

About One Approach for Intellectual Analysis of Social Processes

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Abstract: Modern social processes largely depend on the nature of the forms of change in people's lifestyles under the influence of information technology. Information and communication technologies (ICT) affect not only the biological and social development of people, but also their emotional and psychological state, relationships with others, and worldview. A brief review of research in the field of social informatics and the problems mentioned in the article prove the relevance of creating a system of intellectual analysis of social processes. The purpose of the study is to develop a general model for the analysis of social processes. This article discusses research in the field of social informatics and identifies factors that affect social processes in society. The model of a system for analyzing social processes and social relations is proposed. The article consists of four parts: the first part, which is of a general nature, contains general information about social informatics; the second part examines social groups in society and their characteristics, and the third part is devoted to the classification of social processes. The fourth part proposes a new model for the intellectual analysis of social processes. The proposed modeling model, among other advantages, offers an effective solution to the problem of big data, which is the main problem in the analysis of social processes. The proposed approach can be useful for a correct understanding and forecasting of social processes in society. Since the identification of knowledge and forecasting in social processes is an important factor in social progress and the socio-economic development of society.

Index Terms: Social processes, social informatics, big data, social groups, demographic processes, ETL, OLAP, data warehouse.

1. Introduction

In the modern world, in scientific publications and social networks, expressions such as "social relations", "social status", "social processes", "social capital" and "social credit" are often found. Various state bodies, political parties, financial, banking, and insurance companies, and research centers study the social problems of the population, social relations in companies, offering information systems, new methods and algorithms for managing and predicting demographic processes. Today, the development of information and communication technologies (ICT) has an impact on sociology, psychology and other sciences. The development of ICT has given states the opportunity to study society, reveal hidden knowledge and strengthen control over social processes [1, 2].

The Internet virtual network is an object with a wide range of possibilities, which is expanding and improving every day and has a significant impact on social relations. The role of citizens in the management of social and political processes is expanding. The relationship between the state and the citizen is becoming more transparent as a result of ICT.

Internet services (e-mail, IP-telephony, etc.), various social networks, blogs, wiki projects, etc. are not only a means of communication in the social lives of people, but also sources of knowledge, catalysts for social relations, and a place for providing information warfare. With the advent of the Internet, the impact of digital technologies on human behavior is being studied. Information technology tools are widely used to analyze the processes taking place in society. These studies became known as social informatics [1].

Modern sociology is the study of the forms of social systems, structures, elements, and states, as well as social processes, mechanisms of action, and their manifestations, historically established in the activities of various social groups using information technology [3]. Based on the synthesis of sociology and information technology, a field of science called social informatics was created. The main goal of research in this area is to assess possible threats and opportunities in the socio-economic life of a person and the development of society. The object of research in social informatics is the new information realities in modern society, where ICT is expanding and a knowledge society is being formed. The subject of the study is the processes of information impact in society, the patterns of social processes, and the methods and means of analyzing these processes.

Sociometry, demography, conflictology, etc. are studied in different countries of the world [2, 3]. Serious scientific research is being carried out, and methods and algorithms for managing society are being developed. Sociological problems are being solved with the help of information technologies [4,5]. The goal is to properly manage society in an e-government environment. In this regard, it is important to identify and assess risks, as well as to make predictions related to sociological processes. In these studies, called social informatics, the object of study is the dynamically changing processes taking place in society and society [2–5].

In the modern world, it is not easy to analyze and predict social processes. Information about people located in social networks, mobile communications, government registries, email and various sources creates big data and is often unstructured. Proper structuring and analysis of this information is important both for studying society and for the security of the state.

The main purpose of the study is to develop proposals on the principle of operation of the system of intellectual analysis of social processes for the correct assessment of the social processes taking place in the country.

A system of intellectual analysis of social processes can be important for studying society and reducing risks in public administration.

2. A Brief review of Research in the Field of Social Informatics

It is possible to determine the social tomography of a society with the help of social informatics. Social informatics research is characterized by a wide range of social theories. Social informatics as a field of science can be divided into three main areas:

1. Analysis of the role of ICT in human behavior and its impact on social spheres;
2. Analysis of social processes with the help of ICT;
3. Influence of social informatics on other sciences.

Social informatics analyzes each aspect of the social process separately using information technology tools. Using all the possibilities of ICT, social informatics has the potential to study social processes in different areas. The object of research in social informatics is all types and forms of manifestations of information in society, as well as information processes, technologies, systems, and communications that have social significance for the normal functioning and development of people and society.

Social problems and crises influence the development of sociology as a science. In turn, sociological research helps to identify the problems of society, predict future social events, and focus on solving existing problems in the state and in society. In other words, sociological knowledge is very important in solving socio-political and socio-economic problems in society. The role of sociological knowledge in society is shown below:

- People with sociological knowledge successfully work in state bodies and private companies;
- The methods developed by sociologists are successfully applied in various fields of research (medicine, information technology, economics, etc.);
- The results obtained from sociological research can be used in decision-making in the management of society.

Sociology as a science is very complex, and in modern times there can be no social research without the use of data collected in various information systems.

To understand the nature of any field of science, it is necessary to study its object and subject. The object of sociology is usually society. Sociology as a science studies society, people's behavior, and processes in society. The approaches used in sociology can be classified as follows [6, 7]:

1. Demographic approach. It essentially defines society on the basis of birth, death, and migration.
2. A psychological approach it explains people's behavior by identifying the thoughts, causes, and social events behind it.
3. Group approach. He studies society by analyzing groups and collectives formed by people.
4. Relationship analysis it identifies people's social lives, behavior, and problems through the analysis of social relations.
5. Cultural approach. One learns the behavior of people through the norms and values that are elements of culture.

Social informatics as a branch of computer science began to be studied in the 1980s. Then sociologists said that sociology must keep pace with the times and that the study of society is impossible without the use of digital technologies [8]. The direction of research was considered as a general scientific direction between psychology, sociology and computer science. According to them, social informatics studies the social aspects of computerization in social and organizational change and the role of ICT in social research.

In those years, scholars from the United States, Japan, Russia, and the United Kingdom also began research in this area. In 1990, Academician of the Russian Academy of Sciences Arkady Dmitrievich Ursul published an article titled "Social Informatics and the Formation of the Information Society" [9]. Here, the scientist claims that the information society was formed as a result of the application of information technology in all areas of science and research, creating a new area of science - social informatics."

In his next research, A.D. Ursul says that in the information society, the process of obtaining information with the help of computer science accelerates the normal development of society. Social informatics is based on the results of interaction between informatics, scientific and technical discipline and social sciences, based on man and society. The main features of research on the analysis of trends and patterns of interaction between society and computer science are the complexity of analysis, big data, and constantly changing information [10].

Professor Ingar Roggen, one of the first researchers in the field of social informatics, writes that today the Internet has become a catalyst for a number of social processes. Through the Internet, you can quickly get information about the socio-economic processes taking place in the world, express your personal opinion about events, gather like-minded people around you, and influence certain social processes [11].

Various approaches to the use of information technology in the study of social processes have been developed since the middle of the 20th century. In the scientific studies of K. Shannon, N. Wiener, W. Kennon, W. R. Ashby, and others, they claim that the use of information systems in the assessment of social processes can be considered the driving force behind the development of society. Today, various analytical systems are being created in social networks, when analyzing the internal relations of an organization, using social theories in business development [12, 13]. For example, the "Social Theory" approach uses a range of perspectives to define how people's social status, social structures, and social interactions are formed [14]. That is, in sociology, the data obtained as a result of empirical research is processed using specialized computer programs. An example is the SPSS Statistics system (a statistical package for the social sciences). SPSS Statistics is a statistical package designed for the social sciences that allows you to process quantitative indicators obtained as a result of social research with maximum quality [15].

Research shows that the main goal of social informatics is to better analyze and study socially oriented platforms not only as technology, but also as a combination of social events [16]. Scientific conferences in social informatics discuss scientific work in the fields of artificial intelligence, virtual and augmented reality, big data, cloud technologies, and the impact of the emergence and development of a number of new technologies [17–19].

Professor John Urrie, in his book "Sociology Beyond Societies" [20], claims that the basic concept in sociology is mobility, not society. He emphasizes the role of transport and asserts that any migration is a social process, and that for these processes at a given time, individuals and groups are concerned. These processes include virtual connections. For example, family life is not limited to kinship and marriage. Telephone communication, joint celebration of celebratory events, and, in the case of need, moral and material support to each other - these processes are associated with the movement of people, things, and information. He pays special attention to the concept of network capital in his mobility studies. Network capital is also widely covered in Pierre Bourdieu's scientific works and is presented as a type of capital [21]. Network capital represents all possible actual and potential interactions with people, objects, places, and information, as well as the corresponding types of movement over long distances. A person who knows how to effectively use mobile phones, social networks, and Internet services increases his network capital. The study of social informatics focuses on globalization in the information society and its impact on social structures, as well as the role and position of each citizen in society. It should be noted that information processes interact with the processes and influences taking place in society. The social structure of society and the attitude of people towards the information process have a significant impact on the pace and nature of this process [22-25].

3. Social Groups

Society is a place where various groups gather, act and interact. A social group is a group of people with common social characteristics. The social group is the basis of society, and society itself is the largest social group [26]. There are more social groups in the world than people. Because everyone can be a member of different social groups at the same time. Each member of the group is subject to the rules and norms of the social group. Many characteristics of a person are the result of the activities and influence of a social group, which includes thinking, language, speech, behavior, discipline and morality. Norms, rules and traditions that determine the behavior of people, as well as society, are formed in social groups.

Since social groups are the basis of social life, with the help of social informatics it became possible to analyze social groups, the reasons for the emergence of these groups, their role, benefits and dangers in society. Groups are created for a specific purpose and, depending on the purpose, can be classified as follows:

- Reference group – a real or unreal group that will be an example for others [27];
- Collective – a group of people united by a common goal;
- Conglomerate – a group of people forced to gather due to the situation [28];

- Cooperation – a group that differs from the real organizational structure, striving to achieve results in a certain area of activity;
- Association – a group formed on the basis of pre-existing relationships (friendship, acquaintance, kinship);
- Corporation is a group that wants to unite to achieve a common goal and achieve its goal, even at the expense of other groups.

Every normal person needs a social group, and in certain areas of his daily life he depends on groups. During illness, holidays, natural disasters or wars, people need social groups more. Social groups can be classified according to their characteristics:

- nominal or real;
- large, medium or small;
- formal or informal;
- primary or secondary.

A nominal group is a group of people artificially selected on some basis and having nothing in common with each other. These can be passengers of the same car, voters voting for the same candidate, etc. In sociology, demography, the analysis of nominal groups is of great importance in solving scientific or practical problems. Large nominal groups classified according to social characteristics (sex, age, education, place of residence, etc.) are called social categories. In demographic studies, especially during the population census, as well as in the effective solution of socio-economic problems, citizens are divided into social categories [24, 25].

In real groups, there are connections and relationships between members of groups within frameworks. Family, party, organization, team, club, etc. e. Individuals gathered in groups consider themselves part of these groups and understand their responsibility and commitment.

Depending on the number of participants in the group can be small or large. In large groups it is not possible to have direct relations between members. However, they support each other in different social and political processes, because they know that they belong to the same group. Examples of such groups are: national unity, generation, ethnic affiliation, etc. Small groups usually consist of 2 to 10 people. Relationships between two people represent a small form of social group and are called diadoi. Triad is a group of three people. Groups of three and more members are formed on the basis of norms and formal rules.

In small groups, participants are in direct personal contact: family, friends, close associates, club members, and so on. If there is an increase in the number of members of the group, the established limits are reduced, which leads to an increase in the degree of individual freedom [29].

In formal groups, the status and relations of group members are formally regulated. In such groups, the relationship is formal and the purpose of the members of the group is clearly defined. All types of public organizations are official groups. In informal groups, the status or goals of group members are not always clearly defined. In such groups, relationships are personal and often based on mutual liking, common interests, or habits. Examples include relationships between friends, acquaintances, and neighbors. Informal groups may operate within formal groups or independently of each other. For example, within an organization, employees form a formal group, but there may be close friendships between some members of an organization that is already an informal group. If the purpose of the formal group is to satisfy any social demand, then the informal group provides the communicative needs of the members of the group.

Charles Horton Cooley, an American sociologist, one of the authors of the concepts of the "Primary Group" [30] and the "Looking Glass Self" [31], proposed dividing social groups into two types: contact (primary) and distant (secondary). Cooley refers to the main group as a cooperation or association of people who have a direct relationship with one another. Such groups do not have a large number of members and have very close social relationships.

In contact groups, social relationships are based on mutual sympathy, emotional closeness, and support and are characterized by longevity. Cooley believes that if the members of the group can call their group "We", then the group is primary. Family and close friends belong to the primary group. The primary group is the initial stage of the socialization of the individual and the place of the most effective assimilation of social values and norms. The individual here, first of all, acquires a sense of social belonging and assimilates common ideals. Primary bands "do not depend on the big society but reflect its spirit to some extent".

MacIver and Page grouped social groups according to the following characteristics [32]:

- The size of the group
- Quality of social relations
- Proximity degree
- Range of interest between groups
- Continuation of relations
- Degree of organization.

The spread of the Internet and the possibilities of social networking have brought minor groups to the fore. Although minor groups are today's mainstay in the study and management of society, social networks and various virtual projects have made the main groups more resilient, helping to maintain relations between citizens and activate civil society.

There are different approaches to the analysis of the activities of social groups. Neil Joseph Smelser, an American sociologist and one of the founders of economic sociology, classifies groups according to the following functions [33]:

- Socialization: only in groups can people provide for their lives and the upbringing of the younger generation.
- Instrumental: groups provide people with this or that activity.
- Expressive: groups satisfy people's needs for self-affirmation, respect and trust.
- Supportive: people tend to come together and work together in difficult situations.

The main features of social groups in developed countries are mobility and the ability to easily move from one social group to another. The similarity of cultures and levels of education in different social groups led to the formation of common sociocultural needs among these groups. As a result, conditions are created for the gradual integration of value systems, behavior patterns, and motivations into social groups.

4. Social Processes

Social groups and their resources (human, physical, economic and temporal) influence the social processes and behavior of each person. Social groups form the basis of social processes. Social processes are the processes of establishing and maintaining relationships between people and social groups and changing behavior patterns as a result of social influences. A social process is a socially significant change that occurs as a result of the impact of various groups on the current situation in society in order to ensure a certain interest. The famous Russian scientist P. Sorokin explains social processes in this way: "A social process is understood as any movement, modification, transformation, rotation, or development, i.e. any changes in the object under study at a certain time." These changes include all signs, from qualitative and quantitative indicators to the position of an object in space [34]. Ginsberg explains the social process as follows: "Social processes mean the various modes of interaction between individuals or groups, including cooperation and conflict, social differentiation and integration, development, arrest and decay" [35].

Development and changes in society are the result of a social process. Even the development of science depends on social processes. Any scientific achievement is the result of the joint work, scientific discussions and proposals of a group of researchers. Discussing methods, observing other researchers' scientific activities, and developing relationships are all based on social norms and behavior [36].

Social processes are the emergence of relationships, behaviors, and interactions that arise or change as a result of social interactions between individuals and groups. Social processes are a major factor influencing the social environment. "Social environment" means the interaction of existing social groups, socio-demographic strata, national associations and conditions of labor of people, educational environment and state of health [37]. The following indicators affect the social environment:

- working conditions
- family, friends and colleagues
- a measure of material well-being
- solution to the problem of health, education and social protection;
- safeguarding social justice
- solution to the problem of social stratification in society.

The resolution of the above-mentioned issues depends on the level of economic development of each state, the nature of economic relations between people. Social processes are often called socio-economic processes. All social processes are divided into natural and social, blind and manageable, internal and external, persistent and unstable processes.

Social processes can be divided into two main categories: conjunctive processes and disjunctive processes. In conjunctive processes, individuals or social groups form associations based on certain interests. Disjunctive processes are processes that create divisions in society. For example, conflicts in society, struggles for power or economic advantage lead to disjunctive processes.

By their nature, social processes can be classified according to many criteria: production processes, educational processes, migration processes, religious processes, etc. Social processes also include such processes as cooperation, conflicts, assimilation, people management, and movement. According to the subject of social processes, they can be classified as follows:

1. Socio-economic processes are social processes resulting from the economic inequality of social actors. Socio-economic processes have a serious impact on both the country's economy and the social situation in society: inflation,

unemployment, competitiveness, economic growth, people's well-being, and etc. These processes are divided into people's livelihoods, employment, labor assessment and social security. Life support is understood as providing people with food, clothing, housing and communal services, medical, legal, transport and communication, education, recreation and law enforcement benefits [38]. Social security is a conditional concept that provides for budgetary and extrabudgetary payments to socially protected groups of the population (single mothers, the disabled, the elderly, etc.). Ordinary social analysis does not provide complete information about a person's lifestyle, problems and behavior. Here a general analysis of socio-economic processes is required [39].

2. Socio-political processes are the processes of providing political opportunities to various public associations and formations or changing these political opportunities. Various social forces (social classes and political parties representing these classes) compete for power in order to protect their economic, political, and other interests [40, 41].

3. Demographic processes are an increase or decrease in the population in a certain territory, a change in the status of nations, peoples, ethnic groups, migration processes in the world, state and regions. Analysis and forecasting of demographic processes are very important in the formation and sustainable development of e-government. To effectively solve the problems of demographic processes in various developed countries, electronic registration documents (registries) are created and coordinated. Work on the creation of a population register began in the 1970s. Although separate demographic information systems were created, it was not possible to create a unified population register for various reasons, including lack of funding and other reasons [42, 43]. Today, in developed countries, the creation of a general population register is carried out not only by government agencies, but also by giant banking systems, advertising and insurance companies. The work is carried out mainly under the guise of determining the social status and purchasing power of citizens [44].

4. Social relations mean relations between social groups or their members in the processes taking place in industrial, economic, legal, moral, political, religious, ethnic and other spheres. The content of social relations can be different: friendship, love, conflict, enmity, economic competition, etc. [45].

Relationships are between people, organizations, parties, companies and countries. Relationships have always been important in people's socio-economic life [46]. Effective governance, welfare and psychological well-being of citizens are highly dependent on relationships, so measuring, managing and ensuring relationships is an important issue. For example, the breakdown of family relationships can lead to the destruction of family values, crime among children, and the deterioration of the financial situation of family members.

5. Social norms are the norms of behavior of individuals, social groups, rules, values, and beliefs that ensure order in society. They also determine the goals and role of individual groups in society. In many cases, behavior patterns that do not correspond to social norms are the object of study in sociology. Crimes, conflicts and confrontations in society are often the result of behavior that does not correspond to social norms [47]. Social norms play an important role in the spiritual life of society. Social norms are the subject of social research emerging in the fields of education, culture, science, art, religion, morality and education. When studying social norms, ethnic characteristics and family values of each nation are taken into account [48].

Social processes are important for managing not only people, but also society as a whole and the state. From this point of view, when analyzing social processes, it is first of all necessary to understand the essence of social processes, classify these processes, and determine the factors influencing these processes. The classification of social processes into socio-economic, socio-political, demographic processes, social relations and social norms once again proves how difficult the task before us is. It is important to use an intelligent system to solve such a complex task.

5. Model for Intellectual Analysis of Social Processes

The implementation of a balanced social policy in the country is considered an integral part of the e-government system, and the intellectual analysis of social processes is one of the issues for assessing, analyzing and making effective decisions on the current social situation. Today, mobile and network data, as well various personal data are used to determine the socio-economic situation in the country, to address issues that concern citizens, and to identify patterns of sociological processes [49]. To conduct an intellectual analysis of social processes, first of all, the analyzed data and their sources should be identified. Using as many sources as possible for analysis allows you to achieve high results in solving the problem, but it creates big data. The big data in these sources includes personal data, population statistics, population censuses, data on personnel in organizations, public health data, education data, etc. Data for analysis can be classified as follows:

- web browser search queries;
- data from social media;
- Data gathered from state registers;
- electronic service data;
- data from mobile phones.

The model of the system for intellectual analysis of social processes is shown in fig. 1. Regardless of the form and structure of the source of information, data is processed and structured according to a given format before processing in order to obtain the most effective result. Data processing can be divided into five main steps:

1. Data collection and identification of data registers.
2. Data cleaning and aggregation.
3. Multidimensional analytical data processing.
4. Intellectual analysis of social processes.
5. Representation of data.

Data is collected from various registers, cleaned, aggregated and loaded into the database using ETL (Extract, Transform, Load). The design and development of ETL processes is an important issue in the organization of data warehouse (DW) and online analytical processing (OLAP). The reasons for using ETL are as follows:

- In Big Data, organizes data from various registers.
- The possibilities of the ETL-system are used for the organization and efficient operation of the database.
- Organization of metadata at different stages of the ETL process.
- Depending on the ETL process, the quality and completeness of the data entered into the database are ensured.

An ETL system is often thought of as a subsystem that transfers data from various sources to a centralized database. The following processes are performed through ETL [50]:

- the process of bringing data from different registers;
- the process of storing imported data in the field interface table, data cleaning, error detection and recovery;
- the process of changing data according to established rules and storing results in the field of operational data (Operational Data Store);
- the process of reading data from the operational data field and uploading them to the detailed data field (System of Records);
- the process of aggregating data and loading it into a database.

If real-time data analysis is required, it is important that the system has additional capabilities to address such issues. This requires a multilevel system. Although the data being analyzed is dynamic, the analysis process itself must be carried out according to the “if, then” condition. First of all, it is necessary to determine what data will be collected in the database for analysis. That is, if not all records in the database are needed for analysis, then the analyst must provide conditions for selecting the records of interest.

A database is a centralized system that stores data from multiple sources (registers) for analysis. Standard database technologies connect various registries to the system. This simplifies the comprehensive analysis of big data generated from the Internet. The database passes the required data (including metadata) to the OLAP system for query-based analysis. Metadata is information about data. Metadata refers to the data source, download history, quality information, error reports, and audit trails.

The use of OLAP technologies in the analysis of social processes has a number of advantages. OLAP performs fast processing of large volumes and various types of data and is mainly used in decision making systems. Multidimensional analysis makes it possible to analyze the behavior of individual groups, identify the nature of social relations and find out the problems in society.

Multidimensional analysis is performed by creating OLAP cubes. Presetting OLAP cubes allows the decision maker to focus on the analytical process such as cutting and detailing the cube. The number, size and characteristics of the cubes depend on the number and complexity of the problem being solved. Visualize and quickly analyze big data using cubes. As a result of organizing data in the form of a multidimensional cube, the analyst receives a clearly described data model [50, 51].

Each multidimensional database created as a result of OLAP collects data according to the type of social process. The use of data mining methods on such multidimensional arrays allows you to get more efficient results.

If the analyst is required to consider a large number of different queries, the system develops special patterns in Data Mining that determine the consistency of the patterns. The data mining process continues in stages: domain analysis, problem statement, data preparation, model building, model testing, and evaluation, selection and application of a suitable model, model updating. In the intellectual analysis of socio-economic or demographic processes, transactional, behavioral-demographic, etc. models can be used.

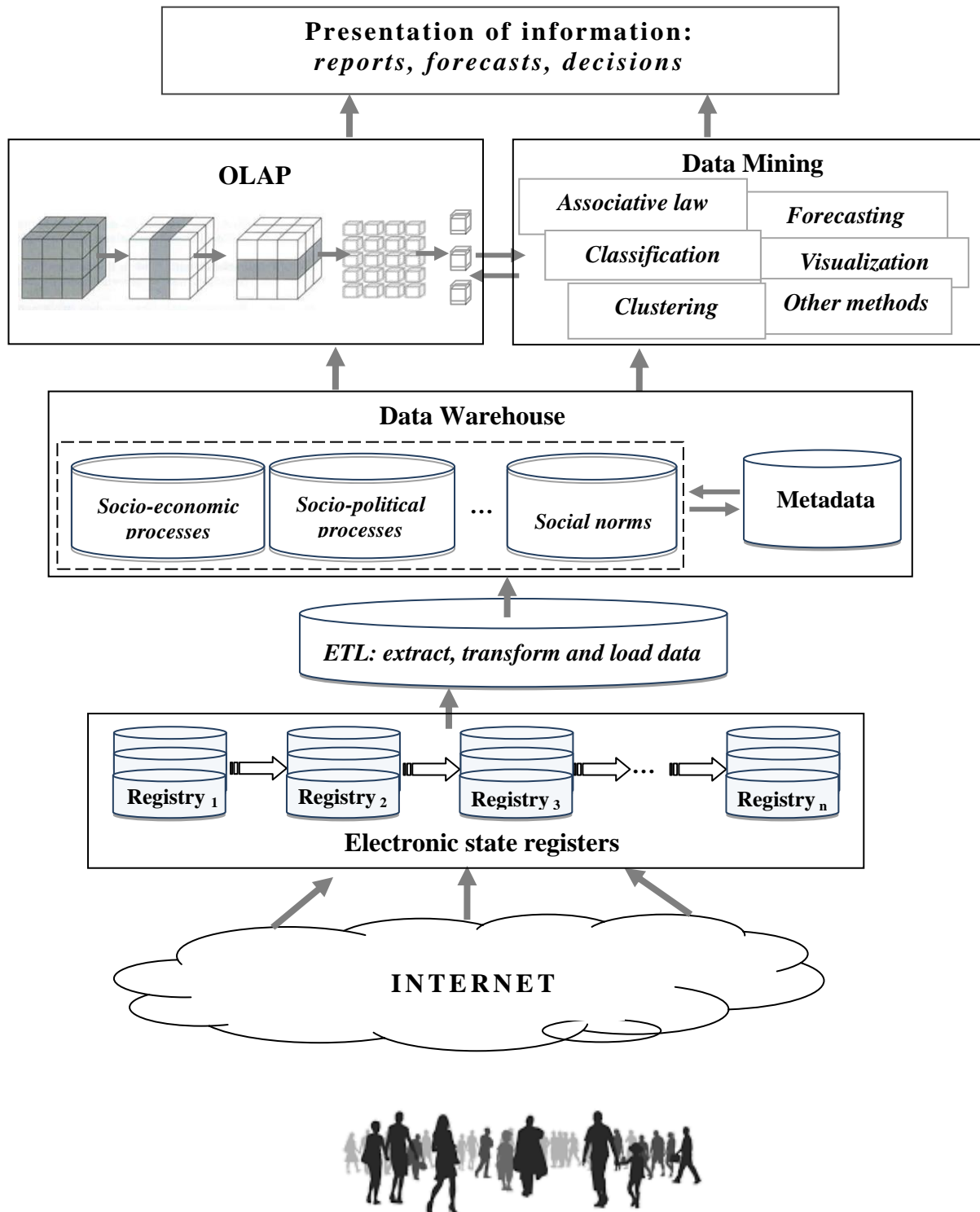


Fig. 1. Model for intellectual analysis of social processes

I can get the desired result using clustering or classification methods. For example, I can continue data mining by combining data on citizen demographics, economic performance, and social relationships. This approach will make it possible to complete research on the analysis of human behavior and generate new ideas and knowledge in social processes.

In multivariate data analysis and data mining, it is not practical to be content with conducting complex data surveys. Regardless of the methods and algorithms used, it is important to clearly define the structure and format of the data.

Data mining means developing appropriate models and algorithms for processing information and discovering hidden information. These methods and algorithms include: artificial neural networks, close neighbors, decision trees,

support vector machines, Bayesian networks, linear regression, regression analysis, association rules search method, genetic algorithms, classification and clustering methods.

From time to time, when electronic registers are fully integrated into the e-government platform, they will become virtual clouds. The system of intellectual analysis of social processes, created on the platform of e-government, provides an in-depth analysis of social processes and allows the identification of problems in the fields of socio-political, socio-economic, etc.

The creation of a system of intellectual analysis of social processes is important for achieving such goals, as the prediction of public attitudes and the identification of risks in the development of e-government. It will allow us to build the future scientific and effective system of e-government, to determine the strategic direction of its development.

A feature of the model is that it allows the statistical use of data collected in various state registries. Having a single identification system or a single identification number for different sources and resources makes it possible to combine different registries. In this regard, it is possible to carry out statistical analysis based on data collected in registries. As a minimum requirement, there should be a single identification number for individual registries.

Given the relevance of the topic, in order to conduct various in-depth analyzes of social processes, the mining of big data collected in social networks and information registries will be considered in further research.

6. Conclusion

In a situation where ICT is rapidly developing, the socio-political situation of countries is rapidly changing, and personal data is constantly increasing and creating a problem of big data, it is impossible to analyze social processes only with the help of social theories. There is a need for the application of information technologies and the widespread use of computational algorithms for the study of social events, human behavior, and social dynamics, as well as the analysis of social networks and social processes.

The analysis of social processes is important for assessing the relationship between citizens and government agencies, identifying social tensions, and for the proper management of society. The creation of a system of intellectual analysis of social processes in the e-government environment is important for ensuring reproductive health, reducing morbidity and mortality, improving living conditions, improving the quality of social relations, regulating socio-economic processes in the country, increasing human and social capital.

With the development of socio-political and economic processes in the world, social relations, socio-economic development, demography, conflict analysis, etc., which are various areas of sociology, are becoming increasingly important. To solve problems, there are many analytical systems and various mathematical tools. However, studies show that it is necessary to improve the means of analyzing social processes, identifying factors influencing the formation of e-government, and the main interests of citizens.

The article describes the advantages of using Big Data, OLAP, ETL technologies for the analysis of social processes. Social security and development of human resources are key strategic aspects of the development of countries. The study of social processes, the formation of electronic state registers and complex conditions for stabilizing the level of development of society can be effectively used in decision-making systems to ensure social progress and socio-economic development of the country, thereby contributing to the development of the information society.

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