican intersectoral systems, such as the republican automated system for centralized management of classifiers (RASTSEK), republican automated system of scientific and technical information (RASNTI), republican automated system for maintaining a fund of algorithms and programs (RFAP) and a number of others;

- service system for the informatization process in terms of implementation and operation of computer technology and information science by providing a wide range of information, computing and technical services.

It is necessary to create a Republican data transmission system based on a digital integrated communication network using satellite transmission channels. This will ensure the introduction of new information technologies, commercial access to international databases and data banks, expert systems and knowledge bases, the functioning of geographically distributed commodity exchanges, securities and labor exchanges, etc.

Creating a full infrastructure is a very capital-intensive process, so it is advisable to identify experimental informatization zones (districts, cities, regions), where all work will be carried out in a proactive mode.

5. WAYS TO ACHIEVE INFORMATION IN THE REPUBLIC

The main elements of the implementation of the processes of informatization of the republic can be defined as the creation of an appropriate economic mechanism, the development of a set of legislative and legal acts, and the choice of the structure of organizational management of the process at all levels.

5.1. PREPARING SOCIETY FOR INFORMATION

Continuous preparation of society for informatization requires systematicity, as well as the adoption of a number of measures in the field of propaganda, advertising, training and retraining of personnel. Among them, the following should be noted:

1. Create a wide network of regional informatics centers. For these purposes attention will have to be paid to the creation of a broad state and cooperative system from large and medium-sized computer science centers in the system of the State Committee for Computer Science and Technology of the USSR and other departments to small cooperative ones. Develop youth computer clubs, computer game libraries, slot machines and audiovisual facilities, practice making changes to construction projects for residential and other residential buildings, taking into account the allocation of space on the first floors for clubs, game libraries, and computer science centers. In the public education system, create state centers for new information technologies, organize on their basis the development, implementation and support of educational information technologies according to an integrated curriculum and programs, solving problems of intensification and individualization of training and educational and methodological support for lifelong learning centers.

2. Organize in the republican and local press, on radio and television discussions on the development of computer science, devote more space to promoting the ideas of informatization and best practices.

3. Open specialized courses for managers and specialists national economy with an emphasis not so much on teaching how to use a computer, but on demonstrating the capabilities of computer science; organize and practice learning from best practices.

4. Organize the release (import) and widespread sale of household goods to the population PCs of domestic and foreign production at low prices.

5.2. DEVELOPMENT OF FUNDAMENTAL AND APPLIED RESEARCH IN THE FIELD OF INFORMATION SCIENCE

The successful solution of the problems of informatization of the republic is largely determined by the level of development of fundamental and applied scientific research in the field of computer science, computer technology and communication systems, carried out on the basis of existing and newly created scientific institutions within the Academy of Sciences of the Kazakh SSR and the Ministry of Education of the Kazakh SSR, as well as broad cooperation with relevant organizations union republics.

As part of the coordination of ongoing work, centralized planning and financing of informatization in the republic, preference should be given to the following fundamental and applied research:

- creation and development of promising microelectronics technologies and instrumental base for the manufacture of ultra-large-scale integrated systems (VLSI);

- development and development of the scientific foundations of design methods information technologies based on the use of relevant components of artificial intelligence systems (AI), the creation of databases and knowledge bases, CAD systems for various purposes, automated process control systems, ASNI, etc.;

- development of methods for mathematical modeling and computational experiments in creating expert systems in forecasting, planning and management of the national economy;

- creation of theoretical foundations and tools for integrated designing RSPD, RIVS, RSBD and other components of the informatics infrastructure;

- conducting scientific research on the development of PCs, personal computer systems (PVS), automated workplaces and the creation on their basis of LANs for various purposes with the ability to communicate with them in Kazakh and other languages of the peoples inhabiting the republic;

- development of gateway tools for integrating computer networks for various purposes.

Considering the priority of informatization among the tasks of scientific and technological progress, it is necessary to resolve the following issues:

1. Strengthen the material base of scientific research institutes of the Academy of Sciences Kazakh SSR, universities and other organizations conducting developments in the field of computer science using modern computer technology, laboratory and metrological equipment.

2. Create within the structure of the Academy of Sciences of the Kazakh SSR and the Ministry of Education of the Kazakh SSR specialized research institutes and universities for targeted research, training and retraining of scientific and engineering personnel in the field of computer science and computer science.

3. Open a branch of the central research institute communications (TsNIIS).

4. Practice the creation of scientific, methodological, engineering centers and temporary scientific teams to solve major problems of informatization of the republic on a competitive basis. Fund primarily programs and projects rather than organizations and institutions.

5. Expand work on the participation of the republic in State scientific-technical programs, the Comprehensive Program of Scientific and Technical Progress of the CMEA member countries, as well as international research programs and foreign scientific centers in the field of information science and computer technology.

5.3 CREATION OF THE COMPUTER SCIENCE INDUSTRY COMPLEX

Kazakhstan, although possessing all the necessary raw materials and scientific developments for the production of modern elements of computer science, does not have its own production of VT and telecommunications equipment. This, in addition to the above problems, does not allow effective and independent development of high-tech production and technology - the basis for a commercial breakthrough in the modern world and the acceleration of economic development. Republic practically

does not participate in the social division of labor in the field of computer science and computer technology.

Considering that the important principles for the success of the informatization process in the republic is the inclusion of Kazakhstan in the union and international division of labor, the following main areas of work can be identified:

1. Create enterprises for the production of technical means of computer science and production of software products.

2. Purchase abroad the main components of modern personal computers and organize “screwdriver” assembly at state or joint ventures.

3. Take drastic measures to form a national economy of the republic of the computer science industry complex (KPI).

The computer science industry complex is an intersectoral complex of the national economy of the republic, designed to ensure the development, production, circulation (storage, transport, sales), operation and support of the use of computer science tools, information technologies, automated systems and tools.

The creation of an information science industry complex (ITI) in the republic should take a long time. The institutionalization of the KPI will require large-scale economic, legal and political decisions affecting the often mutually contradictory interests of almost all sectors of the national economy. At the same time, it is necessary to determine the main trends in the development of the computer science industry and the system of organizational and economic conditions in which this development will occur, as well as take these trends into account when forming the complex.

The priority directions for the development of the KPI are:

1. Organization of production of high-quality element base with leading indicators of reliability through the creation of republican industrial microelectronics.

2. Balanced creation and advanced development of instrumental means for designing, manufacturing and maintaining all computer science tools (ASNI, CAD, expert systems, etc.) with minimal operating costs.

3. Construction of enterprises for the production of mass media computer science (PC, PVS, automated workstation, network stations, intelligent interfaces, digital communication technology, etc.).

4. Highly efficient use of information technology.

5. Creation of integrated production automation systems, starting with electronization of equipment at all levels: research institute - enterprise (association) – workshop – section – robot – machine – product – control.

5.4 MANAGEMENT OF THE INFORMATIZATION PROCESS OF THE REPUBLIC

In the process of managing the informatization of the republic, it is necessary to resolve the following issues:

1. Determine information needs in main areas
informatization, taking into account the concept of socio-economic development of the republic until 2005, estimate the costs of informatization of the republic and its social and economic consequences in society.

2. Outline the stages of implementation of the republican policy in the field informatization, which determines the content and methods of influencing the parts of the national economy that participate in this process.

3. Form and develop the national economic complex
the computer science industry, ensuring the creation of the necessary material and technical base for informatization and the organizational and economic conditions for its implementation.

4. Regulation of the process of using information technologies in
all levels and links of the national economy and other spheres of social activity.

To resolve the above issues you should:

1. In the new composition of the Supreme Council of the Kazakh SSR, form a special commission (subcommittee) on informatization, which should determine republican policy and formulate legislative acts in the field of computer science.

2. To perform the functions of the executive body of the state
management of informatization processes to form a branch of computer science.

3. Carry out in accordance with the accepted content of the Concept informatization, changing organizational management structures, meaning the creation on a self-supporting basis of an independent republican association "Kazakhinform", consortia for the creation of RSPD, database systems and information technologies, acting as a methodological and coordinating body in the republic, other new forms of joint activities, as components elements of the emerging Informatics Industry Complex.

4. The state management structure should also be supplemented with public cooperative communities and joint ventures with the participation of foreign firms. For these purposes, assist in organizing a number of associations in the field of computer science on a voluntary basis, for example:

- associations of users of information technology in order to increase
the effectiveness of the use of electronic equipment, their protection from low-quality and expensive projects, the provision of consulting, information, intermediary services, counteraction to monopolism and legal protection;

- regional associations for promoting informatization of the republic, for example, under local Councils, Kazakhstan and press organs, in Komsomol, widespread propaganda of order to form new information informatization, needs, etc.

5. At the pre-planning stage (during the development of the CPNTP, the Concept of Social - economic development of the Kazakh SSR, Scheme for the development and placement of productive forces and union documents of socio-economic development) to provide a special section on the development of the national economic complex of informatization.

6. In order to more fully analyze the provision of coordination and control over In the course of the informatization process, revise the system of planned indicators and link them with the statistical reporting system.

Organizational and legal measures to accelerate should informatization be are aimed, first of all, to encourage micro-activities; emancipation conditions work in production, design, commissioning, intermediary, information, publishing and advertising activities in the field of computer science; to a variety of forms and types of activities.

It is advisable to provide for the elimination of tariff rates that restrain collective and personal interests, the dependence of salaries entirely on the volume of work, aimed at costly methods of work.

The urgent task is to prepare and submit to the relevant authorities proposals for revising the GOST system for automated control systems, CAD and ASNI, developed by the USSR State Standard, which are aimed to an unjustifiably large extent at the production of a paper rather than a software product.

It is necessary to introduce a provision on the republican state order in the field of scientific and design work, providing for competitiveness and competitiveness, to actually finance topics and not organizations on a contract basis.

It is also necessary to develop a republican Regulation on temporary labor collectives (TWC), providing for their widespread use to fulfill government orders and provide TLC with all the necessary social guarantees.

It is necessary to significantly expand the rights of the regions of the republic in terms of creating enterprises and organizations in computer science, financing the necessary developments, creating and managing funds in the field of computer science. To introduce a number of legislative acts, seek the right to introduce them in the republic on an experimental basis.

Other legal provisions of informatization of a general nature include:

1. Protection of intellectual property in computer science, which stimulates creativity in this area and shapes the market of relevant relationship for products.

2. Solving legal issues, related With computer

crimes leading to unauthorized access to information stored on a computer.

3. Regulation of the status of information, which involves:

- information available to any citizen of the country, the concealment of which unacceptable ;

- commercial information that may be the object of purchase - sales on the terms put forward to its owner;

- private information about citizens of the country or organizations, affecting their interests, conscience, morality, etc., the distribution of which is possible only with the consent of the relevant persons;

- information that for one reason or another constitutes a secret; her dissemination is possible only with the permission of the authorities authorized to control issues related to such information.

Legal regulation is necessary not only for determining, but also for changing the status of information.

5.5 PARTICIPATION IN THE UNION AND INTERNATIONAL DIVISION OF LABOR

Participation in the union and international division of labor, which can be considered one of the real factors in reducing the critical backlog of our republic in the field of informatization, should be based on the following provisions:

1. The process of informatization in the republic requires active participation Kazakhstan in the union division of labor. In turn, this determines the need to create a scientific center in the Academy of Sciences of the Kazakh SSR and the construction of enterprises for the production of computer equipment, communications and software products that form the scientific and technical potential of the informatization of the republic.

2. To ensure the participation of the republic in the international division of labor, First of all, the most decisive steps are needed to organize social economic zones in the Kazakh SSR.

The accumulated world experience in this area shows their high efficiency, turning them into the locomotives of national economies. It is characteristic that not only developing countries, but also advanced capitalist countries - the USA, Japan, etc. are resorting to the creation of special economic zones. Thus, in the USA in 1985 there were 123 free trade zones, and in all states special emphasis was placed on creating an enterprise micro and radio electronics.

The creation of special economic zones must be organized primarily in previously economically undeveloped areas, but close to sources of primary and secondary raw materials, primarily waste from the non-ferrous and phosphorus industries.

To attract foreign capital and technology, one should go for a preferential tax regime, exempt joint ventures from the established tax (for 10-15 years), provide guarantees for the return of invested capital and the right to freely transfer investments and profits, limit the effect of the Labor Code of the Kazakh SSR and trade union activities depending on on the technological effectiveness of production.

It is necessary to make every effort to create joint ventures in the republic working in the field of informatization. This will saturate the market with equipment, software and information services.

At the first stage, it is necessary to focus on organizing assembly production to solve the problems of saturating the national economy with computers, gaining experience and training personnel. As development progresses, move to the creation of semi-automated and automated production.

One of the main factors in the economic breakthrough of the countries of Western Europe, Japan, China, etc. at different times was the mass training of students and young scientists, designers and technologists abroad. It is necessary to use this experience and organize training for students and young professionals in advanced countries, to prepare a new wave of specialists with advanced knowledge and technologies.

6. STAGES OF DEVELOPMENT OF INFORMATIZATION IN THE REPUBLIC

Formation of stages of development of informatization of the republic is an important factor for consistent implementation. Their implementation should be reflected in specific programs for the corresponding periods.

First stage 1989-1995. must provide:

- Creation main social, economic, organizational - legal, scientific and technical conditions for informatization of the republic;
- clarificationstructure of the existing training system And retraining of personnel in the field of computer science and computer technology, creation of a specialized educational institution and development of the existing network of universities in accordance with the requirements and implementation of new information technology of education;
- development of fundamental and applied research in computer science, Computer science, cybernetics, economics and law and other related sciences on the basis of existing and newly created scientific institutions and universities, the creation of an institute for computer science problems in the system of the Academy of Sciences of the Kazakh SSR;
- implementation of computerization processes - equipping the national economy, social sphere, management, research and educational activities using computer technology, peripheral equipment, creation of element and repair base;

- creation of local computer networks with distributed banks
data from enterprises and organizations, the use of existing groundwork in the development of industry and territorial networks and automated systems;

- development of standard design solutions (especially in the social sphere) creation of service systems for queuing the population with the training of appropriate personnel;

- carrying out activities to organize the industrial complex
computer science with active participation in the union and international division of labor;

- creation of an experimental zone of the informatization infrastructure of the republic, fragments of a satellite data transmission system.

In the experimental zone, queuing systems will be tested to ensure the provision of information services to the population: automated sale of tickets for all types of transport; introduction of magnetic cards (in the future electronic cards) for non-cash payments of the population; preventive and diagnostic systems of medical care; trade information and reference service; scientific and information services; commissioning, commissioning and maintenance of VT equipment; provision of computing services and organization of leisure activities using computers.

Second stage 1996 - 2000 . must provide:

- deepening and expanding the process of computerization and informatization republics in all directions;

- creation and development of basic capacities for the production of cheap PCs, PVS, automated workstations, microprocessors and other means of VT and telecommunications. Thus, the level of provision of enterprises, organizations and the population with VT means will be increased to 85-95%;

- development and development of NIT, a network of commercial and non-commercial banks data and knowledge banks;

- formation republican complex industry
computer science;

- extension And implementation interactions experienced zones infrastructure of informatization of the republic with union computer networks;

- achievement100% computerization of the learning process in the field education, training and retraining of national economy specialists.

Third stage 2001-2005. must provide:

- creation of a republican complex for informatization of key areas activities of the company;

- completion of the introduction of means into all spheres of human life
informatization of scientific information technology, databases, and knowledge bases, artificial intelligence systems;

- mass introduction of the latest queuing systems
– e-mail, electronic library, electronic publication, teletext, telefax, video text, etc.);

- implementation of mass automation of workplaces, electronicization equipment, robotization of production, etc.)

- reducing to a minimum the gap with developed republics and countries in the field of computer science, taking into account the prospects for the development of informatization processes in them; creation of a competitively capable scientific and technical potential of the republic.

7. CONTROL FIGURES FOR INFORMATION DEVELOPMENT AND ASSESSMENT OF ITS EFFECTIVENESS

The process of informatization of the republic within the framework of this Concept involves obtaining the following economic and social results:

1. Planned increase in the volume of information and computing services for 1,000 rub. gross output of sectors of the national economy from 0.3 rubles in 1986 to 30 rubles. in 2000 and up to 45 rubles. in 2005 will allow the republic to generate an additional national income of 2 billion rubles in the XIV Five-Year Plan. in the XV five-year plan 2.8 billion rubles. by saving labor costs.

2. Improving the quality and efficiency of business decisions, improvement of organizational and economic management can be estimated at no less than 4-4.5 billion rubles, achieved by saving labor, material and financial resources, accelerating the turnover of funds and objects of labor.

3. Introduction of automated workstations of designers, technologists, systems computer-aided design will increase their labor productivity by 10-20 times. On the scale of the republic, this can be estimated as an increase in national income in the amount of 250 - 300 million rubles.

4. The introduction of queuing systems will allow significantly reduce unproductive losses of working time, increase the part of a person’s free time to improve cultural and educational levels, reduce social tension in the distribution of products and services, and reduce the scale of the shadow economy in the service sector.

The main result of informatization of the service sector and everyday life is to improve the quality and standard of living of the people and increase the free time of workers.

Thus, the total control amount of the expected effect, according to our estimates, is 8 - 10 billion rubles. for the XIII - XV five-year plans.

The voluminous informatization program outlined in the concept requires the attraction of significant resources for its implementation. Moreover, in accordance with the principle of multiple sources of financing, the state budget should take on from 25% in the XIII Five-Year Plan to 20% of the XV Five-Year Plan from

total costs. The remaining funds should be provided by attracting the capabilities of enterprises and organizations.

According to experts, the minimum estimate of costs for informatization can be presented as follows:

- budget financing of research work: Xlll heel – 100 million. rub. XlV heel – 100 million rubles. XV heel – 100 million rubles.

- financing of research, design and development work (including programming) at the expense of enterprises and regional budgets:

Xlll heel – 300 million rubles. XlV heel – 400 million rubles. XV heel – 400 million rubles.

- republican centralized capital investments using VT funds and communication systems:

Xlll heel – 300 million rubles.
XlV heel – 300 million rubles.
XV heel – 300 million rubles.

- capital investments of enterprises and funds from regional budgets: Xlll heel – 300 million rubles. XlV heel – 400 million rubles. XV heel – 500 million rubles.

Total costs for informatization are:

Xlll heel – 1000 million rubles.
XlV heel – 1200 million rubles.
XV heel – 1300 million rubles.

In total, over three five-year plans, costs will amount to 3.5 billion rubles. including at the expense of budgetary allocations of 1.2 billion rubles.

8. CONCLUSION

The proposed Concept of Informatization reflects the views of the working group on the prospects for this process in the republic, taking into account the national strategy of the USSR.

While working on the Concept, the working group was able to cover only the main, key problems and tasks, while being aware of possible flaws and shortcomings, lack of specifics and unconvincing argumentation. The main goal was to identify the contours of such a global process as the informatization of the republic, to provide starting impulses for developing the most important decisions on this issue.

The implementation of the stated strategy for informatization of the republic is possible only in the context of the ongoing restructuring of Soviet society, improvement of the political situation in the world, deepening the process of democratization and openness, and the comprehensive expansion of the independence of the union republics in solving socio-economic problems.

In the design decision, the Concept was discussed and mainly approved by the Commission of the Presidium of the Council of Ministers of the Kazakh SSR on the use of computer technology and the development of computer science, the republican meeting on the use of computer technology and the development of automated systems, as well as during discussions in ministries, departments and territorial authorities. The final version of the Concept was finalized based on comments and suggestions received during the discussion of the project.

The concept was developed by a working group formed by the Commission of the Presidium of the Council of Ministers of the Kazakh SSR on the use of computer technology and the development of computer science (minutes of January 26, 1989), consisting of:

Amerbaev V.M. - head of the working group, academician of the Academy of Sciences of the Kazakh SSR

Ashimov A.A. - deputy head of the working group, member - Correspondent of the Academy of Sciences of the Kazakh SSR

Asaubaev K.Sh. - Doctor of Technical Sciences, KazPTI Ministry of Education of the Kazakh SSR Baizakov S.B. - Doctor of Economics, Research Institute of ASPU under the State Planning Committee of the Kazakh SSR Belousov V.I. – Ph.D., NIEIPiN under the State Planning Committee of the Kazakh SSR

Buranbaev B.Zh. – State Planning Committee of the Kazakh SSR

Kolybaev O.K. – Doctor of Economics, Institute of Economics of the Academy of Sciences of the Kazakh SSR Sarsenbaeva A.A. – Deputy Chairman of the State Statistics Committee of the Kazakh SSR Sarypbekov Zh.S. – Ph.D., KazPTI Ministry of Education of the Kazakh SSR Reutsky Yu.V. – Ph.D., KazNPO VTI GKVTI USSR

Toporov V.I. – Ph.D., KazNPO “System Engineering”, Ministry of Electrical and Technical Equipment USSR

Tungushbaev A.M. – First Deputy Minister of Communications of the Kazakh SSR Utembaev E.A. – Ph.D., Research Institute of ASPU under the State Planning Committee of the Kazakh SSR

Khusainov Zh.S. – Ph.D., KazNPO VTI GKVTI USSR

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Supervisor working groups,
Academician of the Academy of Sciences of the Kazakh SSR
_____ V. Amerbaev

Deputy head of the working group,
corresponding member of the Academy of Sciences of the Kazakh SSR
_____ A. Ashimov

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