Charles University in Prague

Faculty of Science

Department of Demography and Geodemography

Population register and its design for Kazakhstan

Master Thesis

Bakhtiyar Kozhakhmetov

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Supervisor: Ing. Jaroslav Kraus, Ph.D. (ČSÚ).

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Population register and its design for Kazakhstan

Abstract

This project primarily affects the process of creating/ building of population register in the Republic of Kazakhstan. The international experiences of population registration in European countries were used in the process of writing this thesis. Current data collection processing, their legal basis in the registers were also was analyzed. The diploma thesis also described the positive and negative sides of building population registers and usage this approach in Kazakhstan's reality.

A census was carried out in Kazakhstan during the writing master thesis. The results of the census can contribute further to improve information base for the establishment of a register of the population based on census.

Keywords: Register, Register-Based Census, The Republic of Kazakhstan, Statistics

Регистр населения и его структура для Казахстана

Абстракт

Данная работа, прежде всего, затрагивает процесс создания регистра населения в Республике Казахстан. В ходе написания дипломной работы был использован международный опыт регистрации населения в Европейских странах, был рассмотрен текущей процесс сбора данных, законодательная база в сфере регистров. Так же в работе описаны положительные и отрицательные стороны регистров населения и использование такого подхода в Казахстане.

В Казахстане была проведена перепись населения, во время написание работы. Результат, которой может в дальнейшем способствовать улучшению информационной базы для создания регистра населения на основе переписи населения.

Ключевые слова: Регистр, Регистр основанный на переписи населения, Республика Казахстан, Статистика

CONTENTS

List of abbreviations

ASRK	- Agency on Statistics of the Republic of Kazakhstan
BIN	- Business identification number
CATB	- State classifier of administrative
CATO	- Classifier of administrative
CCP	- Common Classification of production
CCPV	- Classifier of companies on production volume
CED	- Departmental classifier of enterprise --dimension on employment;
CES	- THE classifier of economic sectors
CETP	- Departmental classifier of enterprises in -terms of production;
CFP	- Classifier of forms and types of property
CIS	- Commonwealth of Independent States
CLFM	- Classifier of legal forms of management
CN	- Classifier of nationalities
COLF	- Departmental classifier of organizational and legal forms of management;
CPA	- The classifier of products of the European Community
CPEAT	- Classifier of products on economic activities types
CS	- Codifier of streets of the Republic of Kazakhstan
DCC	- Dimension classifier of companies on number
GCEA	- State general classifier of economic activities;
GCEO	- State general classifier of enterprises and organizations;
ICCW	- International Classifier of countries in the world;
NACE	- The Statistical Classification of Economic Activities in the European economic Community
PIN	- Personal identification number

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Chapter 1

Introduction

Until recently, the main source of information about the population reproduction was the demographic statistics, based their conclusions on the results of population censuses, surveys, the current account of demographic developments and migration. It defines the rules for groups of demographic data, measurement techniques, using methods of comparing the intensity and factor analysis of the situation. Emphasis is placed on such local processes, such as vital statistics (birth and death), internal and external migration.

In most developed countries the population registers are being used as a base of regular censuses. The census also includes lists of households in which all demographic events in a family are registered in a special file cabinet - with continuously updated information on each person (Lavrentyeva 2003).

Statistical Office of the European Union (Eurostat) has conducted a global assessment of the statistical system of Kazakhstan. As it turned out, it is the most developed in Central Asia - the report of Eurostat says so. The high level of coverage statistics, correspondence of the national accounts to international standards and a fairly complete description of the standard of living - all this shows the positive side of Kazakhstan. But not without its weaknesses - inadequate organization structure, a large proportion of non-observed economy, the absence of continuously updating the statistical register of the population and the lack of external accountability of Agency for Statistics of the Republic of Kazakhstan. Besides, according to experts' opinion from Eurostat, Kazakhstan does not always adhere to the fundamental principles of the UN according to official statistics, particularly the confidentiality of data (K. Kaliyeva 1996).

1.1 Problem definition

At the present time in Kazakhstan there are a large number of separate and mutually compatible databases (registers, inventories, etc.), such as tax service register, the register of the Ministry of Home Affairs, the Register of the Ministry of Labour and Social Protection containing a variety of accounting information about individuals and property (hereinafter - information resources).

For example, information about individuals in a given volume is contained in more than 18 databases. As a rule, these information resources are maintained by various public authorities and organizations to perform their separate functions. As a result, these information resources contain only limited information on a certain number of individuals-i.e., full coverage of the entire mass of the objects into account, even on the list of minimum required information, none of the departmental databases can not provide.

Thus, we can note the following:

- To improve the quality of public services and solution of a number of socio-economic problems the interagency information data exchange about individuals is required.
- In order to make the most of existing developments authorities, to improve the operational efficiency of accounting systems for private individuals, to reduce the budgetary costs of maintaining the systems it is necessary to create a mechanism of access to existing departmental databases and ensure their interaction between each other and synchronization of data.
- To solve the harmonization problem of existing databases and further the possible creation of joint public information resources with the help of which it will be possible to have effective access to any public information resources – it is necessary to solve the problem of the data codification: about individuals.

In this regard, the development of approaches and proposals directed at the establishment of the population register in Kazakhstan is of particular relevance.

1.2 Research goal and objectives

The goal of this research is to describe a logical model of the population register in Kazakhstan based on the international experience. This will be an alternative approach to traditional statistics of the census.

The result of this thesis is to contribute to the system development of public information resources and information exchange between them. Within the framework of the population register for a personal account[1] of the population it is necessary to develop approaches and mechanisms of unequivocal identification of the stored data in them about individuals.

To achieve this goal it is necessary to solve the following problems:

- analysis of international experience of the individuals identification within the framework of population registers;
- analysis of the administrative conditions and laws for the development and use of the registers system in Kazakhstan;
- analysis and development of proposals to change the regulatory legal framework regulating the registration and identification of individuals;
- Development of proposals on the integration to the construction of new information systems containing personal data on the population.

[1] In this work the term personal account is used to describe the enumeration of individuals in specific acounting system, and not related to the idea of financial accounts of individuals.

1.3 Relevance of research

Also it should be noted the European experience of the problems solution of various information systems integration containing data about individuals. It can be concluded that the experience of many countries in the part of data unification can be effectively investigated and applied to build the united state information resources in Kazakhstan.

Creating a register of the population will allow to have the reliable information about the population to public authorities for solving of the most important social and economic problems, and also efficiency ensuring in solving the problems of the population.

In comparison with manual techniques, a computer population accounting enables to solve the problem of tax collection in a completely new way, also pension charge and benefits, issuing and verification of documents, account of military service, accounting and property insurance, health insurance, elections, account of offenders, statistics, employment, etc.

Currently, there are various automated population accounting systems, created to solve the functional tasks assigned on the various public authorities, such as pensions payment, social benefits, taxes and etc.

However, because of the lack of information interaction between such accounting systems there is a number of negative effects:

- disconnection and incomparability of personal data contained in various accounting systems;
- unreasonable costs on an accumulation and multiple input of the same personal data of citizens in various automated accounting system;
- Inability to obtain reliable and comprehensive information about the population.

Creating a population register will help to unite the government information resources of individuals accounting and the formation of a common information space in the Republic of Kazakhstan to satisfy the information requirements of public authorities, legal entities and individuals.

For instance, population registers are currently used only in Moldova (CIS), and in a limited amount in Georgia (Chudinovskikh 2009). Moldova uses two sources - census and register, this method can be called as a register based on the Census (Similar work is under way in Georgia). Register of Moldova's population is in the conduct of Ministry of Information Development, however, the residence permits are issued by the Ministry of Home Affairs and it has its own statistical reporting.

Population census data are usually used for ten years. However, on the second year after the census implementation the information relevance begins to decline and in a decade it is necessary to conduct a new census. The cost of the national census is very high and many countries are seeking to solve the population accounting problem through the creation of contemporary registers.

The cost of registers implementation is incomparably lower than the census implementation. So, unlike the census, the registers allow to have annually complete and reliable information about the population of the country.

In this research the object of study is the system of state information resources and information exchange between them in the part of personal population accounting.

Initial data for work implementation are the legal and regulatory framework of foreign countries and the Republic of Kazakhstan, the analytical work on the subjects, the results of other studies, the draft of a personal population accounting concept.

1.4 Structure of dissertation

Graduation work consists of 6 chapters. The first chapter describes the definition problems, goals and objectives, as well as the relevance of the topic. Further, in the second chapter there is a focuse on the selected literature. The third chapter shows an overview of the registers. Chapter 4 shows the analysis of the legal framework and the existing statistical system in Kazakhstan. Also there is an analysis of the international register systems in Chapter 5. Chapter 6 shows a description of general statistical systems in Kazakhstan. In conclusion, the main findings are given.

Chapter 2

2 Review of Literature

The literature used for this field can be divided into two categories:

- European scientific work in the field of statistics registers;
- Concepts of development of the population register in the CIS.

"Register-based statistics" written by Wallgren (Wallgren et al. 2007) is the main source of information in European region, they have analyzed Swedish statistical system during last 10 years, to study work register-based surveys. They also use their experiences to analyse administrative data in this book. Main purposes of the book are to discuss how the register system should work, to describe structure and methodological work, and to show what basis is for the creation of the system.

Many other statistical offices, like in Finland, Sweden, and Norway are engaged in the research of the process of collecting data for statistics.

Information about Central Population Register was made by the Statistical Office in Denmark. They presented experiences of Nordic countries in the field with the international statistical community in large publications of the UN. The report also contains for the first time the detailed description of methodological approaches to census including those based on administrative registers, in combination with other sources (UNECE 2007).

The most contemporary research concerning Kazakhstan was conducted by Marie Bokhata, the director of the Institute of leadership and management (Czech Republic), and Gest Gutland, Consultant (Sweden). The aim of the study was to describe and horizontal analysis of the current status of the Agency of the Republic of Kazakhstan on Statistics (ARKS), as well as in other organizations in Kazakhstan, whose duties include the development of statistical information (Report on the global assessment of the statistical system in Kazakhstan, 2008).

A significant contribution into the solution of methodological problems and creation of statistical sources register is the concept of an automated system "State Register of Population" of the Russian Federation. This source helps to compare statistics and to create a statistical register of the population in Kazakhstan (The concept of automated systems "State Register of Population" 2000).

However, in Kazakhstan and CIS historiography, degree of the observation level of system statistics relations in the historical and demographic aspects has been insufficient. Studying

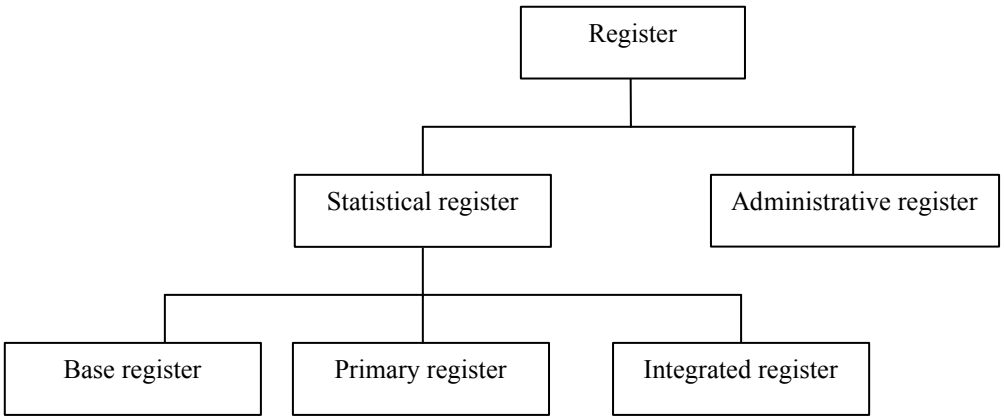
scientific publications on the designated theme has shown that it is necessary to recognize the obvious insufficient investigation of the problem in the demographic aspect. The analysis of statistical system in the years of independence showed that the statistical system in Kazakhstan developed insufficiently.

Chapter 3

3 Review of the registers

This chapter describes the types of registers. In addition, description of administrative data sources used to compile statistics in different countries. Of course, the registers of all the countries are not similar, but anyway there is a resemblance. Registers can also be divided into different types (fig. 1).

Fig. 1 - Typology of registers



Source: Wallgren. et al. 2007, p.47

3.1 Definition and types of registers

First and foremost, we need to give the definition of register. Let's consider the authors who dedicated projects to the population register in different time. *Register* nowadays is considered as the systematic collection of data on organized levels in such a way that the updating is possible. Updating is the processing of identifiable information with the purpose of a correction or expansion of the register, i.e. track keeping of any changes in the data describing the units and their attributes (UNECE 2007).

In addition, there is another definition of the register, which was presented by Wallgren. He defined the purpose for the existence of the register. "The register aim is to be a complete list of the objects in a specific group of objects or population" (Wallgren et al. 2007).

An *administrative register* by Wallgren is maintained to store records on all objects to be administered and the administrative process requires that it is possible to identity all objects (Wallgren et al. 2007).

Moreover, according to his opinion, the information in the register can be stored in various forms. However, it should be noted that administrative registers contain the data that are available in machine readable form for easy use in statistical purposes.

A key requirement to data register, which was used by other author Wilen, is that each unit can always be identified. When the register has its own system of identification codes, it is easier to work with the data (for example, personal identification code, the ID property, business identity code) (Wilen et al. 2002).

Thus, we can observe two basic types of registers: Statistical and administrative register. *Statistical register* is a register which is based on data from administrative registers or on the basis of census statistics carried out by bureau, which have been processed in accordance with statistical purposes (Wallgren et al. 2007).

Base registers should define important object types, important object sets or standardized populations and contain links to objects in other base registers (Wallgren et al. 2007).

Primary registers are statistical registers that are directly based on at least one administrative source. Primary registers are based on administrative sources and with these sources the main part of the statistical variables of the register system are created (Wallgren et al. 2007).

Integrated registers are statistical registers that have been created by only combining information that already existed in the statistical registers in the system (Wallgren et al. 2007).

If we turn to the technical aspects, the population register - common decisions are often based on a central database, interacting in the automatic mode in real time and continuously and round-the-clock via system of dedicated communication channels with a wide range of organizations - suppliers and recipients of information.

The register should be able to update and expand, so that all data about the objects must be identified and available. The full list and known identifiers, thus, are important characteristics of the registered office.

Register observation -is a form of continuous statistical observation of long-term processes that have a fixed beginning, a stage of development and the fixed end. It is based on the conduct of the statistical register. Register is a system that is constantly tracking the state of the observation unit and evaluating the effect of various factors on the studied parameters. In the register each unit of observation is typically a combination of indicators. Some of them have remained unchanged throughout the observation and recorded once; other indicators, the changes frequency of which is unknown, are updated as changes occur; the third one- is a dynamic series of indicators with a known period of renewal. All indicators are stored until the full completion of observation of the surveyed population unit.

In the practice of statistics the population registers and registers of enterprises are distinguished.

Consequently, *the register of population* – is a named and regularly updated list of residents. Surveillance program is limited by common features such as sex, date and place of birth, date of

marriage (these data are remained unchanged throughout the observation period) and marital status (variable feature). As a rule, the registers store information only for those variables features, changing the values of which are documented. Wilen and Johannesson in 2002 have described the New Population Register (Wilen et al. 2002).

Information is entered in the register for each born and arrived from abroad. If a person has died or left for permanent residence from the country, the details about him are removed from the register. Population registers are maintained in certain regions of the country. When the place of abode is changed the information on the population unit is transferred to the register of the relevant territory. Due to the fact that the registration rules are quite complex and maintenance of a register requires high costs, this form of surveillance is practiced in countries with small population and high culture of the population (mostly European countries).

It should be noted that the population register, as well as any index covering a large set of units by the supervision, contains data on a limited number of features. Thus, the maintenance of a register includes conducting of specially arranged examinations, including the census.

In the case of a population register we may also include data such as housing construction, transport, unemployed applicants, taxation, revenue, pensioners, etc. However, ideally the use of registers for statistical purposes, the information must be complete and accurate, but even the incomplete registers can be used to collect data for statistics. For example, the register of staff, lists of board members, etc., which rarely have a statistical annex.

You can certainly work without identification numbers, if there is information about each piece of equipment, such as name, date of birth, place of birth, address, etc. But in this case, the definition of the register becomes more complex and includes a lot of uncertainty - although in recent years, even these methods have been developed rapidly.

There are other types and definitions of registers. For example, *the register of companies* includes all types of economic activities and contains the values of the main features on each unit of the observed object for a certain period of time. Commercial registers contain information about the time of creation (business registration), name, address, telephone, organizational and legal form, structure, forms of economic activity, the number of staff (this figure reflects the size of the enterprise), etc.

Thus, there are several types and definitions of registers, which are based on multiple data collection systems. But they are all based on a similar principle: the systematic collection of data. In our project, we will analyze the population registers in detail.

Register that is based on the census - is the use of traditional census data and combined register data.

The table below shows which parts of the system registers in Table 1 may be used in register-based census.

Table 1 Statistical registers used in a register-based census

Census register	**Register used to produce the census registers**
Population registers	
Employment register	Statement of Earnings Register (Job register

	based on advance tax payments)
Education register	Compulsory school Upper secondary school Register of University students
Income ant Taxation register	
Register on buildings	
Register on dwellings	

Source: Statistics Finland 2004

For example, Finland, took its Census of Population and Housing based only on register data, without sending a questionnaire to the entire population only in 1990, this long process of evolution began to unfold in 1970.

However, it is important to note that these registers data can not fully replace direct data collection from sample surveys, but these methods are complement each other very well.

These registers can be used even by those countries in which there is only the census that is currently used.

Let's look at the definition of the census to achieve the goal of this project.

3.2 Essence of the Census

The concept of "census" today is defined by encyclopedias, as a single process of collecting, generalization, analyzing and publishing of demographic, economic and social data referred to all persons on a specific time in the country, or clearly limited part of it. The concept of the census sometimes also includes the processes of a summary, processing and publication of data" (V.A. Borissov 2003).

E/2005/24E/CNJ/2005/27 the round of population censuses and housing census in 2010 (from 2005 to 2014.) is declared by resolution adopted by the Economic and Social Council of the United Nations and it is determined that "periodic Census of Population and Housing fund in the country as a whole and for each administrative area is one of the main sources of data needed for effective development planning and monitoring of demographic issues and trends, policies and programs in the socio-economic and ecological areas"(The concept for the preparation and holding of the All-Russian Census 2010, 2007).

The main role of the census is determined by the existing demand for statistics, real need to change direction, the structure of the existing statistical system in the country, the need to improve the reliability of the data. In these circumstances, there is a need to enhance the role and significance of the statistical system, as any policies in the sphere of the country's economy should be based on quality, reliable data. Finally, if the statistics is improved and upgraded, then the level of social orientation of the economy will raise, its changes on the characteristics of the population, taking into account the composition, socio-demographic structure, as when the economy will develop effectively, purposefully and it will be focused on the welfare of each resident.

These are general definitions and principles of population censuses. We must provide information regarding Kazakhstan's reality of conducting population census. National census in 2009 in Kazakhstan is the second general census in the development conditions of the country's independence and formation of new market relations, creation of new legal norms and social stratification of society. Taking into account these circumstances, the development of organizational and methodological aspects and their implementation during the preparation and conduct of the census was realized in the light of modern economic development of the country on the basis of existing legal and regulatory framework, the application of international experience and recommendations of international organizations, development of new technologies and maintaining of data continuity with previous censuses.

In Kazakhstan, the legal and regulatory basis of the census taking is the Law of the Republic of Kazakhstan dated May 7, 1997 "On State Statistics» № 98-1 (Articles 2, 3, 10). In 2005, the Concept was developed to provide training, a national census in 2009 in Kazakhstan and the processing of its materials. The document was approved by Journals of the Government of the Republic of Kazakhstan dated December 20, 2005 № 19.

Preparations to the census began in 2007 on the basis of the decree adopted by the Government of Kazakhstan from November 27, 2007 № 1138 "On the national census in 2009". In the approved plan of preparations for the national census on Agency on Statistics in the Republic of Kazakhstan (hereinafter - ASRK) the tasks of carrying out the preparatory work, the census of population and development of program and methodological issues were assigned (Kassenova 2009:40).

The national census recommended by the United Nations was conducted within the period of the 10 round of censuses from 1995 to 2004. The population census in 2009 in the Republic of Kazakhstan was taken from February 25 to March 6.

The method of public survey was based on the interviewers and paper questionnaires. In the census there was a question on housing conditions of population. As part of preparations to the census, a 1% experimental census was conducted in Turkestan (South-Kazakhstan region) in February 2008 (Report on the global assessment of the statistical system in Kazakhstan, 2008).

After the successful use of OCR scanners in the census in 1999 and agricultural census in 2006-2007, in the census in 2009 the same data collection technology was used, but in a more advanced form. Since the previous census, there have been many important developments in information technologies.

With respect to certain information which is collected in the census, the census can be used to collect better data regarding undocumented international population movement (emigration and immigration). Data collection of this type is a complex issue, but these data are very important to improve the assessment of the population, also they could to ensure the formulation of policy frameworks in this sphere. The census is generally not a good source to collect these data, but it can be used when other sources do not provide sufficient quality data, as it is inherent in Kazakhstan (Report on the global assessment of the statistical system in Kazakhstan, 2008).

Census in 2009 was held under the slogan "Each one is important". Starting in February 25 with the main index factor 15.73 million people, in ten days the census showed – the number of

people is growing in Kazakhstan. The census questionnaires at the time of the last day of the main phase of the campaign were filled by 16,304,840 people (Economics and Statistics 2009:136).

For the success of the event of national importance more than 74,164 people worked in the country (loggers, the census divisions managers, instructor supervisors, "counters"). With the special care SARK approached the preparation of the counters. 58,368 professionals working in all towns and villages in Kazakhstan, was to have time to get around during the census about three hundred people. Financing of the company census initially took maximum savings as its basis. For the census (the organization, performance, summarizing) state has allocated six billion tenge up to 2010.

Complete data that will be received during this major event, they will be processed during 2009-2010, and afterwards their results will be included in a single information base of census. As a result of the census there will be the prepared handbooks, collections, press releases, press issues, articles and other statistical, analytical and information materials. These materials will be presented to a wide range of users: the Presidential Administration, Government, and Parliament, ministries, departments and agencies. The local executive bodies will also be able to get them, and also state universities and libraries, international organizations, research institutes and other institutions. By 2011, according to national census it is planned to produce an analytical report.

Thus, the census is defined as a single process of collecting, synthesizing, analyzing and publishing demographic, economic and social data. In addition, in Kazakhstan the census is now the primary mechanism for data collection. The project aim is to show how you can combine these two methods in the reality of Kazakhstan. The next chapter will describe the ways of such a combination, based on the experience of European countries.

3.3 Register bases and special registers in Kazakhstan

In the statistical system the transition to the international statistical classification began from the introduction of the classifications of economic activities types and products. The State General Classifier of Economic Activities Types (GCEAT) and Classifier of products on economic activities types (CPEAT) were approved as the national standards by the Order of the Committee on Standardization, Metrology, and Certification of the Ministry of Industry and Trade of the Republic of Kazakhstan №542 dated December 30.Union Classifier of the national economy that was previously in force (UCNE) and the Common Classification of production (CCP) stopped to reflect adequately the industrial structure of the economy. With the development of market relations, there are new types of activities, which were not properly encoded in UCNE and vice versa, UCNE contained branches that were disbanded in the market conditions (logistics and distribution, procurement, housing and utilities, etc.)

As a basis for GCEAT and CPEAT the authentic text of the Statistical Classification of Economic Activities in the European Economic Community (NACE) are adopted and the classifier of products of the European Community (CPA) without any changes in the structure or content. Applying the principle of industrial origin of products in the European classifications

would provide full identification of activity codes and products for the first four digits. This advantage of European classification in comparison with the classifications of the UN led to the application of the European qualifiers as the basis for national classifications.

The objects of the general classification of economic activities types (elements of the classified set) are all economic activities of legal entities and individuals with one-profiled and multidisciplinary activities.

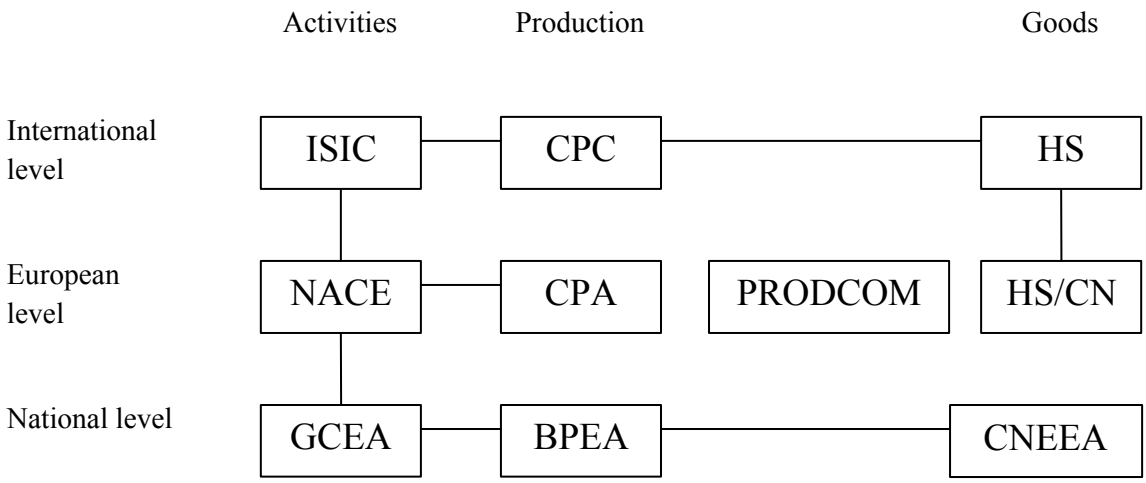
In the classifier the division of activities types in manufacturing and non-productive is not provided, but the distinction between primary and secondary activity on the one hand and supporting the activities from the other one is being made.

Legal entities and natural persons, who set to the same economic activity, are classified in the same group of classification regardless of ownership (private or public) and organizational and legal forms of management.

In CPEAT classified objects are all types of transportable and non-transportable goods and services related to a certain type of activities provided for the GCEA. Codes provided by this current classifier in a single six-digit code combine codes of the related classifiers: Economic Activities Types (GCEAT - 4 digits) and product (two more digits are added).

In accordance with these principles, each product or service is classified according to type of activity that is characteristic for its production (provision).

Fig. 2- Scheme of harmonization of international, European and national classifications



Sources: Bulebayeva 2009

Among the national statistical classifications general classifier of enterprises and organizations (GCEO) occupies a special place, it has been approved as a national standard by Resolution of Committee of Standardization, Metrology and Certification of the Ministry of Industry and Trade of the Republic of Kazakhstan № 10 dated July 5, 1999 instead of the all-union classifier of enterprises and organizations (Bulebayeva 2009).

Classifier GCEO provides the use of a unique code for each legal entity, registered in the Republic of Kazakhstan. Unification and standardization of the information space by applying the classifier GCEO have a large economic impact, because they allow to realize the interaction of various information databases, multipurpose using of databases, etc. In order to create the national registries of identification numbers of the Republic of Kazakhstan there will be

identification numbers to identify legal entities and individuals. Instead of codes OCEO for legal entities the business identification codes will be applied.

To the state qualifiers we can also refer classifier of administrative-territorial facilities (CATF), introduced to replace All-union classifier of administrative-territorial facilities, and the classifier of fixed assets, developed to meet the above classifications of products.

Conducting of statistical classifications is provided by a complex of works on their scientific and methodological and organizational support, and it provides for their maintenance in authentic condition and information services to users.

In the system of statistical classifications we also include sectoral (departmental) classifications, which contain information that is not included in the state qualifiers. Sectoral statistical classifications are approved by the Agency of the Republic of Kazakhstan on statistics and they are intended for use in departmental information systems of the Agency of the Republic of Kazakhstan. For example, to maintain a database of "State Statistical Register," along with the state classifications, the following groups of sectoral classifications are applied (Bulebayeva 2009:46):

- Dimension classifier of companies on number (DCC);
- Classifier of economic sectors (CES);
- Classifier of legal forms of management (CLFM);
- Classifier of forms and types of property (CFP);
- Classifier of companies on production volume (CCPV).

Also the groups of sectoral classifiers have been developed, they are used in different spheres of statistics such as:

- Statistical classifier of Individual Consumption by Purpose (SCICP);
- Statistical product line by type of service trade (SPLTST);
- Statistical classifier of industrial production (SCIP);
- Statistical classifier of Agriculture, Forestry and Fisheries products (SCAFFP);
- Statistical classification of construction works (services) (SCCW);
- Statistical nomenclature of activities and services in tourism (SNAST);
- Classifier of nationalities (CN);
- Codifier of streets of the Republic of Kazakhstan (CS).
- Designation systems of government and economic management;
- classifier of statistical data;
- nomenclature of science branches and specialities.

Most sectoral classifiers have been developed on the basis of the international classifications.

Thus, the classifier of economic sectors (CES) is based on functional classifications of the System of National Accounts (SNA 93).

CES is designed for the classification and coding of institutional units according to their affiliation to the relevant sectors of the economy that allows to realize the development of macroeconomic indicators in the context of the institutional sectors.

Statistical Classifier of Individual Consumption by Purpose is made in accordance with general principles of construction and structure of one of four functional classifications

described in the System of National Accounts in 1993. SCICP is used for the classification of final consumption expenditure, carried out by households. SCICP is used in the statistics for the encoding of consumer goods and services in order to establish a statistical base for the calculation of consumer price indexes, in the statistics of households and the programs of international price comparisons.

Within the statistics the classifiers are also used, the developers of which are other public authorities:

- Classifier of occupation of the Republic of Kazakhstan is harmonized with the International Standard Classification of Occupations (ISCO and ISCO-88-eng) by direct application of the codes and names of its positions, as well as the All-Russian Classifier of Occupations (ARCO 010-93) and it meets the recommendations of the 12th Inter-State Council on standardization of the CIS countries. Classifier is designed to solve problems related to the classification and collection of information, as well as to improve international relations, exchange of information on employment, reduction of employment statistics in accordance with international standards and use of occupational classifications in the census in 1999, and other statistical surveys.
- State Standard "codes for designating the names of countries and their administrative and territorial divisions was approved by Order of the Committee on Standardization, Metrology and Certification of the Ministry of Economy and Trade of the Republic of Kazakhstan in April 23, 2001 № 116 based on international standard ISO 4217-2001 Codes for the representation of currencies and funds.
- codes for designating the names of countries and their administrative and territorial divisions were introduced as a state standard by the Order of the Committee on Standardization, Metrology and Certification of the Ministry of Economy and Trade of the Republic of Kazakhstan dated 23 April 2001 № 115. This classifier is considered to be a complete authentic text of the International Standard ISO 3166.1.
- Classifiers of Bachelor and Master Specialities of the Republic of Kazakhstan were put into operation by Order of the Committee on Standardization, Metrology and Certification of the Ministry of Industry and Trade, dated 12 March 2004 № 75. Classifier is harmonized with the International Standard Classification of Education, approved by the General Conference of UNESCO on its 29th session in November 1997.

Classifier of specialities is designed for:

- creating an open higher education system for the society and every citizen on the classification, reflecting all forms and spheres of activity;
- creating a regulatory framework for the development of state compulsory standards of higher professional education on specialities, contributing of the quality and development of education in accordance with achievements in science, technology and culture with the needs of the population;
- creating conditions for the formation of inter-state educational space;
- contributing of the development and implementation of common educational technologies in a rational variety of specialties;

- creating conditions for the calculation of the needs of all sectors of the economy in the specialists with higher education and the formation founded by public education order for their preparation; provision of statistics and analysis in the field of higher professional education in connection with supply and demand in the labor market (Bulebayeva 2009:47).

State Statistical Register (hereinafter - the Register) is an integral part of official statistics in Kazakhstan. Its legal status is defined by the Law of the Republic of Kazakhstan dated May 7, 1997 № 98-1 "On State Statistics".

The task of establishing the Register was determined by the first program of reform of official statistics for 1993 - 1996, according to which in 1994 the State Register of management and other economic entities of the Republic of Kazakhstan (SRME) were created. After the establishment of the State Register of Legal Entities in the Ministry of Justice of the Republic of Kazakhstan, during the implementation of the second program to improve national statistics on 1996 – 1998 SRME was converted into administrative registers, and then in 1997 into state statistical register.

On the contents the database of the Register is a specially organized and systematic list of subjects: legal entities, branches and representative offices, individual entrepreneurs, as well as individual entrepreneurs operating in the form of joint enterprise. As a tool for statistical account the register contains brief administrative and economic information on all individuals and legal entities covered by the statistics.

The structure and content of the register are defined by international standards and recommendations in the field of business statistics. In particular:

- Regulation (EC) № 177/2008 of the European Parliament and the Council in February 20, 2008 establishing a common framework of business register for statistical purposes and repealing Council Regulation (EEC) № 2186/93. (It contains a description of standard requirements for the Statistical Register);
- Council Regulation № 696/93/EEC of 15/03/93: OJ L076 of 30/03/93, statistical units for the observation and analysis of the production system in the European Community. (It contains characteristics of statistical units and scope of their usage);
- Council Regulation № 1893/2006/EEC of 20/12/2006: on the statistical classification of economic activities NASE Revision 2 in the European Community. (It contains rules for classification and identification of the principal activity type of statistical units).

Register is used in accordance with international recommendations in the following areas:

- means of detection and formation of statistical units. Register allows you to create all types of statistical units provided by international standards for business statistics;
- a tool of training and coordination of statistical surveys. On the basis of the Register the preparation and conduct of all business surveys are realized: the calculation of needs in forms, design of companies sample, the definition of general and selective set, coordination to avoid double counting of data, evaluation of survey results, accounting burden on enterprises, the optimization of selection scheme for the survey, etc.;
- A source of information for demographic analysis of the set of statistical units. Data on the creation and liquidation of companies are invaluable and available rates that characterize the short-term fluctuations in the economy;

- A tool to attract data from administrative sources. Register allows to bring data from administrative registers of other public authorities. It means the data that may be useful in the formation of statistical observations, as well as for formation of statistical indicators;
- a tool for data dissemination. Register allows you to create a large number of indicators characterizing the state and dynamics of enterprise development. On the basis of the Register monitoring for development of small businesses is realized, and also a large number of individual users' requests is held.

Interaction of the register with other government databases. Since September 2004, the Register is included in the system of registration of legal entities, branches and representative offices on the principle of "one window". The purpose of the interaction between all the state databases is to provide greater access to non-confidential information contained in the register, increasing the efficiency of administrative sources attracting for statistical data, and thus to reduce the burden on respondents.

Information System "State Statistical Register" includes a central server with a database at the national level, and remote working places that are located in:

- the authorized department Agency on Statistics of the Republic of Kazakhstan (ASRK);
- the Departments for maintaining the registers and the service of "one window" in the regional (city) Department of Statistics (hereinafter - the Department of registers);
- the departments of RSE "Information Technology Centre of Agency of the Republic of Kazakhstan on Statistics (hereinafter - the ITC).

All the specialists according to their working places have certain responsibilities for maintaining the Register and access to bases in the Register.

In accordance with Article 9 of the Law of the Republic of Kazakhstan "On State Statistics" the register contains brief administrative and economic information on all individuals and legal entities covered by the statistics. Registration in the Register shall be subjects that have passed state or accounting registration in the relevant registration authorities of the Republic of Kazakhstan, in accordance with Article 13 of the Law of the Republic of Kazakhstan dated April 17, 1995 № 2198 "On State Registration of Legal Entities and Accounting Registration of Branches and Representative Offices", and according to Article 27 of Kazakhstan in January 31, 2006 № 124 "On private entrepreneurship.

Natural persons and legal entities shall be guaranteed confidentiality of primary statistical information. Lists of legal entities (branches and representative offices) with the official classification attributes are not the primary statistical information, i.e. these are not covered by the principle of confidentiality in the statistics.

The register contains the basic administrative information about the legal units and economic information about statistical units.

The legal unit is endowed with legal status. According to the legislation of the Republic of Kazakhstan to the legal units we can refer:

- legal entities with their structural units, whose existence is recognized by law, regardless of individuals or organizations that may be their owners or participants;
- individuals officially registered as individual entrepreneurs and meet their obligations;
- Individual entrepreneurs, officially registered, operating in the form of joint enterprise.

Statistical unit is an abstract unit, established by law for statistical purposes. In the register, according to international standards, the following statistical units are used:

- Enterprise;
- local unit;
- unit of activity;
- local unit of activity.

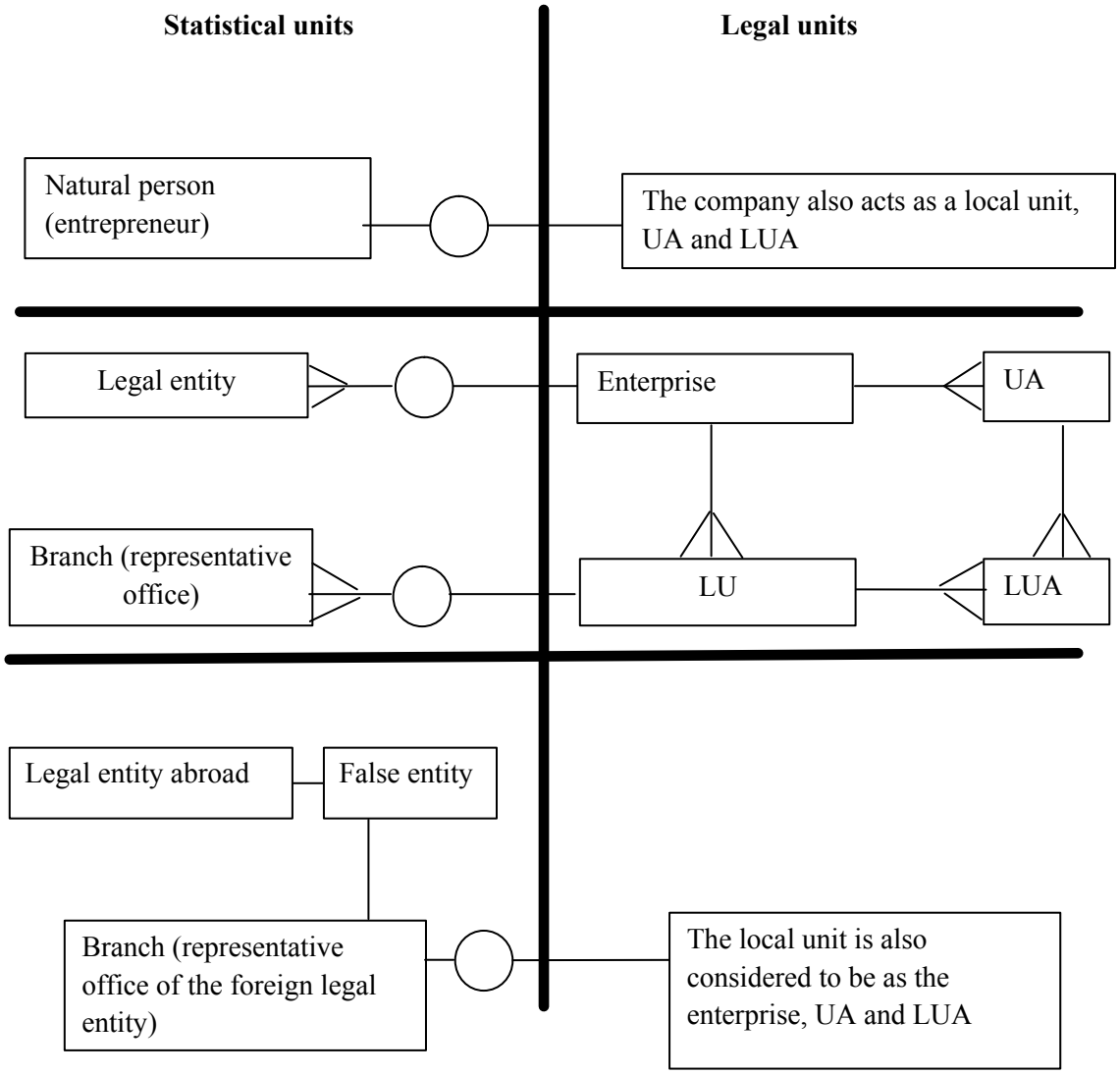
Enterprise - is the smallest combination (i.e. one or more) legal entities, operating in one or more locations on a commercial or noncommercial basis. The company can be considered as an organizational unit producing goods and services, which has a certain freedom to make decisions regarding the use of funds it receives.

A local unit corresponds to the enterprise or part of the enterprise (workshop, factory, shop, office, mine), located outside the enterprise. An important condition for allocation of IU is the presence at least of one employee working at least part time. Every company has at least one local unit (i.e., on the basis of head office the local unit is set up). GCEA of local unit is assigned, regardless of GCEA enterprise, i.e. it may not coincide with the main GCEA of enterprise.

The unit of activity - an enterprise or its part, which is relatively uniform in production (economic) activity and independence in decision-making on the manufacturing process, about which we can get meaningful data. Enterprise Statistics is based on the institutional approach, i.e. all the activities of each unit are refered to its core business. With this approach, UA allows you to improve the results uniformity of statistical surveys by types of activity. UA can not be based on the supporting activities of enterprises.

A local unit of activity is geographically isolated part of the activity unit, which corresponds to the local unit. Each UA must have at least one LUA. It should be noted that the GCEA LUA always corresponds to the GCEA, head UA. Thus, the definition of statistical units is based on three main criteria: the law (L), geographical (UA, LUA) and economic (LUA).

Fig. 3 - Communication and relationships between all the units of the Register are presented in the following table.



- means that the connection does not always exist;

- Connection type one or more to one ;

Source: ARKS

Considering the connection between the legal and statistical units it should be noted:

- Legal (law) basis of a statistical unit, "the enterprise" is always only one legal unit (legal entity or sole proprietor);
- Statistical unit "enterprise" may be associated with one or more legal entities. Legal units can act as co-sponsors.

Table 2 - Relationship between units

Subjects of connection (Types of units)	Reasons for the formation of communication (information, procedure)	Notes, annotations
Legal - Legal	Information about the owners (members) legal entity	With the proportion of ownership (participation) in%
Statistical - Statistical	they relate to one enterprise	E ———UA I I LU———LUA
Legal - Statistical	in formation of statistical units	connection between legal basis and statistical unit

Source: ARKS

In addition, the Register reflects the relationship between:

- legal unit and its reporting units;
- legal units, resulting from demographic developments;
- legal entity and structural divisions.
- Information coding of the Register is based on the classification and coding system.

The Register uses the following standard classifications:

- GCEO - State general classifier of enterprises and organizations;
- CATB - State classifier of administrative-territorial bodies;
- GCEA- State general classifier of economic activities;
- CFP - departmental classifier of forms and kinds of property;
- CED - departmental classifier of enterprise dimension on employment;
- COLF - departmental classifier of organizational and legal forms of management;
- CES - departmental classifier of economic sectors;
- CETP - departmental classifier of enterprises in terms of production;
- ICCW - International Classifier of countries in the world;
- CS - codificator of streets of Kazakhstan.

Situational code. To reflect the degree of economic activity of enterprises in the register there is the usage of situational codes, which are filled with business registration and change in the process of updating of the Register.

Situational code has the following meanings:

- 0 - not yet active unit (i.e., it has been just registered and the next month probably it will not start its economic activities);
- 1 - active unit (it realizes an economic activity or it is in the short term (less than one month), simple);
- 2 - not an active unit (it is located in the simple one more than one month);
- 3 - unit is removed;

- 4 – there is no information about the unit (in the case where there is no information for more than two years, and unity can not be found);
- 9 - unit is officially declared as bankrupt.

In creating of a statistical unit in the legal basis the filling of the following attributes is verified:

- GCEO;
- The type of unit;
- Legal address;
- GCEA (according to the legal address);
- actual address;
- GCEA (according to the actual address);
- The organizational and legal form;
- Type of economic activity;
- The size of population;
- Situation code;
- The sector of the economy;
- Ownership forms.

Table 3 - Fill in the key attributes of statistical units

№	Attribute	E	LU	UA	LUA
1	Code	+	+	+	+
2	Type units	+	+	+	+
3	CED	+	+	+	+
4	GCEA main	+	+	+	+
5	GCEA another	+	+		
6	Sectors of economy	+	+	+	+
7	Situational code	+	+	+	+
8	The number of full list	+	+	+	+
9	The number of total	+	+	+	+
10	COLF	+	+	+	+
11	Turnover	+	+	+	+

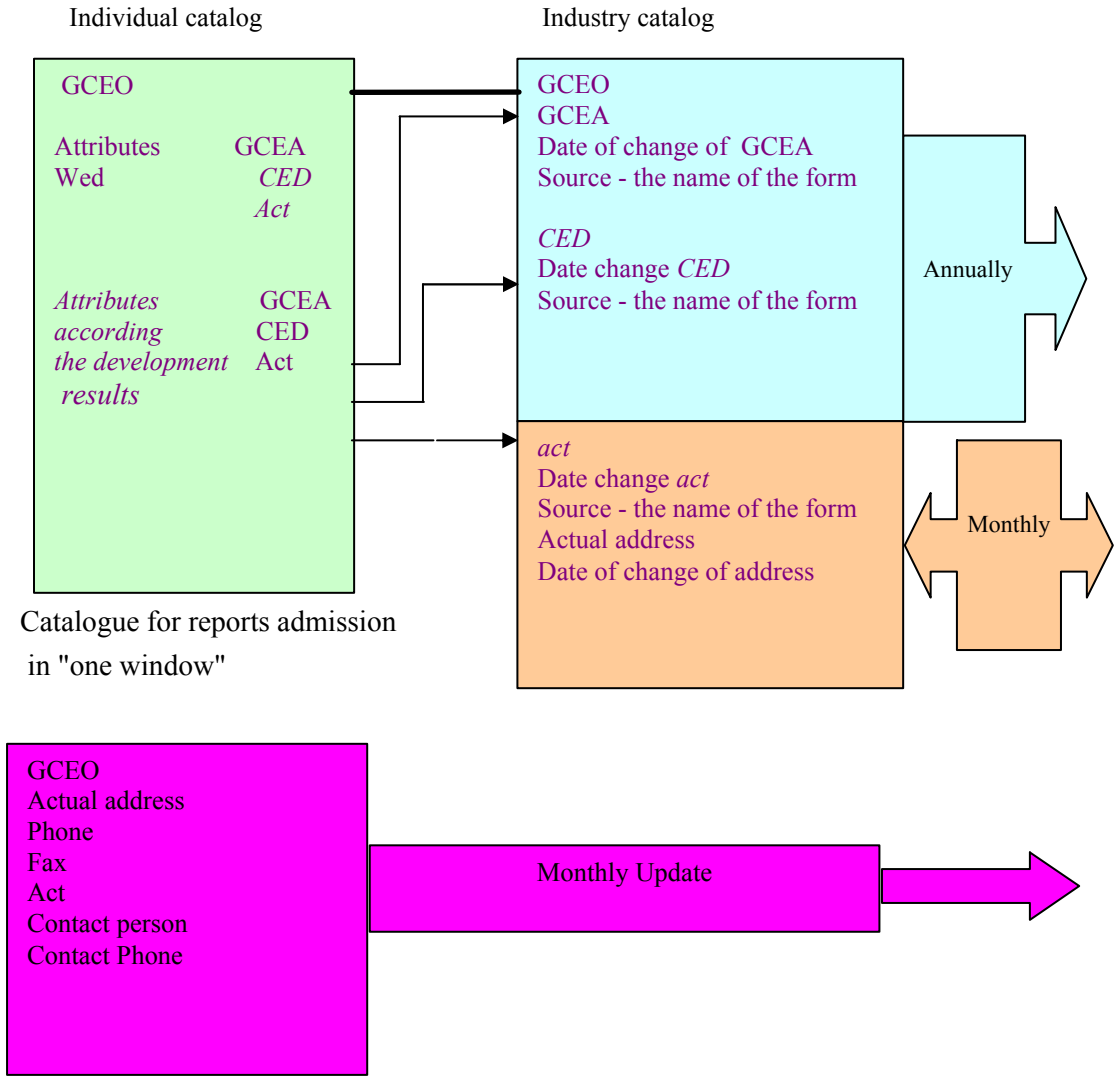
Source: ARKS

Catalogues or lists of items from the Register are the main tool for coordination of statistical surveys. Catalogues contain a list of units of the general population.

For sectoral departments from the Register two types of catalogues are formed: the individual and the sectoral. To receive a report in the "single window" at the regional level, a catalogue KATREGR is being formed. Each type of catalogues is designed to perform specific functions according to rules of working with catalogues.

All types of catalogues allow to take into account changes in classifications of units, which are found during the statistical observation. Changes recorded in the catalogues are used to update the register (Figure 4).

Fig. 4- Directories as a source update of the Register

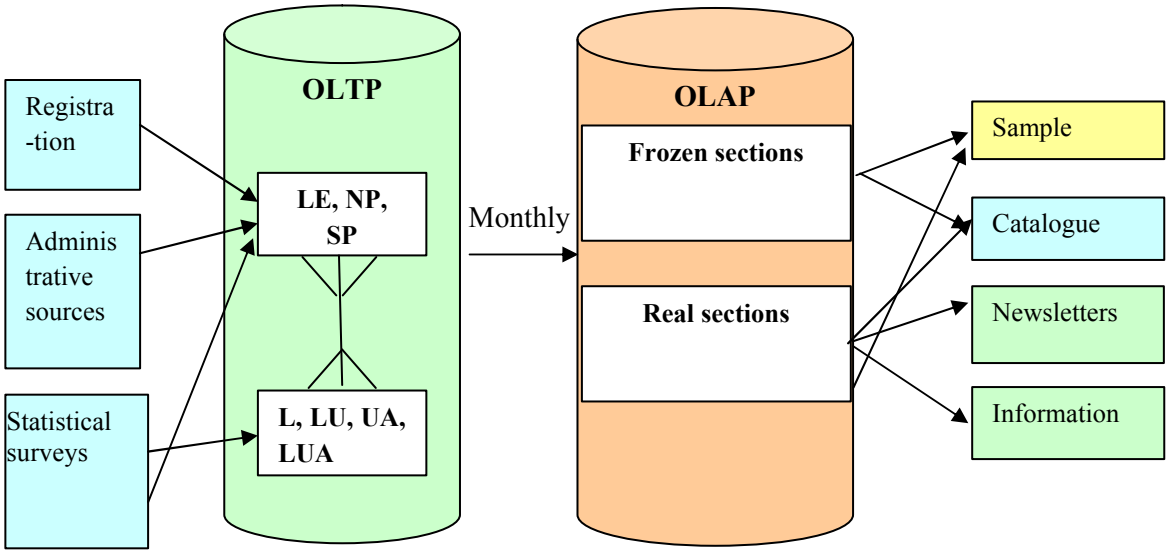


The Register uses two databases:

- Operational database - OLTP-base;
- Data warehouse - OLAP-base.

Source: ARKS

Fig. 5 - Technology of registers base maintenance



Abbreviations:

- LE - legal entities;
- NP - natural person;
- Sp - sole proprietor;
- L – legal
- LU - local unit
- UA - units of activity
- LUA - local units of activity

Source: ARKS

OLTP Database contains the latest actual data on legal and statistical units. In this case, according to the main attributes you can see the "history", i.e. previous values of attributes and events that led to their change. OLTP is for input and adjustment of information, as well as for creating and analyzing of statistical units.

OLAP Database contains information in the form of cuts - the data on legal and statistical units at a certain time (at the beginning of each month and year). OLAP is used for the analysis of time series, data distribution, forming sheets, samples, catalogues, and various references.

All information on legal and statistical units is recorded in the operational base OLTP.

Data of state registration (re-registration) of legal entities, branches and representative offices receives on a daily basis, data on SP - monthly.

Information for updating the legal and statistical units comes during a year based on the results of statistical surveys and other sources. In order to prepare the Register to the beginning of the year in January, at the beginning of the year update is held.

Data processing of state registration (re-registration) is implemented in accordance with the Rules of the information exchange of state database "Legal entities" with the information system "Statistical Register" of Agency on Statistics of the Republic of Kazakhstan, which are designed to integrate information systems to create a unified accounting system operating on the territory of the Republic of Kazakhstan (legal entities, branches, representative offices and subjects of the individual joint entrepreneurship on the basis of business -identification number.

Rules define the interaction of the participants for information exchange, the composition of the transmitted information, used classifiers and guides, modes and methods of data transmission, modes of transmission time, form and data formats (Guidelines on management of the State Statistical Register, 2009).

Thus, in Kazakhstan in 1999-2005 a register of enterprises has been established, the transition to the international classification NACE, CPA has been realized.

Chapter 4

4 Administrative and legal conditions for the development and use of the registers system in Kazakhstan

4.1 Regulatory and legal base

The development of official statistics in Kazakhstan starts from the beginning of the XX-th century. Having passed many stages of development, the statistical system of Kazakhstan has now very high standards and adheres to many international recommendations.

The role of the National Statistical Office is the Agency of the Republic of Kazakhstan on Statistics (ASRK)

According to the Law of the Republic of Kazakhstan "On State Statistics"[2], Agency on Statistics of Kazakhstan is the authorized body, forming and implementing public policy in the field of statistics, developing and implementing programs to improve the statistics in the Republic of Kazakhstan. According to the Decree of the President of the Republic of Kazakhstan dated 30 June 1998 "On further measures to optimize the government bodies", Agency on Statistics of the Republic of Kazakhstan is a central executive body, that is not a part of the Government. Agency on Statistics of the Republic of Kazakhstan has autonomy in matters of methodology and methods of statistical accounting; it administers its territorial units and coordinates the activities of subordinate organizations.

The main tasks of the Agency on statistics of the Republic of Kazakhstan are as follows:

- development of proposals for the formation of public policy in the sphere of state statistics;
- Maintenance and improvement of a unified statistical information system based on scientific methodology and international standards;
- Ensuring the integrity, reliability, and adequacy of statistical data;
- A comprehensive and objective study, compilation and analysis of economic and social events in the country and trends of their development.

[2] The law of the Republic of Kazakhstan "On state statistics" dated from May 7, 1997

Agency on Statistics of the Republic of Kazakhstan, in accordance with its objectives carries out the following main functions:

- Develops proposals for the formation of public policy in the field of state statistics;
- Co-operates in the field of statistics with other countries and international organizations, concludes agreements and treaties aimed at the development of state statistics;
- Develops statistical methodology in accordance with international statistical standards;
- Conducts the national census over and above a plan of statistical work;
- Develops and approves programs of state statistical observations;
- Coordinates the statistical activities of state bodies, based on approval of programs of statistical surveys;
- Provides methodological guidance by means of economic accounting maintaining;
- Issues standard and legal acts on national statistics;
- Conducts statewide statistical observations according to the statistical work plan;
- Ensures public authorities the statistical and analytical information in the manner prescribed by the Government of the Republic of Kazakhstan;
- Maintains the State statistical registers in accordance with international standards;
- Provides access to summary statistical information for legal entities and individuals;
- Presents statistical information to international organizations in accordance with the obligations under the current agreements, and it also conducts an exchange of statistical information with foreign countries;
- Provides with statistical forms blanks and instructions for their completion for individuals and legal entities providing information to state statistical bodies,;
- Provides with storage, maintenance and updating of information and statistical databases on socio-economic situation of the republic and its regions;
- Organizes research work in the field of statistics;
- Oversees the organization of primary and statistical accounting of individual entrepreneurs and legal entities;
- Supervises the implementation of methodological instructions.

In ASRK - all the important international statistical classifications are used[3].

Period of the introduction of new classifications in this area takes usually less than two years, which corresponds to the normal rate of any developed country (UNECE and UNESCAP 2008).

Implementation of the coherent policies in the field of standardization, metrology and certification in the Republic of Kazakhstan is regulated by Decision of the Government of the Republic of Kazakhstan № 1113 accepted July 15, 1997 "On the transition of the Republic of Kazakhstan on the international system of classification and coding of technical and economic information." As a national standard the Unified system of classification and coding of the technical, economic and social information "is approved (JCC TEI).

[3] Nowadays ASRK is the independent government department, working according to the government decisions of Kazakhstan from March 30, 1999

Central place in the general classification system is occupied by statistical classification. They determine to a large extent the quality of the collected statistical information and its international comparability. Classifications in statistics are used as a tool for processing and compilation of statistics, systematization, ordering, aggregation and comparison of statistical data. Widespread use of standard classification groups in the statistical forms, electronic processing systems of statistical information, in statistical outputs and publications led to the formation of the modern system of statistical classifications (Bulebayeva 2009:45).

The legal bases of international and intergovernmental statistical classifications in the territory of the Republic of Kazakhstan are: Law of the Republic of Kazakhstan "On State Statistics" dated May 7, 1997, fundamental principles of official statistics, adopted at the 47th session of the UN European Economic Commission, the interstate agreements referred to the Government (Decree of Government of the Republic of Kazakhstan № 1113, 1997) and other regulatory documents.

As the technology, companies and markets advance, as well as in connection with the emergence of new economic activities, objects, transactions, economic units and even entire industries it is required the periodic review of standard international classifications and recommendations. Another important reason for the revisions is increasing globalization of economic activity. Without periodic revisions of statistical systems it is not possible to receive accurate and balanced information about trends in society.

International Standard Industrial Classification of All Economic Activities (ISIC Rev.4) and Central Product Classification (CPC), developed by the UN, respectively, required revision in the classification of economic activities in the European Community (NACE) and the product classification of the European Community (CPA). European countries planned the transition to a new version of the classifier NACE from the beginning of 2008.

In accordance with international recommendations for the transition to a new system of international classifications, by Kazakh Agency on Statistics the main stages and activities for the revision of national classifiers were identified, they were harmonized according to the statistical classifications NACE Rev.2 and CPA 2008 European Economic Community, and introduction of new classifiers in statistical manufacturing:

- Development and approval of state classifiers of economic activities (GCEA) and products by economic activities (CPEAT);
- Development and approval of departmental classifications, nomenclatures and guides;
- Development of correspondence tables from older versions of classifiers, nomenclatures to the new one;
- Replacement of old classifiers, nomenclatures and reference books in all statistical forms;
- Review of statistical forms in accordance with the new classifiers. Application of dual coding in statistical forms;
- Implementation of the new GCEA in the state statistical register is provided in 2008-2010;
- Transcoding and maintenance of dual coding on the old and new codes of GCEA (at level of 5 characters)

- Collection and processing of statistical data in new and old classification: 2010-2012;
- Publication of statistical data on new classifications: 2011-2012.

The above activities indicate about complex and gradual transition of Statistics of Kazakhstan to the new system of international economic classifications, which conventionally have been divided into:

- Preparatory phase (2008-2009.)
- The transition period (2010-2011.)
- Completing the transition (2012).

Results of the National Census in 2009 are used to create a whole system of statistical databases on population characteristics, as well as the basis for constructing of sampling statistical surveys. In the perspective for the actualization of the samples the administrative data register should be used as an additional source.

Last 15 years, ASRK may be marked by three periods of development:

- 1992-1996- Formation of the Agency as the National Agency for creating basic methodological know-how, which had previously been concentrated in Moscow, which provides the main international relations and membership in international statistical organizations, the introduction of international standard SNA93 - System of National Accounts 1993;
- 1996-1998 - further development of existing accounts of the SNA and the development of methodology for the integrated accounts and tables of the SNA, the initiation of the systematic use of internationally - agreed statistical classifiers, beginning of the creation of statistical registers, the introduction of statistical methods for the production of information on small businesses, the introduction of new information and communication technologies;
- 1999-2005 - Introduction of international classifications virtually in all areas of statistical production, development of statistical registers as the main tool of statistical activities in the field of economic statistics, the successful implementation of the census in 1999 and the development of new demographic and social statistics, the increased use of information technologies and increase of international cooperation.
- The program of stages 2006-2008 can be characterized as a preliminary period for deep restructuring of the ASRK. It is focused on improving the quality of statistical information and on the introduction of the most important international standards in the work. And it is realized in good cooperation with Eurostat and other National Statistical Offices and donor organizations, the International Monetary Fund, World Bank and many UN organizations.

Finally, it is not clear whether the state statistical register referred to Article 9, is used for statistical purposes only or whether it can also be used for administrative purposes. ASRK is responsible for this register. It is not clear whether it is just the register of economic units (Business Register), or whether it includes also a population register. As this article provides ASRK, as a responsible organization, with access to all sources from other agencies to update this register, and an uncertain resolution to meet all these sources (plus any data from statistical surveys carried out by ASRK) for updating of these registers, the goals and conditions of access must be defined in the law. Paragraph in Article 13, according to which wide access is limited

by characteristics that are publicly accessible, but it is not sufficient as a limitation, because some sources are used to update these characteristics, and may not be public.

Statistical Programming is based on the succession of policy documents, such as "Action Plan to implement the Programme of the Government of the Republic of Kazakhstan for 2003-2006, approved by Government Resolution № 903 from September 5, 2003 (2003) and" Programme to improve the state statistics of the Republic of Kazakhstan for 2006 -2008, approved by the decision of the Government № 71 from February 6, 2006 (2006). The penultimate Strategic Development Plan ASRK had been developed for the period from 2009 to 2011 (Strategic Plan of Agency on Statistics of the Republic of Kazakhstan, 2008), that is for three years. In December 2009, a new strategic plan was adopted for five years - 2010 - 2014 (Strategic Plan of Agency on Statistics of the Republic of Kazakhstan, 2009).

Scheme Document of Strategic Plan reinforces the role of registers, as important information sources of statistical production.

Development of the Housing Register was made in 2008; the development of Population Register is planned - by the end of 2011 and the introduction of Business ID system - by the end of 2010. Interaction with these and other public registers will be set at various stages over five years. The introduction of quality standards in processes and services of statistics was presented in 2008 and even evidence of quality management system ASRK is mentioned as a target by the end of same year.

The interaction between the administrative sources and the register of public sector moves forward slowly. At the end of 1990's the cooperation with the Ministry of Justice was established, in which the register of legal entities was stored, the cooperation with the tax authorities was also established, from which the data were obtained on individual entrepreneurs. At the beginning, the transfer of data was conducted solely in paper form. The information was mainly used to create and update the Business Register ASRK.

In addition to the administrative register of enterprises of the Ministry of Justice and tax information from the Tax Committee of the Ministry of Finance of the Republic of Kazakhstan, ASRK receives from them regular upgrading on certain topics and has partial access to the following administrative registers:

- Shipping Registry of the Ministry of Transport and Communications of Kazakhstan;
- Register of public license;
- Register of Public Finance of Ministry of Finance;
- Register of foreign assets of National Bank;
- Database of pension fund;
- A database of customs declarations of Customs Control Committee of Ministry of Finance in Kazakhstan;
- Register of agricultural units;
- Registers of the municipal building.

4.2 Methods of collecting information in Kazakhstan

Agency on Statistics of the Republic of Kazakhstan carries out the annual development of the basic 1041 and 15,500 detailed statistics indicators on 20 areas (branches) of Statistics (ASRK Strategic Plan, 2009).

Indicators are being developed with annual, semiannual, quarterly, monthly and one-time intervals with varying degrees of details by groups of signs or classifiers. 10 state qualifiers are used, that are relevant to international standards and more than 100 industry classifiers, nomenclatures and guides.

Time period between putting into operation of the main qualifiers in the European Union and in Kazakhstan, is approximately two years. Dates of publication and the granularity of statistics correspond to international practice; much of the data is distributed via the Internet free of charge.

A complete set of statistical information is available on the Internet site of the Agency www.stat.gov.kz, statistical information on the National Census of population - an online resource www.kz2009.kz (Strategic Plan of Agency on Statistics of the Republic of Kazakhstan, 2009).

At the same time, users are not sufficiently informed about the disposal of the Agency's data and the possibilities of expanding the scope or depth of statistical observations.

The National Bank and government agencies involve in the production of national statistics, that realize annually more than 130 surveys, as well as state database and register systems are being led.

The main methods of obtaining data are statistical surveys using statistical forms of legal entities and households, the registration of prices, people interviewing and accounting (register) systems.

The main problems in the data collection are a high burden on respondents due to insufficient use of available administrative data and the complexity of the forms and methodology for primary data for selected groups of indicators. In addition, there is a duplication of collection of similar figures by various government agencies and insufficient use of register systems and sample surveys.

In 2009, by ASRK 204 statistical surveys were realized (in 2008 - 2013), by other public authorities - 80 (in 2008 - 84), also the accounting systems of administrative data are being conducted (state database and register systems).

Problematic aspect is also a significant burden on respondents. Thus, the average workload on the enterprises in 2008 was 8 statistical reports per month (from 4 to 50 forms, depending on the size of the enterprise, region or method of observation), and the time that is taken by an average respondent to fill out reports, varying from 2 to 18 person-days per year (29 person-days in accordance with the Strategic Plan for 2009-2011), depending on the size of the enterprise. In 2009, for the achievement of the indicator "reduction of the burden on respondents" the activities are implemented in corpore: 131 forms of statistical reporting have been modernized; 127 instructions to the forms of statistical reporting have been processed, new

ones have been developed and 1918 methodological instructions have been redesigned (Strategic Plan of Agency on Statistics of the Republic of Kazakhstan, 2009: 3).

These figures exceed 1,5-2 times indicators of foreign statistical offices. Moreover, in foreign countries (Norway, Canada, Australia) at legislative, technological and organizational levels the full use of data of all administrative sources for the production of statistical indicators has been provided, which also contributes to reducing the burden on respondents (reducing the number of reports that must be submitted in the public authorities).

In 2009, 30 statistical forms were introduced into trial operation, which collect data in an information system "electronic statistical reporting" (hereinafter - the IS ESR) conducted in concurrent mode with the local systems. In 2009 8 statistical forms were put into commercial operation, which made a real data collection and processing in IS ESR. During 10 months in 2009 5423 reports through the regional departments of statistics were adopted in electronic form without the use of electronic digital signature (hereinafter - EDS), after the introduction of the EDS the amount of reported enterprises through the Internet resource was 276, the number of reported enterprises through the regional Departments of Statistics - 241.

Technical assistance to Kazakhstan in the framework of the Tacis program began in December 1992, at that time statistical accounting in the country was limited by collection of data that needed to be sent to Moscow. During the different phases of cooperation the considerable progress has achieved.

Let us consider existing statistical registers in Kazakhstan.

4.2.1 Business-Register

Business Register of ASRK occupies a central place in the field of economic statistics and it is an integral part of modern statistical systems. The register was established in 1990s. Information interaction of the statistical register with the information systems of the Ministry of Justice and Tax Committee is realized in a part of the information on the registered legal entities, branches, representative offices, as well as individual entrepreneurs.

Business register covers all registered legal entities and individuals, and it contains data on the main characteristics of these units (legal status, type, type of activity, ownership, organizational form, the number of employees).

ASRK has done substantial work in the planning and work maintenance to improve the quality of statistical business register. This is the best statistical register ASRK.

In spite of this, we must pay attention to three disadvantages: (1) register contains a lot of units that are inactive or non-existent, but marked as active, (2) it does not include any information about the turnover, which would be useful for sample (in register there is an attribute "Turnover", which is updated on the basis of annual reports (1PF, 2MP, 1W) once a year. On the basis of this attribute the dimension of the company on turnover is provided. Thus, in the register there is all the information on turnover in accordance with recommendations on business registers management, (3) it does not indicate the relevant units of large, complex enterprises.

4.2.2 Sampling formation for household surveys/ statistical population register

Within the realization of State program of formation and development of national information infrastructure of Kazakhstan, state database of "individuals" (SDI) was created. SDI data are updated based on information of the Registration Service Committee (RSC) of the law enforcement agency. However, it covers not all the indicators that are necessary for population statistics.

Currently, in Agency on Statistics of the Republic of Kazakhstan the database of the census in 1999 is being used. Updating the database is based on the acts of death and birth that are used for household selective surveys.

Agency on Statistics plans to establish an information system "Register that is based on census", which will be based on data of the latest census data and integrated with SDI data.

4.2.3 Housing Stock Register

Within the realization of the State program of formation and development of national information infrastructure of Kazakhstan, state database "Register of Real Estate" (SDRRE) is being created. Data of SDRRE are updated on the basis of the information of the Registration Service Committee (RSC) of the law enforcement agency. Agency on Statistics of the Republic of Kazakhstan also realizes maintenance of the housing stock register. This register is based on the information gathered during the previous census in 1999 and it is updated annually based on reports from akimats, economic books (on Rural Housing), the data in hard-copy form from the law enforcement agency and on the basis of statistical surveys.

In the new information system for management of the Housing Stock Register the electronic interaction with creating SDRRE is provided. Currently, electronic interaction is not performed because of unavailability of SDRRE.

Thus, the current use of registers in the production of official statistics is still not systematic, not sufficiently reliable, and far from ideal situation. For example, even within ASRK, units producing economic statistics do not use the business register extensively. The main reason for it – is a quite large number of inconsistencies and lack of coverage in the existing registers.

However, the information of microdata on individuals or correlation within households, such as the results of the microdata collecting of Census, should not be directly used by the authorities outside the statistical agency to update the register of natural persons. International standards recommend refraining from upgrading of administrative registers with the help of statistical data based on the assurance of confidentiality. Census belongs to this category of informational data.

Engine for improvement – is the mutual use of registers and the combined actions of the Agency on Statistics and the various authorities that are in charge of the registry to improve the structure of the register and update methods. These efforts, of course, will provide a benefit and the efficiency achievement of the both holders of the register and the Statistical System in whole. To avoid any possible negative public reactions, it is of limiting value, to maintain respectively the confidentiality of data on individuals, enterprises and organizations in the registers.

It is also important that information collected for statistical purposes should not be used to update individual data in administrative registers. Microdata flow can only go in one direction - from administrative registers to statistical registers.

The statistical community has a worldwide reputation of strict adherence to the principles of confidentiality. International recommendations are clear and strict, for example, in guiding principles adopted by the Conference of European statisticians (CES) in June 2006 on access to microdata - "Guiding principles and General Principles of management of statistical confidentiality and microdata access" (UNECE 2006). CES Recommendations for Census 2010 provide with important information (UNECE 2010).

4.2.4 Statistical population accounting (births, deaths, marriages, divorces, migration, population census)

Primary source of information about the population is population census. Census of population – is a process of the collection of demographic, economic and social data, characterizing each inhabitant of the country or territory at certain period of time. The latest censuses were conducted in 1999 and 2009. Information about births, deaths and migratory movements of population are based on statistical data development from a system of registration acts of civil condition and slips of statistical accounting to the papers of arrival (departure). Structure, concepts and classifications for the compilation of population, statistics on fertility and mortality are mostly compatible with international standards recommended by the Conference of European statisticians (1997 and 2006), UNECE, Eurostat, UNFPA, UNICEF and the Department of Statistics of the United Nations Secretariat.

Statistical data on the population assessment are made on the basis of results of the latest population census, to which the number of births and arrived people is added monthly in a given territory, and the number of deaths and left people from the territory is subtracted. The calculations take into account the increase or decrease in population of individual territories as a result of changes in their boundaries, and also changes in urban and rural populations as a result of the administrative-territorial reforms. Current population assessments for the past years are specified on the basis of next census results. The natural population growth is calculated that is equal to the difference between the numbers of births and deaths, migration increase, calculated as the difference between the numbers of arrived and left people, and other demographic calculations.

4.2.4.1 Population census

The first independent national census was carried out in 1999.

Processing of census data in 1999 was realized by eleven scanners located in various parts of the country. Agency on Statistics of the Republic of Kazakhstan was the first in Central Asia, using the methods to speed up and to improve efficiency of the processes of the census. The first results were published during 12 months after the census results. The census results are still being used to conduct monthly and annual population assessments and demographic analysis, and this is the reason to use this structure in the income and expenditure survey of households.

The second population census was carried out in 2009, which was considered in the first chapter.

4.2.4.2 The statistical accounting of the population

In the Republic there is a monthly collection of information, which meets more to international requirements and can fully describe the occurred events. The second copies of the documentary records compiled by registry offices, serve as primary documents of statistical accounting on demographic events of birth, death, marriage and divorce. The number of births includes only those ones who were born alive.

Accounting of migration is realized every month based on the coupons of statistical accounting of arrivals and departures, specifically designed for statistical development in government statistics. Coupons of statistical accounting are compiled during the registration or removal from the register of the population by place of residence along with targeted leaflets of arrival and departure of Registration Service of Justice (citizens of the Republic of Kazakhstan) and Home Affairs (foreigners and stateless people). Data are classified by the region, sex, age, nationality and other characteristics.

Data on the number, the natural and migratory movements of population are issued and published monthly. Population assessments are made as follows:

a) For convenience of calculation the results of the population census move from the date of the census to the 1st of January of the census year;

b) for this purpose during the census the additional information on the number of births, deaths, arrivals and departures is collected and developed in the corresponding period in the context of all the administrative-territorial units, in which the calculation of the total population is realized, separately for urban and rural areas with the sex distribution;

c) all subsequent calculations on population are carried out from the data as of January 1 this year until January 1 next year (for example, on the 1st of fJanuary, 2010 on the basis of data on the 1st of January 2009 and changes in the natural movement and migration of population for 2009 and etc.);

d) The amount of external migration of population outside the country is adjusted on the basis of statistical data and migration services of other countries on the number of people arriving for permanent residence. The need for such amendments is related to the current transparency of the borders between countries;

e) In calculating the population for rural and urban areas changes also are taken into account resulting from the administrative-territorial transformations (ATT): transformations of rural settlements in the urban ones (partially or fully), their inclusion in the urban settlements, as well as the transformation of urban settlements in rural settlements.

Thus, the acts registration of the civil condition in Kazakhstan is a constant, uninterrupted and continuous recording of demographic events (births, deaths, marriages and divorces). In fact, all people have a unique identification number. Everyone in the countryside is registered in the “economic book”. In urban settlements people are also registered. The accuracy of registration of migrants, however, is problematic. It deals with the arrival and departure, as well as international migrants.

4.2.5 Household (labor force, household budget)

The household survey – is the main source for social indicators in Kazakhstan, including employment and unemployment, poverty measurement and gender statistics. Department of Demography and Social Statistics ASRK is responsible for two major household surveys - a survey of labour and income and expenditure survey of households, which have been held since 2001.

4.2.5.1 Labour Force Survey (LFS)

Household survey on employment and unemployment are held on a quarterly basis. The third week of middle month of the quarter is considered to be as the basic one. The observation is financed from the state budget and covers 21,000 households, it is 0, 5% of the households universe.

By the observation all regions (oblasts) of the country are covered. Observation units of the selection are households and people at the age of 15 years and older living in them. The survey results are published in section of regions and districts of the republic. Surveys data are representative at the regional level.

Questionnaire survey of the population covers accounting criteria and the formation of indicators on employment, unemployment and economic inactivity of the population.

Summary survey data are published taking into account sex, age, education level, employment status, economic activity, place of residence, reasons for unemployment.

Concepts and definitions are based on standards and methodological approaches of the International Labour Organization (ILO); it ensures their comparability at the international level.

At the moment there is no need to develop a quarterly survey in monthly one.

Population Census in 1999 allowed to compile a register of households according to which the samples are now realized. Each year, the rotation of households (one-fourth part of their selection) is carried out.

Information on unemployment resulting from a survey of the labor force differs significantly from the data on registered unemployment, which are based on administrative records. However, the labor force survey data are the basis for the official reports about unemployment in Kazakhstan.

The percentage of active respondents is high – in the survey more than 95% of respondents of households is involved. In big cities like Almaty and Astana there is a decrease of the real rate of participation. In particular, in Astana, the level of participation is lower because of the large proportion of non-permanently living labor force employed in the construction of new capital.

Thus, the labor force survey is in conformity with international standards. ASRK is now able to provide objective and comparable information on employment and unemployment in the labor market of the country and its regions.

Labour Force Survey should cover all forms of employment, including employment in the informal sector and informal employment in the sectors of the economy.

Census of 2009 will give an opportunity to update the sampling methods of households in Labour Force Survey.

4.2.5.2 Statistics of value of labor

In statistics of payment and value of labor there is a tracking of such key indicators as an index of real wages, the wage index of professions and positions and the cost of charges on labor force maintenance.

In the statistics of remuneration of labour there is a realization of the collection and development of the data on the size and dynamics of employees' wages of organizations on monthly and quarterly intervals. They cover all main economic activities, including agriculture.

One-time survey of workers' wage was intriduced in certain professions and positions of employees according to State classifier of occupations, based on International Standard Classifier of occupations (ISKO-88).

In the statistics of labor value there is a realization of annual data publication on the value of employers' costs for the maintenance and use of manpower. Currently, however, the data collection takes place only within the structure on the main cost items for valuation calculations.

In the short run it is necessary to develop and construct an index of labor value (LCI) in accordance with European standards. This requires the basic items definition of the cost of the charges on the labor force and the development of methodological tools.

Creating an integrated system of working time indicators, based on criteria and standards of the ILO, will provide in the future with obtaining of indicators on the use of working time on all categories of workers. The definition of the variable components of indicators of working time is required, and their harmonization with international standards, development of information flows and ways to collect the necessary data.

Thus, the introduction of sample surveys of labor force value will allow creating of an information base for subsequent construction and calculation of labor cost index (LCI) according to the standards of the ILO and Eurostat.

Development of methodological bases and criteria for construction of labor cost indexes enables to realize its calculations and to ensure comparability of international counterparts.

4.2.6 Business Statistics

Data of business statistics are formed by the Department of microeconomic statistics ASRK.

The statistical data are currently compiled by kind of economic activity (functional approach). However, the need to gather information about the enterprise is recognized (institutional approach), and it is necessary to make progress to implement the methods of data collection for this purpose.

Generally, data of business statistics are based on statistical reports, sent to enterprises on a monthly, quarterly and annual basis. One of the main statistical indicators is the physical volume index on industry, construction, domestic trade, transport, services, etc.

At the same time, taking into account the new system of planning, oriented on the results, it is necessary to expand coverage, additional detail and the creation of tools for monitoring the strategic plans execution by public authorities.

Current legislation in the field of state statistics, based on the Law of the Republic of Kazakhstan "On State Statistics" dated May 7, 1997, requires the modification in the following areas: ensuring of a clear distinction between the collection of information for statistical and other purposes, providing an access of Agency on Statistics to administrative data (distribution of powers and responsibilities of public authorities), management of responsibility for the submission of initial qualitative information.

The important problem is the lack of trust to official statistical data and users' satisfaction. In comparison with other countries, confidence level to state statistics and the degree of satisfaction with the quality of data in the Republic of Kazakhstan are relatively low. According to the survey results of statistical information users conducted by Agency (annual questionnaire Q-002) in 2009, over 74% of users considered the data of official statistics more reliable more than 75%, 33.2% of them trust completely in the data. Most users - 85.7% of respondents are satisfied with the amount of published information. For comparison, in developed countries (Canada, Australia, Finland, Norway and others), the level of confidence is more than 85% (Strategic Plan of Agency on Statistics of the Republic of Kazakhstan, 2009:3).

Thus, the problematic areas of ASRK activity(weaknesses and shortcomings of the existing system of state statistics) are:

a) further development of the methodology of statistical surveys in accordance with international standards;

b) a significant burden on respondents;

c) lack of the confidence level to official statistical data and users' satisfaction;

d) insufficient use of administrative sources data (interagency cooperation) to develop statistical indicators;

e) weakly integrated statistics into the international statistical space.

Thus, to achieve strategic objectives it is important to solve the following problems:

- Further improvement of statistical methodology;
- Analysis of administrative sources database;
- Mandatory observance by administrative sources with the requirements of the Agency in order of formation and maintenance of databases and the use of statistical classifications;
- Development and integration of information systems of public authorities and Agency;
- Further upgrading of forms of statistical observations (Strategic Plan of Agency on Statistics of the Republic of Kazakhstan, 2009:6).

Chapter 5

5 European experience in establishing of individual population accounting systems

In European countries the considerable experience has been accumulated in the construction of systems of personal accounting of the population. The possibility of international experience using provides certain advantages in the creation and development of such a system in Kazakhstan. In particular, there is the possibility of analyzing the advantages and disadvantages of operating in the systems of other countries, both through the prism of their concepts, and in the part of their practical application.

Creating a system of personal account of the population is primarily related to tendency of authorities to use the mechanisms of operational accounting of citizens residing constantly within a particular state. According to specialists' assessments of the Statistics Bureau of the UN, the systems of population accounting operate in about 60 countries.

5.1 The situation in the statistical system of Europe

Let us consider the history of population registration system in Norway.

After 1946 the population registration system consisted of several hundred local population registration offices, each of them had a population register, as well as the State Service of Register, which was a part of Statistical Service in Norway. This service was a specialized agency that was responsible for registration of the population. Local offices were located, along with parts of the tax service (Vassenden 2007).

During 1960's in the Statistical Service of Norway in addition to the local population registers there was a central electronic register that was implemented. It was assumed that this Central Population Register (CPR) will actually copy the local registers with the help of notices sent by mail from the locations. In the spring in 1964 a new register was created, which was based on the census materials in 1960. Residents of Norway, who were discounted in the census and born (or immigrated into the country) after it, had been assigned personal identification numbers (The first register-based Census in Norway 2011). General information about people

covered by the census (date of birth, name, etc.), had also been copied from the census forms and on punch-cards it had been sent to the local branches of the population register. This procedure had two objectives - control of the completeness of population accounting by local registers and transmission in the local registers PIN (Personal Identification Number), assigned to the inhabitants of this territory. Since then, all the local registers were obliged to send notices about changes denoting a PIN to Statistical Service of Norway.

Operation of the population register was carried out by the Office of the register, which manages also public service of acts recording of civil condition. There were close links with the Department of Population Statistics of Central Bureau of Statistics. For the introduction of the CPR there were two main incentives. One of them was the need to establish Unified System of Personal Identification Numbers (PINs) in Norway. Existence of a central population register covering all residents of the country and all assigned numbers, according to Kore Vassanden, seems a great advantage (Vassenden 2007).

Another motive was to make better use of data obtained during registration of the population, for the development of population statistics.

CPR worked well as a tool for the assignment (to individuals) and distribution of PINs, and PINs in their turn have been used in the structures of social power almost immediately, firstly and mainly, in the registry system of taxation and public insurance. Wider application of personal data for public needs was not considered as a main problem of CPR. Nevertheless, a few years later, the dissemination of key information on microfiche became quite common practice.

Partly society's need in data obtained on the basis of population registration, was satisfied through a network of municipal centers of punched cards, which had already been included in the data processing system for municipal and government institutions.

In early 1970 the Directorate of Taxes allowed to record information on magnetic tape (they called it " Tape Register"), the development process of which was transformed into a parallel to the central population register, and was intended for purposes of taxation, national insurance and other purposes. A few years later most of the initial data for the Central Population Register came from the "Tape Register." It was later integrated with the registry of tax service and renamed into the Joint Registry (Statistics Norway 2005).

All homogeneous information recorded in the registers, which existed in Norway, were checked once a year for uniformity of information and discrepancies were identified.

The era of the database. From a technical point of view, the CPR had been stored and operated in the form of sequential files till 1985 when the register was transformed into a relational database, which was placed at the State computing center. By that time the administrative tasks had become more complex, and the statistics of the population was no longer the main purpose of register (Aurbakken 1999).

Central Population Register in the form of a database was considered to be as a combined system, designed to update the data and meet the needs of society. The problem, however, was that, in fact this system could not cope with any of the above mentioned tasks.

Thus, in middle of 1980's the process of computerization of the local population registration offices began, they were connected on channels to a completely new Central Population

Register, which was established in the Directorate of Taxes. Such a connection had improved the situation regarding the timeliness of data transmission and control possibilities. At the moment, such actions can be seen in Kazakhstan, where the computerization of local authorities of statistics has occurred recently.

According to Kore Vassenden the work of national statistical services in a country with a population register, depends on how well the transfer of personal data is organized to statistical agencies, which are accumulated in the population register system. This information is used for the development of demographic statistics, as well as in other areas (Vassenden 2001).

The current system of transmission of personal data in the Central Statistical Office of Norway was established in 1995. Statistical Service of Norway receives information about the registered population, allowing statisticians from this point to have a database at their disposal that is a copy of the Central Population Register, which is maintained by the Directorate of Taxes (Vassenden 2001).

Nevertheless, the recipients of the data after 1995 passed the phase of adaptation. For example, Central Statistical Office of Norway has continued to work with the old system of update (using the transaction with the entered information) before the creation of a new "system of direct recipient" in 2004. In addition, during this period the new organizations have been added to the list of recipients of the data. It is now really important. (Vassenden 2007).

In essence, this data transmission system is working well in terms of the Central Statistical Office of Norway. The high level of satisfaction with this model of relationships (at least in the Central Statistical Office of Norway) and the fact that, apparently, very few countries use this model, is the sole motive for the submission of this system to other countries.

The basic principle that was laid in the construction of the new CPR, there was a clear separation of the input functions and results. This principle meant that the database of CPR should only be a tool to update, while the separate registers intended for distribution and supported by commercial distributors, should serve the public interests.

To the number of major users of data provided by distributor, we currently include:

- Police;
- Hospitals;
- The authorities that are responsible for school enrollment;
- Offices of Public Security Service;
- Banks;
- Insurance companies;
- Employers;
- Altlnn (reporting system of enterprises);
- Centre of Registers, the Bronnoysund;
- Agencies of business information;
- Office that forms the electoral lists;
- Heads of municipal treasuries;
- National Fund of Education Crediting;
- Employment Service;
- Licensing Department of TV and radio Broadcasting of Norway;

- Office of Public Roads: Register of Driving License;
- Agency for the collection of debts;
- medical register of births;
- Scientists;
- Services for Public Opinion Studies, etc.

In the process of updating a database (in the Central Statistical Office of Norway - a database of population) the transactions in respect of births and immigrants who firstly arrived in the country (as well as certain single transactions of this type) lead to the creation of new records. Other transactions only change the meaning of one or more variables in the existing records. Many of the updating procedures are very simple and require a small number of conditions.

During the past 10 years in the Central Statistical Office of Norway, of course, there have been some changes, including the rapid process of technological development.

One example of the changes that accompany the creation of a database on population, is the installation of relational database management systems Oracle database in the department of population statistics of the Central Statistical Office. This choice was not random, such a tool for managing databases like Oracle, is a considerable advantage when updates are made frequently.

Let us consider the situation in other countries, particularly in the Scandinavian countries. Sweden is a country with a similar system.

Sweden has evolved; this way is similar to the one that was in Norway: in the second half of 1990, first there was a modernization of the system of population registration, and then the system has been updated within the national statistical service. Like the Central Statistical Office of Norway, the Swedish statistical service before beginning of the third millennium, has moved from working with a multi-user host computer to a new technological platform (Wilen et al. 2002).

The main principle in data transferring from a register in the national statistical service in Sweden is the same as in Norway, but on a practical level, there are numerous differences that are found. Perhaps the most obvious of them, with the view to Norwegian experts - is a more complex database structure developed in the statistical service of Sweden to work with data on the population register.

Nevertheless, even if Norway and Sweden present their system in different ways, in fact, they have a lot in common, at least in the international context.

Netherlands. In accordance with the legislation, in the Netherlands there is no central population register. Statistics of the Dutch population, which is developed by statistics service of the Netherlands (StatNeth), is based on automated municipal population registers. This decentralized system of registration of the population is known by the acronym GBA.

Statistical data on demographic developments and migration on a daily basis (in electronic form) are sent to the municipalities in Statistical Service of the Netherlands. Once a year, municipalities send compilation of information about the entire population of the country to the statistical service. This selection is a source for determining the size and composition of the population on January 1.

In practice, it is not possible, that all municipalities at the same time can make this selection. As a result - some residents are in the selection of more than one municipality, while others are not included in it at all. In order to ensure full coverage of the population and to prevent repeated records, the statistical office of the Netherlands reconstructs the situation on the first day of the year. This is done using data on births, deaths and migration.

Data on demographic events could theoretically be combined with data on the state of the entire population on the 1st of January. Thus, the modern register can be obtained containing data about the current state of the whole population of the Netherlands.

Hence we can see that the Nordic countries have the Central Population Register (CPR) with a unique PIN (personal identification number). The register contains basic information on all people (sex, age, military status, citizenship, etc.). (UNECE 2007).

5.2 Structure and functions of personal accounting systems of European countries

The Central Population Register (CPR) of the Nordic countries with a unique PIN (personal identification number). CPR contains basic information on all persons (sex, age, military status, citizenship, etc.).

Systems of a personal account of the population are the most important element of state information systems in many countries. Their existence is conditioned by the need of the state in possession of relevant information about the population living in the country, taking into account its territorial location. Moreover, in several countries (particularly in Finland) the information systems are implemented, including the interrelated set of so-called basic registers about such basic elements of the state such as (UNECE 2007):

- citizens;
- economic entities (companies, corporations, foundations, etc.);
- buildings;
- land resources.

The main purpose of the personal accounting systems of population is to meet society's needs in basic information about the population:

- personally identifiable information (name, personal identification number, nationality, etc.);
- family relationships (marital relationship, children, etc.);
- place of residence (the official residence, place of temporary registration, etc.).To the basic functions of personal accounting systems in foreign countries we can refer:
- drawing up of statistical accounts;
- provision of information for authorities for formation of various program, budget, for the purposes of taxation, social security and welfare, health planning, education, pensions;
- identification;
- compilation of voters' lists;
- compilation of recruits' lists for military service;

- inquiry by law enforcement services, and judicial authority, etc.;
- population service in the issuance of various documents and certificates.

In this regard, the personal accounting systems of the population are some of the basic registers and important means of the realization of rights and responsibilities of citizens. Registration of the citizen in the personal accounting system of the population and place of this registration are essential for implementing of many rights and responsibilities, such as the right on social benefits for children, tax payment, etc.

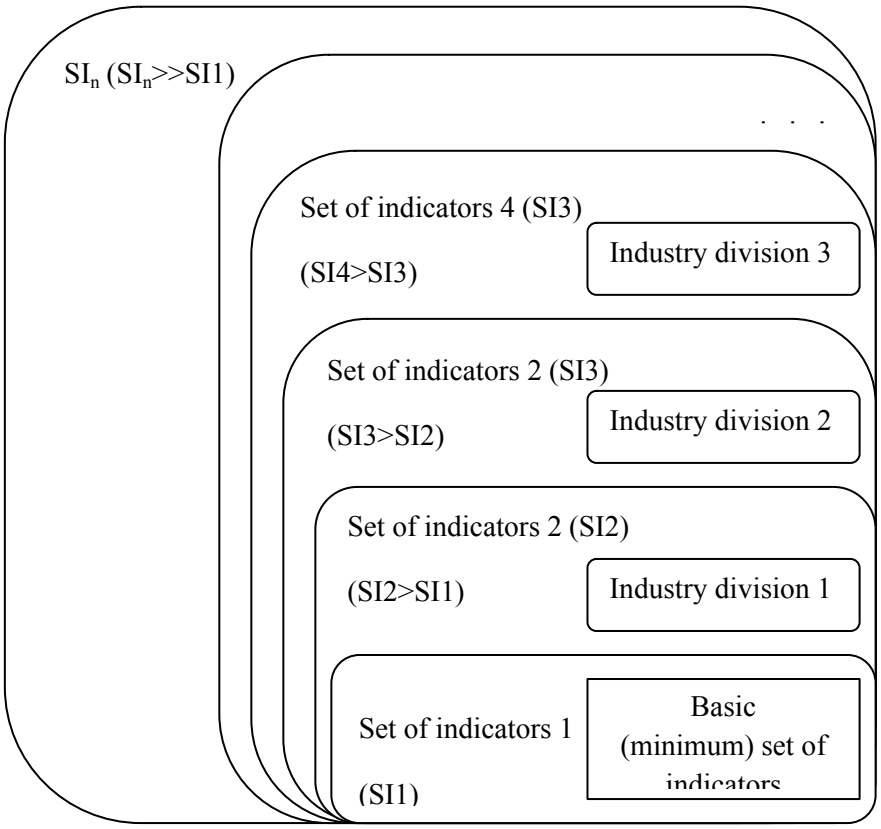
The implementation of such personal accounting systems can lead to a significant economic effect. Thus, it is expected that full-scale implementation of the project "E-Vital» in the USA will give annual savings of millions of dollars by means of detecting the fraud cases, as well as in connection with the reduction in the number of erroneous social benefits (L. Yukhnevich et al. 2005).

The use of personal accounting systems of the population saves citizens from the necessity of repeatedly informing of the public authorities about the occurrence of certain events in their lives, such as change of place of residence. It is enough to inform the state once - and the availability of the necessary information in the system will be sufficient to realize by the state a large number of functions relating to citizens.

5.2.1 The data contained in the personal accounting systems of the population

List of data on citizens in the personal accounting systems depends on the availability of accurate and timely information about changes included in the registry of features. In this connection, many systems of personal accounting contain a reasonable minimum of necessary and timely indicators that are updated, and abilities to collect additional information, that are expanded gradually as the branch-wise sub-systems establish, which contain the personal information on other aspects as well as in implementing of interagency information exchange procedures.

Fig. 6 - Expanding the set of indicators of personal civil registration as the integration of additional branch offices



Source: Statistics Finland

In the personal accounting systems of population of different countries in particular there is a recording of the following information elements (in varying quantities and combinations):

- a unique identification number;
- current and previous surname, first name and patronymic;
- date of birth;
- place of birth;
- place of residence (current and past) with full address;
- civil status;
- name and surname of parents, foster parents, spouse (s), children (adopted children), guardians of children;
- unique identification numbers of parents, children and spouses;
- nationality and citizenship;
- for immigrants - the country of arrival;
- native language;
- occupation;
- country of residence and date of departure if a citizen is abroad for permanent residence;
- the date of emigration or death;

- place of death;
- numbers of birth and death certificates;
- place of burial for the dead.

5.2.2 Unique identification numbers of citizens

Practically all the projects of the creation of national population accounting systems are based on the usage of unique identification numbers assigned to every citizen.

In most countries the main component of the personal accounting systems is the fact that each person has a unique identification number that is assigned, for example, at the time of birth registration. It contains in coded form the information about the individual and nonvarying attributes of the concrete person (date of birth, sex, place of birth, order of registration on a particular day). Identification number is written down and used in all documents, obtained by a person throughout his life; it allows to provide for the data integration about an individual from various information systems.

Unique identification number is used in the spheres of taxation, state insurance, in the educational system, in the issuance of driver's license and civil passports. The numder serves as a basis for providing with integrated services for citizens using the principles of "electronic government". In January 1, 2012 Kazakhstan also suggests to use the individual identification numbers.

5.2.3 Reasons for use. Advantages and Risks

With increasing of transactions volumes between country and citizens (a trend is increasingly more typical for developed countries) it is more important to invent the accurate means of identifying of social services users. In the complexity conditions the assignment of unique identifier to every citizen within the jurisdiction of a particular state greatly simplifies the control and implementation of regulating functions by public authorities. But the advantages in terms of management efficiency can be achieved both by introducing a multi-purpose personal identification numbers, and highly specialized ones. Although individual identification numbers preceded the emergence of automated data processing (for example, registries of the population in many countries existed long before the emergence of automated data processing), application of the data processing technologies by public authorities is made more profitable for the authorities to use individual identification numbers. Thus, the identification numbers are regarded as beneficial and economical means of improving the management efficiency.

The system of individual identification numbers provides with accurate identification of individuals and the correctness of the personal information which is stored in the computer systems. Firstly, the personal identification number can be considered as a tool helping to avoid complications in case of identical names. For example, the names and surnames are absolutely insufficient for accurate identification of individuals, especially in cases where the identification has financial consequences (the right on various forms of assistance, checklists of unreliable debtors, etc.) or social consequences (for example, police files).

Secondly, the personal identification number can provide the authorities with reliable information that is stored in the administrative register, filing cabinets, or databases. The fact

that information about the person is contained in several databases for different administrative purposes, allows authorities to verify the accuracy of the given information, comparing it with information from other databases. Meanwhile universal identifier significantly simplifies the process of editing and verification of information.

Introduction or use of personal identification numbers in many countries gave rise to discussions about the problems of data protection. In a number of countries in this regard the legislative acts regulating the protection of data have been accepted.

There is a risk that the personal identification numbers, along with automated data processing may be a factor in limiting personal freedom, in particular, reducing the costs of control of each individual citizen's actions. In addition, there are some other risks:

Personal identification number may contain the coded information that is known only to officials and it is provided for them and it may be accessible only by machine readable means.

Personal identification number may include purely personal information inherently (for example, some people do not want to have a number that contains information about that they are divorced, or that they are over 50, 60, etc.).

In most countries, using a system of identification numbers, in the numbers in one form or another there is some information on birth date, gender of the citizen. In addition, in the numbers a check digit is often used (sometimes - the figures), which is calculated in accordance with certain algorithms, and serves mainly to confirm the correctness of information in data transmission. In some countries, the identification number also includes information about place of birth.

It should be noted that in many countries there are clear normative documents that describe the scope of use of a unique identifier. In particular, it provides with the recommendations for citizens and agencies to protect the numbers from unauthorized use. In this case, the number itself is not used as a tool for personal identification. For this purpose, additional mechanisms are used.

European Data Protection Convention establishes the basic principles regulating the use of personal identification numbers (as the individual identification numbers are closely related to the processing of personal data). National laws often contain special standards relating to identifiers. In addition to legislation on data protection, normative documents on the basis of which the personal identification numbers are entered and may also include certain legal protections regulating their use, and they may determine the authorities of the persons and bodies for their application. In more detail the experience of using the identification numbers in specific countries is considered in the relevant sections on the experience of these countries.

5.2.4 Personal identification cards.

To the identification system of personal data the practice of using of personal identification cards is closely related.

In one form or another one the identification cards are used in many countries around the world, but the types of cards, their content and functions differ significantly from case to case. About 100 countries have formal compulsory identification cards, which are used for different purposes.

In different countries, there is the widespread use of special cards in the health and welfare. Most of the countries, where there are no universal state cards, have medical cards or social security cards or traditional paper-based identification documents.

A key element of the cards is usually a number. It is used as an administrative mechanism for different purposes. In many countries the number – is a common means that provides access to information about activity of the owner's card in various spheres of life.

In some countries, identification documents are replaced by plastic cards, which are more durable and reliable in terms of protection against forgery. Changing the form of cards is always accompanied by a change in the nature and content of the information structure of the document.

The different purposes of identity cards introduction are distinguished (Identity Cards Act 2006):

- assistance in the fight against crime (United Kingdom);
- the fight against tax evasion (Australia);
- realization of the right on social security (New Zealand);
- a means of improving efficiency of public administration;
- Key elements to simplify border control procedures;
- Integrated communication means between citizens and government.

In recent years, identification cards have begun to connect with recording system. When the magnetic tapes and microprocessor technologies appeared, and technologies for electronic government were developed, these cards also became a means of access to public services. Thus, the cards have become an association means of identification and services.

We can distinguish three different systems of identification cards:

1. Selected papers;
2. Registration system;
3. Integrated system.

Individual documents are produced in the primitive conditions or circumstances of the threat of unexpected economic and political changes. Often in areas where the power is exercised by military leadership or emergency laws act, the local identification cards are put into operation, which are essentially internal passports. Their main goal – is establishing the right of residence in a certain area.

Most identification systems include an auxiliary registry, in which there is the same parallel information that is put on the card, as well as additional information.

Practically all cards systems that have been introduced over the past 10 years are the integrated systems. They are created in such a way as to provide a basis for general public management. As a result, the card number has become the state registration number, which is used as a general identifier by many public institutions.

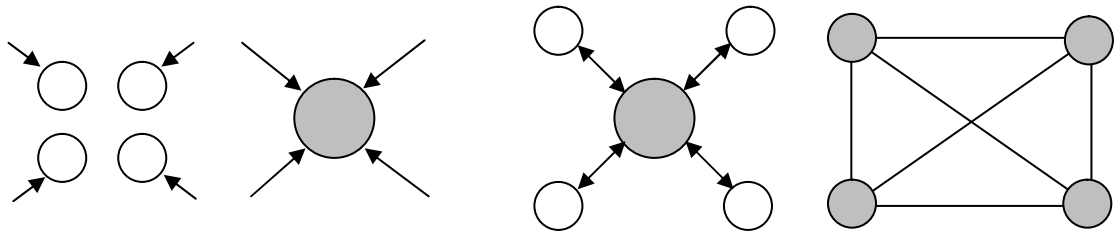
Most cards that are used in developed countries contain the following information: name, sex, birth date, and initial data of the card issuance, card expiry date, card number, and signature.

5.2.5 Architecture of the personal accounting systems of the population

Almost in all countries that have implemented projects to create the personal accounting systems of the population, the system is an interconnected combination of construction approaches on centralized and distributed principle.

Central data warehouses have certain connections with the local population registers and information systems of other agencies, such as tax services, services of social insurance and pension provision, statistical services, services of a land cadastre, property rights registration service, the Ministry of Home Affairs, the Ministry of Defence, Ministry of Emergency Situations, electoral commissions, etc.

Fig. 7 - ***Structural classification of a personal account of population***[4]



independent centralized decentralized distributed

The official body which is responsible for the centralized management of personal accounting system is usually the central government agency. In different countries, this may be the Ministry of Home Affairs, Ministry of Justice, the National Civil Registration Management, Ministry of Finance, tax authorities and other authorities that solve the specific application tasks.

5.2.6 Regulatory control of systems

As it is shown by international experience, the establishment and effective functioning of personal accounting system is possible on the basis of the law, which establishes the system structure, functions and powers of official bodies charged with its administration, the duties of official person and it defines the united information, volume, order and procedures of interagency information exchange , it also establishes the obligation for the population to report necessary information for the maintenance of the register up to date, as well as the official bodies' obligations on personal data confidentiality and responsibility for its non-observance.

Establishment and operation of personal accounting systems of population, the organization order of access to personal data and the use of personal data are regulated by law, they require special regulatory legal acts and adjustments of current acts (especially in the part of personal information, protection of its privacy). Provision of access to personal data of the population through state information systems requires the development of special methodological and technical standards. For example, the legal guarantees are necessary that the highly specialized

[4] This figure "independent" structure actually means the absence of the system.

personal identification numbers will not be used outside the boundaries of the planned application, which could lead to their general use in all spheres without adequate public discussion and adequate legislative base for the use of universal identifiers (restrictions in the use of specialized personal identification numbers are needed in only certain area).

5.3 Structure of Registers

This section examines the experience of construction and operation of personal accounting systems of the population in individual countries. In particular, special attention is paid to the spectrum of personal information included the population register, and to the principles of assignment and the structure of personal identification numbers.

Sweden. Since 1991, the function of accounting and registration of the Swedish population has been transferred to Revenue (National Tax Board), which is part of the Ministry of Finance and has 10 regional offices (regional tax authorities) and 116 local tax offices (previously the population accounting was conducted by Swedish church).

Procedure of citizens' registration is regulated by the following legal and regulatory base (The Swedish Tax Administration 1998):

- Population Registration Act, accepted in 1991. It contains a definition of "population registration"; the procedure of its conducting, the powers and functions of responsible authorities, citizens' responsibility for providing information. It establishes the list and the appointment of population registers, defines the structure and field of register records, as well as the organization order of access to interested organizations and private individuals. And it also regulates the handling of personal data and confidential information of a personal nature.
- Notification Register Act, adopted in 1995.

Registration of the population is also regulated by the laws of marriage and name change. Access to local registers is provided for all citizens according to the Law on Freedom of the Press and Law on the Personal Information.

Population Register of Sweden includes (The Swedish Tax Administration 1998):

1. Local population registers.

They are served by local tax offices and provide the population accounting living within a certain territory. It includes the following information:

- the unique identification number;
- name and surname;
- the place of residence - full address (municipality, ward, street, house, etc.);
- the civil status;
- the name and surname of parents, foster parents, spouse, children (adopted children), guardians of children;
- the place of birth;
- nationality and citizenship;
- for immigrants - the country of arrival;
- the date of emigration or death;
- the place of burial for the dead.

2. Central inquiry registers.

They are served by Revenue, and they provide the unique identification numbers assigned to citizens at local tax offices. It contains the following information:

- the unique identification number;
- name and surname;
- tax office registration of the citizen.

3. Register of notice.

It is served by Revenue and brings together all the information from local population registers to provide access to relevant data concerned agencies, organizations and citizens. It is updated on a daily basis through the export and data loading from local registers. It provides the ability to search any information and the formation of various samples of people according to certain criteria.

For personal identification in Sweden the official documents containing a civil number (passport, driver's license, voluntary ID-card or electronic ID-card) may be applied as well as a paper certificate issued by tax authorities.

Unique identification number is issued to a newborn in his/her registration in the local register, as well as in the case of acquiring the citizenship by an immigrant. Unique identification number of citizens is used in tax spheres, national insurance, education, issuing of driver's licenses and civil passports.

In Sweden, currently used form of the unique identification number of citizens was approved in 1967 (Swedish Citizen's Codes 2000). Number consists of ten figures:

- the first two - year of birth;
- the second two - month of birth;
- the following two - the day of birth;
- the following three figures - the number of birth;
- the last figure – control one.

Number of birth in Sweden is assigned according to a certain pattern. It represents a number from 001 to 999 (odd- for males, even- for women), in a random way it is generated. Number is used to provide separate accounting of citizens who were born in one day. Between the date of birth and number of newborn there is a "dash", which is replaced by a "plus" to achieve a one hundred years by citizen. The control figure is calculated according to a specific algorithm based on the full birth date and birth numbers, and it is used to check number compliance in order to avoid errors in its transmission. Let us consider the application of the algorithm for calculating of the control figure by example:

Let the citizen (male) was born in August 23, 1964, his randomly generated number of birth - 323 (odd, because the citizen - man). Unique identification number (without the control figure) has in such a case the following form:

6 4	0 8	2 3	3 2 3

To calculate the control figure the first digit number is multiplied by 2, the second – by 1, the third - by 2, the fourth – by 1, etc.:

6 4	0 8	2 3	3 2 3

2 1	2 1	2 1	2 1 2
12 4	0 8	4 3	6 2 6

Figures of the result are summed up (12 is counted as 1+2):

$$1+ 2 +4+ 0+ 8+ 4+ 3+ 6+ 2+ 6 = 36$$

Figure of units digit (in this case it is 6) is subtracted from 10:

$$10 - 6 = 4$$

The received figure is the control one, i.e., full identification number becomes: 640823-3234.

To unique identification number in the register the additional two figures are assigned denoting the century of the birth. These numbers are used only for official purposes in the transmission of information.

Local tax offices maintain registers of population living in the territory under the authority of each individual office, and they are responsible for the collection, check of correctness and introduction to the registers of relevant information. The structure of local register may include additional information on the decision of the local tax office. Information in the local tax offices is provided directly by the citizen, government bodies, institutions (hospitals, etc.). Local registers maintain accounting of changes of all fields of the register records. All incoming information is initially recorded and counted in a special journal, and daily carried into the local register. Registers are integrated with the cadastres of addresses and properties that are supported by the postal service and the service of cadastres (National Land Survey).

Access to local registers is provided to all citizens under the Law on Freedom of the Press and the Personal Information Law. The procedure for obtaining information from the Register is regulated by the conditions of the made contracts between the State tax administration and consumers. Access to the register is available for a fee with the exception of cases provided by standard acts of the Government.

Possible forms of access organization to the Register of notification:

- in the case of conducting by the organization or authority's own register that contains information from the population register, it is integrated with the Register of notification and updating of this information is carried out in an automated way on a regular basis as changes are made;
- the possibility of updating information on population by special request;
- terminal access directly to the Register itself, providing an opportunity to work directly with it (the search, samples formation, etc.);
- the possibility of access organization to data of the Register from applied applications and information systems.

The main users of the register are Statistics of Sweden, The National Police Board, The National Social Insurance Board, The National Service Administration, The National Land Survey, The National Road Administration, The Swedish Immigration Board, as well as individual municipalities.

To gain access to register data the authorization procedure is held. There are the following authorization levels: system administrator, director of the tax office, office guidance, performers

and other users. Organization of access to the system is realized via a special card of authorization, containing the changed access code.

Ordinary users can have an access through special terminals to information on the surname, name and address of the registered citizens. If it is necessary to get the additional information it will be required to treat to employees of tax offices. All changes in the local registers and electronic magazine are written in a separate transactional protocol to control the actions of users. At the end of each working day the relavant protocol and an electronic journal are copied on the data medium and placed in a special locked room protected from fire and unauthorized access (so that in case of failures of the electronic system there is a possibility to recover lost data of the register).

Finland. The personal accounting system of the population in Finland is considered to be as one of the most progressive one. As a result of a long evolutionary process, the system has been significantly improved. At the same time there is a continuation of the active work to improve the system efficiency, to reduce costs on maintenance of its operation, to improve the quality of the contained information and provided services. The personal accounting system of population in Finland has several fundamental principles:

- protection of personal data;
- rational maintenance of system;
- wide spectrum of data application contained in the system;
- co-operation of government bodies and municipal authorities;
- use of information technologies.

Population accounting in Finland is conducted by the Population Register Centre. The Centre was founded in 1969 as an independent unit of Ministry of Home Affairs and it currently includes 37 regional offices that are responsible for information collecting and updating of the central population register (Population Register Centre, Finland 2002). The Centre is also responsible for the formation and support of Population Information System. The system of population registration was transferred to the Information Technologies and it became the centralized one in the early 70's. Since 80’s the relevant information system has included data about the objects of housing and non-housing stock. Single register, formed within the system, is based on the usage of 60 local registers (Statistic Finland 2004).

A relatively small proportion of the population and the high level of technology allowed to create a system of registers in Finland that made it possible to obtain the necessary data in real time mode. Due to the openness of a central database for magistrates in the places, the presence of a permanent access and feedback, the magistrate, as well as any interested person or agency can receive the basic information about a citizen in any region of the country. In this system the Population Register Centre collects and systematizes information, the magistrate, having a sufficient degree of autonomy from central government bodies, corrects and complements the single database and he is also its main user.

The regulatory legal basis of the personal accounting system of the population in Finland includes (Statistic Finland 2010):

- Population Information Act, adopted in 1993 (Population Structure, 2009).

- Personal Data Act, adopted in 1999 and prohibited to enter the information in a registration system that might impair to the individual. This includes information about racial or ethnic origin, political or religious beliefs, membership of the trade union associations and societies, commission of crimes, health status, sexual orientation (Personal Data Act (523/1999)).

The information system contains a single register with information about citizens, persons who temporarily reside in the country, buildings, installations and other objects of immovable property and their owners. Contained information in the system about the population are registered and used by authorities in the identification and statistical purposes.

Information about citizens, contained in the register, includes:

- the unique identification number;
- present and previous surname, name, patronymic;
- date of birth;
- place of birth (magistrate);
- surname, name and patronymic of spouse, children, parents;
- place of residence (current and past);
- nationality;
- native language;
- occupation;
- place of work;
- the date of death.

Information about places of residence:

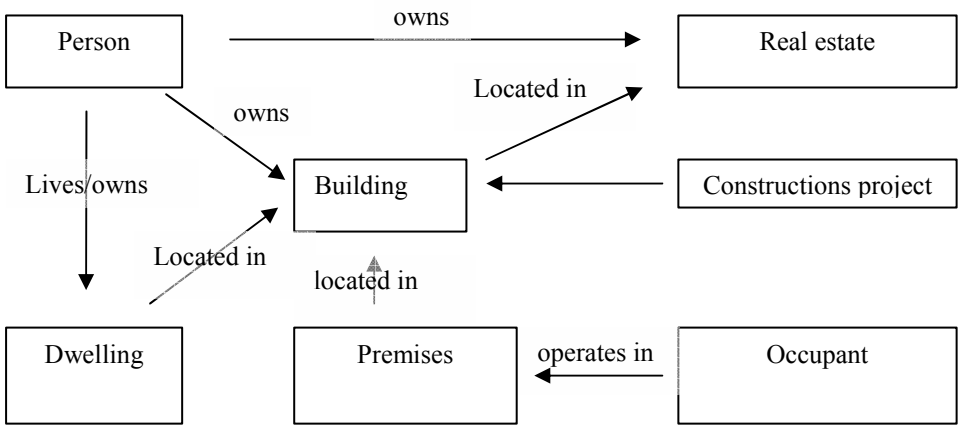
- address of the apartment;
- type of ownership (rent, etc.);
- total area;• residential area;
- number of rooms and type of kitchen;
- engineering services.

Buildings and facilities:

- address;
- owner;
- date of construction (building);
- purposes of use;
- total area;
- residential area;
- engineering services;
- heating system;
- given permissions on the use of the building.

The relationship of data of different registers can be demonstrated by the following block diagram (Fig. 8):

Fig. 8- Data units of the population information system and their connections



Source: Population Register Centre, Finland (2002)

The information in the appropriate system is provided by citizens and organizations. Citizens in accordance with the adopted legislation are only responsible for providing information in case of changing their place of residence. Institutions in the health sector are responsible for providing information about the facts of birth and death, the courts – about the cases of divorce, the establishment of guardianship or adoption, congregations - about marriages, the names of newborns, magistrates - about changes of the names, Immigration administration - citizenship, housing inspections - about objects of housing and non-housing stock, and real estate services - the status of their use.

Unique identification code was adopted in 1964 under the social insurance system (Kajantie Mira et al. 2006). Unique identification code of a citizen of Finland consists of 10 figures:

- The first two figures - the day of birth;
- The second two - month of birth;
- The third two - year of birth;
- The following three figures - the individual code of the citizen;
- The last figure is a control one.

For personal identification in Finland, except ID-cards, the passports, driving licenses, sometimes - social security cards with photo are used (such as banks recognize these cards as identity cards).

In addition to public institutions the main users of the information system of population registration are currently: the citizens, institutions and research organizations, bank and credit institutions, insurance companies, companies engaged in direct marketing, etc.

France. In France, the registration of the population is conducted by State Institute of Statistics and Economic Research (INSEE-SISER) in 1982. The Institute is maintaining a national identification list of the individuals (repertoire national d'identification des personnes physiques - RNIPP) using an automated accounting system, that has existed since 1971 and has provided storage of data on citizens from the 1891 year of birth. The citizens are liable to accounting who were born in the territory of metropolitan country and overseas departments (French Guiana, etc.), as well as children of French citizens that were born abroad.

For every citizen the accounting is realized on the following fields:

- registration personal number (numero d'inscription au repertoire - NIR);
- surname, name, patronymic;
- sex;
- date and place of birth;
- date and place of death;
- numbers of birth and death certificates.
- unique identification number consists of 13 figures:
- the first figure – the sex;
- the following two figures - the year of birth;
- the following two figures – the month of birth;
- the following five figures or characters indicate the place of birth;
- the following three figures - serial number that allows to provide accounting of citizens who were born in one place at one time.

Additionally two figures are used, that are determined in accordance with the methods.

For personal identification in France the national passports and national ID-cards are used (for foreigners – permission on residence or work).

Information is provided for the regional offices of the Institute by authorities, registering the acts of births and other acts of civil status, as well as by migration service. Except the cases that are provided by law, registration individual number can not be used to search the people. According to the processing results of incoming information the formation of a common population register is provided. Relevant register is available to agencies under the existing legal basis. Confidentiality of personal data, placed in the list, is controlled by the National Commission on Informatics and superior bodies.

Lithuania. In Lithuania, the register of the population has begun to be carried out since 1992. (Lithuanian statistical office 2010). In 1999 register existed in the form of a centralized database. At the present time there are the registers of the regional level, in particular, the creation of local registers began from major cities such as Kaunas and Shaulyai. It is assumed that regional registers should contain the information of the central register and share data with it.

Since 2000, the population accounting in Lithuania was given to the created office on registration of the population that is composed of Ministry of Home Affairs. Office on Population Registration includes regional services that are responsible for administration of the Population Register on the places.

Population Register includes information about:

- citizens of Lithuania;
- citizens of other countries and persons residing in Lithuania without citizenship.
- information about the citizen, that is placed in the register, includes:
- unique identification number;
- surname, name, patronymic;
- sex;
- date of birth;

- citizenship;
- place of birth;
- place of residence and date of settlement;
- country of residence and date of departure if a citizen is abroad for permanent residence;
- marital status and date of its change;
- the date of death;
- unique numbers of parents, children and spouses or other personal data in the case of number absence;
- nationality (information about nationality is placed in the Population Register only with the consent of the person being registered).

The data that are included in the population register are processed and stored in a single database. The information that is included in the register is formed by the Migration Department, Ministry of Home Affairs, services that provide population accounting on the place of abode, as well as by services that provide registration of acts of the changes in marital status. Relevant data are stored in profile information systems and daily transferred in the Population Register. Also the integration of profile information systems and register is assumed in order to organize automated updating of records in case of changes of personal data. At present the database contains about 3 million records. Controlling of the classifiers of the database and its administration are carried out at the central level.

Currently in Lithuania the register data are available to the following authorities - the Department of Statistics of Government, Service of State Land Cadastre and Register, Ministry of Defense, the State Fund of Social Insurance, State Tax Inspectorate, Department of Information Technologies and Communications of the Government, the Central Mortgage Institute, Kaunas district court, National Bureau on Organ Transplantation, as well as municipalities and enterprises.

Unique identification number of registered person is used in identification documents, as well as for the interconnections organization between state information systems and registers. In Lithuania, the personal number includes 11 figures:

- the first one indicates sex and century of birth;
- the following two - year of birth;
- the following two - month of birth;
- the following two - the day of birth;
- the following three - the number of birth for citizens who were born in one day;
- the last figure fulfils the control function and it is calculated on a specific algorithm.

Norway. Each inhabitant of Norway is assigned a personal identification number under the rules of law “On the population registry”. Personal identification number consists of 11 characters:

- the first two numbers - the day of birth;
- the following two numbers - the month of birth;
- the following two numbers - the year of birth;

- the following three numbers distinguish the persons who were born in one and the same day;
- the ninth number - sexual identity (even - female, odd - male) the last two numbers – control ones.

Besides the use in the population registry, personal identification numbers are used in some other spheres of public administration, which are needed in the identification of citizens, such as social security and taxation.

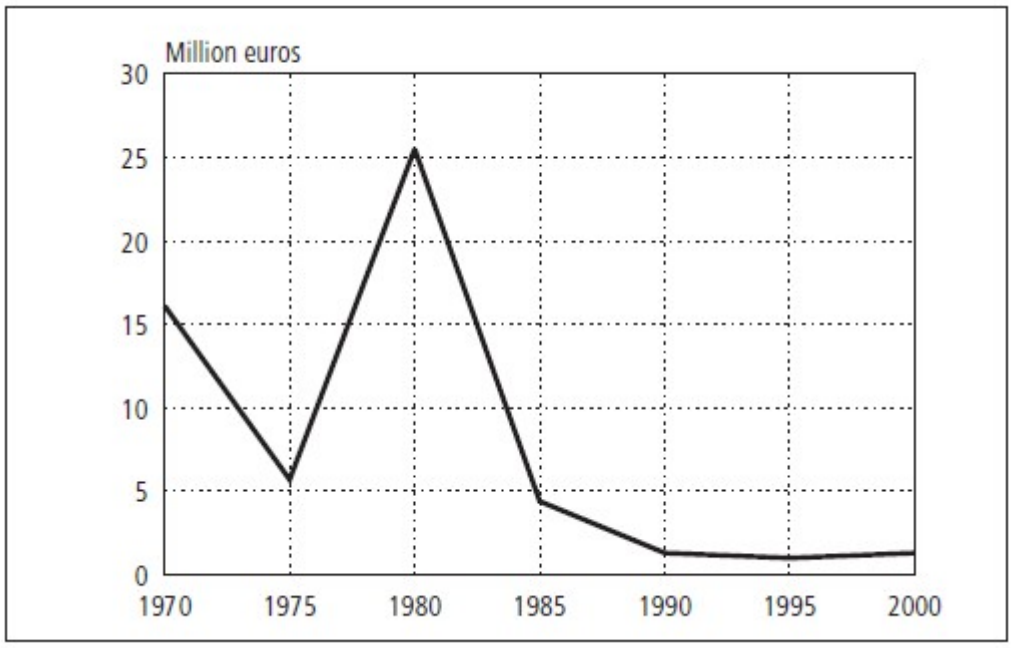
The use of personal identification numbers as a means of identification is partially extended on the private sector, particularly on banking and insurance. Generally, for personal identification in Norway the passport, driving license, military ID-card, bank cards, ID-card of post services, travel documents for immigrants and ID-cards for refugees are being used.

Findings. As we can see the data of population registers are used for different purposes, for example, to obtain personal information about the population and composition of the administrative-territorial units, to make the register of votes, military service, etc. In some countries, population registers are maintained in small centers of population (administrative-territorial units) in the form of lists or cards of individuals, household, families that are automated collection of data on the population. For transmission, storage, processing of data, of course, the computer is used. Population register is conducted in the Ministry of Home Affairs, Justice and the national statistical services. Access to the register of the population and the confidentiality of individual data are regulated by law. Providing information in the registers of the population is the responsibility of citizens.

A feature of this type of population registers is to store and regularly update the personal data by assigning the unique identification number to each inhabitant; it includes the code, sex, date of birth, place of birth. All changes are made on the basis of documents such as identity cards.

We also would like to note that the greatest effect of population registers is achieved by a combination of registers, population censuses and other special observations. Registers are easier and cheaper to operate for accounting by collecting of information about the population (you can look at the example of Finland, see Figure 9), for enhancing of their authority, but basing on the observation, census and special investigations we can obtain additional information, which is not registered in the registers, and etc. Not all themes can be explored on the basis of the registers. In this regard, the use of monitoring register is necessary with a sample survey. In the right organization the statistical data selection on the accuracy is not inferior to the census data, so we need help to find opportunities for practical implementation of selective methods of statistical observation of demographic processes. It is also necessary to conduct sample surveys of demographic processes at the present time due to the fact that the transition to a market economy evokes several new negative changes in the demographic situation in the republic and to investigate, evaluate them only on a selective basis, taking into account the specific interests of modern society.

Fig. 9 - Costs of censuses 1970-2000 in Finland (million euros)



Source: Population statistics Finland

Nevertheless, at least for the statistical service of Norway, it is impossible to return to the previous system.

Perhaps this conclusion is the best feature of the existing system of data transmission (Vassenden 2007).

Chapter 6

6 Creating of a logical model of a population register system in Kazakhstan

6.1 Description of the population register based on population census

In general, the possibilities of statistical accounting in Kazakhstan can be evaluated as good ones. Despite the lack of systematic control, the quality is, apparently, in most cases satisfactory. However, there are strong and weak points.

The positive results include high coverage level of statistics that is usually carried out within the national statistical system. The modern system of statistical classifications has neen accepted and largely implemented. To the strong points we can refer high percentage of active respondents in the survey. This is especially important for statistical accounting of labor resources and income and expenses of households. In general, the economic statistics has the good quality, though there are some exceptions. The living conditions of population are adequately described. To the positive points we can refer many good publications. For dissemination of information the well-designed Web-site is used. There is an absolutely new library that will be very useful to many consumers. Apparently, the Tacis projects contributed significantly to this progress and enhancement of the national statistical system. These projects have had a particularly positive impact on the data dissemination system and development of sample surveys.

The negative aspects include low opportunities at the national level. Now the organization work depends largely on a few key experts in each sphere.

To the weak points in specific spheres we can refer the following:

1. Register of enterprises must be cleaned from nonfunctional enterprises. To do this it is necessary to use the annual questionnaires of local statistical agencies and registers of the tax authorities. In effective use of existing data sources, the need for expensive enterprise census is reduced. Perhaps, the use of other sources to update the enterprise register would be much more successful if all interested bodies used a single code for classification of enterprises. As standard

statistical units in the enterprise register are not always used in the samples, the results of sample surveys are not as reliable as they should be. Questionnaires are designed for industries, but not for complete statistical units.

2. There is an urgent need in continuously updated register of the population of Kazakhstan. Ministry of Transport and Communications should do the work on the population register as a primary task. Work on the register was delayed because of ambiguities with respect to the main customer. This problem must be solved as soon as it possible. The register should be used for administrative purposes. In ASRK it is necessary to develop a statistical register that is based on the population census. To avoid duplication it is necessary to coordinate work carefully on the two registers.

Statistical register that is based on the population census should be used only for statistical accounting.

In Kazakhstan, the introduction draft of a single identification number of the natural person (legal entity) is being considered. The aim of the concept is to introduce the single number of natural person or legal entity, which will replace the taxpayer's registration number (TRN), social identification code (SIC), numbers of ID-cards, diplomatic passport, driver's license, as well as numbers in the social and medical insurance system.

The first six figures in the single code of natural person indicate the date of birth, the following figures indicate sex of the natural person and century of birth, the last five figures will be assigned randomly. Single number of natural person can be used for obtaining of birth certificates, passports, driver's license, TRN.

Business identification number (unique identification number of legal entities) will actually replace the TRN of the legal entity and it will be used in issuing of a certificate of legal entity's registration, receiving of all permits, licenses and so on.

These identification numbers will be developed according to the European experience. Statistical accounting, as it has been described above, has its strong and weak points. Thus, the most convenient model in the reality of Kazakhstan is a model based on the census.

Register that is based on population census is a list of citizens of the Republic of Kazakhstan with the individual characteristics which are used to develop aggregated statistical indicators.

Register is maintained in the form of a database (table view), on which it is possible to realize the following operations: adding, editing of records, updating of information, unloading of directories, keeping of the regulatory reference information.

Thus, the personal and summarized data on the population in centralized order are collected and stored in a register that is based on population census.

On the basis of the registers that are based on census the planning of sampling statistical surveys are realized, which, in their turn, are held for the formation of data complex on demographic, socio-economic statistics.

The main positive aspects of registers are reducing of the burden on respondents, budget savings of surveys and satisfaction of growing consumer demand in statistical information (Sagatov 2009:51).

Register that is based on census is intended to facilitate data collection process and updating of data with other registers, for implementation of different aspects, multipurpose and socio-economic and demographic development of indicators:

- socio-demographic;
- analysis in Kazakhstan and regions, a retrospective analysis of socio-demographic processes;
- current assessment of the structure, reproduction and migration of population by groups and categories of the population;
- prediction of the population in different sections;
- information provision of problem solving of the family statistics;
- economic and statistical analysis of the structure and dynamics of the workforce, the study of migration and employment;
- analysis of workers' movement in various spheres and economic sectors and regions;
- analysis of professional and qualification structure of workforce;
- analysis of the structure and dynamics of the education level of population, use of experts in economics;
- preparation of lists of citizens' certain categories (voters, recruits, preschoolers, students, etc.) that are necessary for solving socio-political and socio-economic problems.

On the basis of the data register the aggregated indicators can be formed on the population as regards nationality, on the place of residence, sex and one-year age group, fertility, mortality, migration, marital status, and other necessary indicators. Listed set of indicators is the basic one. Range of indicators may be expanded based on needs in the relevant information from consumers.

Register that is based on census should be formed on the results of National Census of Population and Housing Stock of 2009 and it will contain several statistical subsystems, based on the following indicators: sex, age (date of birth), place of birth, nationality, religion, status in marriage, education, literacy, proficiency in languages (Kazakh, Russian and English), proficiency in computer programs, indicators of the sources of livelihood and income, location of work / study, branch of employment, number of children and the difficulties of a physical nature. Data on housing conditions are collected by separate form (2P) that is filled on the premises (Sagatov 2009:52).

Data that are obtained from the census and other statistical surveys, without preliminary processing can not be used as a register, as they give a fixed description. The use of registries allows to realize the dynamic (regularly updated) formation of statistical indicators, which improves the quality and comparability of data.

Using the register it is allowed to develop a point statistical system in which the location of buildings is determined by the geographic coordinates indicating the exact location of each statistical unit. With the help of the most conventional bundled software of geographic information systems (GIS) it is allowed to analyze a point belonging to the administrative-territorial objects based on the data.

For example, it is possible to bind all the variables received from census to geographic coordinates, and thereby to provide information to persons using the statistics of territorial units. However, as a result of the high detail of information of small territorial units, it is necessary to pay special attention to issues of information security and confidentiality.

Information System "Register that is based on population census" is planned for introduction in 2011, the preliminary design of software was implemented in 2009-2010. The implementation of the migration procedure with subsequent regulated data updating with SDI and formation of a register that is based on population census are planned in 2010.

In addition, in 2012, it is planned to provide regulatory legal and technical provision of information interaction with information systems of other public authorities.

Full use (commercial operation) is expected in 2011.

The basic principle of the use of registers is regularly updated data. All relevant units should be covered, as the data are used for sample surveys conduction, the requirement of register relevance is the priority one.

That is why the new units will be regularly added in the register, these units are included in the general population (newborns and immigrants), and units, leaving the target population will be "erased" (more specifically they will be classified as "inactive").

Mandatory updating is conducted according to all the characteristics of each individual (marital status, number of children, education level, etc.).

The main source of data updating of registers, in contrast to traditional methods of data obtaining from statistical surveys, is the use of administrative sources.

In this case, the statistical product remains the same. Instead of asking questions to individuals, households or companies to obtain information, the data are used that are available in other public authorities. Instead of checking the quality of data obtained from individuals, administrative data are processed according to the used terminology, thereby there is an increasing of both coverage and data quality.

Maintenance costs of the register system may be reduced, as we see from the experience of Statistics in Finland, "the costs of registers based on census were less than one tenth of the cost of previous censuses" (Statitics Finland 2004).

Data from an administrative source can be converted by direct input in register systems for further use in the development of more than one type of statistical indicators (Sagatov 2009:53).

In the system on the basis of registers there is mainly focus on the comparability and coherence at the micro level. An important requirement, which must satisfy the initial statistical data, concerns the accuracy. It is refered to both data received from the questionnaires and the data obtained from registers.

Complete confidence is needed in the accuracy of registered data compliance to the studied circumstances.

Accessibility and clarity to a lesser extent depend on the used sources. However, as far as the data systems on the basis of registers are quite complex and are used in statistical materials, metadata must be comprehensive and ordered. In general, the quality requirements imposed by the statistical use of register data, to some extent coincide with the requirements that are imposed on them by the main purpose of the register.

The combination of survey data and registers offers great opportunities to study quality. The quality requirements of statistical use coincide to a certain extent with the requirements, which should also be followed to achieve the goals of registers; information must be accurate and registered with sufficient accuracy.

In addition, the data should be interesting for statistics.

Personal and aggregated data on the population in centralized order are collected, processed in accordance with the used concept of multidimensional data processing in Agency. As the basic systems of database management there is the software called Oracle.

Registers will be integrated with state database "Individuals" (SDI) in the implementation of migration procedures and further regulated data updating and naturally on the basis of census data.

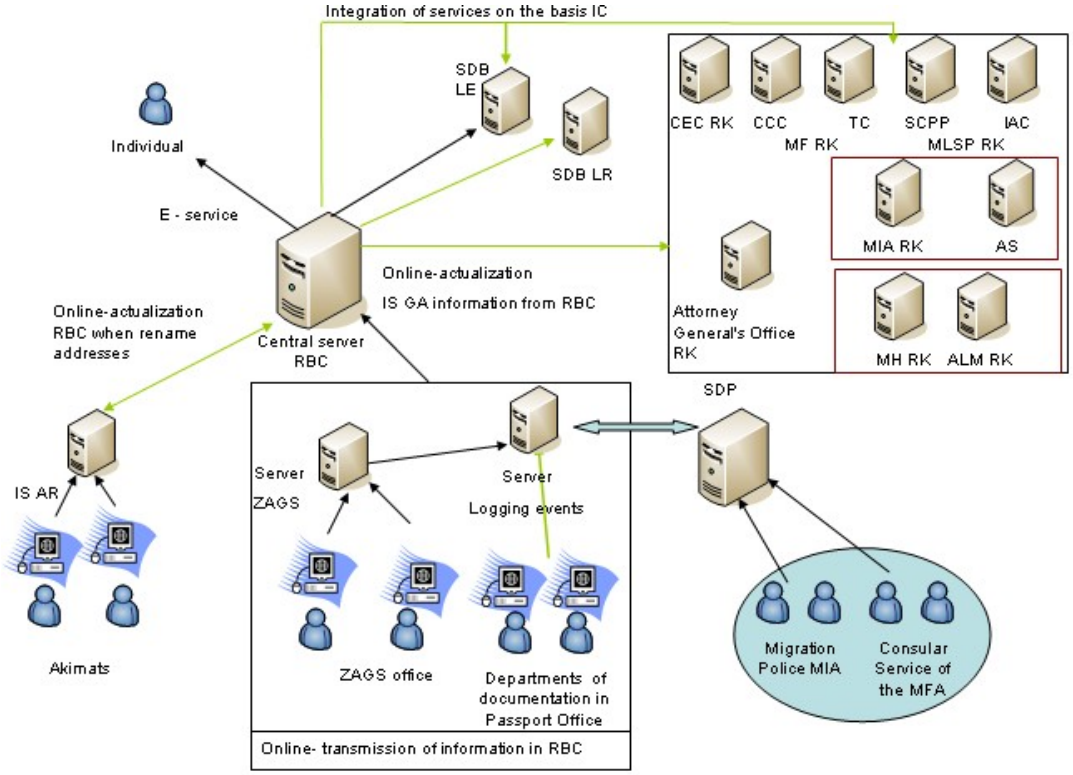
For satisfaction of the information needs in creating a register the information interaction to obtain the necessary information is planned on the following public authorities: Ministry of Justice (on the main events: birth, death, marriage registration, divorce, internal migration), Ministry of Home Affairs of Kazakhstan (external migration), Ministry of Education (level of education), Ministry of Health (morbidity), Ministry of Labour and Social Protection (unemployment, social benefits, etc.).

Creating a register of the population will allow to:

- save the citizens from need to repeatedly inform the public authorities about the occurrence of certain events in their lives, such as change of place of abode, marriage. It is enough to bring data in a register - and then the citizen will not need to submit each time confirming information about whether he is married, at the military registration, whether he has higher education, etc. In many cases the register data will be sufficient for the realization of the rights and freedoms by citizens in relation with the state;
- reduce the time lost in handling of the citizens and business entities to the public authorities, improve the work of public authorities under the principle of one window, raise the quality of public services (for example, in issuing of documents, charges of pensions, residence registration and acts of civil status, registration of individual entrepreneurs , submission of tax returns, conducting of surveys and elections), it will also have the positive affect on the rights and freedoms of citizens;
- improve the planning and implementation of measures for social protection and health protection of citizens;
- optimize the placement of trade organizations, domestic service, health care organizations and educational institutions;
- determine quickly the population and make out lists of voters;
- allocate rationally budget revenues between the administrative-territorial units and the main spheres of conomic development of the state;
- reduce paper workflow between public authorities and other organizations.

Register that is based on census will work in automatic mode.

Fig. 10 - Relationship between the register-based census with government registers



Notes:

- SDP – system documentation of population (ID forms, keeps track of individuals and documents with ID);
- Central server RBC – accumulates and actualization the information about population.;
- ID – Identification Code;
- SDB LE – State database «Legal entity»;
- SDB LR – State database «Land register»;
- IS AR – Information system «Address register»;
- ZAGS – Civil Acts Register Office;
- ALM RK – Agency for Land Management Republic of Kazakhstan;
- MH RK – Ministry of Health;
- CEC RK – Central Electoral Commission;
- CCC – Customs Control Committee;
- TC – Tax Committee;
- MF RK – Ministry of Finance;
- SCPP – State Centre of Pension Payment;
- IAC – Informational - Analytical Centre;
- MLSP RK – Ministry of Labor and Social Protection ;
- MFA RK – Ministry of Foreign Affairs;
- MIA RK – Ministry of Internal Affairs;
- AS – Agency Statistics.

Data will be carried in a register automatically on the secure communication channels for introducing of these data into the departmental information systems (instantly or periodically (for example once a day) depending on the technical capabilities of public authorities).

In regard to obtaining of information from the register, according to law, all organizations are divided into 2 groups. To the first group we can refer the organizations for which the use of personal data from the register is required to perform tasks within the competence of these organizations defined by the legislation of Kazakhstan. For such organizations data will be

provided free of charge according to the contract on the regular provision of data. Thus, depending on the technical capabilities of these organizations, presence of their networks, they may be granted the remote access to the data of register that they need, or such data may be submitted to them in hard-copy form.

Thus, each organization - the recipient of the information from the register will have an access to a strictly limited segment of the personal data of individuals. The list of indicators for information exchange will be determined by the contract on the regular provision of personal data from the register, recorded in a protocol of exchange and automatically provided for exchange of information. Organization - the recipient of the information from the register will have his identification number (key of authorization, electronic digital signature), which will be included in all information messages of this organization. A register of the population through a system of keys recognition determines automatically what and how much you can give the organization - the recipient and what to receive from it.

Organizations, that do not need regular acquisition of data from the register, will be able to get them on the written or electronic request without a contract. At the same time they can get only a limited list of personal data that is required to perform tasks under their competence.

To the second group of organizations we can refer those, for which the use of personal data from the register is not a prerequisite for the performance of their tasks, and who will be provided only anonymous personal data and only on a fee basis. Such organizations will not have remote access to the register. And every time when you need to obtain such data, they will send a request to registered service with requesting to give them the certain personal data.

There will not be any accessible arrays of personal data in the register. Any data from the register will be issued only in authorized access, and strictly in the extent determined by the rights of the specific organization- recipient.

Citizens can obtain personal data from the register in respect of themselves, those individuals, who are their legal representatives, and – according to the written consent - personal data of other individuals, who are not their legal representatives.

Speaking about the nature of information that will be contained in a register that is based on the census, we can say that the information will be collected about citizens, it has been already collected and contained in different information bases. Some new kinds of data that previously have not been collected by public authorities (except data about the lifetime disagreement on the collection of organs and (or) tissue for transplantation in death coming), will not be in the register.

In addition, in the register there will not be any information that can be used for any kinds of pressure on people:

- on race, nationality and skin color;
- on the world outlook, political or religious beliefs;
- on any diseases;
- on sexual orientation;
- on adoption and many others.

Some functions of the Population Register that is based on the census will work automatically.

This means that personal data will be entered in the register automatically by public authorities, suppliers of these data. The responsibility for the completeness, accuracy and relevance of the entered personal data in the register are realized by heads of public authorities that are making these data.

Automatic mode also means that every organization - the recipient of information from the register, it has an access to a strictly limited segment of the personal data of individuals.

Obtaining of personal data from the register will not be easy procedure. In order to get the data from the register, each organization will have to prove that it needs such details that their use is necessary for the fulfilment of the tasks by the organization.

So, those public authorities and other state organizations, which regularly need personal information to perform tasks within their competence, defined by law (for example, the Tax Committee, Ministry of Labour and Social Protection), will make contracts with a population register about provision of personal data. In each case it will not provide all the data contained in the register, but only a certain amount of data required to a particular public authority.

In all other cases, the manager will separately consider each request for data and decide whether to provide data from the register for an organization, for a particular natural person.

In any case, the organizations, which competence does not include working with personal data, can receive from the register only anonymous data, that is, the data on which it is impossible to identify specific individuals who have these data.

The protection of personal data is covered by article 31 of the Law "On State Statistics", according to which the register manager carries out activities aimed at preventing of unauthorized interference in the maintenance process of registers, including the attempts of illegal access to personal data contained in the register, their blocking, copying, provision, distribution, distortion, destruction and other illegal actions in relation to these personal data.

The law makes provision that the order of personal data protection contained in the register is determined by the manager of the register and in case of improper performance of this function, he will bear responsibility stipulated by legislative acts for improper performance of the functions.

For the protection of personal data there are some regulations of Article 32 of the Law "On State Statistics", according to which the authorized officers of the recording service have the right to expel, store, restore, and provide personal data contained in the register only in the order provided by law.

In addition, it is provided that the illegal provision or distribution by authorized employees of registered service of the personal data which become known to them in connection with their labor activity, including the time after the termination of this activity, is punishable in accordance with legislative acts.

For the protection of personal data there are some regulations of Article 18 of the Law “on the need of the use for computer software and hardware”, that are certified in accordance with legislation.

Creating a register of the population will be realized in 2 stages:

Stage I - entry of the data in a register contained in the automated system "Passport" Ministry of Home Affairs of the Republic of Kazakhstan, and the data contained in the registry offices;

Stage II - entry of personal data in a register specified in the Law by public authorities

Step 1

It will be necessary to ensure the establishment of the register and entry of the main personal data in a register and to provide allocation for this purpose in the national budget.

This means that during three years it will be necessary to undertake the following activities.

To develop software and hardware of the register: to identify the program, the specifications, to purchase necessary equipment.

To fill the register with the following information:

- identification number;
- surname, name, patronymic;
- sex;
- the date, month and year of birth;
- place of birth;
- digital photograph;
- data on the citizenship (nationality);
- data about registration on place of abode and (or) place of residence.

Step 2.

It is necessary to prepare and submit plan to carry basic personal data into the register by public organizations in the prescribed manner to the President of the Republic of Kazakhstan, as well as additional personal data.

Public authorities and organizations should assess the technical capacities of collection and transmission of the data that they possess, and also they should decide how much time they need to build (in case of absence) their automated information systems for the conversion of their personal data into electronic form (if it has not been done before), as well as for the technical connection of the automated systems to register the population.

Thus, the establishment of a register is not limited by the strict time limits; it will be formed gradually, over several years as construction and development of computer networks.

6.2 Integration of various data from other registers with the register of the population based on Census

At present in Kazakhstan there are some accounting systems of legal entities and individuals. In particular (Tax Committee MF RK 2010):

- for the purpose of levying of taxes and other mandatory payments by the tax authorities to both individuals and legal entities the taxpayer registration number is assigned (TRN), which has 12 digital positions;
- for the calculation and payment of pensions and social benefits the departments of the Ministry of Labour and Social Protection of Kazakhstan there is the using of social

individual code (SIC), which has 16 positions, and in the positions, along with digital ones the literal values are used;

- for passport control the citizen identification code (ID-code) is used by the Ministry of Justice of the Republic of Kazakhstan, which has 12 digital positions. This code is indicated on the ID-card and (or) the passport of a citizen.

As a result, there is a lack of coordination between executive agencies in establishing of departmental automated database systems, each of which is based on its number (the code).

For example: The tax authorities keep a registry of taxpayers, by the Ministry of Justice database is maintained on issued identity documents; by the bodies of the transport police an electronic database of registered vehicles is formed, social welfare agencies are responsible for keeping registers of the social benefits issuance and more.

Moreover, often existing departmental automated systems are formed on the basis of developed methodological principles by each body, they contain irrelevant data (as they are updated only when citizens' appeals are brought to the relevant authorities) and may not be linked because of the lack of general algorithms for their formation and maintenance, and as well as a single number that could be used as a linking "key" in the working with the departmental automated systems.

In addition such disunity in the information interaction between departmental systems causes unnecessary expenses for the collection and multiple inputs into the state systems of data accounting of that information which allows identification of the population. In this case, that every public authority uses its own format of information registry, along with well-known problem of the inevitable errors of manual input, ultimately, it leads to the inability to obtain reliable and comprehensive information.

Solution to eliminate the incompatibility of existing and emerging departmental accounting systems is possible with the introduction of a single accounting system of natural persons (legal entities): identification numbers and business identification numbers, the use of which would allow on their basis the creating of the single information systems of national registries of the Republic of Kazakhstan.

Introduction of a single number of natural person or legal entity, in order to create the unified information system of national registries in the Republic of Kazakhstan, should be carried out through legislative acts that will:

1. establish the fundamental principles and rules concerning the establishment and maintenance of national registries, relationships procedures of the population and the state on generation of a single number , the regulation of data exchange between public authorities to conduct departmental automated accounting systems;

2. Limit the application sphere of the single numbers for individuals;

3. Contain regulations for confidentiality of information obtained by public authorities on the database formation of personal data, as well as organizing and conducting activities for the transition to a single number.

Currently the adoption of the Law of the Republic of Kazakhstan "On national registries" (hereinafter - Law) is being considered, which defines the goals, objectives, principles and legal basis for establishing and maintaining of the national registries of identification numbers on the

basis of identification number formation for the natural person, legal entity (branches and representative offices).

National registry - an information system designed to implement the registration accounting of ID numbers.

The purpose of establishing and maintaining of the national registries of identification numbers is the transition to a unified registration system of information relating to a specific person, based on the introduction of identification number in the Republic of Kazakhstan.

That is, if in the past you wanted to find out information about a person, it was necessary to request information within the competence in the different public authorities depending on what information is needed, it delayed not only the time for obtaining such information, but it was not always reliable.

The creation of the national registries involves obtaining of the accurate information by public authorities in a single database for a particular person.

The objectives of establishing and maintaining of the national registries of identification numbers are as follows:

- updating of information databases of public authorities and exclusion of information duplication, i.e. solution to eliminate the incompatibility of existing and emerging departmental accounting systems;
- improvement of the management and use of information resources;
- improvement of the relationship of individuals and business entities with public authorities on the basis of the acceleration and simplification of state procedures in handling of citizens and legal entities.

Identification Number – a personal identification number (PIN) or a business - identification number (BIN), expressed as a sequence of digit characters that allow to make a recording of the data related to a specific person in the national registries of identification numbers, it is used in the registration of legal entities and individuals, and in the registration of real estate, personal property; issuing of identity documents, the issuance of documents of registration and permissive character; in the making of payments and money transfers, including the transfer of compulsory pension contributions and social payments, as well as the performance of tax liabilities and other occasions.

Identification number is divided into PIN and BIN.

PIN - unique number generated for an individual, which contains information about date of birth, sex of an individual, etc.

BIN - unique number generated for a legal entity (branches and representative offices), which contains data on state registration of legal entity (branches and representations) and individual entrepreneurship in the form of joint enterprise.

Documents with the PIN are: the birth certificate and identity documents.

However, for foreign citizens, who opened a bank account or have real estate in the territory of the Republic of Kazakhstan, PIN is stated in the certificate of the taxpayer of the Republic of Kazakhstan.

For legal entities (branches, representative offices) and individual entrepreneurs in the form of joint enterprise BIN is indicated in the certificates on registration of legal entity or individual

entrepreneur, as well as in the certificate of accounting registration of branches or representative offices.

In addition, for legal entities - non-residents operating in the Republic of Kazakhstan without permanent establishment (branch, representative offices) the document with the business - identification number is certificate of the taxpayer of the Republic of Kazakhstan.

However, according to the draft law, the term assignment of PIN and BIN for individuals is identified during 3.5 years and for legal entities - 2,5 years from the date of the law publication.

Moreover, during the transitional period the right is provided to use the taxpayer identification number and other codes along with an identification number.

Personal population accounting in Kazakhstan is currently being implemented by various executive bodies, the state off-budget funds, election commissions and other state organizations to provide services to the population and business entities, to solve main problems of public administration.

To ensure the implementation of the assigned duties by the authorities in these areas the unique identification of data about a person is required, these data are contained in the various state information systems. Currently, none of the information systems of public authorities and local control contains complete, relevant and reliable information about all the population of the territory. Each of these systems was originally designed as a narrow departmental one and was aimed at departmental task of Information Support of Office Activities. Thus, each of the existing system contains certain information about a specific category of population. Information interaction of public authorities, population and business entities has reached a state when the information contained in a single source - the departmental information system – is not enough to fully support public services. There is a need for exchange of information between agencies, including those located at different levels of power. The objective of this exchange is to collect and process information about a particular person or group of people located in various information systems. This information can be stored in the systems in various forms. Information systems can have different data structure. Data formats and data structures can be changed periodically. These factors substantially complicate the provision of public services, in which there is some information used from various departments.

Within the current applicable state system of accounting registration of persons, who are temporarily or permanently residing and living in the territory of the Republic of Kazakhstan, the use of personal identifier is not provided by the authorities, it allows to establish unambiguously the correspondence between the personality and information about it, and thus there is a guarantee not to change it throughout his life.

Development of state statistics is aimed at achieving of the strategic development objectives of the Republic of Kazakhstan, at creating of conditions for improvement of efficiency of public authorities system and it is intended to facilitate information and statistical support for policy documents and annual messages of the President to the people of the Republic of Kazakhstan.

One of the main problems is the insufficient data use of administrative sources for statistical indicators. To solve this problem in 2009 the work on improvement of the regulatory and legal basis of the state statistics system was carried out, draft laws were developed "On State Statistics" and "On introducing amendments and additions to some legislative acts of the

Republic of Kazakhstan on state statistics. Adoption of the draft laws has been planned for 2010. New laws will allow to clearly define the delimitation of statistical and non-statistical activities, to improve the quality of statistics, to reduce respondent burden through the use of administrative data sources.

The law of the Republic of Kazakhstan "On making amendments and additions to some legislative acts of the Republic of Kazakhstan on State Statistics" will change 104 legislative acts (Civil, Land, Forestry, Environment, Labor, Budget Code, the Code of Administrative Violations, sectoral laws, and also a number of legislative acts on issues of private entrepreneurship) in part of more precise definitions, bringing of the rules dealing with the competence of public authorities, in accordance with the terminology and the concept of basic draft law, access of the authorized body to administrative sources data (Strategic Plan of Agency on Statistics of the Republic of Kazakhstan, 2009 : 2). Adoption of the draft laws will allow improving of the state apparatus work to provide the users with complete and accurate information; it will increase personal responsibility of public officials for compliance with legislation in the relevant sphere. Within working on interaction with the World Bank conducted on rating of doing business level in the Republic of Kazakhstan («Doing business»), in 2009, the work was carried out to reduce the burden on business and to cut down administrative barriers. According to the results of this work in the legislation there are some amendments, providing for uncertificated registration form in the authorized body of state statistics (statistical card is revoked in the registration of more than 25 thousand legal entities a year).

Conclusion

The personal accounting systems of population are being created and they are successfully functioning in many developed and developing countries and are used primarily for safety, quality improving and convenience of the provided services by the state for the population, as well as the effective execution of control and supervisory functions. In many countries the establishment of these systems eliminates the need for a census of the population (for example, Sweden and Finland).

In the thesis there is a consideration how the data transfer process can be organized for the production of population statistics from the administrative agency that is responsible for registration of the population, the national statistical service.

There is another interesting historical perspective of research: the thesis showed how the technologies of accumulation and data processing were changing – from hard –copy form to punch cards and magnetic tapes, and then to personal computers and relational databases. At the same time the understanding of the needs of population statistics remained unchanged and also concern that the national statistical office in proper time and in corpore should obtain necessary data for their own development.

The State Statistical Service in foreign countries (especially in Scandinavian) has broad rights to receive regular arrays of individual data for the development of demographic statistics. These rights are fixed in state laws on statistics, which determines the high status of the statistical service and gives them more authority. This situation provides for statisticians with good source information and, in its turn, it allows the state and society to make high demands to the quality of produced statistical development.

Virtually all adopted successful projects of establishment of population accounting systems are based on the unique identification number assigned to each citizen, which is assigned, for example, at the time of birth registration. It contains information in coded form about the individual and nonvarying attributes of the particular person (for example, birth date, sex, place of birth, order of registration on a particular day). Identification number is written down and used in all documents, obtained by a person throughout his life; it allows to provide the integration of data about an individual from various information systems.

Unique identification number is used in the spheres of taxation, public security, education, issuance of drivers' rights and civil passports. Typically, a unique identification number is assigned to citizens at birth registration.

The number serves as a basis for providing integrated services to citizens using the principles of "electronic government".

Formation systems of unique identification numbers are different in different countries. At the same time, in most of the analyzed countries, the identification number in one form or another contains information about date of birth, sex, the control figure (or figures). In some countries, this number also includes information about place of birth.

The use of single identifiers allows to eliminate duplication of data about citizens in various social systems and other services. In many countries, the identifier is the basis for the implementation of electronic cards of a citizen, which serve as a document proving his identity, as e-identification tool, and they are also used for accounting of citizens' interaction with authorities and for payments for provided public services.

Identification system may include citizens of the country or the entire population, including immigrants who have not received citizenship or persons who are temporarily residing in its territory.

Abroad, the main sources of data for the system are the services that are responsible for assigning of the identifier of an individual service, for logging of the natural life cycle events and migration of population.

In order to coordinate and implement the work on accounting for population, maintenance and support of systems for identification, the independent units can be created both in the structure of public authorities and separately. These functions can also be realized centrally by the existing agency. Almost invariably the relevant organizations have networks of geographically distributed offices and representatives which are responsible for the registration of citizens at the local level.

In most countries there are clear normative documents that describe the spheres of the unique identifier using. Establishment and operation of personal accounting systems of the population, the organization of an access to personal data and the use of personal data are regulated legislatively, and require special regulations and adjustments of existing ones (especially in part of personal information, protection of its privacy). Provision of access to personal data of the population through state information systems requires the development of special methodological and technical standards. For example, legal guarantees are necessary that the highly specialized personal identification numbers will not be used outside the boundaries of the planned application, which could lead to their general use in all areas without required public debate and adequate legislative basis for the use of universal identifiers (there is a need of restrictions in the use of specialized personal identification numbers only by certain sphere).

Experience of several countries in the use of the personal accounting systems of the population suggests that their introduction of universal identifiers (IDs) draws a wide public response. In this situation, there is a need for open public debate on fundamental principles of

implementation of system, objectives, goals, spheres of usage, and more particular issues (for example, whether it makes sense what personal data can be placed on ID-cards).

In Kazakhstan, the improvement of the national identification system of the population is of particular importance. This is due to the requirements of improving the reliability of the system, its efficiency and expansion of its functionality, which leads to the need to move from manual technologies and the "paper" documents to automated systems based on ICT and electronic identification. Identification System will provide the ability to significantly expand the range of tasks - in particular, problems of social sphere, to facilitate an access to different services for citizens, to reduce costs of public authorities and organizations to provide service functions to citizens.

Foreign experience indicates the need for a unified system of personal accounting of the population; it ensures the integration of existing elements and is based on the universal identifier of personal data, covering all segments of the population.

Agency on Statistics and Analysis of Kazakhstan is regulated mainly by the Law of the Republic of Kazakhstan "On State Statistics" dated May 7, 1997. To a great extent it limits its rights and powers, including access to the complete and reliable information on the population. Many problems of population statistics in Kazakhstan of the last decade have emerged from the fact that the innovations in the legal basis were short-sighted; the basis defines the order and amount of the information transfer for collecting and designing of statistics on fertility, marriage, divorce and migration of the population. In preparing of new laws and regulations in medias res (according to different reasons) the long-term implications of the changes have not been considered in terms of state statistical observation of demographic processes. Such solutions are not accompanied by understanding of the needs of the legislative and executive power (and whole society) in a reliable and diverse data about the population, especially in the critical demographic situation.

The population census in Kazakhstan is conducted once in 10 years. The event is a massive and very expensive.

Currently, such work is planned as a population register. If this innovation would be acceptable, then the population accounting will be conducted on a monthly basis, including on the settlements and rural districts. Eventually it is planned that the register system will replace the census (Urgenshbayev 2002), or they will at least complement each other.

On the basis of a study of existing information processing systems on the population its shortcomings are identified and a new form of statistical observations is proposed – register based on census, that allows to unify, unite and coordinate all streams of personalized information on the population, to enhance the methodology of statistical surveillance and the primary population accounting and collecting organization, processing and analysis of the data.

Establishment of a register that is based on census will allow to integrate all the personalized information using a single methodology for accounting, which will provide the required accuracy and reliability of the data that are needed at the macro and micro levels. The main advantages of register that is based on census of the population in comparison with other sources of information are (Yarnykh 2009:20):

- a significant reduction in the number of sources of current information about population, as the functions of collection, storage and processing of primary information for the various departments may be assigned to one agency that will be responsible for the system;
- providing of a single input and removal of duplication to a large degree, as there is a single opportunity to collect data at the time of the event (birth, death, change of place of residence, obtaining of a certain level of education, etc.);
- expanding of opportunities of quality control of statistical and operational information both in terms of accounting completeness of certain types of events and registration accuracy of demographic and socio-economic characteristics, which must be recorded in primary documents of the current accounting (for example, in acts of civil status);
- creation of conditions for the integration of statistical data from various sectoral statistics (cultural statistics, labor statistics, demographic statistics, etc.). The greatest potential of such combined development of statistical information on populations occurs in the materials of population census, which is conducted at the best once in ten years;
- expanding of opportunities in the receiving of detailed information about population in the current manner and about its composition at the territorial level in comparison with the current system of information about population;
- rational organization of Demographic Studies.
- method of an identification number construction is proposed, it allows to identify each individual, to combine all the information about each person, regardless of the source and its origin.

In the dissertation research the information aspects of register building based on the census have been developed, its organizational and functional scheme has been presented. The issues of building and organizing of register maintenance system based on census, which allows to maintain information on the population up to date. The question of a register establishment that is based on census is particularly relevant in connection with the recent population census in 2009.

The dissertation shows how you can use the electronic versions of database systems of the personal accounting of the population in Kazakhstan for the development of population statistics. The transition from hard-copy form to electronic versions of primary data, for example in the development of migration statistics, will save considerable time and resources needed to re-enter the information (firstly in the accounting bodies, then in the bodies of the statistics). It is clear that the creation and debugging of a personal accounting system of the population in Kazakhstan - a long and difficult task. It will take the time to adapt the format of transmitted information to statistical bodies; the technological and organizational problems are inevitable. However, with goodwill and understanding, especially from the sight of the administrative agencies that are responsible for population accounting in the future we can hope that the personal accounting systems of population in our country will become the prototype of the registers. And it's important that they will be used not only for solution of individual

departmental objectives, but also as a source of reliable, diverse and accessible statistical and demographic information.

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