МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
Національний технічний університет України
«Київський політехнічний інститут імені Ігоря Сікорського»
Видавничо-поліграфічний інститут
Кафедра видавничої справи та редагування

INFORMATION MANAGEMENT
Charts and Tables

ІНФОРМАЦІЙНИЙ МЕНЕДЖМЕНТ
у схемах і таблицях

Методичні рекомендації
для студентів спеціальності 061 «Журналістика»
спеціалізації
«Реклама і зв'язки з громадськістю»

Рекомендовано
Вченою радою ВПІ
КПІ імені Ігоря Сікорського

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В авторській редакції

ВСТУП

На допомогу студентам, які здобувають фах «Реклама і зв'язки з громадськістю», в зручній схематичній та табличній формі подано методичні рекомендації з дисципліни «Інформаційний менеджмент». Лекційний курс викладається для студентів-магістрантів англійською мовою. Тому матеріал, поданий у лаконічній наочній формі таблиць, схем та діаграм, дозволить полегшити засвоєння лекційного матеріалу.

1. Introduction to discipline “Information Management”

The notion of **“Information Management”** (hereinafter – IM) appeared relatively recently – in the late 70's of the last century. The emergence of the IM as a concept, and then as an independent branch of knowledge, is associated with the need to make effective decisions in the field of IT development (internal IM tasks), as well as with the requirements for the management of information in the main activities of the enterprise (internal IM tasks).

The term **“information management”** owes its emergence to the federal government of the United States, which in 1978 suggested to control government documents, and in 1980 adopted the law on reducing the number of paper documents to put down expenditures of American firms for preparation of various reports.

The purpose of the academic discipline is to develop necessary theoretical knowledges and practical skills, in students, on the issue of administration of information activities, that is, on information management issues

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Definition of term “Information”

Definition 1

Information → Documented or publicly disclosed information about events and phenomena occurring in the society, the state and the environment. (The Law of Ukraine "On Information“)

Definition 2

Information → Statements about the surrounding world and the processes occurring in it, which are perceived by a person or a special device. (Ozhehov S.I., Shvedova N.Yu. The explanatory Dictionary of Russian language: 80000 words and idiomatic expressions. – M.: Azbukovnik, 1997. – 944 p.)

Definition 3

Information → A universal substance that permeates all spheres of human activity, serves as an agent of knowledge and ideas, an instrument of communication, mutual understanding and cooperation (UNESCO).

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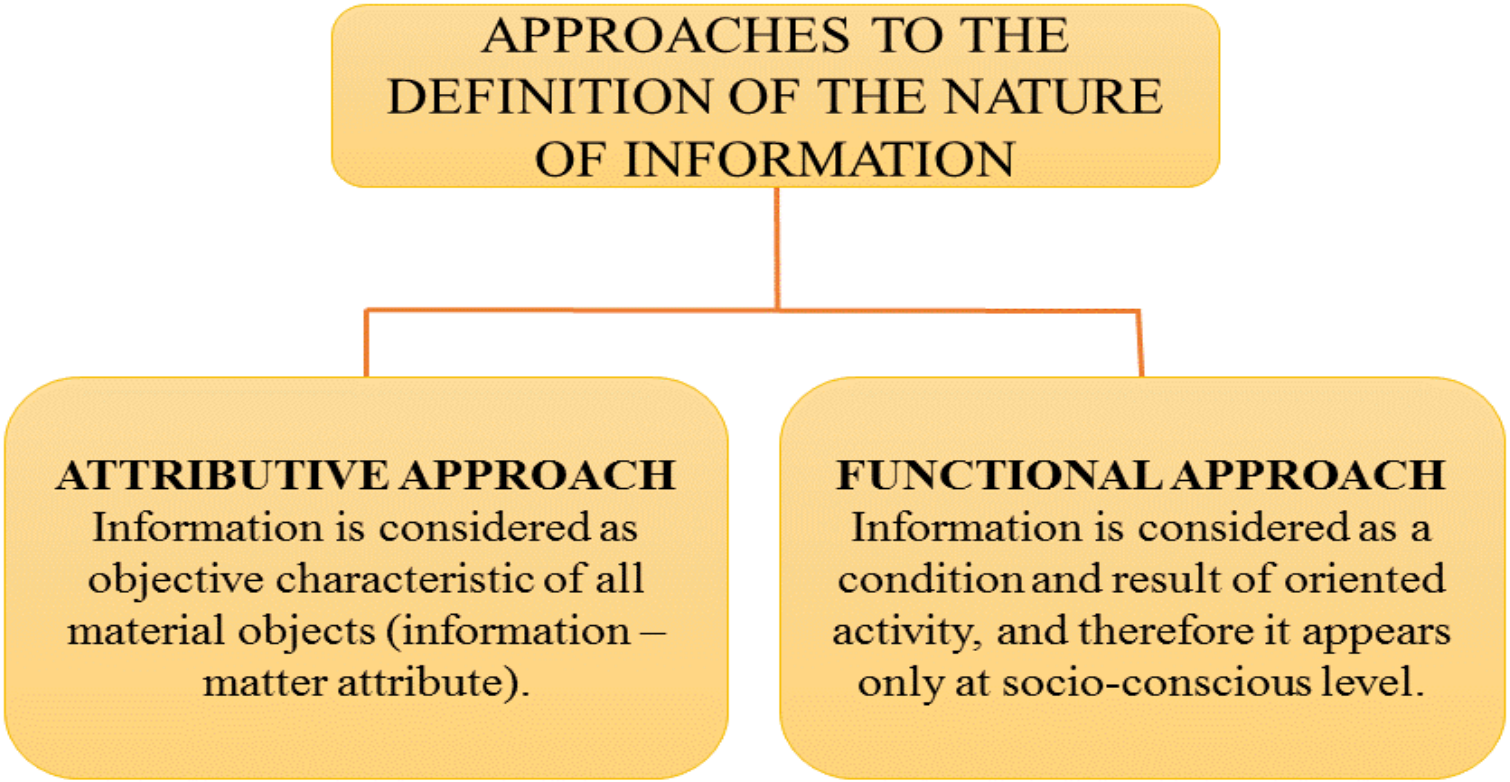
APPROACHES TO THE DEFINITION OF THE NATURE OF INFORMATION
ATTRIBUTIVE APPROACH
Information is considered as objective characteristic of all material objects (information – matter attribute).
FUNCTIONAL APPROACH
Information is considered as a condition and result of oriented activity, and therefore it appears only at socio-conscious level.

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Definition of term "Management"

The term **"Management"** is used in many meanings and is often utilized as a synonym for the term "administration". The researchers of the basic approaches to management science have brought a variety definitions of "management" and "administration" concepts – from the consideration of management as a component of administration, to the identification of these concepts.

The main task is to prepare highly skilled information managers who should posses following behaviors :

- ✓ the ability to organize and carry out informational activity on any object (both in informational and non-informational spheres);
- ✓ sophistication to be at the head of information services (of a company) (whether commercial or noncommercial or to manage its separate unit);
- ✓ the ability to provide leadership to a team of project developers (new informational computing firms, new IPs, software products, other information frameworks, etc.);
- ✓ the ability to identify efficiency enhancement potentials for production and economic activities of information services (companies) and the ability to mobilize them.

Management

Is an administration within a market economy, which means:

- focus of an organization on demand and requirements of the market, on requests of certain consumers and management of manufacturing process of specific products, which are in demand and can bring planned profit;
- constant striving for improvement of efficiency of a company with low expenditures, for gaining optimal results;
- economic independence, which assure freedom of decision making for those, who bear responsibility for final results of business activities of company and its units;
- constant adjustment of objectives and plans depending on condition of business climate;
- the necessity to apply modern informational background with computers in order to carry out multiple calculations to make reasonable managerial decisions.

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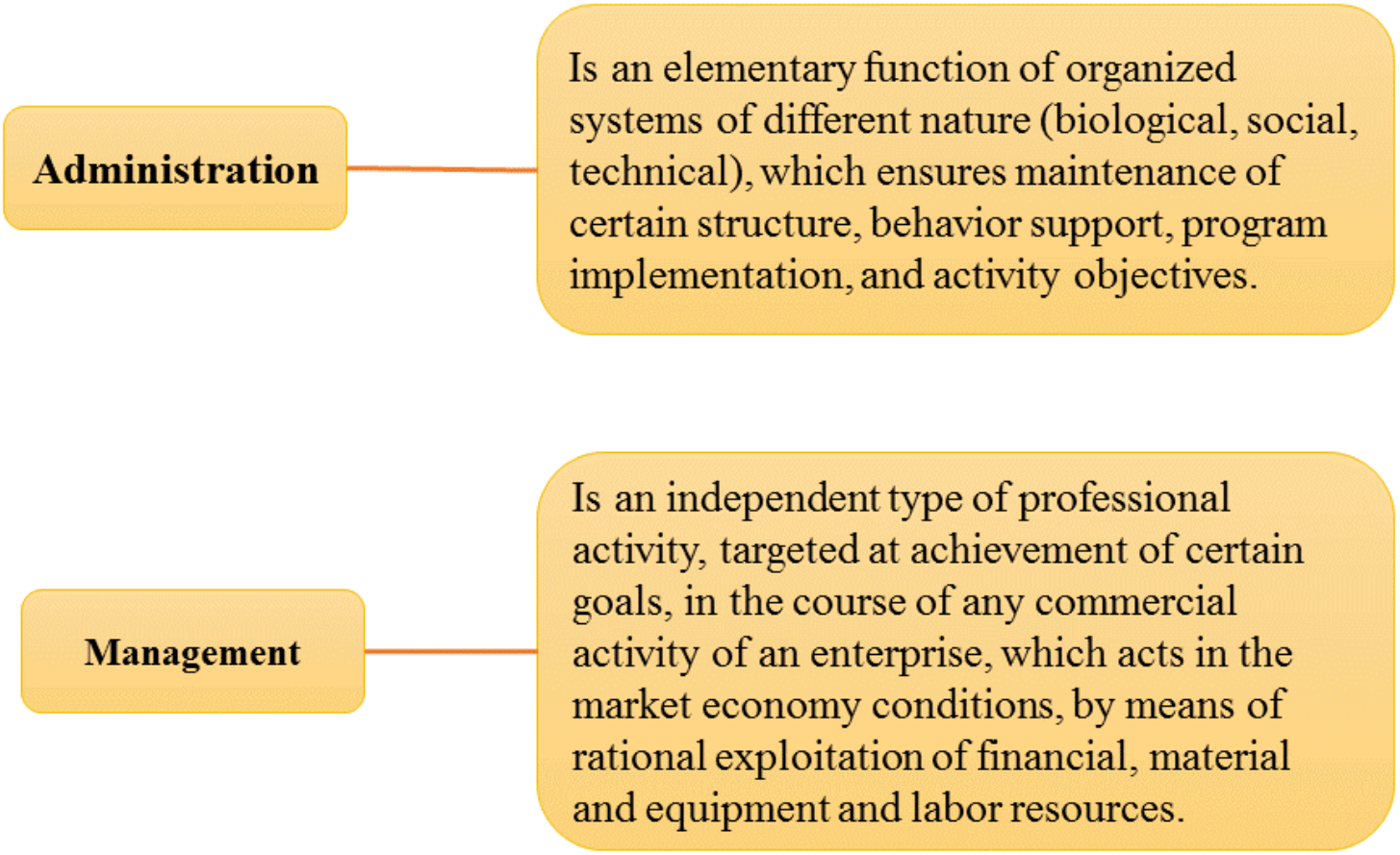
Administration
Is an elementary function of organized systems of different nature (biological, social, technical), which ensures maintenance of certain structure, behavior support, program implementation, and activity objectives.
Management
Is an independent type of professional activity, targeted at achievement of certain goals, in the course of any commercial activity of an enterprise, which acts in the market economy conditions, by means of rational exploitation of financial, material and equipment and labor resources.

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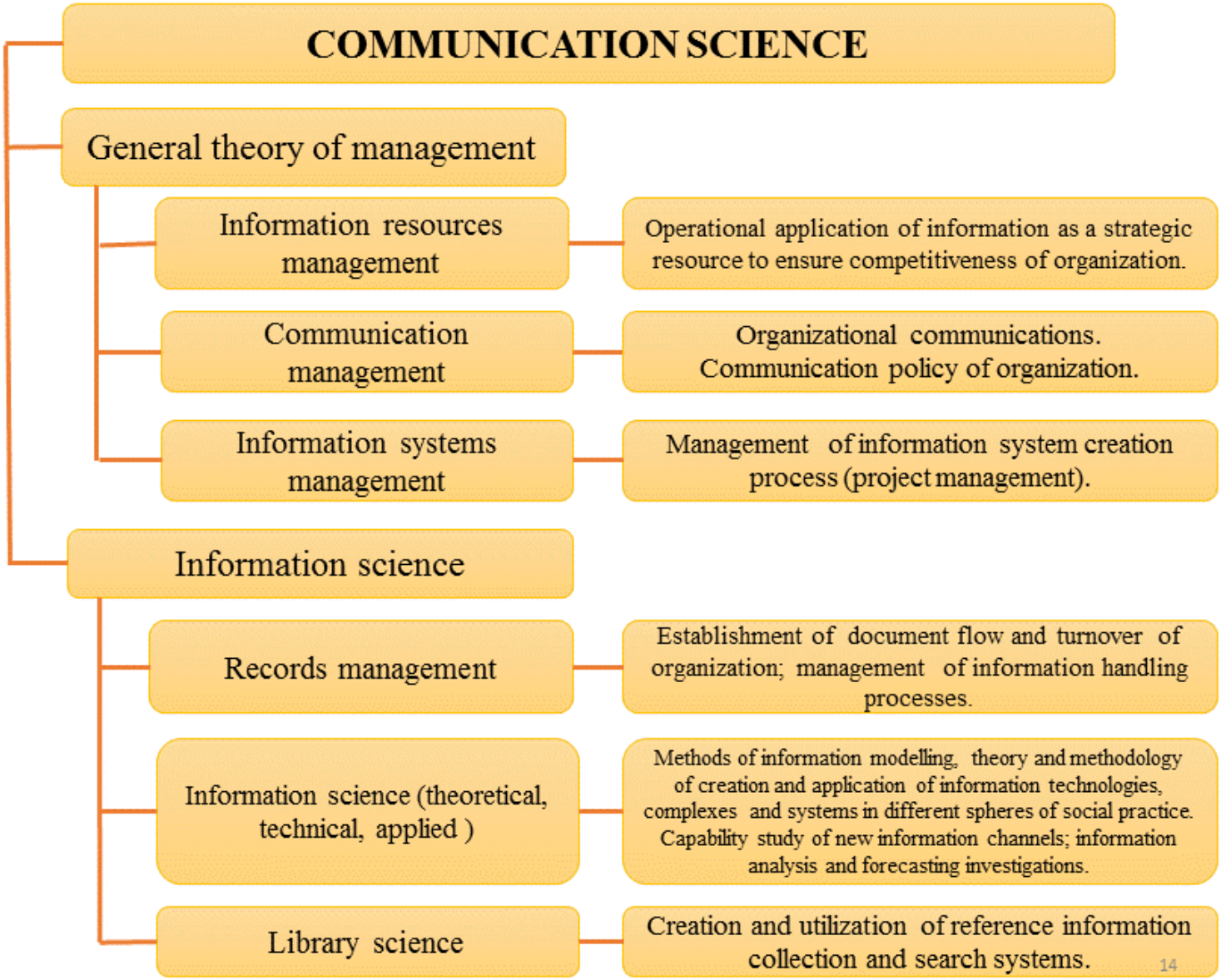
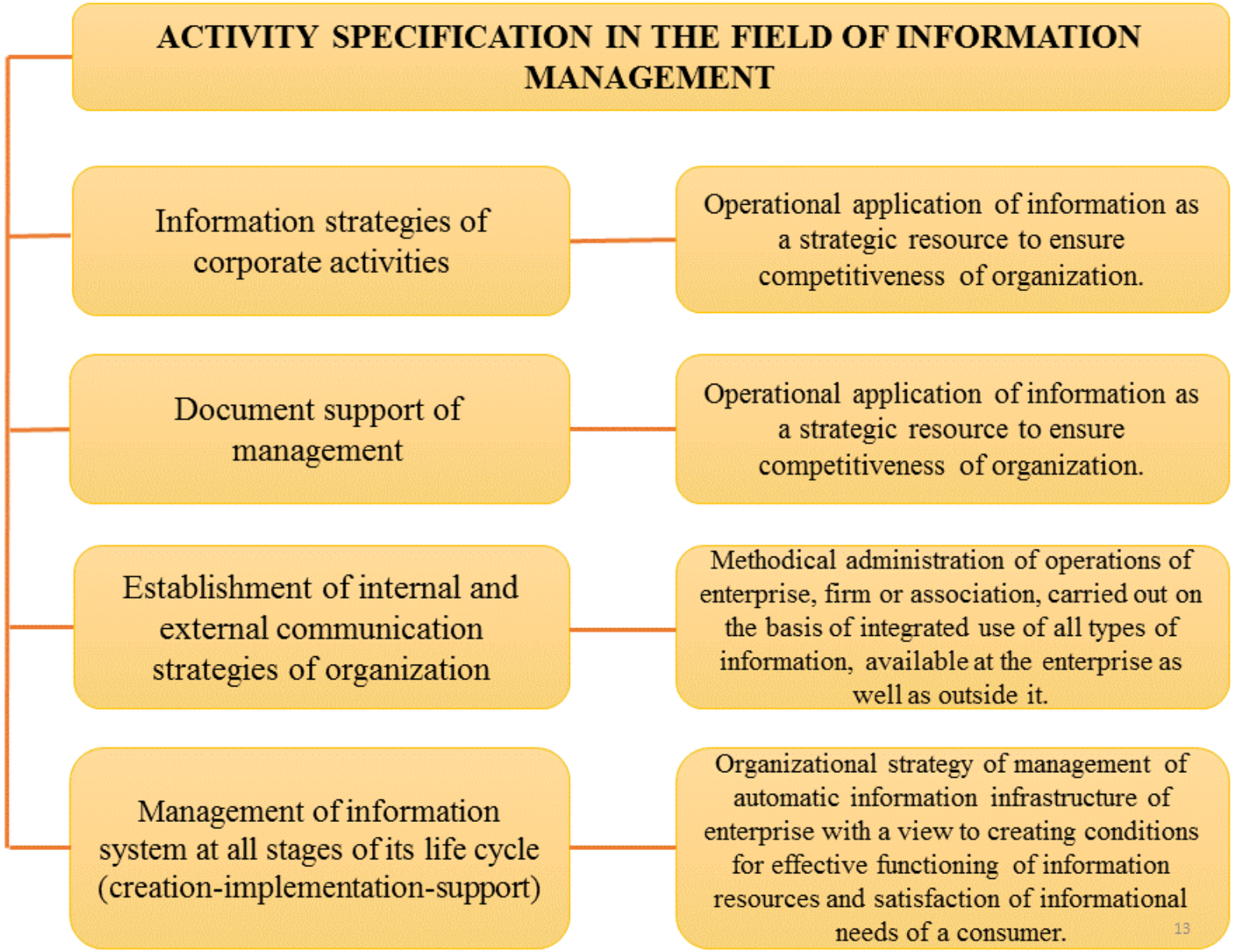
INFORMATION MANAGEMENT

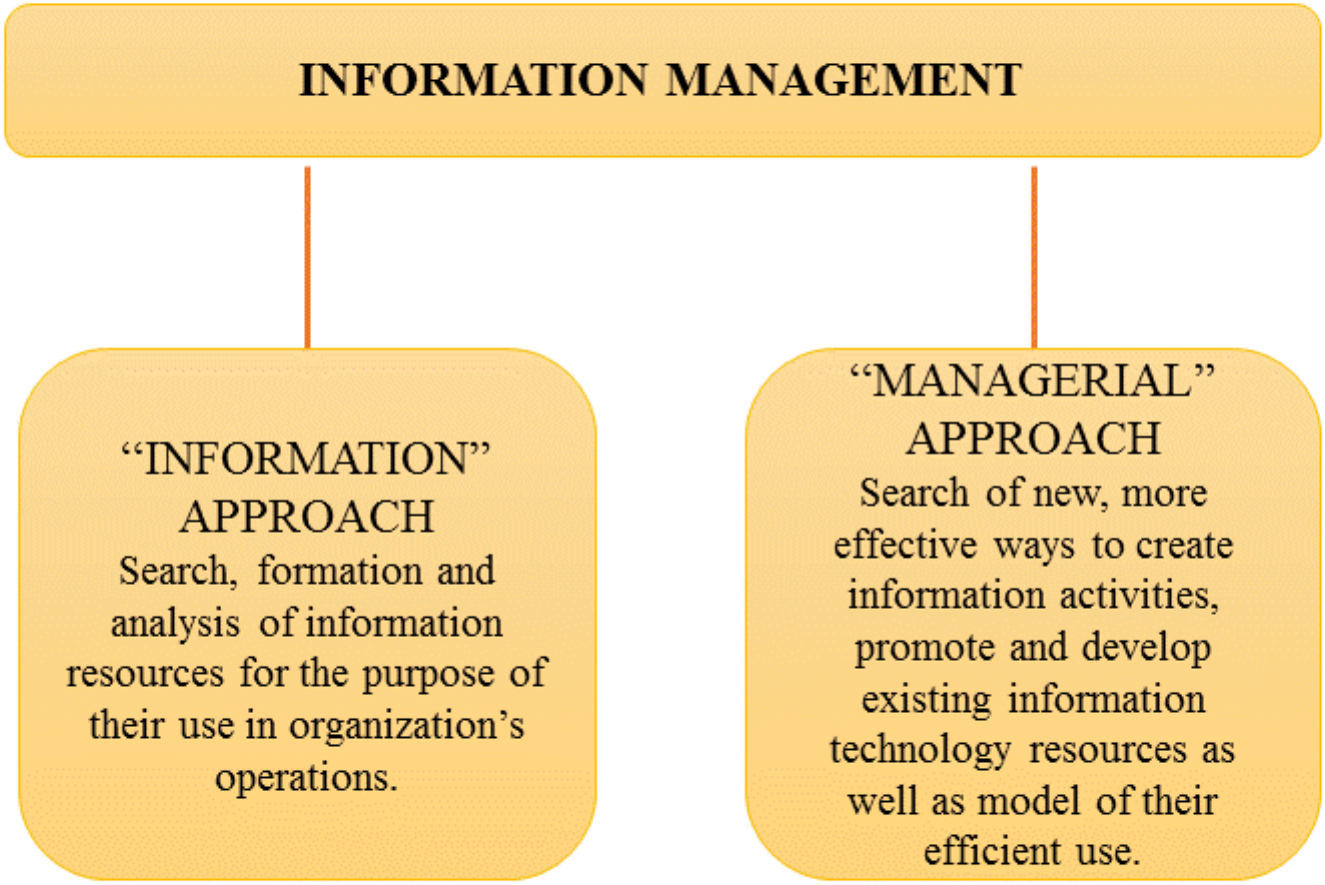
It is an innovation activity, focused on continuous search of new, more effective ways for organization of information activities, on establishment of material and social preconditions for efficient access to information, on information communication processes support, on activation and development of existing information resources and models of their efficient use.

Structural scheme of information management

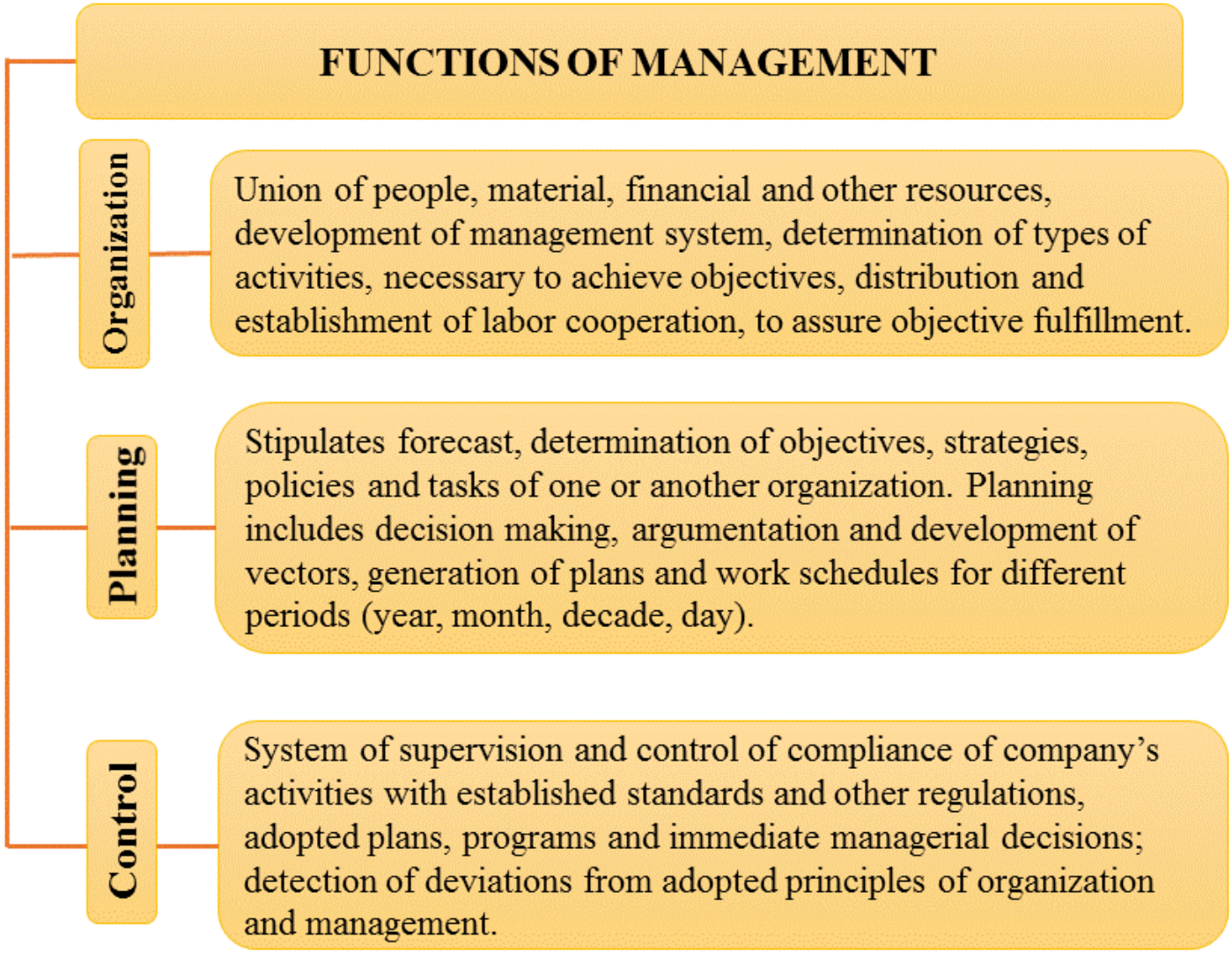



ACTIVITY SPECIFICATION IN THE FIELD OF INFORMATION MANAGEMENT
Information strategies of corporate activities
Operational application of information as a strategic resource to ensure competitiveness of organization.
Document support of management
Operational application of information as a strategic resource to ensure competitiveness of organization.
Establishment of internal and external communication strategies of organization
Methodical administration of operations of enterprise, firm or association, carried out on the basis of integrated use of all types of information, available at the enterprise as well as outside it.
Management of information system at all stages of its life cycle (creation-implementation-support)
Organizational strategy of management of automatic information infrastructure of enterprise with a view to creating conditions for effective functioning of information resources and satisfaction of informational needs of a consumer.

APPROACHES TO ACTIVITIES IN THE FIELD OF INFORMATION MANAGEMENT



Branches, where information management develops


FUNCTIONS OF MANAGEMENT
Organization
Union of people, material, financial and other resources, development of management system, determination of types of activities, necessary to achieve objectives, distribution and establishment of labor cooperation, to assure objective fulfillment.
Planning
Stipulates forecast, determination of objectives, strategies, policies and tasks of one or another organization. Planning includes decision making, argumentation and development of vectors, generation of plans and work schedules for different periods (year, month, decade, day).
Control
System of supervision and control of compliance of company's activities with established standards and other regulations, adopted plans, programs and immediate managerial decisions; detection of deviations from adopted principles of organization and management.

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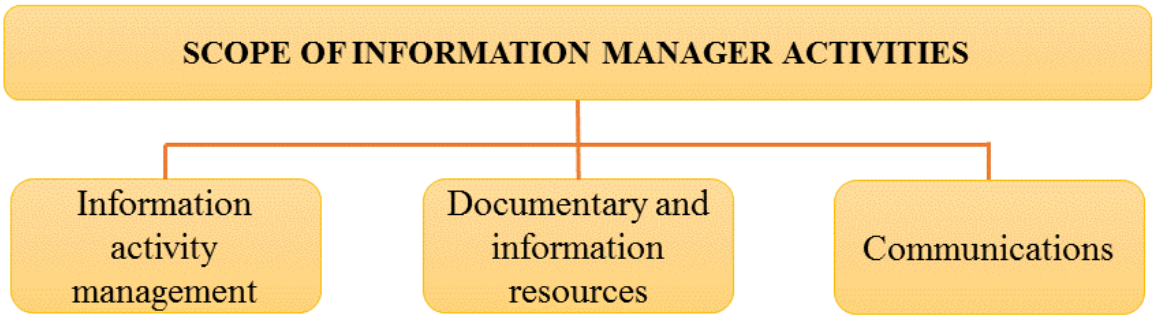
The peculiarity of information management

The peculiarity of information management lies in the fact that it is a multifunctional activity area: on the one hand, it directly concerns the general theory of management, and on the other – it concerns the subject field of informatics and information activities, including their analytical and forecasting components, that is, the entire complex of forms, methods and tools that provide efficient interaction in any field of activity.

Information management includes execution of following activities:

- ✓ examination of the enterprise as an object of management;
- ✓ development of information resources of the enterprise as a management base;
- ✓ creation of information products as management means.



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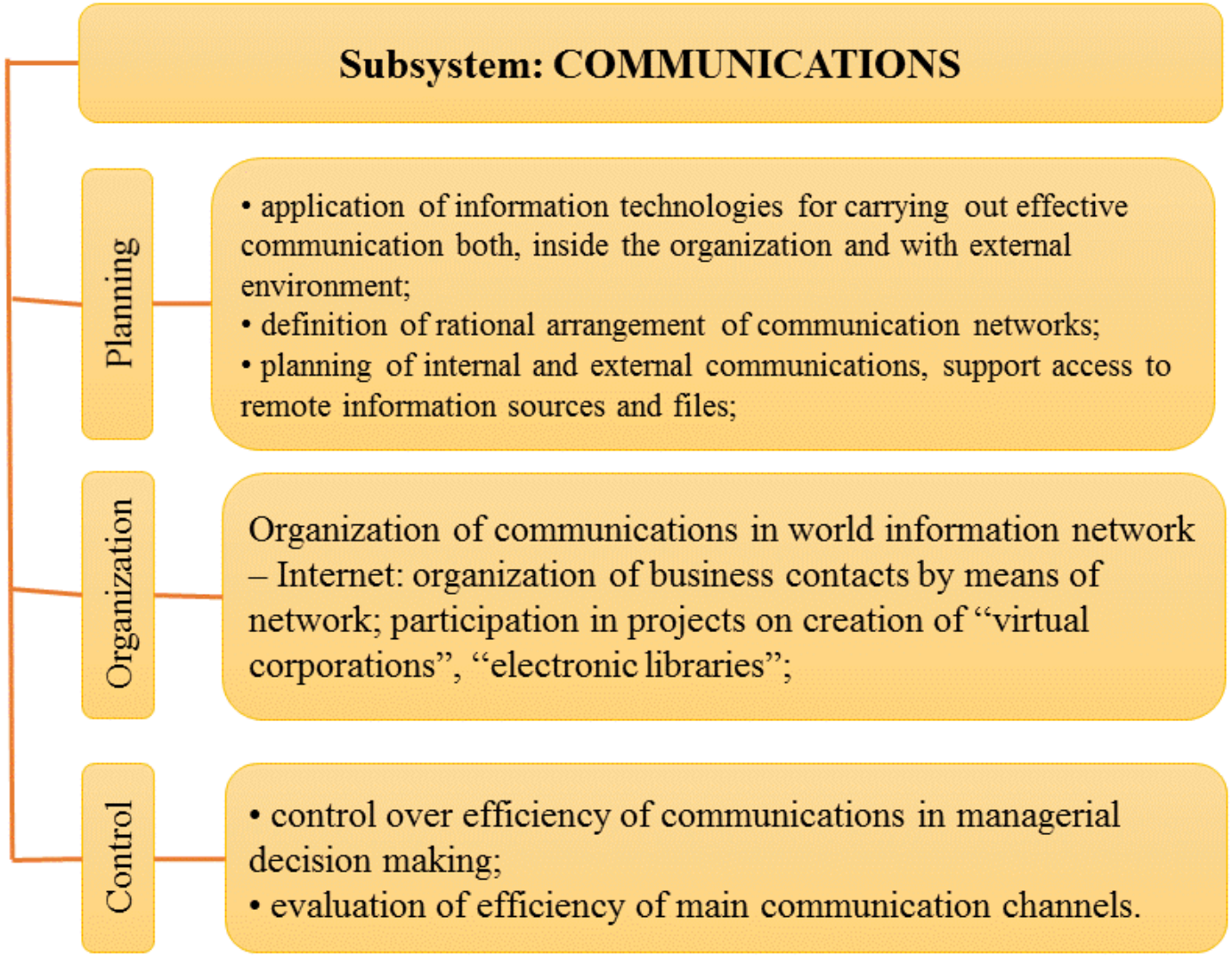
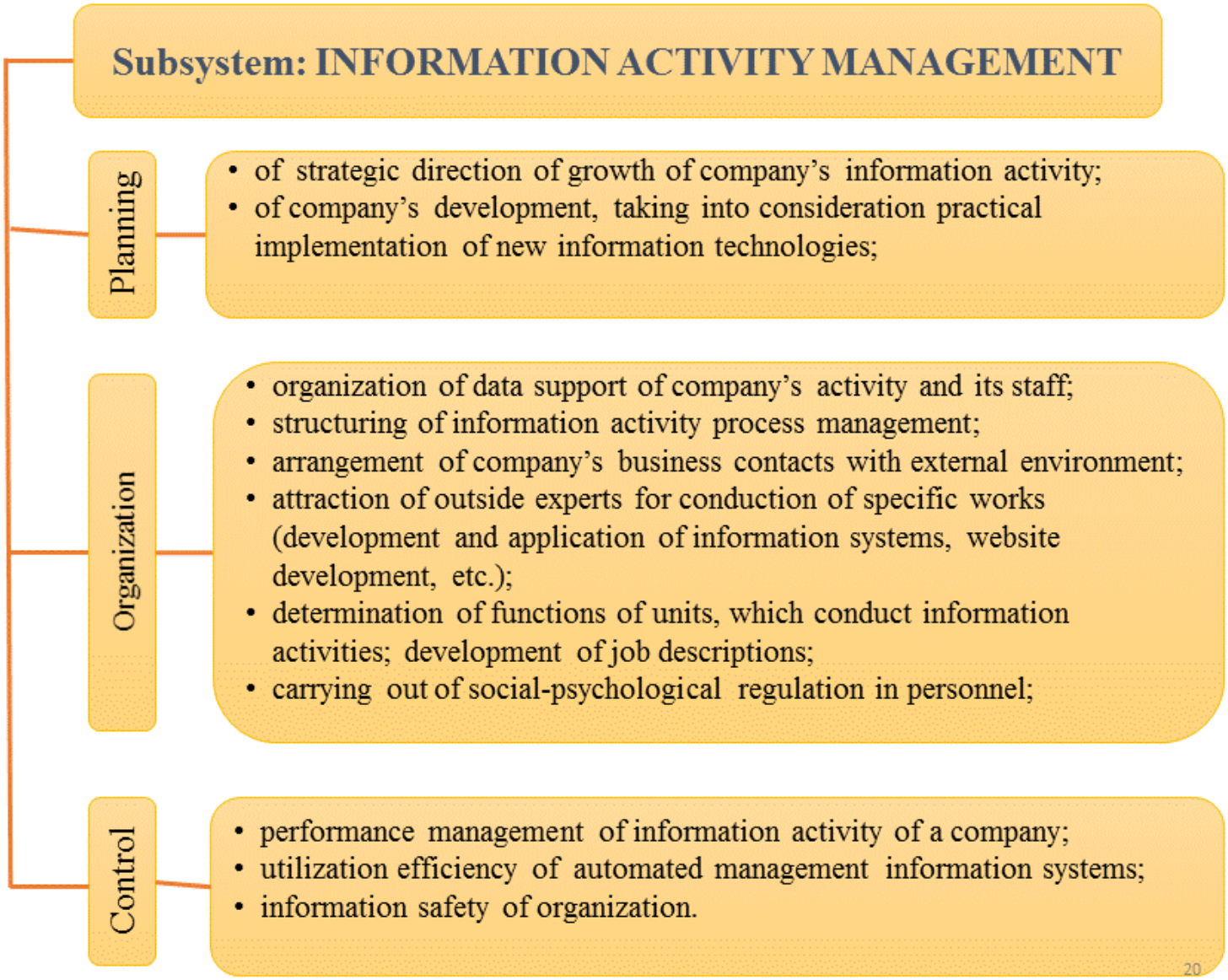

Subsystem: COMMUNICATIONS
Planning
• application of information technologies for carrying out effective communication both, inside the organization and with external environment;
• definition of rational arrangement of communication networks;
• planning of internal and external communications, support access to remote information sources and files;
Organization
Organization of communications in world information network – Internet: organization of business contacts by means of network; participation in projects on creation of "virtual corporations", "electronic libraries";
Control
• control over efficiency of communications in managerial decision making;
• evaluation of efficiency of main communication channels.


Subsystem: INFORMATION ACTIVITY MANAGEMENT
Planning
• of strategic direction of growth of company's information activity;
• of company's development, taking into consideration practical implementation of new information technologies;
Organization
• organization of data support of company's activity and its staff;
• structuring of information activity process management;
• arrangement of company's business contacts with external environment;
• attraction of outside experts for conduction of specific works (development and application of information systems, website development, etc.);
• determination of functions of units, which conduct information activities; development of job descriptions;
• carrying out of social-psychological regulation in personnel;
Control
• performance management of information activity of a company;
• utilization efficiency of automated management information systems;
• information safety of organization.
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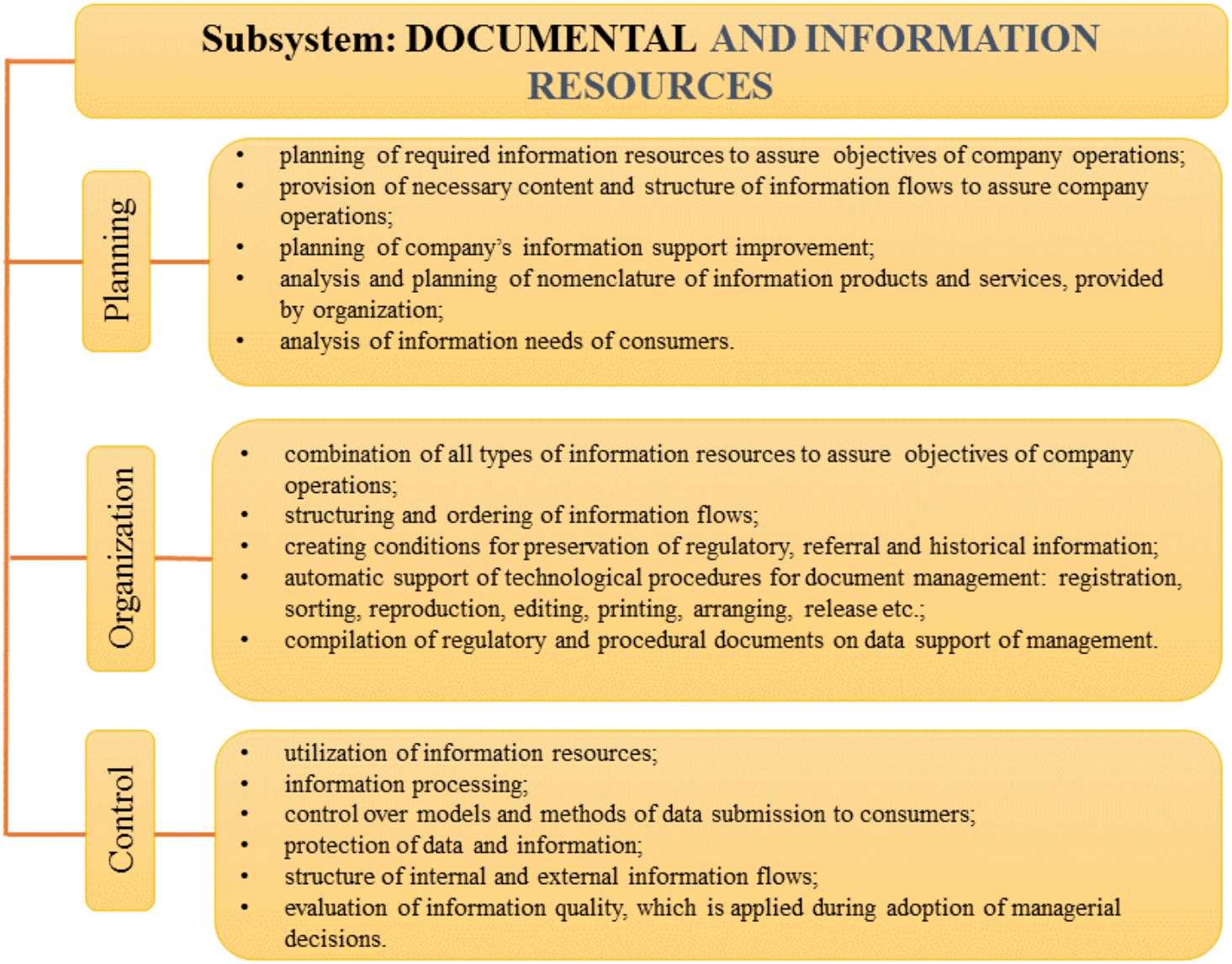
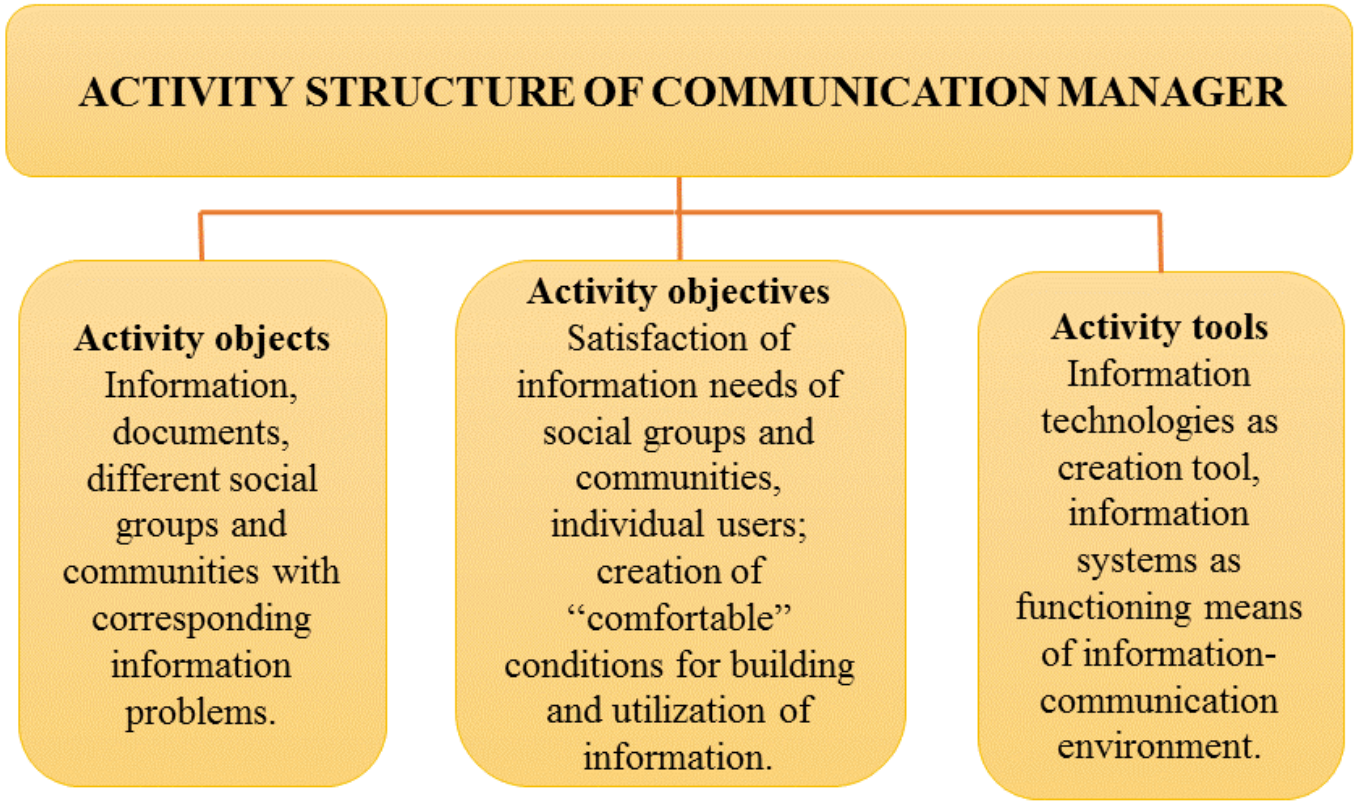

Subsystem: DOCUMENTAL AND INFORMATION RESOURCES
Planning
planning of required information resources to assure objectives of company operations;
provision of necessary content and structure of information flows to assure company operations;
planning of company's information support improvement;
analysis and planning of nomenclature of information products and services, provided by organization;
analysis of information needs of consumers.
Organization
combination of all types of information resources to assure objectives of company operations;
structuring and ordering of information flows;
creating conditions for preservation of regulatory, referral and historical information;
automatic support of technological procedures for document management: registration, sorting, reproduction, editing, printing, arranging, release etc.;
compilation of regulatory and procedural documents on data support of management.
Control
utilization of information resources;
information processing;
control over models and methods of data submission to consumers;
protection of data and information;
structure of internal and external information flows;
evaluation of information quality, which is applied during adoption of managerial decisions.


ACTIVITY STRUCTURE OF COMMUNICATION MANAGER
Activity objects
Information, documents, different social groups and communities with corresponding information problems.
Activity objectives
Satisfaction of information needs of social groups and communities, individual users; creation of "comfortable" conditions for building and utilization of information.
Activity tools
Information technologies as creation tool, information systems as functioning means of information-communication environment.

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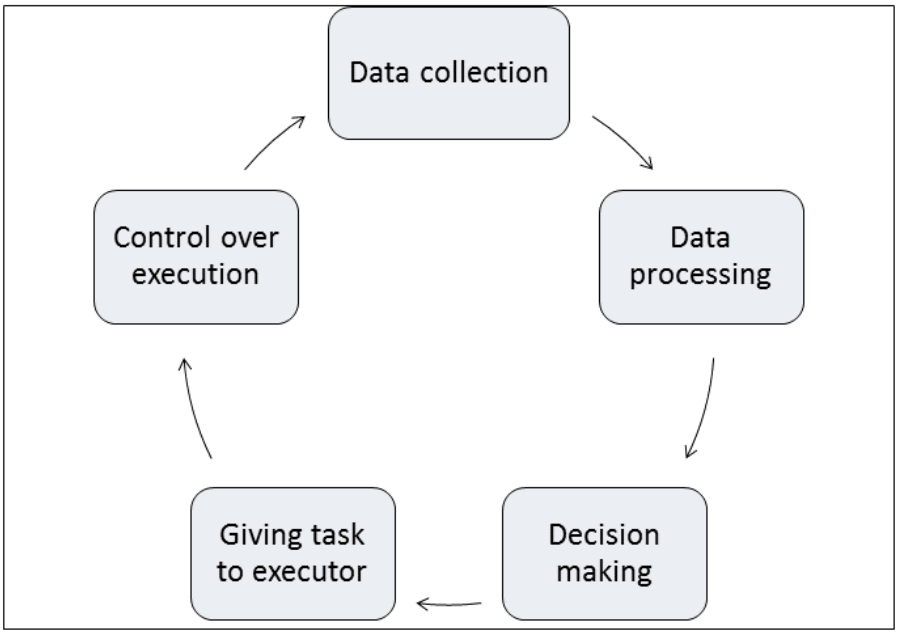
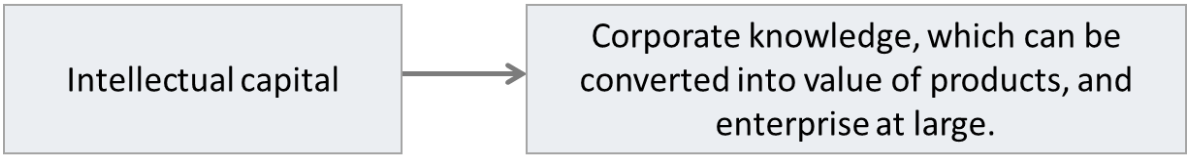
2. Data Intelligence

The competitiveness of an enterprise depends on how management and staff can quickly identify, and even predict, changes in the external environment and how flexibly can they rearrange their behavior, choosing an innovative way of development.

- The process of making and taking decisions in the management system is an information process.
- ***The decision*** is a "cluster" of information, intentionally collected, analyzed and processed by the subject of management.

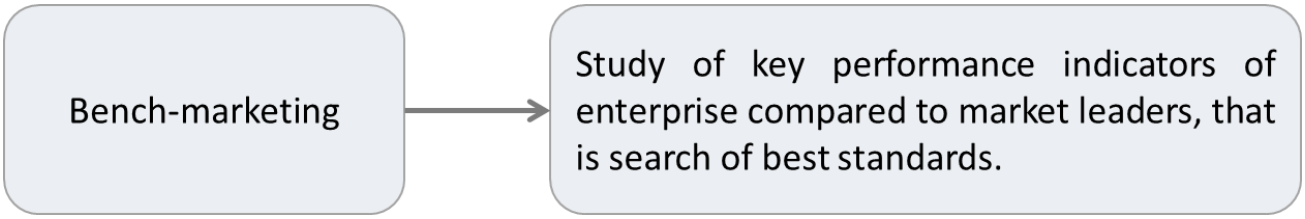


The adoption of managerial decisions on strategic development of an enterprise involves usage of a considerable amount of diverse information, which is constantly replenished by all channels of communication, both external and internal, including personal knowledge and experience of the personnel, that is, taking full advantage of the entire intellectual potential of an enterprise.



- ✓ Intellectual capital includes all industrial property objects (patents for inventions, industrial designs, trademarks and service marks, company names and other means of individualization of products and services of an enterprise), know-how, production secrets, personal knowledge and experience of employees, information resources of enterprise and its communication channels, which can be used to obtain necessary information;
- ✓ The quality and extent of utilization of software products, network information technologies, systems of operative and intelligent data processing;
- ✓ Organizational capabilities, relationships with vendors and customers.

Bench-marketing contributes to study, evaluation and increase of intellectual capital of an enterprise.



Directions of bench-marketing:

- ***competitive*** – examines products, services and work processes of direct competitors of an enterprise;
- ***functional*** – *is* oriented at products, services and work processes of organizations, which are indirect competitors of the enterprise.

Types of information analytics

Information analytics is a component of information activity, that is connected with acquisition, use, distribution of information. The study of information flows, information resources of institutions, external information resources, forms and methods of information provision of managers, which requires consideration of the achievements of the ***theory of scientific information activity*** is of current interest in the range of problems of information management.

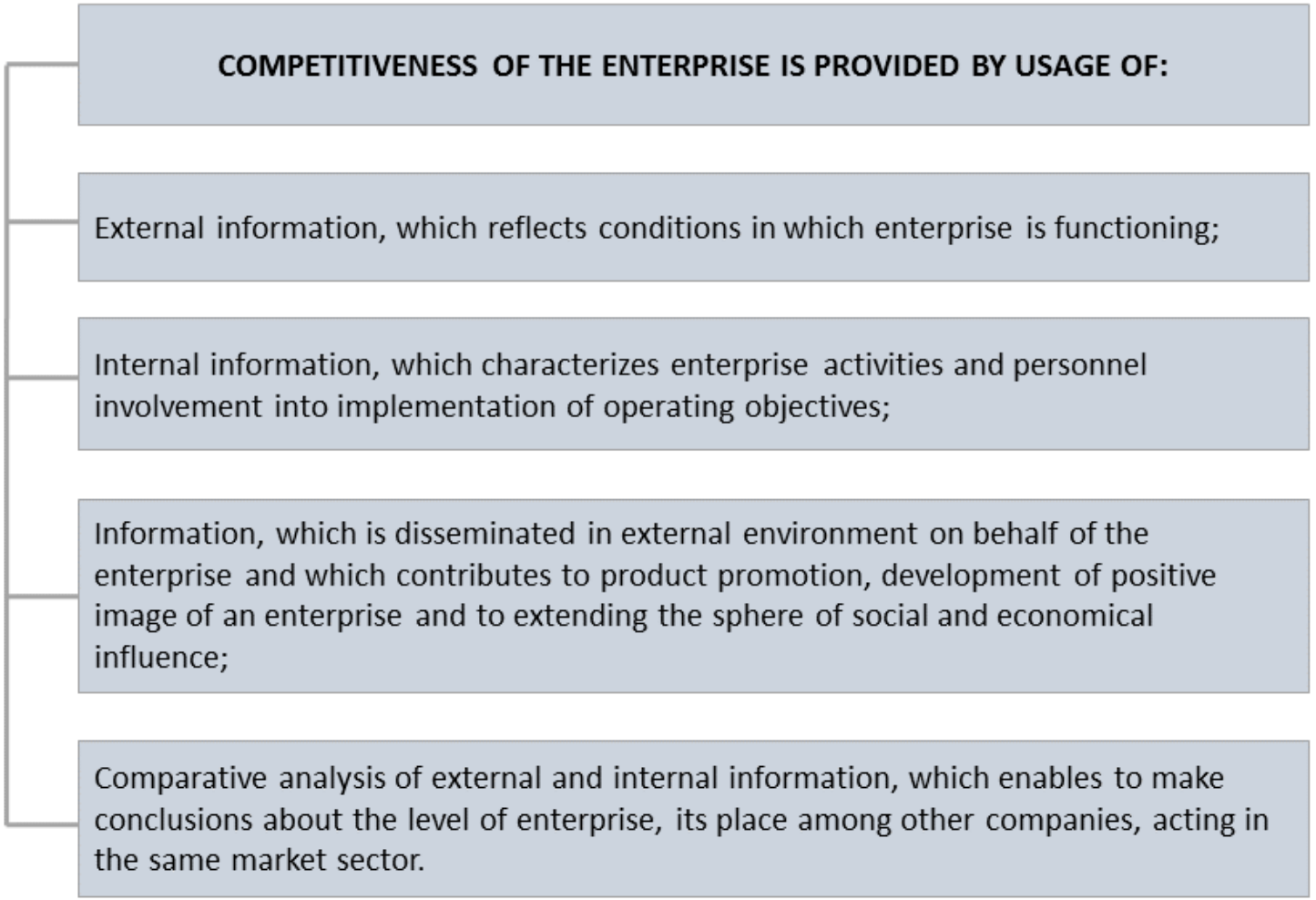
It is very important for the managerial sphere, politics and economics, to prevent conflicts and socio-political situations, to find the best way out of the situation, to evaluate the possible consequences of decision making, to identify trends and patterns of development of financial situation, strategic planning.

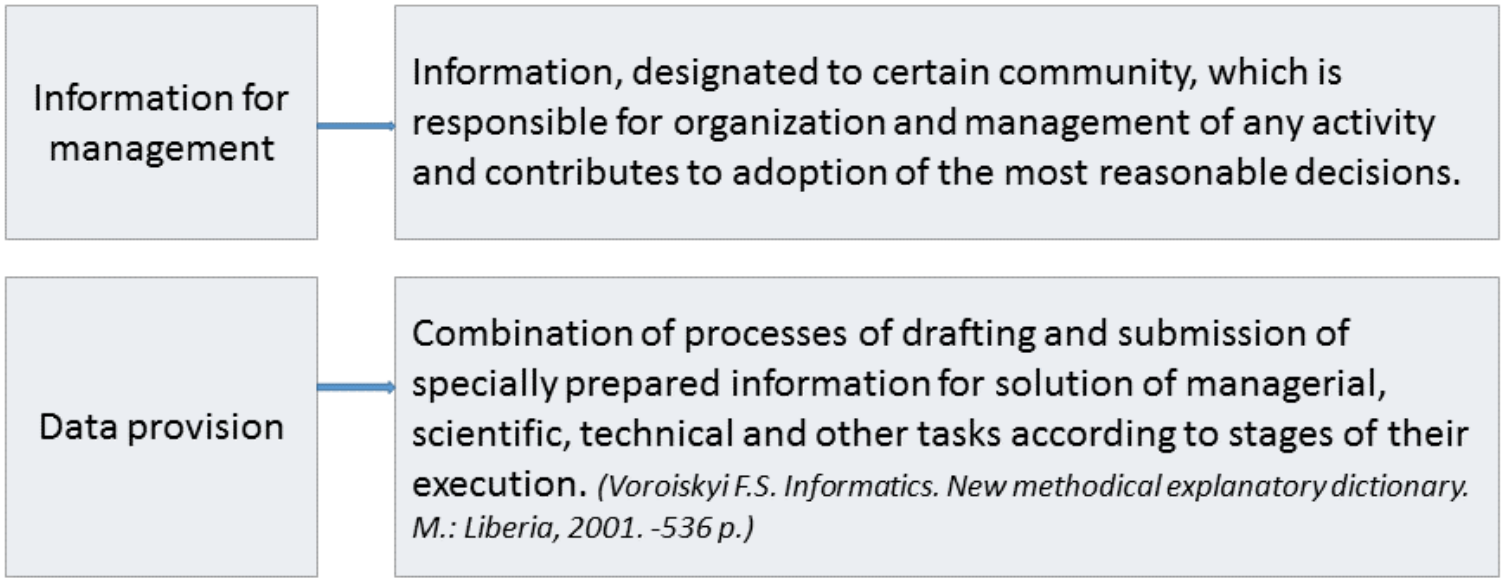
These problems are characterized by informational openness, uncertainty of the borders of the problematic sphere.

Focusing on predictions, determination of trends of situation development stipulates preferential application of various analytical methods of information processing: information analysis, source study, situational analysis, content analysis, etc.

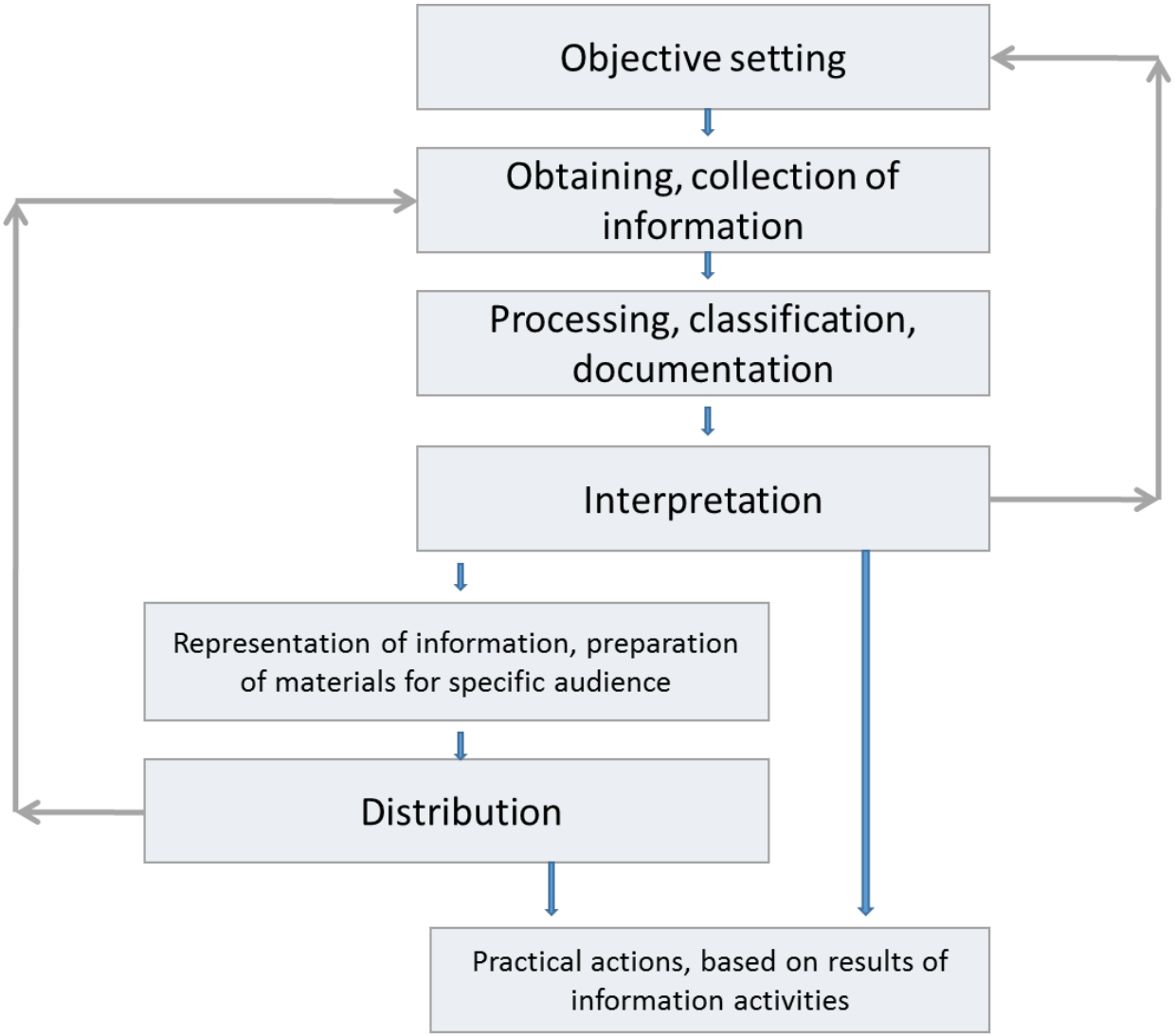
Types of management activities in order of intellectuality and complexity		
First class	Task content	The simplest tasks, which consist of entirely formalized procedures, and execution of which represents no difficulties for executors. These tasks are standardized and programmed. They include: accountability, completion of paperwork, its duplication, distribution and others.
	Task executor	Technicians, who perform all routine work. Their work is scheduled, does not require understanding of information content. This group also includes employees, who possess only production skills (printers, operators). The main criteria of their productive efficiency are promptness and timeliness of work without faults and failures.
Second class	Task content	More complicated tasks: decision making under risk, that is, in cases when there are random factors, for which influence principles are known. Definition and solution of such tasks are possible on the basis of probability theory methods, analytical and simulation modeling.
	Task executor	Professionals, who execute tasks of second and third classes and constitute intellectual basis of enterprise, provide entire information preparedness for decision making by executive manager. They are main document originators and evaluate their quality.
Third class	Task content	Slightly structured tasks, which contain unknown or unmeasured components (non evaluated quantitatively). These tasks have no resolution procedures on the basis of direct processing. In a number of instances, it is possible to build formal solution schemes based on fuzzy set theory and application of this theory.
	Task executor	(See Task Executors of second class)

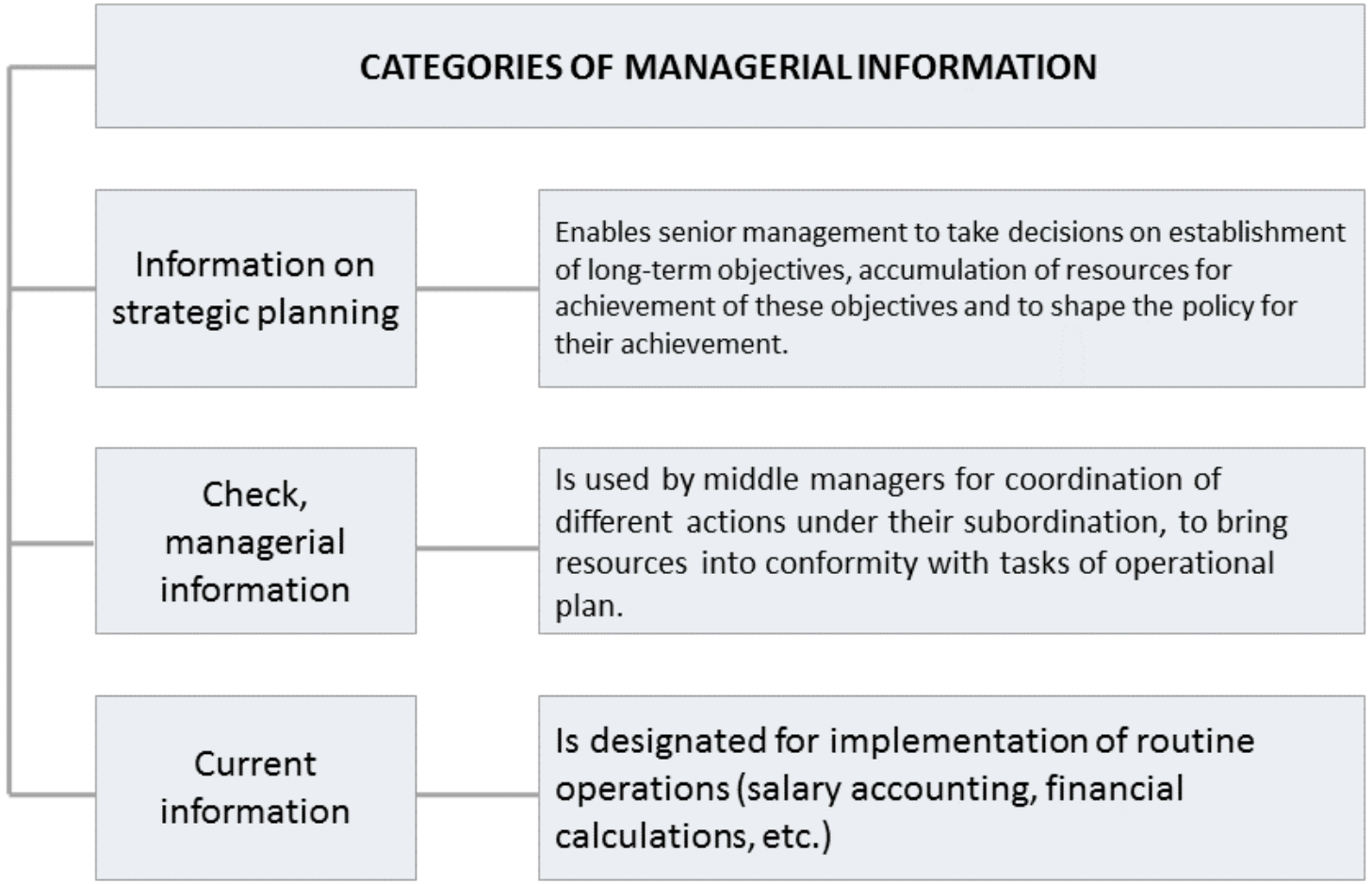
Fourth class	Task content	Decision making under conditions of counteraction and dispute (for example, taking into consideration availability of existing competitors). These tasks include random factors with unknown influence principles. Definition and solution of such tasks are possible (but not always) by methods of probability theory, fuzzy set theory and games theory.
	Task executor	Managers (CEOs, general managers, executive managers, department managers), who, as a rule, execute tasks of fourth and fifth classes. Creative component of their work is of highest priority and routine content is minimized. These employees bear the biggest responsibility for decision making and are the main users of generalized information resources of enterprise.
Fifth class	Task content	The most complicated tasks for decision making, which are defined by absence of formalization possibility, due to high degree of indefiniteness. Such tasks include majority of forecasting and perspective planning problems.
	Task executor	(See Tasks Executors of fourth class)


COMPETITIVENESS OF THE ENTERPRISE IS PROVIDED BY USAGE OF:
External information, which reflects conditions in which enterprise is functioning;
Internal information, which characterizes enterprise activities and personnel involvement into implementation of operating objectives;
Information, which is disseminated in external environment on behalf of the enterprise and which contributes to product promotion, development of positive image of an enterprise and to extending the sphere of social and economical influence;
Comparative analysis of external and internal information, which enables to make conclusions about the level of enterprise, its place among other companies, acting in the same market sector.


Information for management
Information, designated to certain community, which is responsible for organization and management of any activity and contributes to adoption of the most reasonable decisions.
Data provision
Combination of processes of drafting and submission of specially prepared information for solution of managerial, scientific, technical and other tasks according to stages of their execution. (Voroiskyi F.S. Informatics. New methodical explanatory dictionary. M.: Liberia, 2001. -536 p.)

The process of information support consists of the following sequence of stages




CATEGORIES OF MANAGERIAL INFORMATION
Information on strategic planning
Enables senior management to take decisions on establishment of long-term objectives, accumulation of resources for achievement of these objectives and to shape the policy for their achievement.
Check, managerial information
Is used by middle managers for coordination of different actions under their subordination, to bring resources into conformity with tasks of operational plan.
Current information
Is designated for implementation of routine operations (salary accounting, financial calculations, etc.)

MAIN MANUFACTURING PROCESSES OF DOCUMENTARY SOURCES

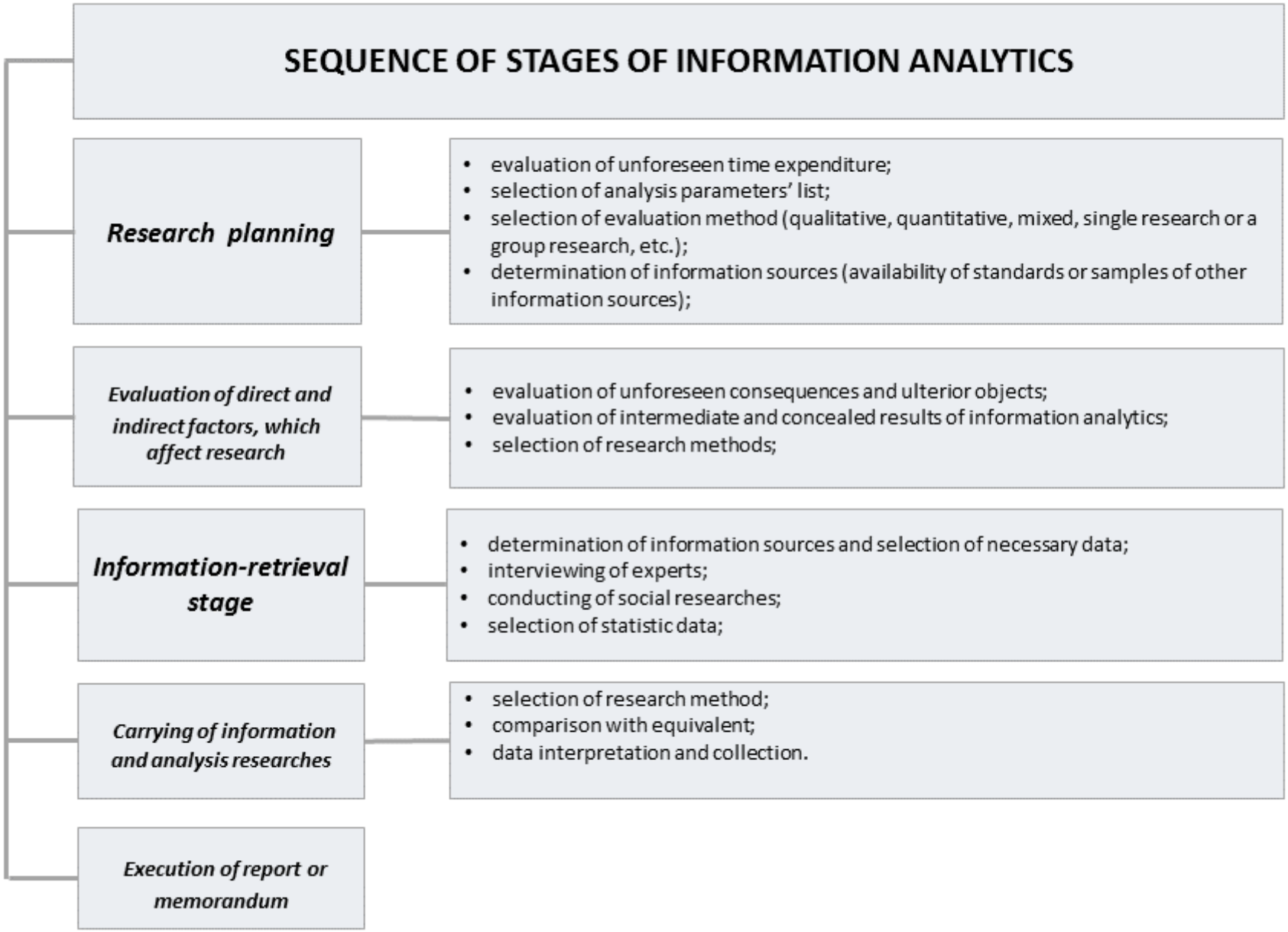
- Extract from documents and systematization of information and quantitative data, which characterize different condition aspects of object under consideration;
- Evaluation of novelty, authenticity and correlation of selected data, their supplement and content clarification;
- Logical processing of obtained data for the purpose of acquisition of new information concerning the condition of certain scope of activity, that is determination of attained level, trends and development perspectives.

CLASSIFICATION REVIEW SCHEME			
Depth of analysis of primary source content	**Bibliographical review**	**Abstract review**	**Analytical review**
Target purpose of review	▪ new additions; ▪ bibliographical guidance; ▪ historiographic; ▪ information publication	▪ scientific-technical; ▪ engineering and manufacturing; ▪ technical and economic; ▪complex	▪ scientific-technical; ▪ engineering and manufacturing; ▪ technical and economic; ▪ complex; ▪ comparative; ▪ prognostic; ▪ science education
Form of review presentation, which reflects operational flexibility of information	▪ review reference ▪ annual review ▪ review article ▪ monographic review		

MAIN OBJECTIVES OF ANALYTICAL COVERAGE

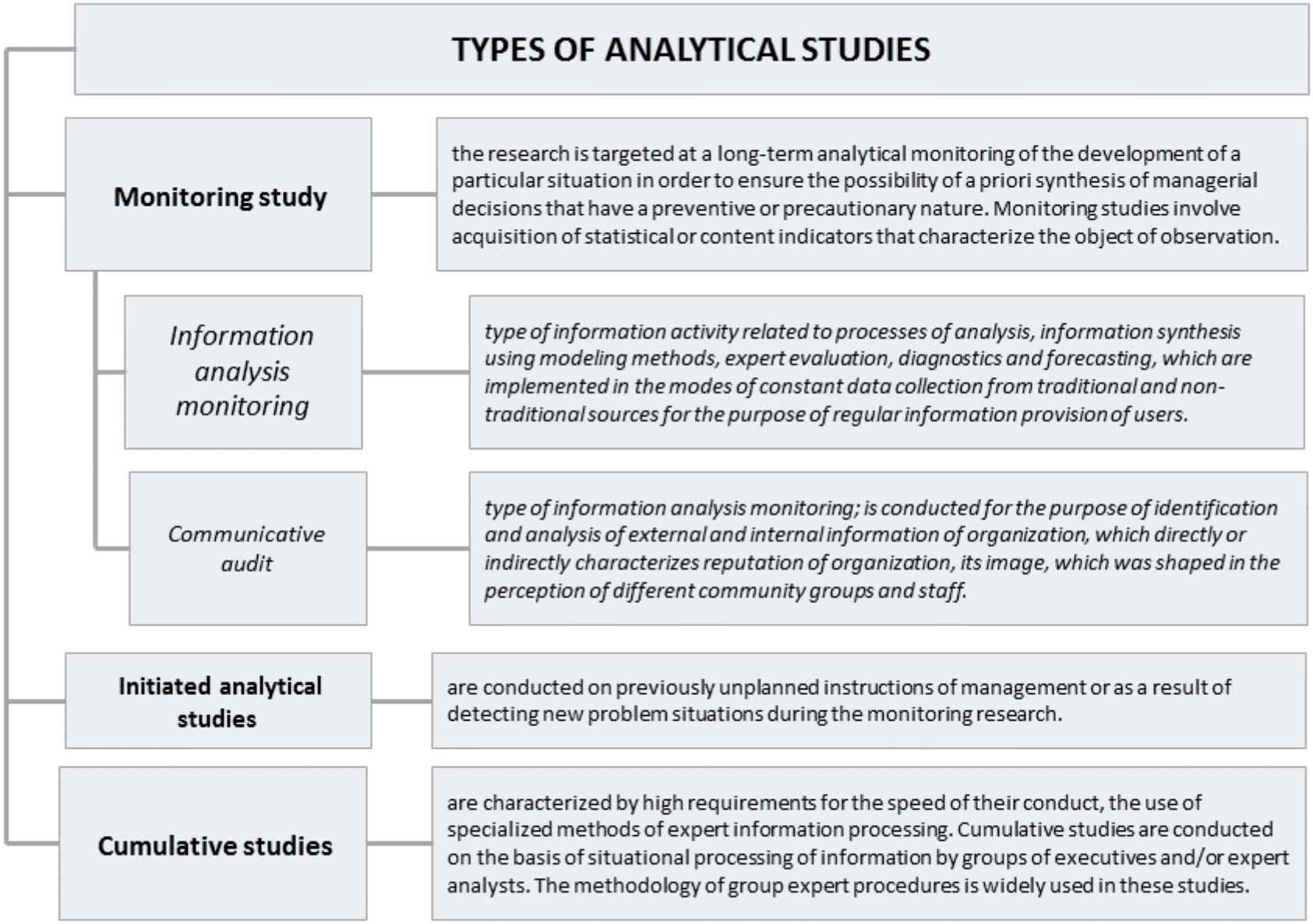
- *preparation of information before decision making;*
- *evaluation of research level;*
- *provision of field experts with necessary information, including photographic;*
- *introduction of achievements in certain fields of economy, science and engineering to experts and managers.*

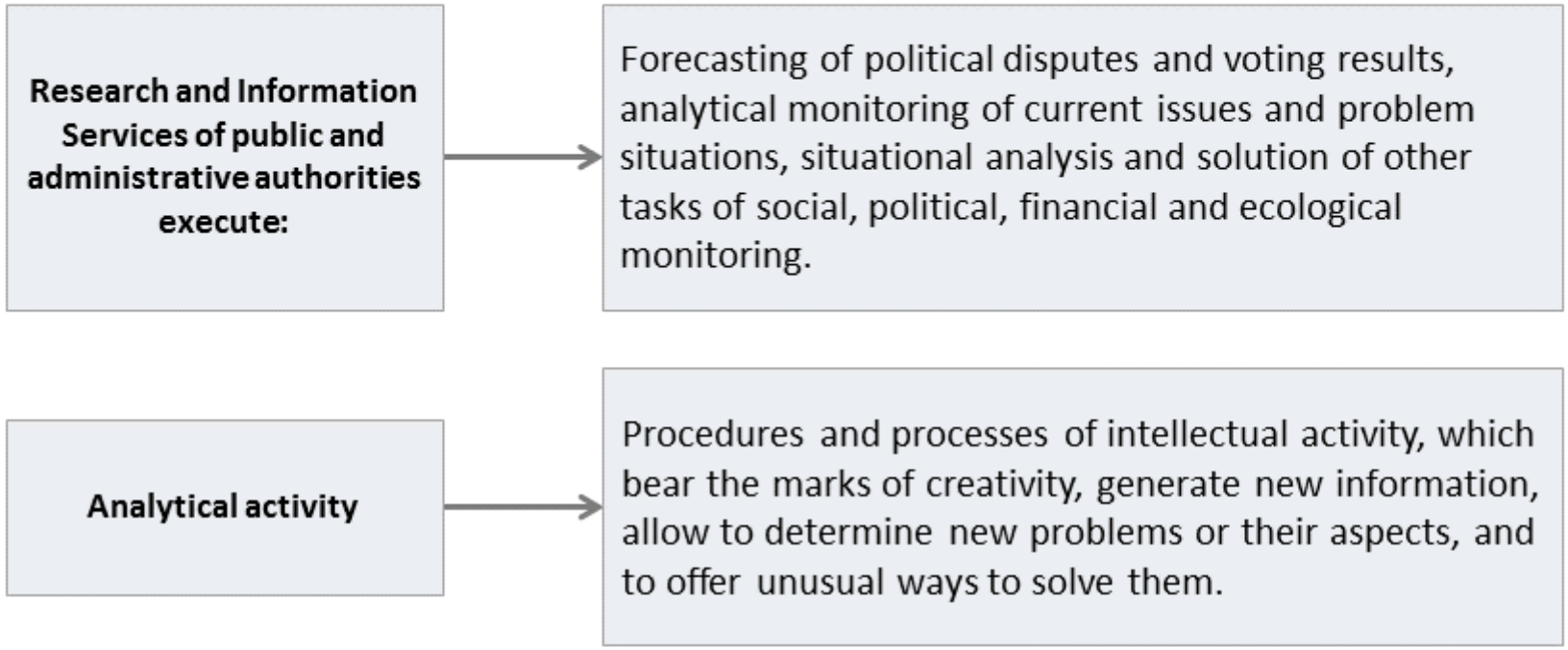
Review → scientific-technical document, which contains concentrated information about preliminary and current condition or trends of problem development, obtained from primary sources on the basis of analysis, systematization and generalization of data.

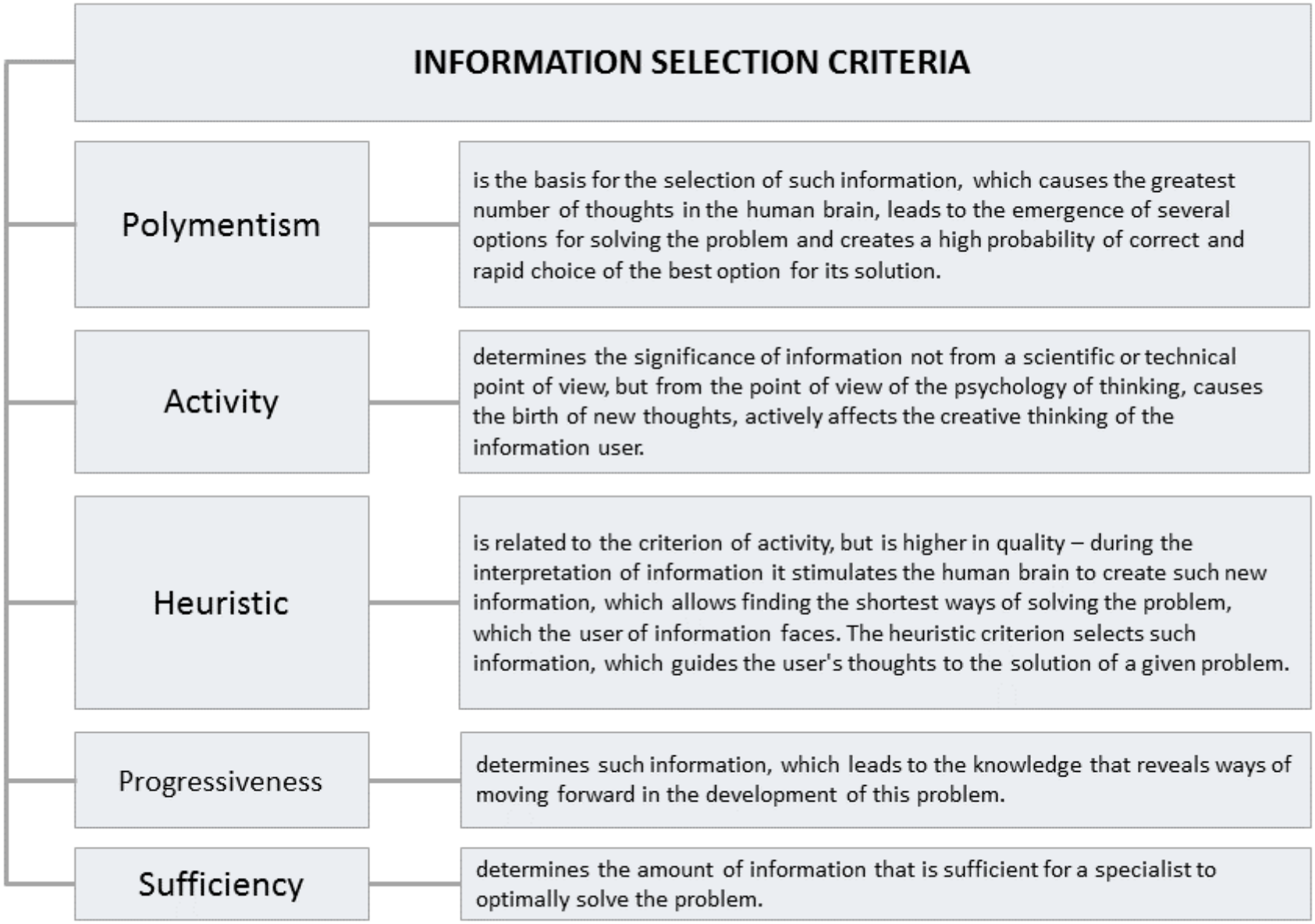

SEQUENCE OF STAGES OF INFORMATION ANALYTICS
Research planning
• evaluation of unforeseen time expenditure;
• selection of analysis parameters' list;
• selection of evaluation method (qualitative, quantitative, mixed, single research or a group research, etc.);
• determination of information sources (availability of standards or samples of other information sources);
Evaluation of direct and indirect factors, which affect research
• evaluation of unforeseen consequences and ulterior objects;
• evaluation of intermediate and concealed results of information analytics;
• selection of research methods;
Information-retrieval stage
• determination of information sources and selection of necessary data;
• interviewing of experts;
• conducting of social researches;
• selection of statistic data;
Carrying of information and analysis researches
• selection of research method;
• comparison with equivalent;
• data interpretation and collection.
Execution of report or memorandum

FEATURES OF ANALYSIS METHODS	
Method	**Features**
Decomposition	Division of any complicated phenomenon into simple components. Real social, as well as intellectual systems can be the objects of division. At achieving adequacy of decomposition, decomposition modelling is applied, that is creation of a new model and its comparison with the system before decomposition.
Comparison	Involves comparison of the system, phenomenon or process with others that allows to reveal their character.
Normative	A set of regulations, that reflect the efficiency of the system, is justified and then the real system is compared to normative, that allows to reveal the nature of deviation from a standard.
Aggregation	Transformation of basic model into model with less number of variables or restrictions that gives, compared to basic model, close description of investigated object or process.
Analogy	Involves display of analogy between two objects and transfer of explanatory system from one object onto another.
Exclusive	Is based on gradual exclusion of a considerable group of components on grounds of law of excluded middle, which says that situation looks as given in statement or as objection requires, take it or leave it.
Hypothetical	Is confined to development, argumentation and proving of hypothesis.
Regularity	Presents a search of consistent and non-random characteristics or relation of facts.
Minimax	This is a separate case of regularity method, which stipulates search of minimal or maximal characteristics.
Balance	Abstraction of two aspects of something, which determine integral unit and counterbalance each other.
Classification	Arrangement of objects on the basis of fundamental features according to certain classes.
Ranking	Assignment of certain numerical values to collection of objects on the basis of intuition or according to the intensity degree of certain feature.
Trial	Selection of certain objects and their probation.
Average and deviations from it	Certain average value is calculated and deviations from it are determined.
Modelling	Definition of a model that reflects key aspects of analyzed object, simplifies it and replaces actual object of analysis.

Method	Features
Ambivalence and contradiction	Search of something ambivalent to the phenomenon (fullness – hunger, big – small), search of contradictions, which distinguish the essence of phenomenon.
Paradox	Consideration of phenomenon from unsuspected perspectives, which are inconsistent with common understanding.
Systematization	Systematization of present data, that allows to explain them from the perspective of system approach.
Extrapolation	Extension of conclusions, obtained from surveillance over one aspect of phenomenon, to another aspect of phenomenon.
Induction and deduction	Induction involves drawing of a conclusion about the whole class on the basis of knowledge about one part from this class. Deduction is an operation of reverse nature (on the basis of knowledge about the whole class, the conclusion is drawn about one part).
Idealization	Imaginary procedure, connected with the vision of something as an icon, and consequent comparison of actual object with ideal object.
Formalization	Investigation of an object by means of transfer of its qualitative features into certain symbolic form.
Simplification	Representation of an object in the form of certain simplified model.
Morphological	First, the main features of an object – axes – are distinguished, then different variants of each are recorded.
Test questions	The list of questions is compiled and then the answers are prepared.
Focusing	Is targeted at focusing on certain objects that allows to obtain their original view.
Brainstorming	Constitutes organized discussion system on condition of prohibition to criticize statements of colleges.
Synthesis	Execution of synthesis and verification of efficiency and identity of an object oneself, after the procedure of analytical decomposition.
Empathy	Analyst gets into character of analyzed object, imagines himself an analyzed “detail” and studies operations from its position.
Selection	Study of not the whole collection of phenomena, but only a part of it, selected according to certain rules.
Indirect proof	Means change of situation into exactly the converse situation and comprehension of it.


TYPES OF ANALYTICAL STUDIES
Monitoring study
the research is targeted at a long-term analytical monitoring of the development of a particular situation in order to ensure the possibility of a priori synthesis of managerial decisions that have a preventive or precautionary nature. Monitoring studies involve acquisition of statistical or content indicators that characterize the object of observation.
Information analysis monitoring
type of information activity related to processes of analysis, information synthesis using modeling methods, expert evaluation, diagnostics and forecasting, which are implemented in the modes of constant data collection from traditional and non-traditional sources for the purpose of regular information provision of users.
Communicative audit
type of information analysis monitoring; is conducted for the purpose of identification and analysis of external and internal information of organization, which directly or indirectly characterizes reputation of organization, its image, which was shaped in the perception of different community groups and staff.
Initiated analytical studies
are conducted on previously unplanned instructions of management or as a result of detecting new problem situations during the monitoring research.
Cumulative studies
are characterized by high requirements for the speed of their conduct, the use of specialized methods of expert information processing. Cumulative studies are conducted on the basis of situational processing of information by groups of executives and/or expert analysts. The methodology of group expert procedures is widely used in these studies.


Research and Information Services of public and administrative authorities execute:
Forecasting of political disputes and voting results, analytical monitoring of current issues and problem situations, situational analysis and solution of other tasks of social, political, financial and ecological monitoring.
Analytical activity
Procedures and processes of intellectual activity, which bear the marks of creativity, generate new information, allow to determine new problems or their aspects, and to offer unusual ways to solve them.


INFORMATION SELECTION CRITERIA
Polymentism
is the basis for the selection of such information, which causes the greatest number of thoughts in the human brain, leads to the emergence of several options for solving the problem and creates a high probability of correct and rapid choice of the best option for its solution.
Activity
determines the significance of information not from a scientific or technical point of view, but from the point of view of the psychology of thinking, causes the birth of new thoughts, actively affects the creative thinking of the information user.
Heuristic
is related to the criterion of activity, but is higher in quality – during the interpretation of information it stimulates the human brain to create such new information, which allows finding the shortest ways of solving the problem, which the user of information faces. The heuristic criterion selects such information, which guides the user's thoughts to the solution of a given problem.
Progressiveness
determines such information, which leads to the knowledge that reveals ways of moving forward in the development of this problem.
Sufficiency
determines the amount of information that is sufficient for a specialist to optimally solve the problem.

FAVORABLE AND UNFAVORABLE EXECUTION CONDITIONS OF INFORMATION AND ANALYTICAL ORDER	
UNFAVORABLE	**FAVORABLE**
Absence of consistency in team actions.	Access to information, acquiring of knowledge concerning problem.
Discrepancies between executors concerning problem understanding.	Possibility to verify new ideas.
Availability of tough requirements to information and analytical order, execution of which is impossible.	Transparency of exposed and defiladed targets.
Absence of funds and trained staff concerning given problem.	Availability of funds and trained staff.
Uncertainty in generation of ultimate purpose.	Availability of experience in task execution.
Availability of discrepancies between customer and executors – analysts.	Readiness of a customer to stage-by-stage discussions.

3. Information Resources Management System

Implementation of information activities in organizational management system, under conditions of automated systems functioning, requires consideration of approaches to the models of "electronic offices", formulated in the late 80's, related both to purely managerial problems, and to the problems of automatization of management activities.

MODELS OF "ELECTRONIC OFFICE"

Informational model

Is focused on information as a source, which is produced and used during the process of management system functioning, targeted at information problem solution, improvement and integration of information processes, enhancement of information structure, improvement of operational efficiency at large.

Communication model

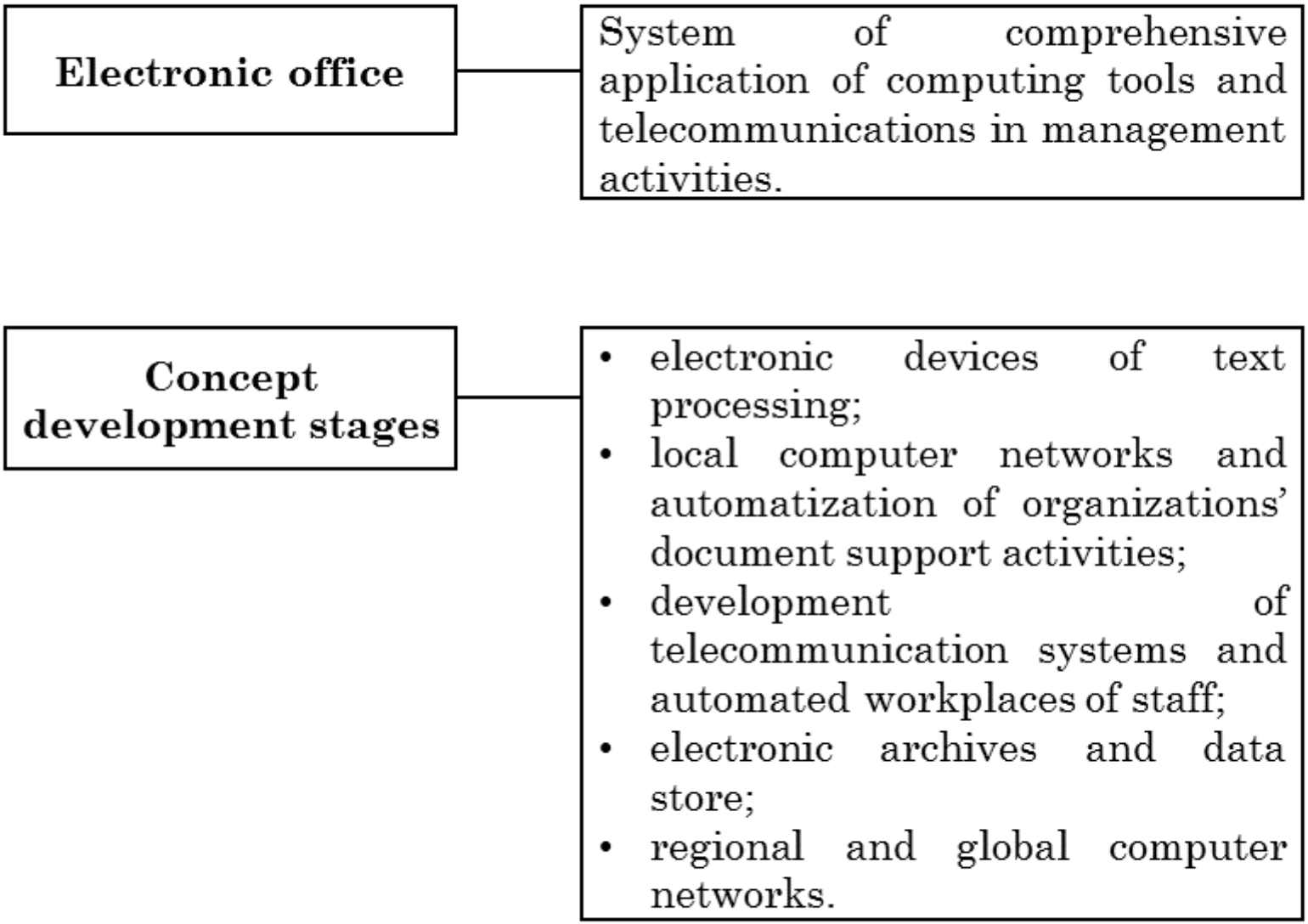
Demonstrates feasibility of management computerization as a comprehensive system, which includes management of executive office together with personnel, organizational contacts, practices; in other words it is a model of organizational management system as a comprehensive system of social communications.

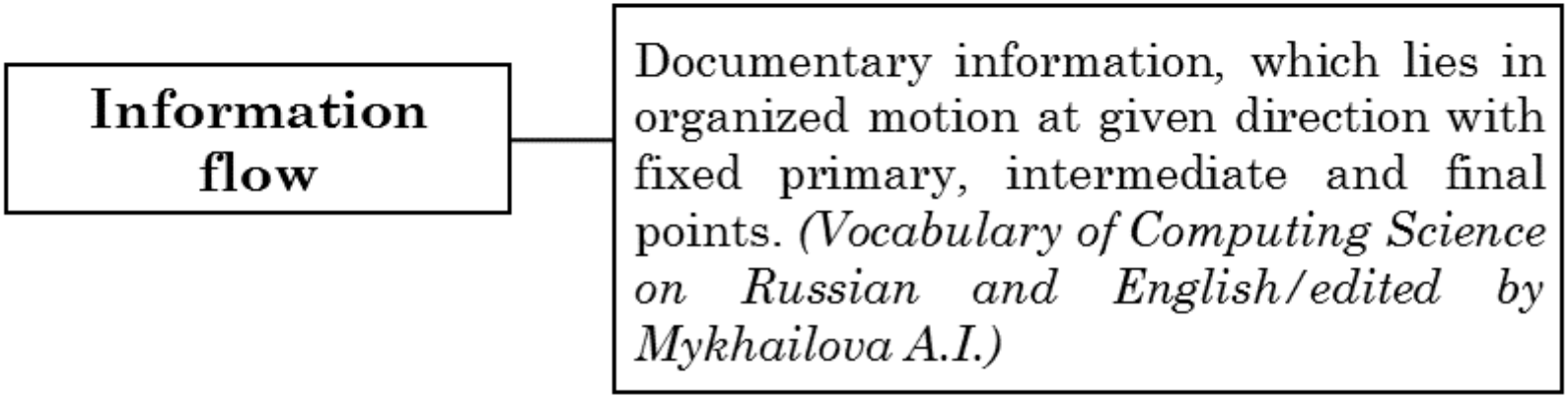
Socio-technical model

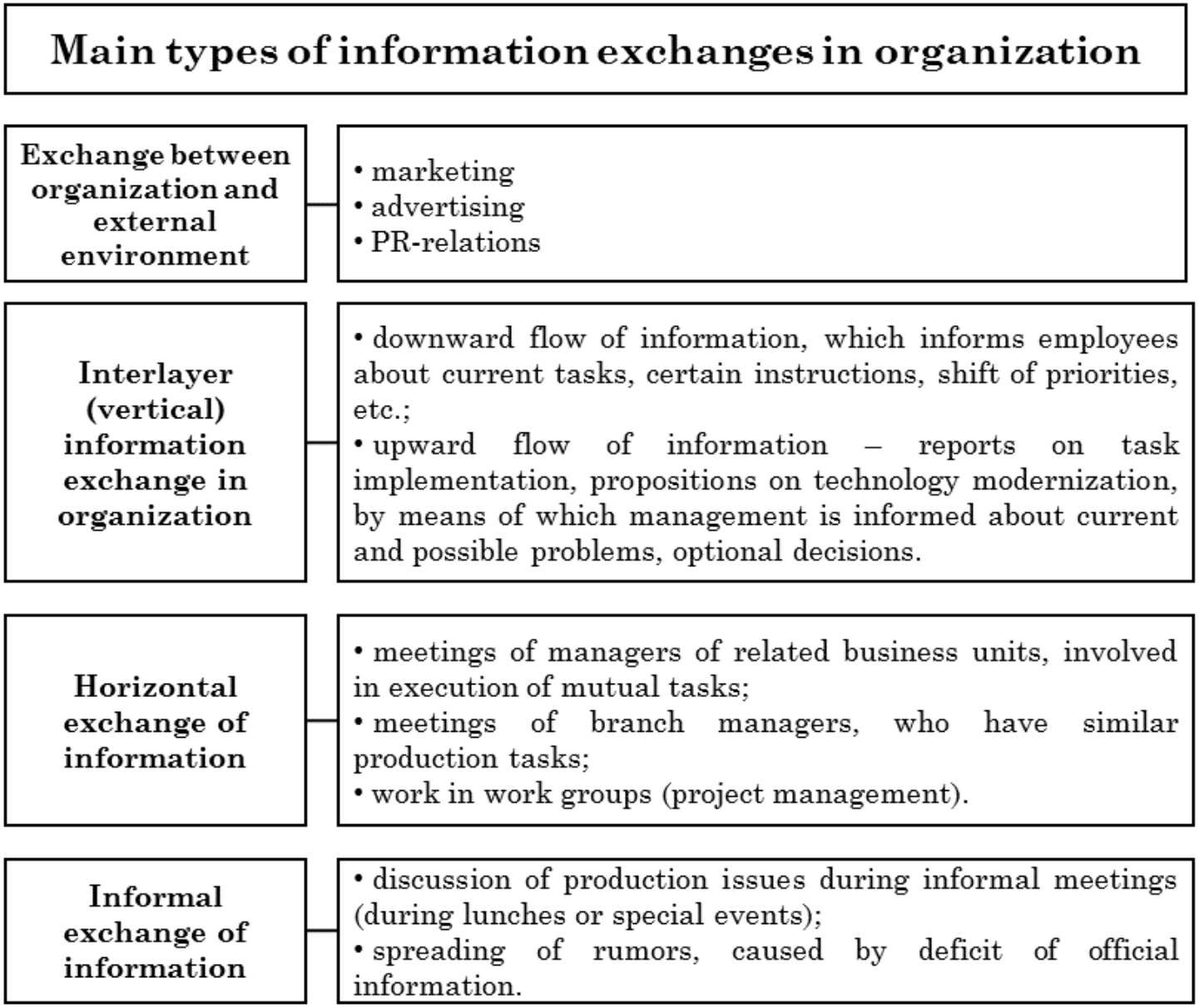
Describes the process and result of automated systems' design, which should also take into account socio-psychological aspects of organization, where system is to be functioned. Final results of organization activities mostly depend on human relations, and their values.

Main functions of electronic office

- implementation of capability to maintain contacts and break ranks with partners, successfully adjust to rapidly-changing economic situation;
- inclusion of a company to information structures of global and national market economies, access to commercial data bases, conduction of electronic marketing, advertising and informational measures;
- coordination of activities inside and outside the organization;
- assistance in decision making;
- exception of delays and errors during information and documentation processing.


Electronic office
System of comprehensive application of computing tools and telecommunications in management activities.
Concept development stages
• electronic devices of text processing;
• local computer networks and automatization of organizations' document support activities;
• development of telecommunication systems and automated workplaces of staff;
• electronic archives and data store;
• regional and global computer networks.

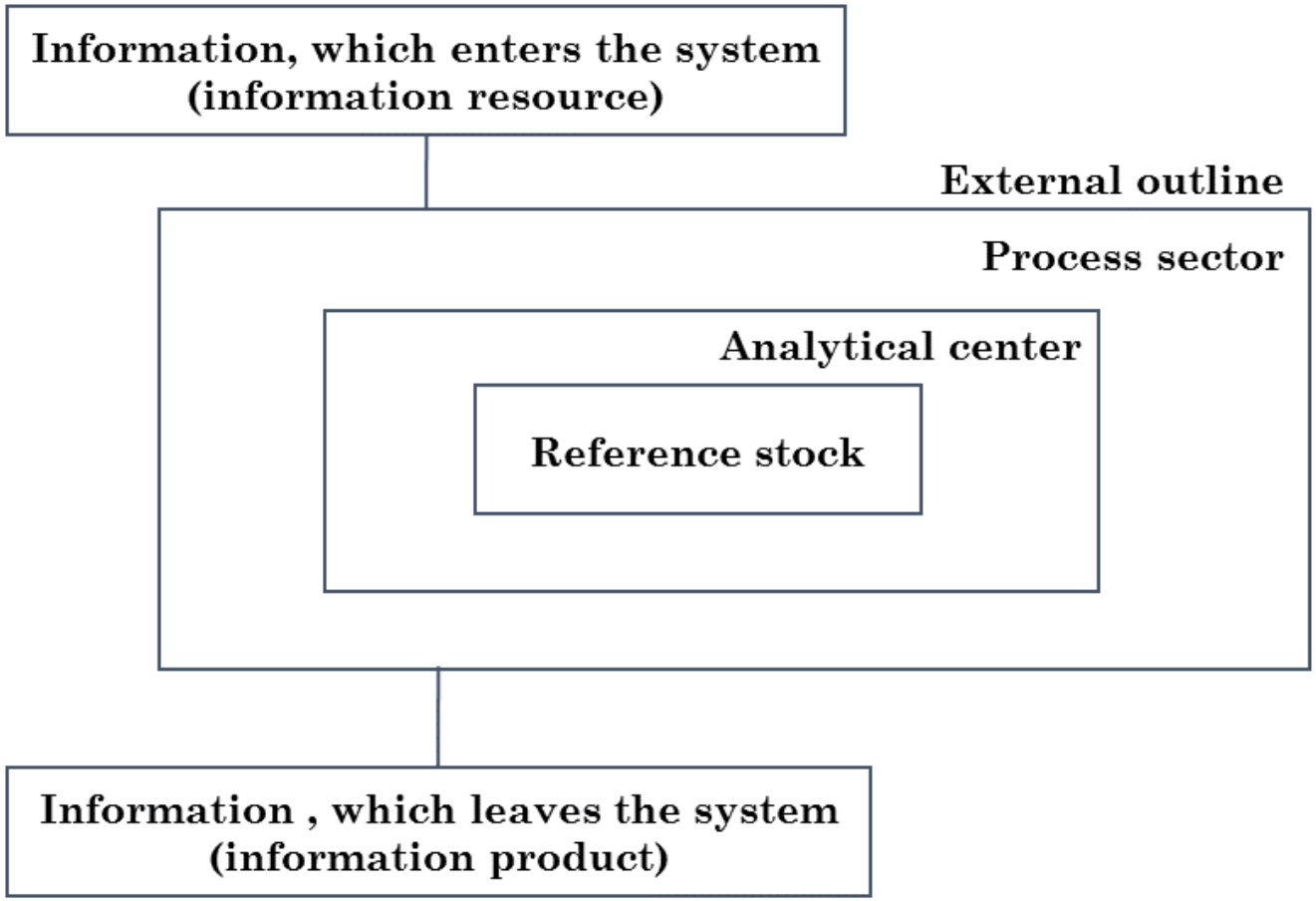

Information flow
Documentary information, which lies in organized motion at given direction with fixed primary, intermediate and final points. (Vocabulary of Computing Science on Russian and English/edited by Mykhailova A.I.)

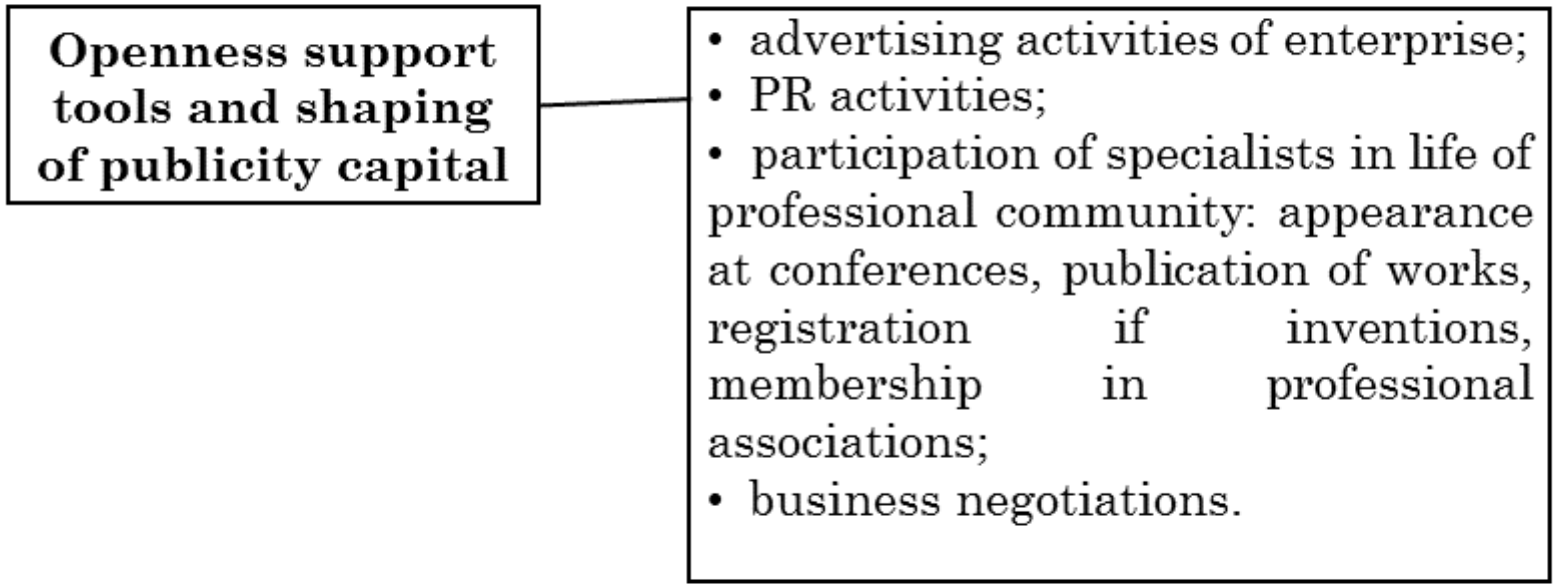

Main types of information exchanges in organization
Exchange between organization and external environment
• marketing
• advertising
• PR-relations
Interlayer (vertical) information exchange in organization
• downward flow of information, which informs employees about current tasks, certain instructions, shift of priorities, etc.;
• upward flow of information – reports on task implementation, propositions on technology modernization, by means of which management is informed about current and possible problems, optional decisions.
Horizontal exchange of information
• meetings of managers of related business units, involved in execution of mutual tasks;
• meetings of branch managers, who have similar production tasks;
• work in work groups (project management).
Informal exchange of information
• discussion of production issues during informal meetings (during lunches or special events);
• spreading of rumors, caused by deficit of official information.

External outline – provides structuring of external environment impact and the possibility of information resources entry to the system, prevents its destruction from external impact.

Input	Provides protection from unauthorized access to internal system information, compatibility with external environment (system, hardware, informational, legal), information selection, distribution of information by internal channels.
Output	Provides blocking of unauthorized exit of information from the system, compatibility with external environment, possibility to transfer information via targeted channels.

Information technology space of the organization's information activity system.


Information, which enters the system
(information resource)
External outline
Process sector
Analytical center
Reference stock
Information , which leaves the system
(information product)


Openness support tools and shaping of publicity capital
• advertising activities of enterprise;
• PR activities;
• participation of specialists in life of professional community: appearance at conferences, publication of works, registration if inventions, membership in professional associations;
• business negotiations.

External communication policy

In the course of implementation of external communications policy, an enterprise receives information from external environment, increases its intellectual potential, and by means of distribution of information about its activities, forms the "publicity capital".

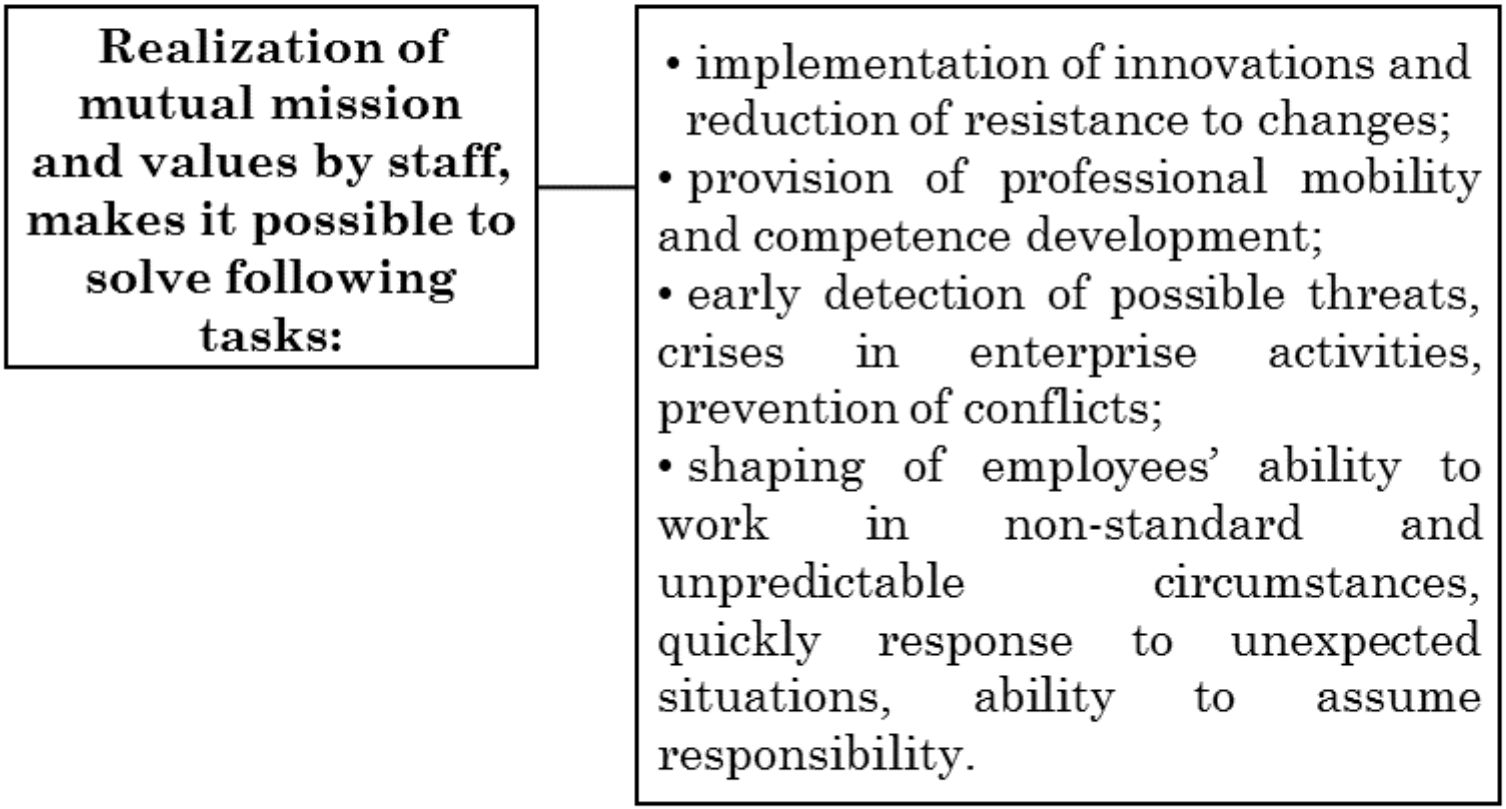
The high degree of information openness of an enterprise confirms its confident positions and respect to consumers, partners, and society as a whole.

MEANS OF INTERNAL COMMUNICATION POLICY

- code of behavior;
- intra-company newspapers and magazines;
- distribution of announcements and collection of employee propositions;
- celebrations;
- production meetings;
- training of employees.

Employees should posses information on:

- business situation at enterprise;
- prospects for the development of enterprise and its own place in innovative processes;
- adopted rules and regulations of behavior at enterprise, efficiency rating criteria, encouragement and punishment means, applicable to the employees at the enterprise;
- evaluation of personal contribution of each employee, possibility to upgrade one's skills and career development;
- performance of own department compared to other from the point of view of management as well as employees of other departments;
- enterprise reputation.


Realization of mutual mission and values by staff, makes it possible to solve following tasks:
• implementation of innovations and reduction of resistance to changes;
• provision of professional mobility and competence development;
• early detection of possible threats, crises in enterprise activities, prevention of conflicts;
• shaping of employees' ability to work in non-standard and unpredictable circumstances, quickly response to unexpected situations, ability to assume responsibility.

Notions about the mission and values of the enterprise, shared by all employees, contribute to the establishment of business team, which makes it possible to solve problems.

Internal communication policy is focused on employee engagement, its orientation at achievement of organization goals and perception of these goals as personally significant.

COMMUNICATION POLICY PROVIDES:

❖ information openness of enterprise activities, which contributes to enhancement of its reputation and demonstrates respect to customers, business partners, own staff;

❖ explanation of enterprise behavior, preparation of clients and employees to possible changes;

❖ product promotion;

❖ demonstration of enterprise influence on social and economic conditions of region, branch, country;

❖ establishment of business relationships;

❖ sharing of experience and knowledge;

❖ joining efforts for protection of mutual interests and establishment of business ethics.

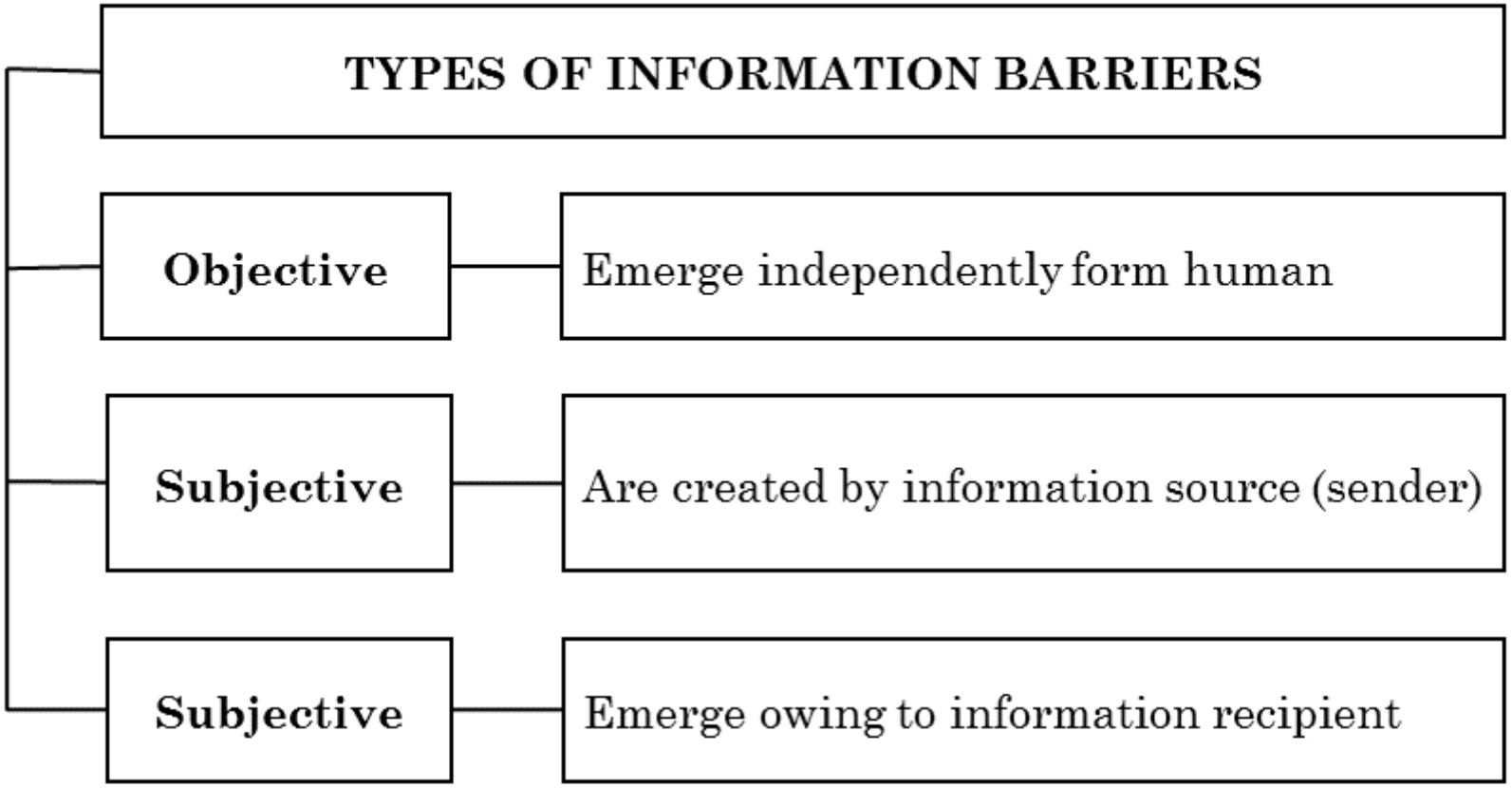
Communication policy of organization

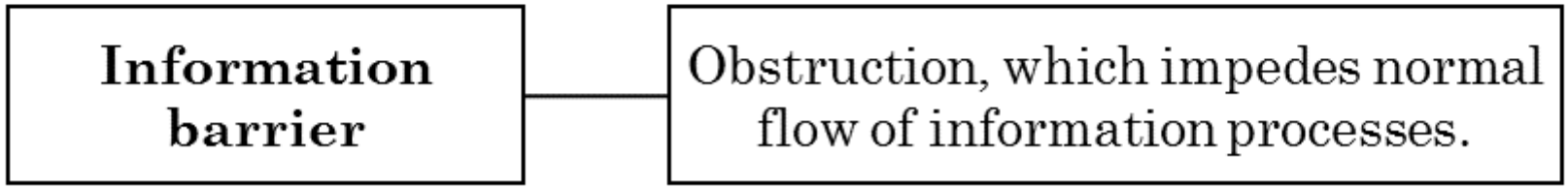
Communication policy	Purposeful activities of enterprise, targeted at establishment and maintenance of favorable business relationships with other enterprises, public and professional communities, groups of citizens (external policy) and own personnel (internal policy).

Communication policy is a means of expanding the sphere of influence of the enterprise and its adaptation to changes in the environment.

FORMS OF INFORMATION BARRIERS

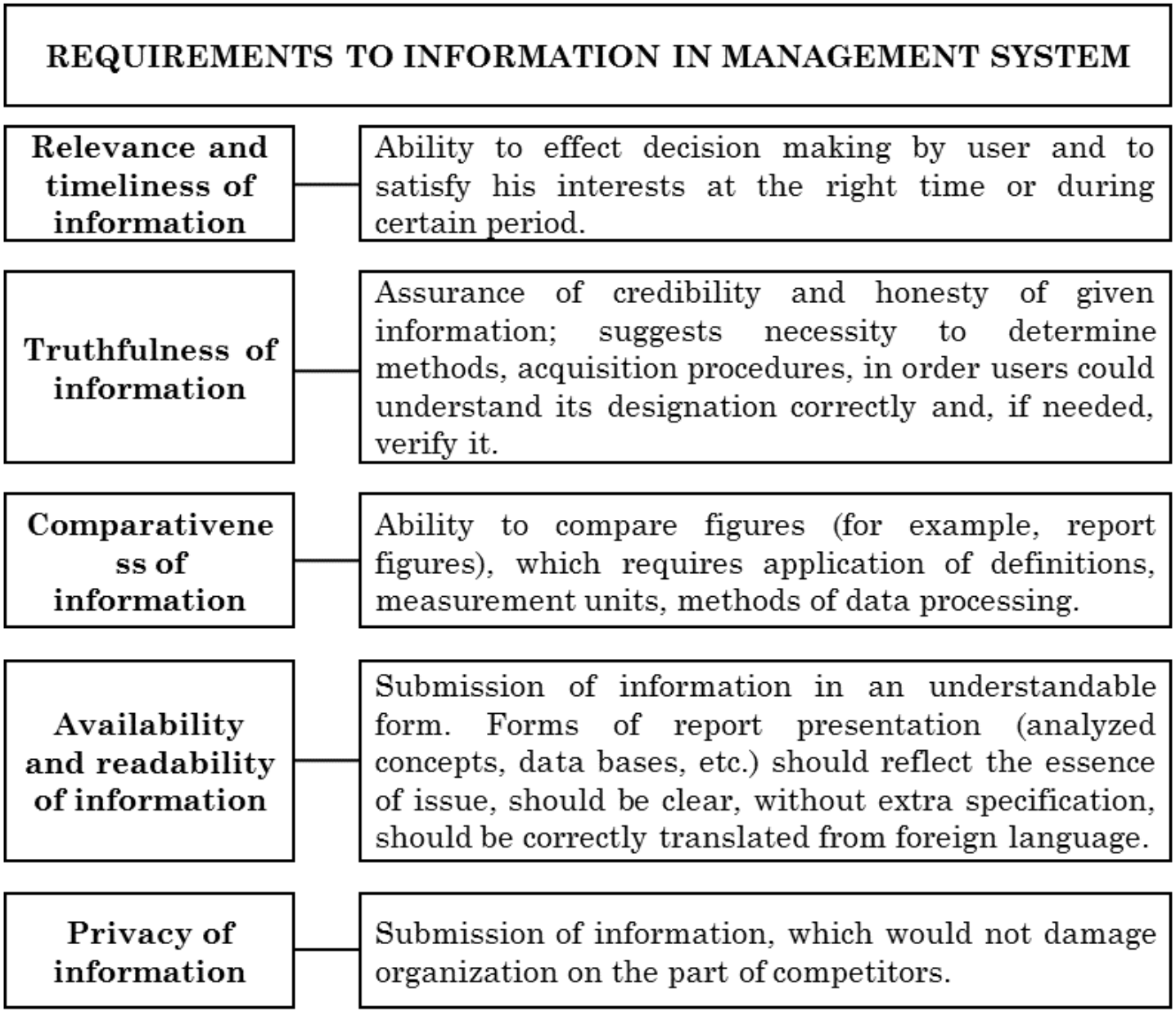
Language (national language) barrier	Caused by lack of language knowledge.
Economic information barrier	Caused by absence or lack of funds for production, transfer and utilization of information.
Technical information barrier	Caused by lack or technical incompatibility of equipment or technical means, required for improvement of information processes
Conceptual (terminological) barrier	Caused by mismatch of definitions of one and the same words, terms and symbols of different people.
Bureaucratic (ministerial) barrier	Caused by branched, hierarchic structure of management system, which extends the distance of document flow.
Time (historical) barrier	Emerges due to time separation of source and recipient of information. The largest the distance is, the more fundamental the barrier is, and it becomes more difficult to overcome it.
Secure information barrier	Restricts access to documented information, which contains national secret or is of private nature.
Ideological information barrier	Occurs between separate people or social groups due to their different ideologies concerning reality, different religious confessions. Ideological barriers can cause sharp social conflicts.
State-political barrier	Emerges due to the fact, that different countries handle information processes in different manners.


TYPES OF INFORMATION BARRIERS
Objective
Emerge independently form human
Subjective
Are created by information source (sender)
Subjective
Emerge owing to information recipient

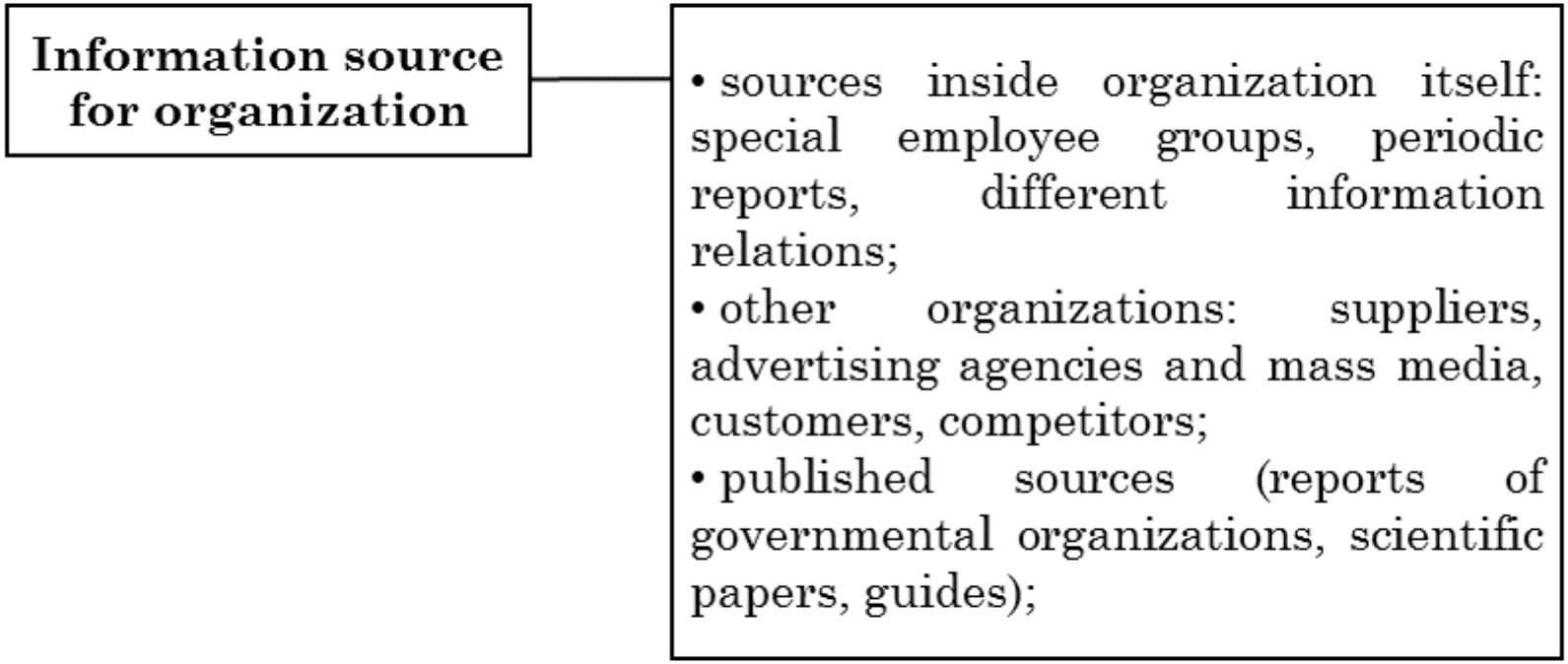

Information barrier
Obstruction, which impedes normal flow of information processes.

Main characteristics of information flow

- source of origin;
- direction;
- frequency of emergence and transfer (once a week/month/year, etc.)
- consistency degree (period of time, during which information preserves its value);
- structure (official, non-official, etc.)
- volume (amount of documents for the time period);
- form (visual, documental, audio) and others.


REQUIREMENTS TO INFORMATION IN MANAGEMENT SYSTEM
Relevance and timeliness of information
Ability to effect decision making by user and to satisfy his interests at the right time or during certain period.
Truthfulness of information
Assurance of credibility and honesty of given information; suggests necessity to determine methods, acquisition procedures, in order users could understand its designation correctly and, if needed, verify it.
Comparativeness of information
Ability to compare figures (for example, report figures), which requires application of definitions, measurement units, methods of data processing.
Availability and readability of information
Submission of information in an understandable form. Forms of report presentation (analyzed concepts, data bases, etc.) should reflect the essence of issue, should be clear, without extra specification, should be correctly translated from foreign language.
Privacy of information
Submission of information, which would not damage organization on the part of competitors.

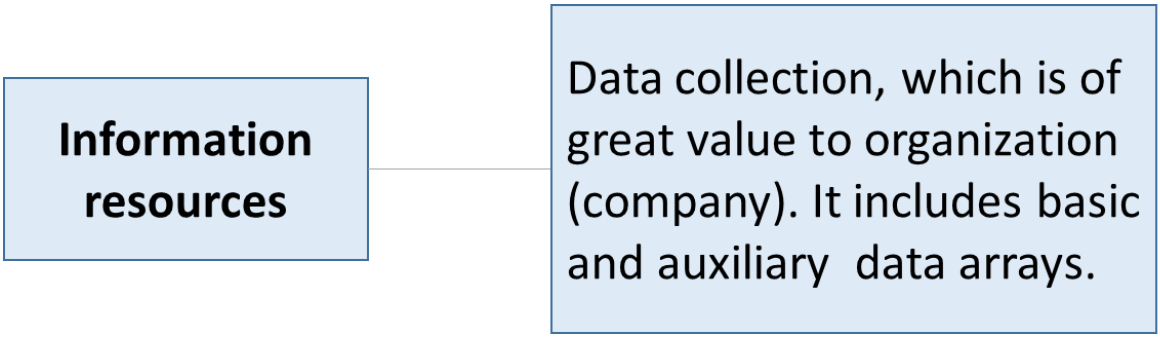
Information utility is determined by users who put forward following requirements to its quality.

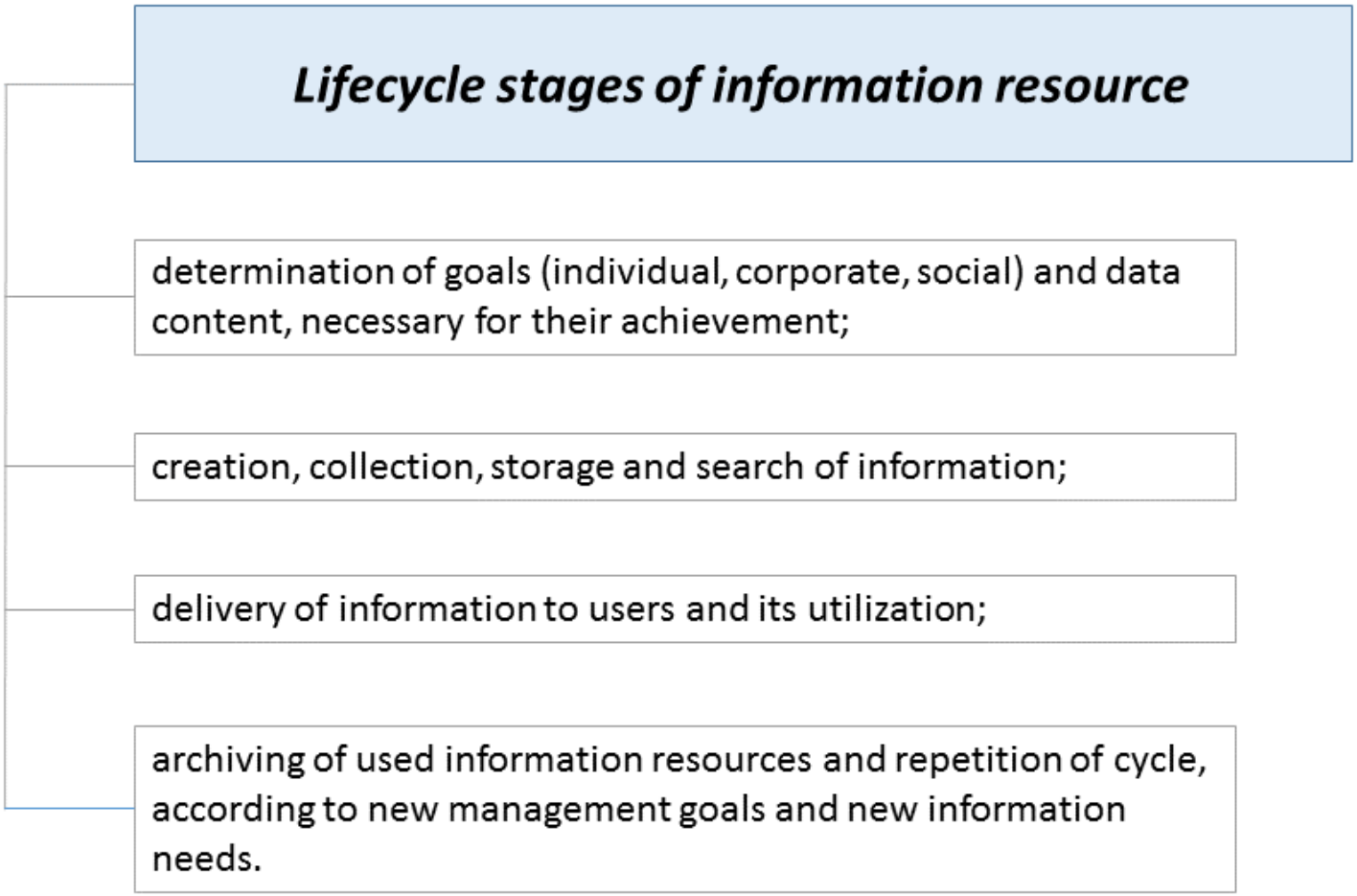

Information source for organization
• sources inside organization itself: special employee groups, periodic reports, different information relations;
• other organizations: suppliers, advertising agencies and mass media, customers, competitors;
• published sources (reports of governmental organizations, scientific papers, guides);

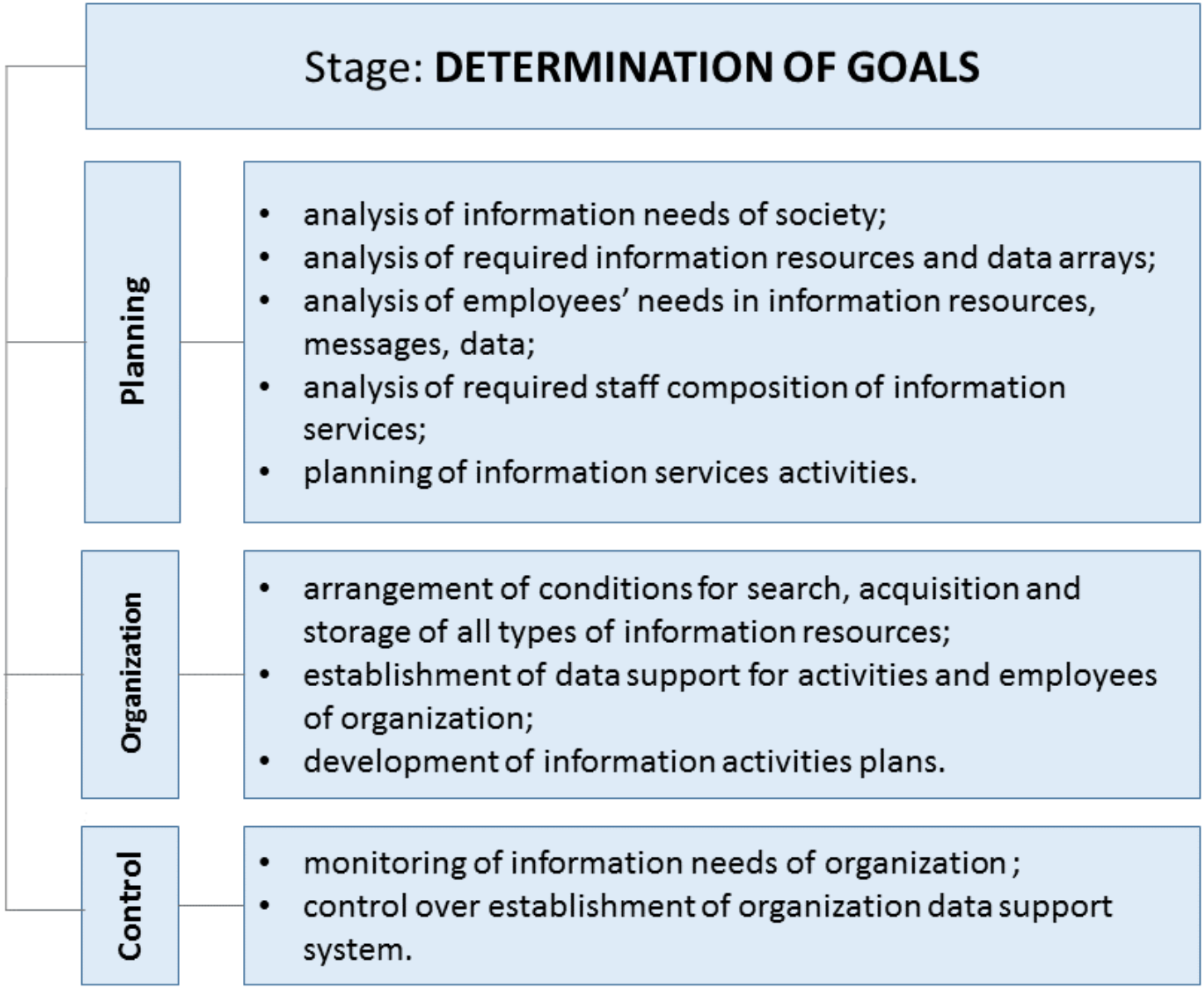
The mutual idea of mission and values, competitive advantages of an enterprise, which is shared by all employees involved in shaping and implementation of external communications policy, makes the company recognizable.

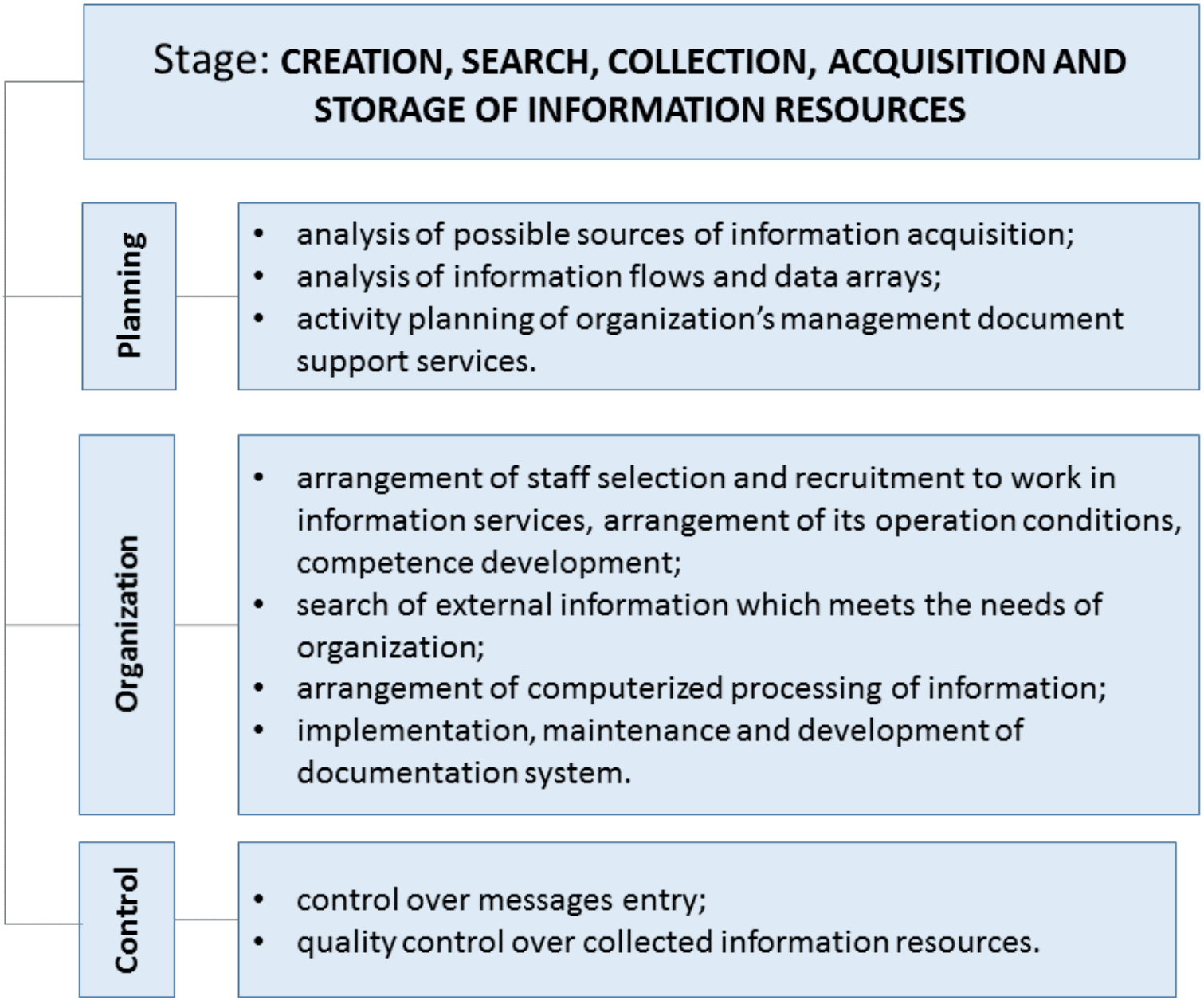
4. Development of information resource management system

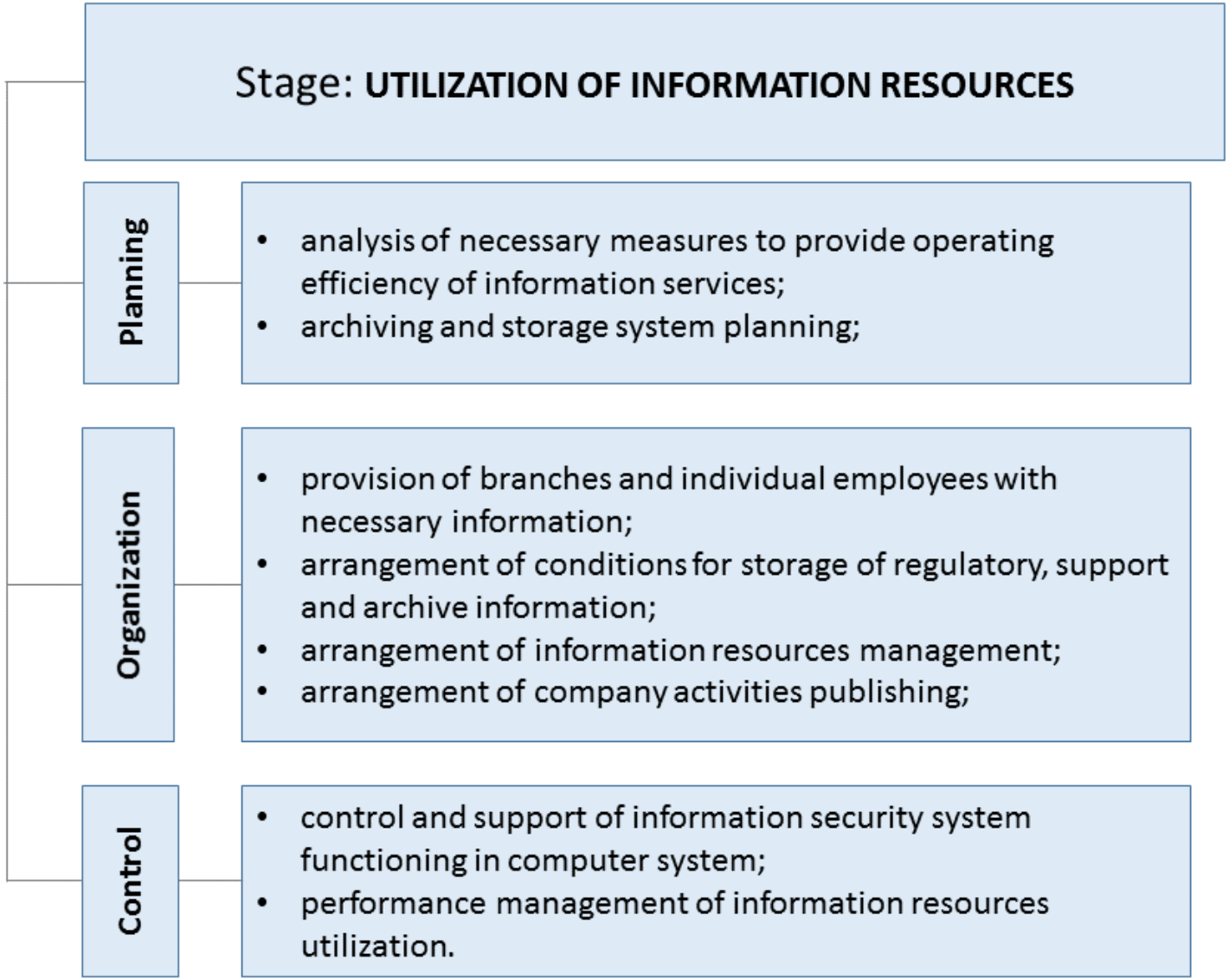
- ✓ Information resources are the products of intellectual activity of society and are considered as a strategic resource for development of any country.
- ✓ Depending on the scale of development and use, we distinguish between total global, national, regional and local resources or resources of individual enterprises. With the introduction of information technologies, such classification becomes conditional, since information resources of any enterprise comprise documents, drawn up within the enterprise, and external information is derived from the total resources of society.
- ✓ The *purpose* for the implementation of information resource management system is to create essential conditions and effective mechanisms for the establishment of information arrays necessary for the implementation of the whole complex of management tasks, reliable storage, protection of information resources, and their effective use in the activities of organizations.




Lifecycle stages of information resource
determination of goals (individual, corporate, social) and data content, necessary for their achievement;
creation, collection, storage and search of information;
delivery of information to users and its utilization;
archiving of used information resources and repetition of cycle, according to new management goals and new information needs.


Stage: DETERMINATION OF GOALS
Planning
• analysis of information needs of society;
• analysis of required information resources and data arrays;
• analysis of employees' needs in information resources, messages, data;
• analysis of required staff composition of information services;
• planning of information services activities.
Organization
• arrangement of conditions for search, acquisition and storage of all types of information resources;
• establishment of data support for activities and employees of organization;
• development of information activities plans.
Control
• monitoring of information needs of organization ;
• control over establishment of organization data support system.


Stage: CREATION, SEARCH, COLLECTION, ACQUISITION AND STORAGE OF INFORMATION RESOURCES
Planning
• analysis of possible sources of information acquisition;
• analysis of information flows and data arrays;
• activity planning of organization's management document support services.
Organization
• arrangement of staff selection and recruitment to work in information services, arrangement of its operation conditions, competence development;
• search of external information which meets the needs of organization;
• arrangement of computerized processing of information;
• implementation, maintenance and development of documentation system.
Control
• control over messages entry;
• quality control over collected information resources.

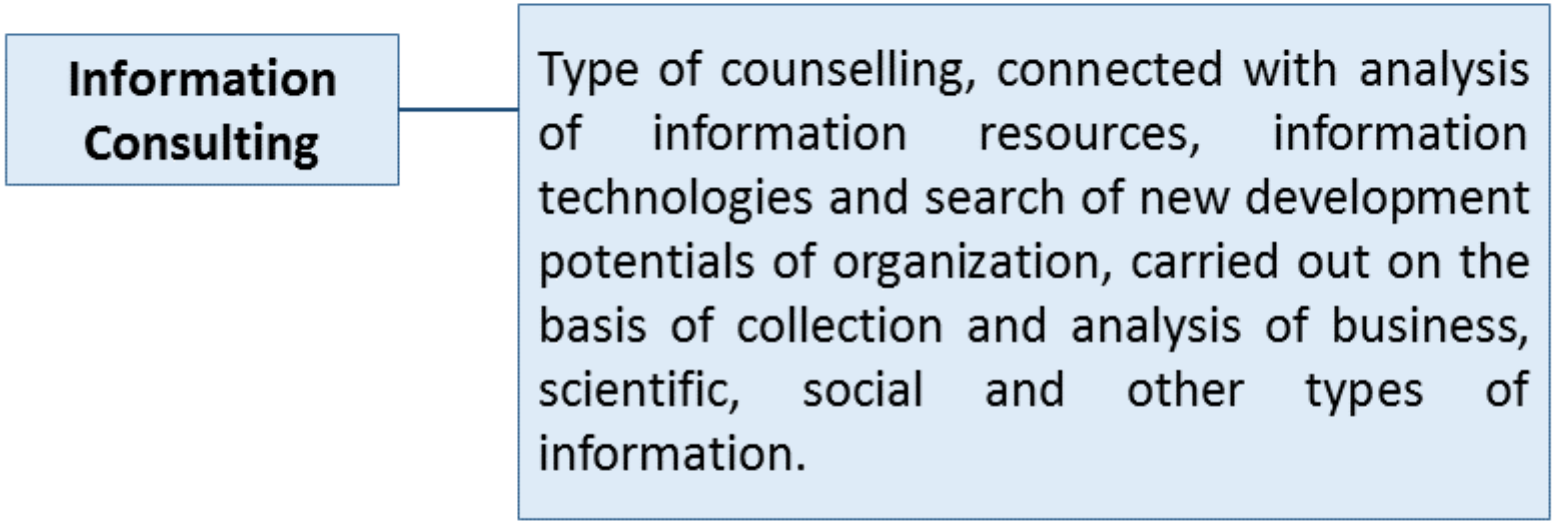

Stage: UTILIZATION OF INFORMATION RESOURCES
Planning
• analysis of necessary measures to provide operating efficiency of information services;
• archiving and storage system planning;
Organization
• provision of branches and individual employees with necessary information;
• arrangement of conditions for storage of regulatory, support and archive information;
• arrangement of information resources management;
• arrangement of company activities publishing;
Control
• control and support of information security system functioning in computer system;
• performance management of information resources utilization.

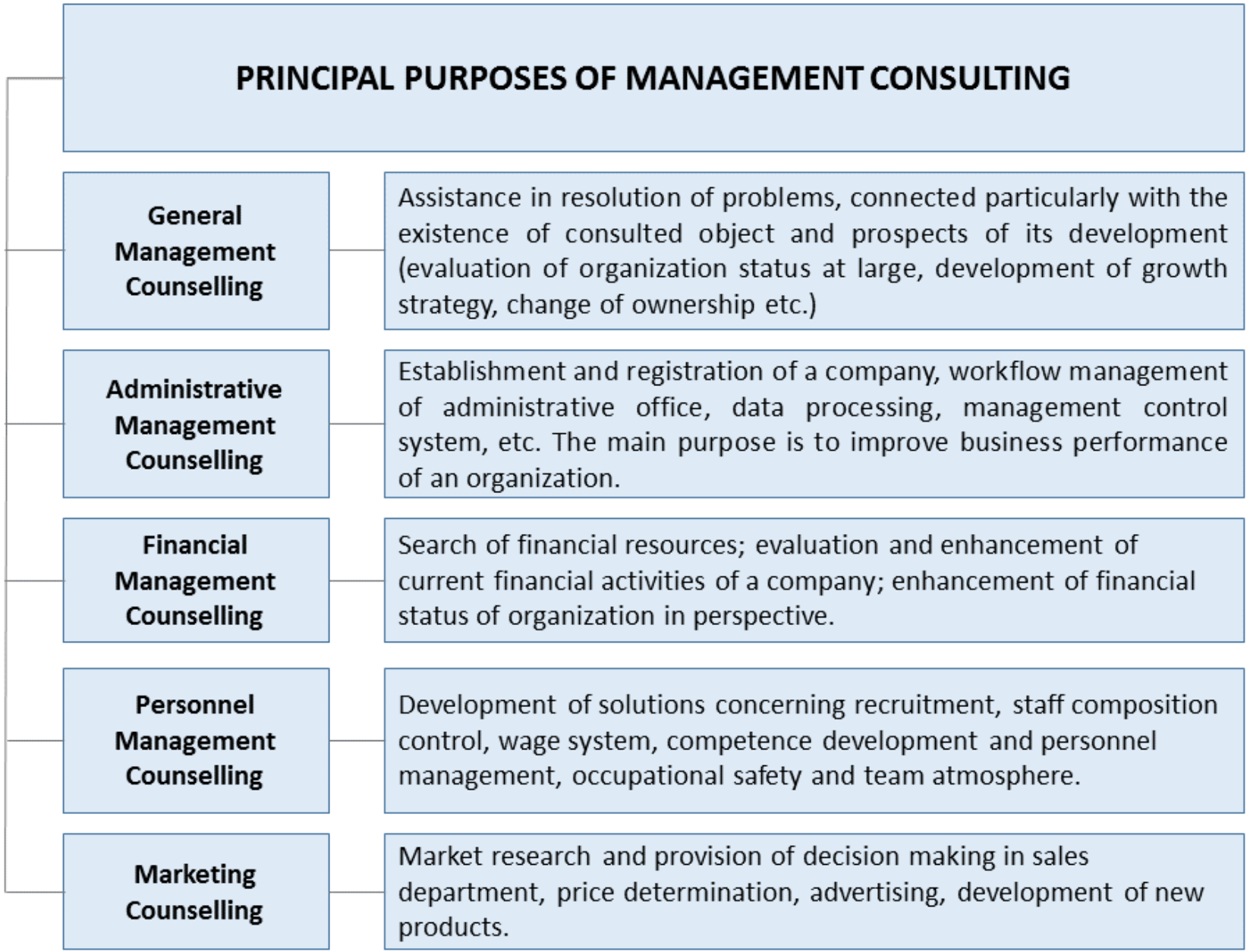
INFORMATION PRODUCTS AND SERVICES. *STRUCTURE OF INFORMATION MARKET*

- The successful development of information society requires provision of equal access to information resources and utilization of new services for all members of society;
- improvement of communication means and data transmission;
- computerization of production, trade and financial activity processes;
- promotion of new types of services in the field of science, education, health care and culture; provision of widespread use of modern information and communication technologies for strengthening and development of democratic procedures and institutions, and promotion of information entrepreneurship development; improvement and development of legislation in the field of information and telecommunications; establishment and training of citizens on the basics of information culture.

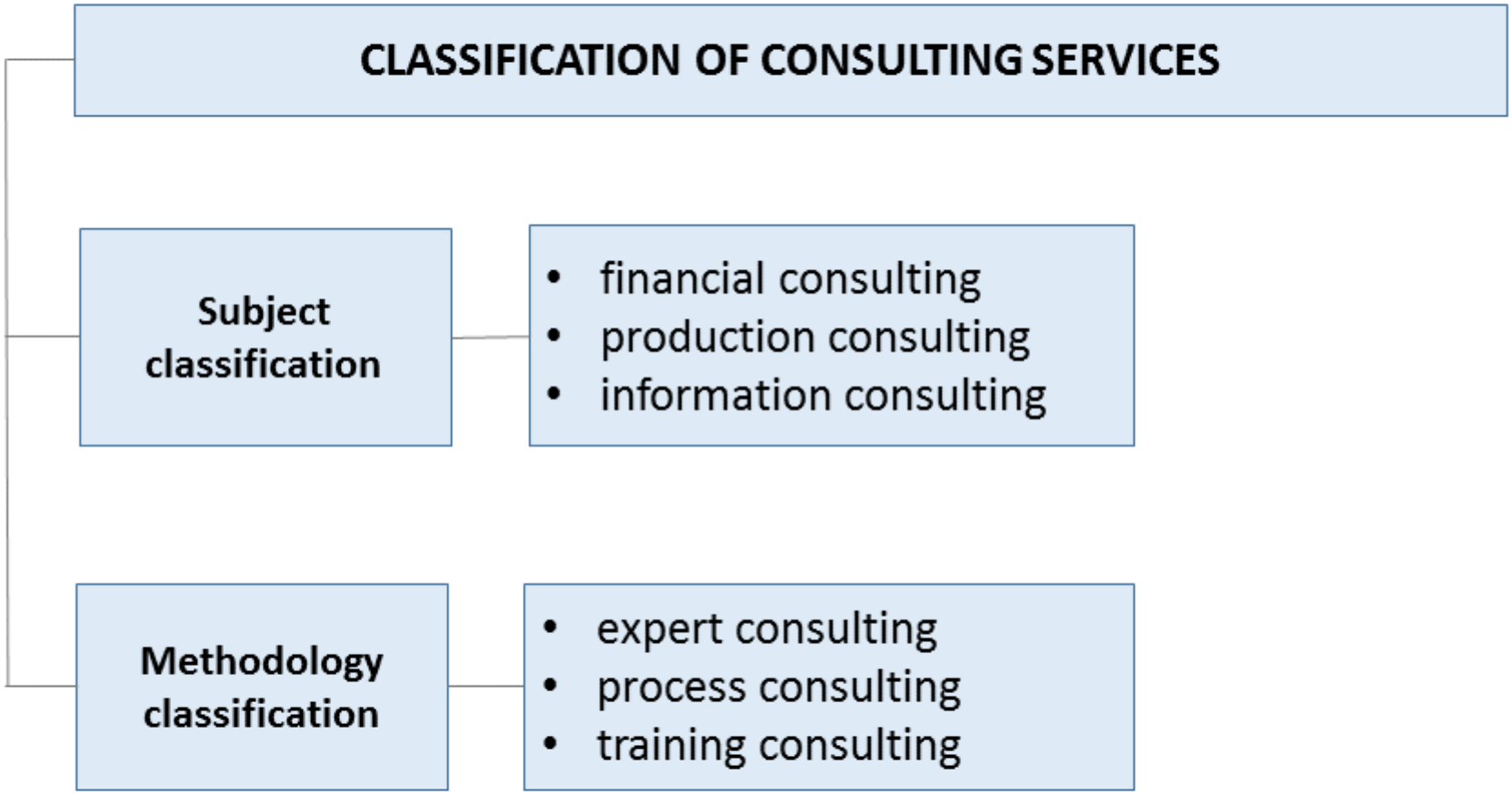
Sphere of Information Consulting

Business Information Counselling	Information Technologies Counselling	PR Counselling
Subjects of Service Delivery		
Information agencies, centers and foundations of social and economic studies;	Specialized software development enterprises; computer service companies; computer equipment manufacturers; specialized system integration companies.	PR agencies, counselling companies, press centers, media offices, media bureau etc.
Types of Services		
Delivery of economic, technical, social, legal, information on: • financial status (balance sheet data, income statements, comparison of financial figures on an annual basis, etc.); • legal form of organization, tax registration number, bank details, current address and registered office address; • capital structure, types of activity, history, management details, information on branches;	Providing advices in the field of implementation and utilization of information technologies : • recommendations on improvement of communication strategies of organization; • consulting on hardware and software, necessary for improvement of communication strategies of organization; • recruitment and planning of required professional personnel development in the field of information technologies;	Counselling concerning reputation development, attractiveness of organization in external environment.
Sources of Information		
Reporting to mass media; library information sources; traditional and nontraditional sources of public information.	Results of system research of organization structure.	Results of organization communicative audit, investigation of organizational culture, value priorities.


Information Consulting
Type of counselling, connected with analysis of information resources, information technologies and search of new development potentials of organization, carried out on the basis of collection and analysis of business, scientific, social and other types of information.


PRINCIPAL PURPOSES OF MANAGEMENT CONSULTING
General Management Counselling
Assistance in resolution of problems, connected particularly with the existence of consulted object and prospects of its development (evaluation of organization status at large, development of growth strategy, change of ownership etc.)
Administrative Management Counselling
Establishment and registration of a company, workflow management of administrative office, data processing, management control system, etc. The main purpose is to improve business performance of an organization.
Financial Management Counselling
Search of financial resources; evaluation and enhancement of current financial activities of a company; enhancement of financial status of organization in perspective.
Personnel Management Counselling
Development of solutions concerning recruitment, staff composition control, wage system, competence development and personnel management, occupational safety and team atmosphere.
Marketing Counselling
Market research and provision of decision making in sales department, price determination, advertising, development of new products.

Management Consulting in Terms of Professional Activity



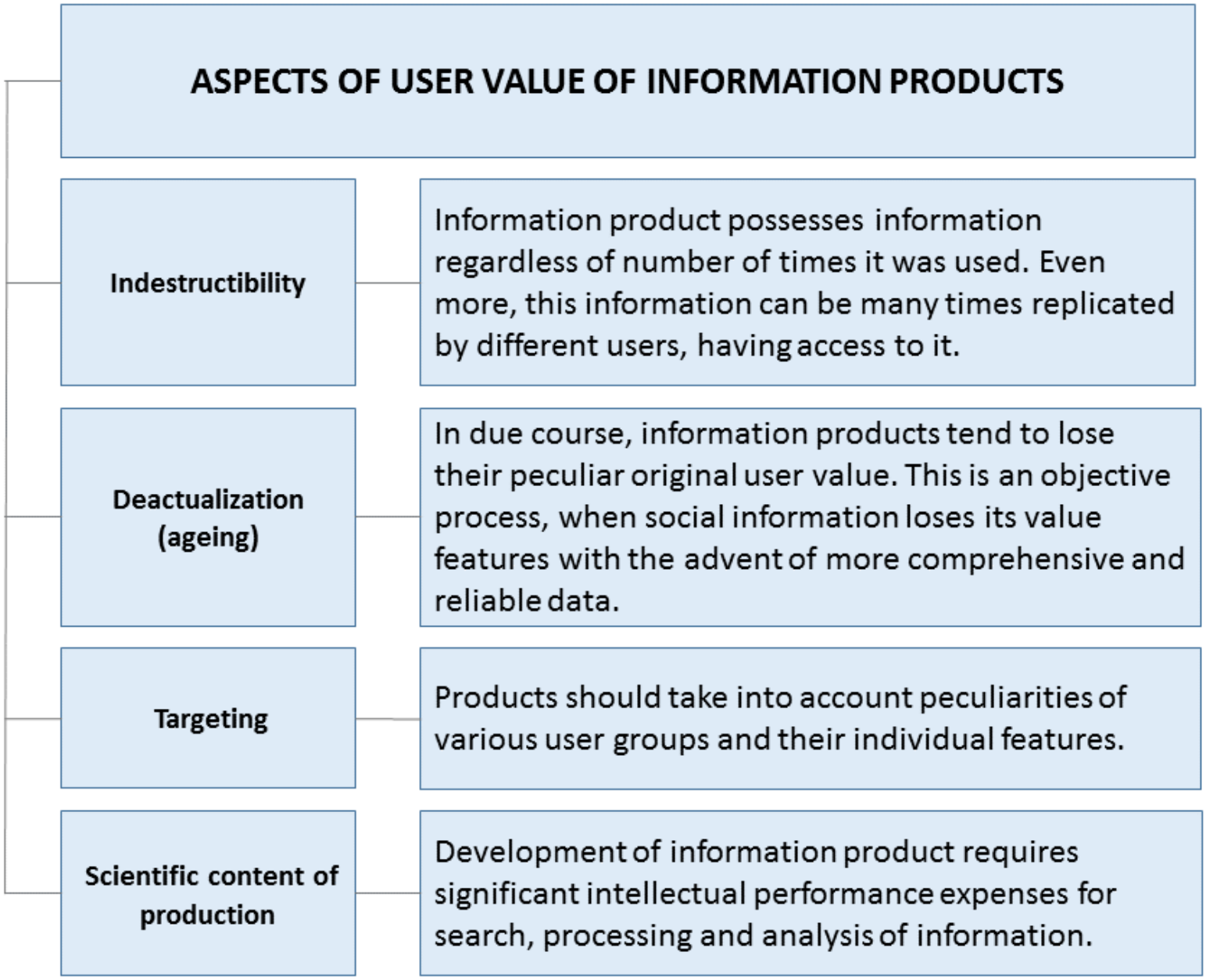
Business Consulting

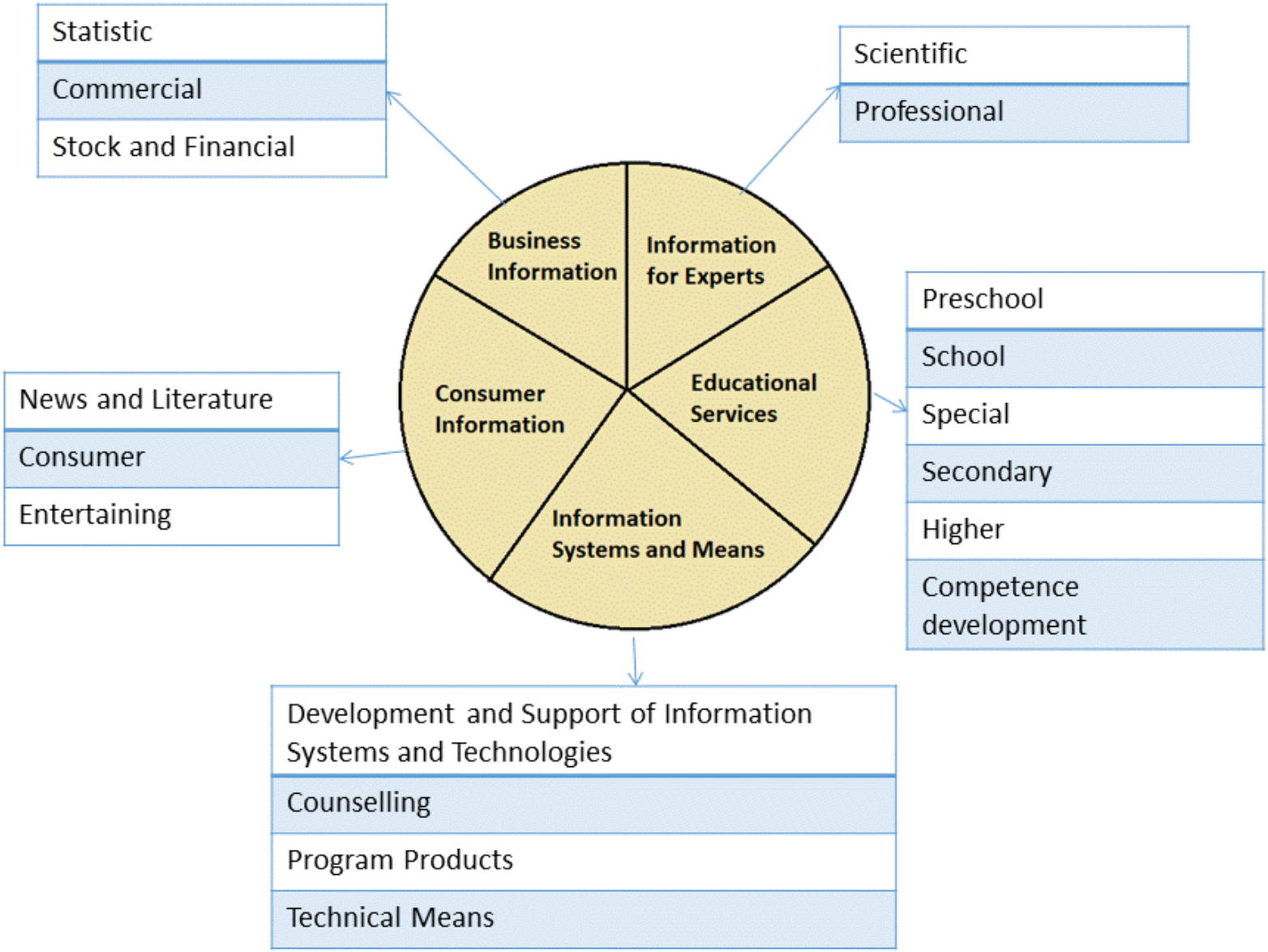
Provision of a client with professional experience, methodology, behavior techniques, professional skills or other resources, which, within the scope of current legal framework, assist in optimization of financial and economic performance, which emerged inside the organization.

Management Consulting

Involves provision of independent advices and assistance concerning management, including determination and evaluation of problems and/or possibilities, provision of recommendations on appropriate measures and their realization. *(European Federation of Management Consultancies Associations; Association of Consulting Management Engineers; Institute of Management Consultants).*

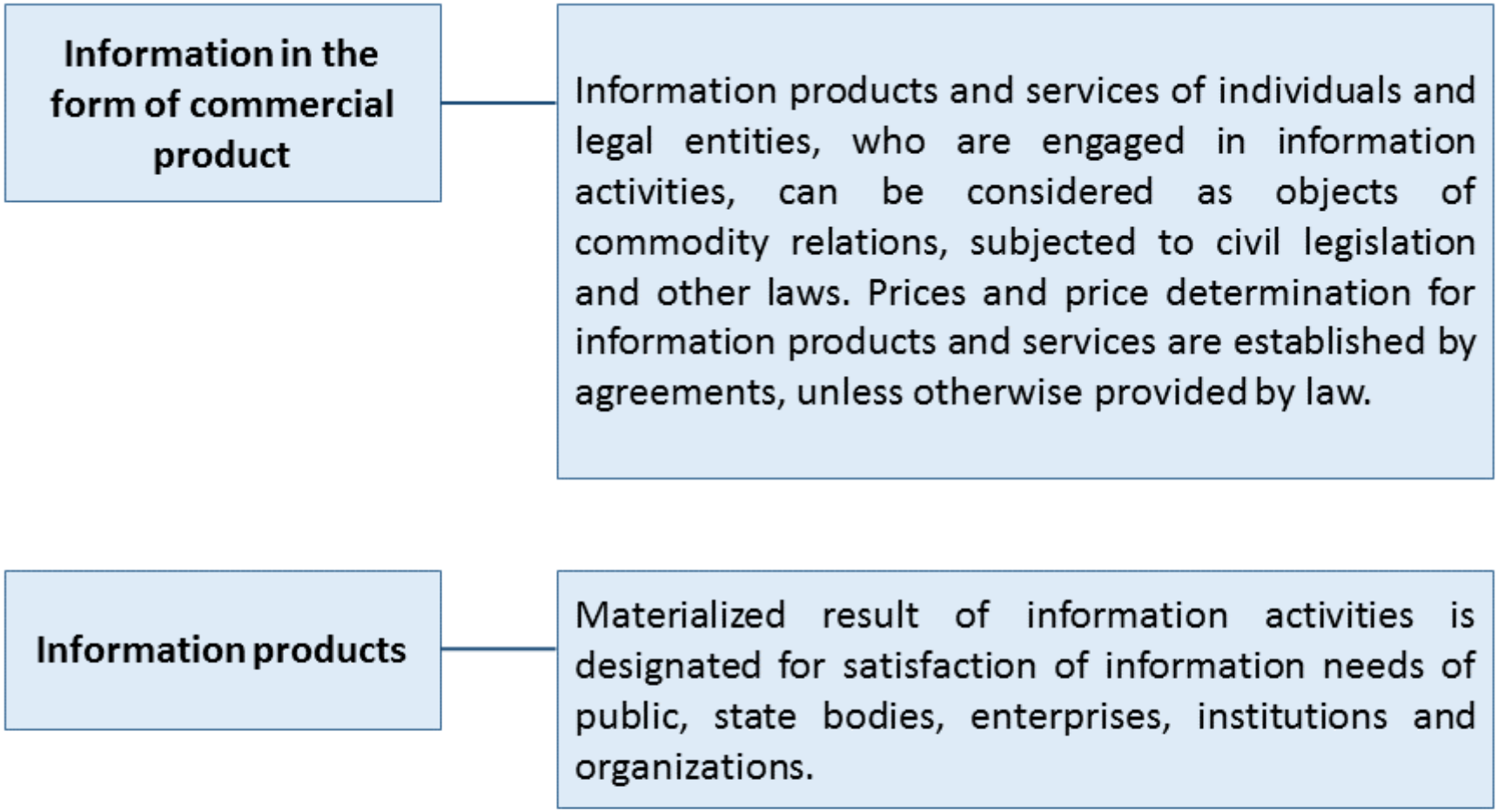
Managerial Consulting	Highly competent assistance to managers, targeted at company activities enhancement, which is provided by independent experts, who are competent in certain field.
Managerial Consulting	Services, provided by independent and trained professionals (experts or group of experts), with the aim to help company managers to detect, analyze and settle managerial and production issues reasonably.
Consulting	It is an expert assistance to managers and executive staff of different organizations (clients), towards solution of problems and development, which is carried out in the shape of advices, recommendations and mutually concluded decisions. *(Posadskyi A.P., Khainysh S.V. Consulting Services in Russia. – M.: Finstatinform)*

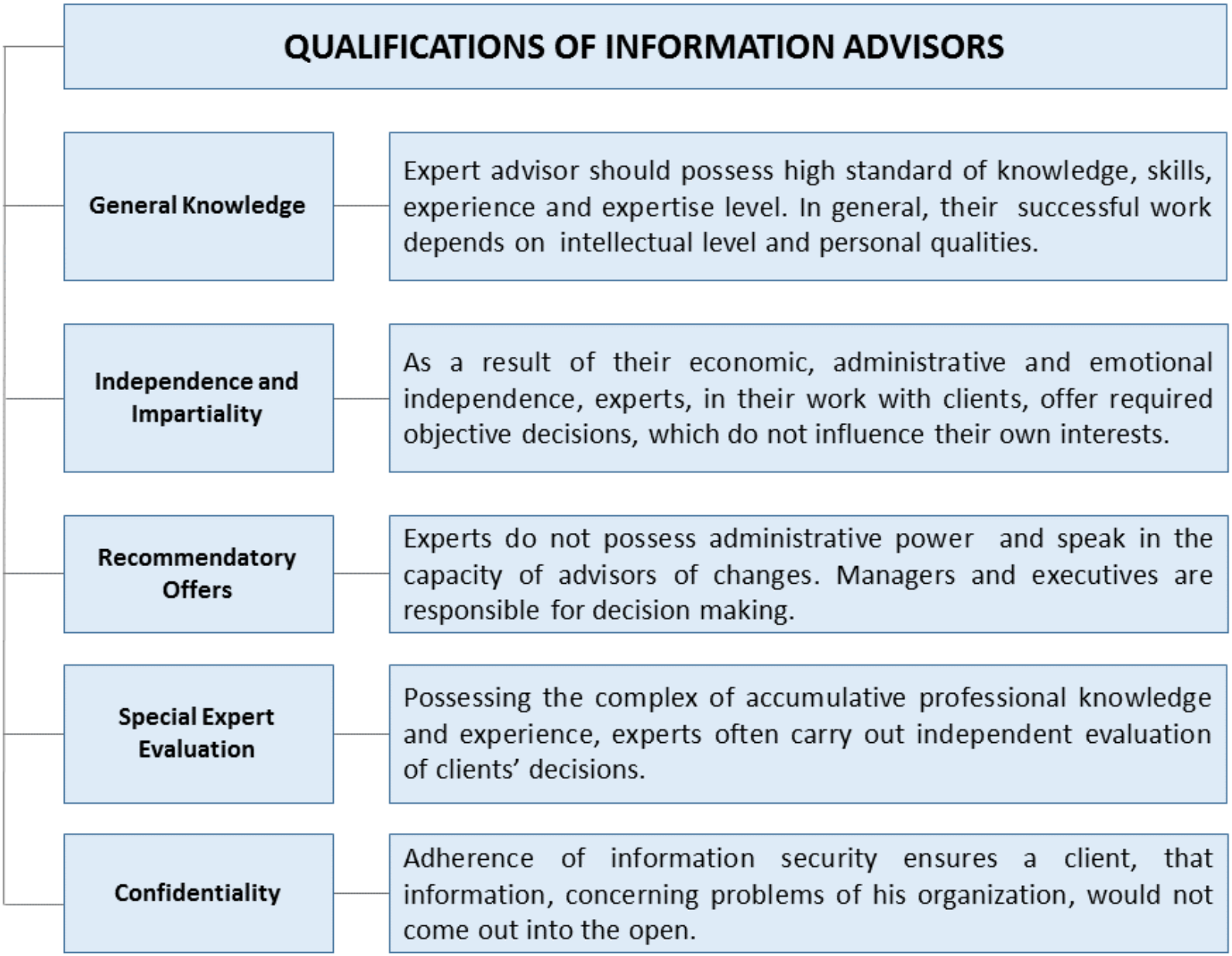

ASPECTS OF USER VALUE OF INFORMATION PRODUCTS
Indestructibility
Information product possesses information regardless of number of times it was used. Even more, this information can be many times replicated by different users, having access to it.
Deactualization (ageing)
In due course, information products tend to lose their peculiar original user value. This is an objective process, when social information loses its value features with the advent of more comprehensive and reliable data.
Targeting
Products should take into account peculiarities of various user groups and their individual features.
Scientific content of production
Development of information product requires significant intellectual performance expenses for search, processing and analysis of information.


Statistic
Commercial
Stock and Financial
Scientific
Professional
Business Information
Information for Experts
Consumer Information
Educational Services
Information Systems and Means
Preschool
School
Special
Secondary
Higher
Competence development
News and Literature
Consumer
Entertaining
Development and Support of Information Systems and Technologies
Counselling
Program Products
Technical Means

Information Consulting

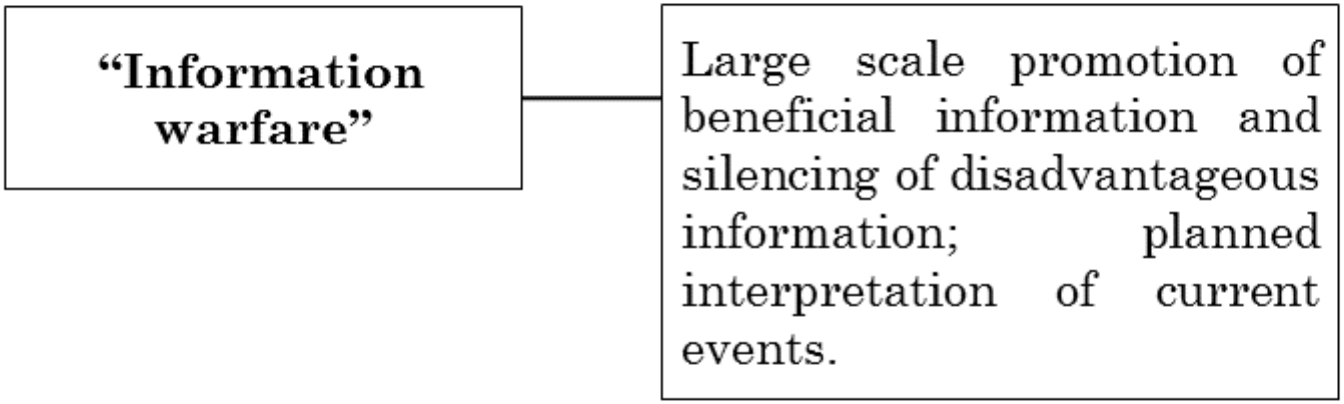
Market of information products and services	A system of economic, legal, organizational relations on information technologies, products and services distribution.
Infrastructure of information market	A complex of market sectors, each of which unites a group of people or organizations, which offer identical information products and services.

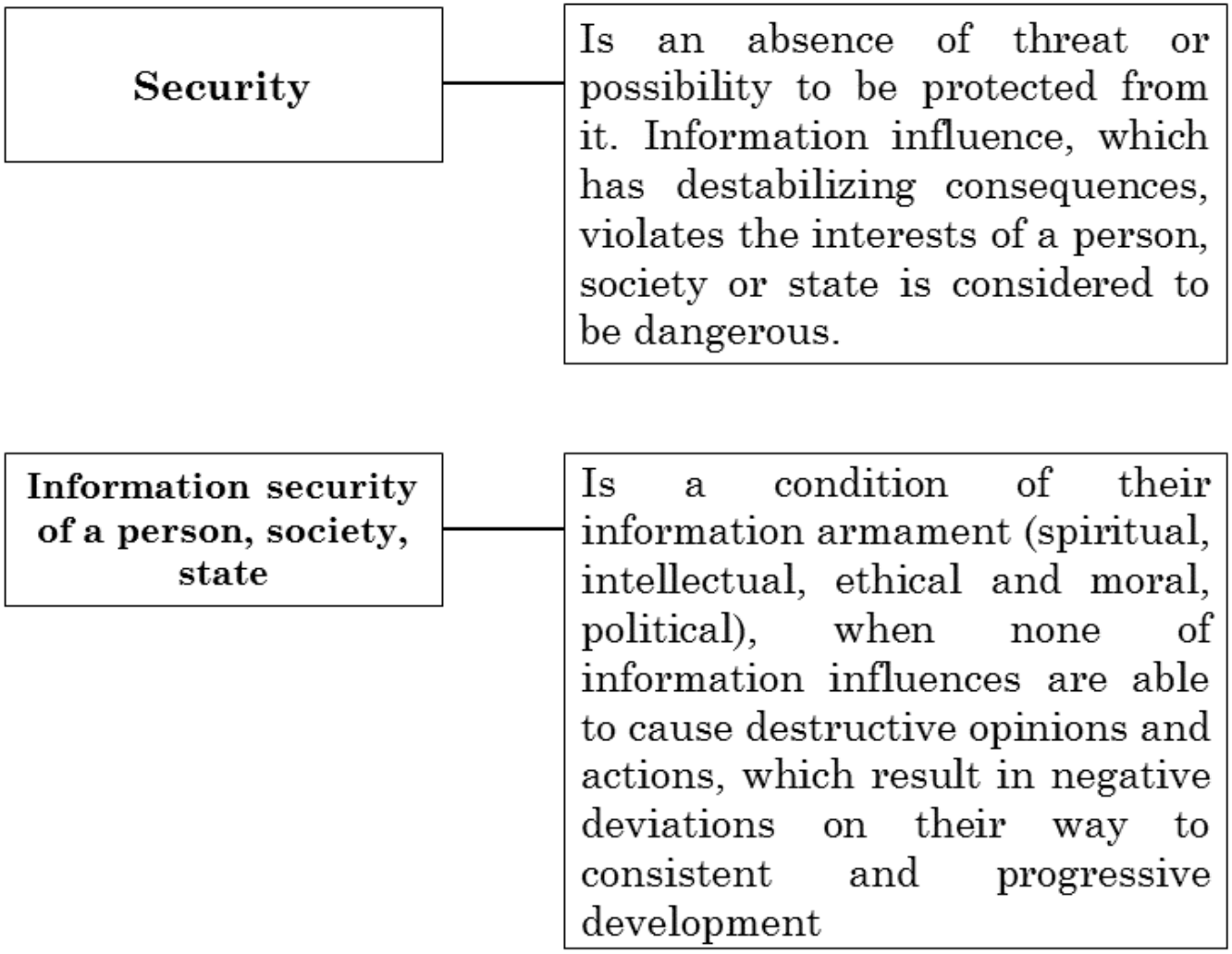

Information in the form of commercial product
Information products and services of individuals and legal entities, who are engaged in information activities, can be considered as objects of commodity relations, subjected to civil legislation and other laws. Prices and price determination for information products and services are established by agreements, unless otherwise provided by law.
Information products
Materialized result of information activities is designated for satisfaction of information needs of public, state bodies, enterprises, institutions and organizations.


QUALIFICATIONS OF INFORMATION ADVISORS
General Knowledge
Expert advisor should possess high standard of knowledge, skills, experience and expertise level. In general, their successful work depends on intellectual level and personal qualities.
Independence and Impartiality
As a result of their economic, administrative and emotional independence, experts, in their work with clients, offer required objective decisions, which do not influence their own interests.
Recommendatory Offers
Experts do not possess administrative power and speak in the capacity of advisors of changes. Managers and executives are responsible for decision making.
Special Expert Evaluation
Possessing the complex of accumulative professional knowledge and experience, experts often carry out independent evaluation of clients' decisions.
Confidentiality
Adherence of information security ensures a client, that information, concerning problems of his organization, would not come out into the open.

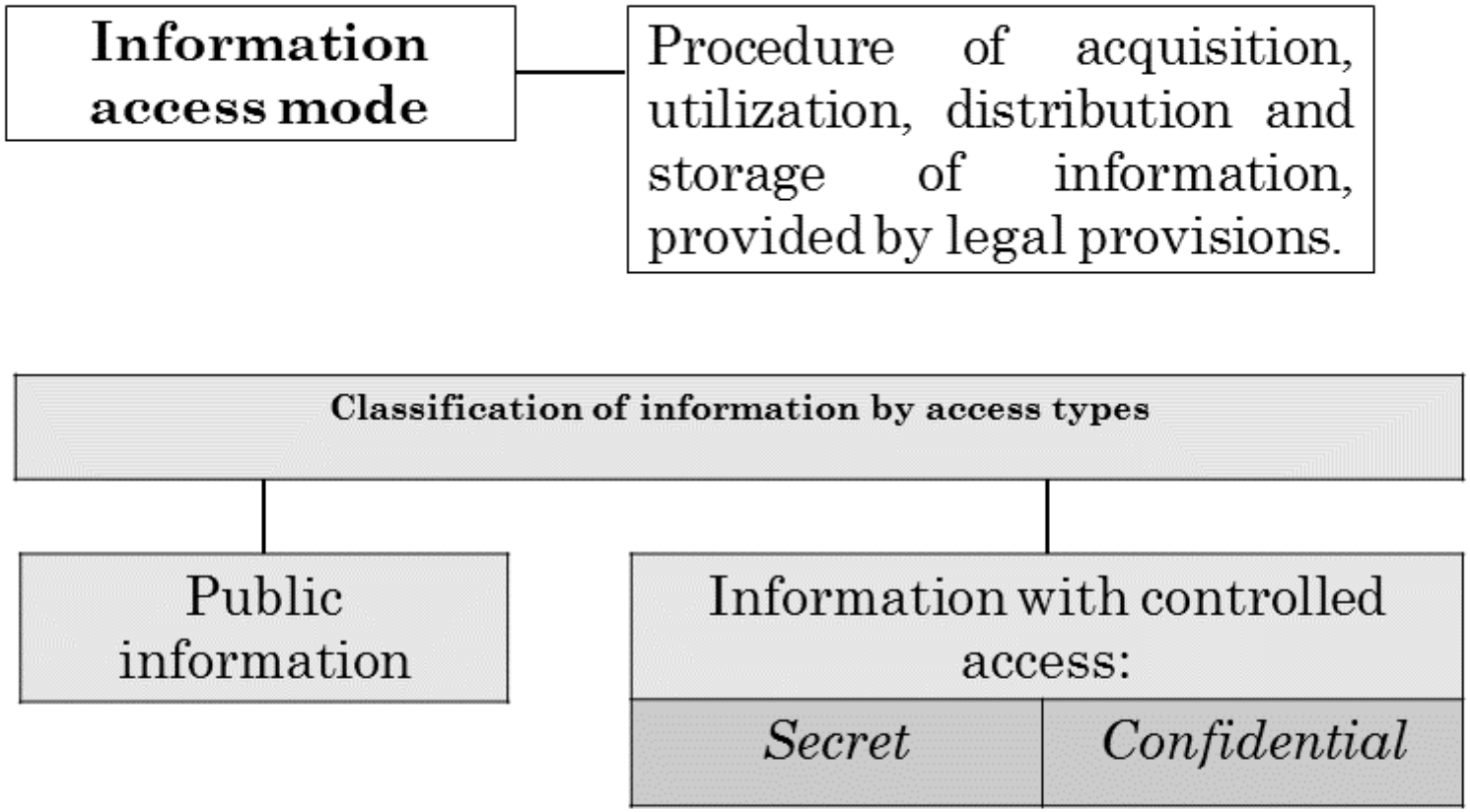
OBJECTS OF INFORMATION SECURITY

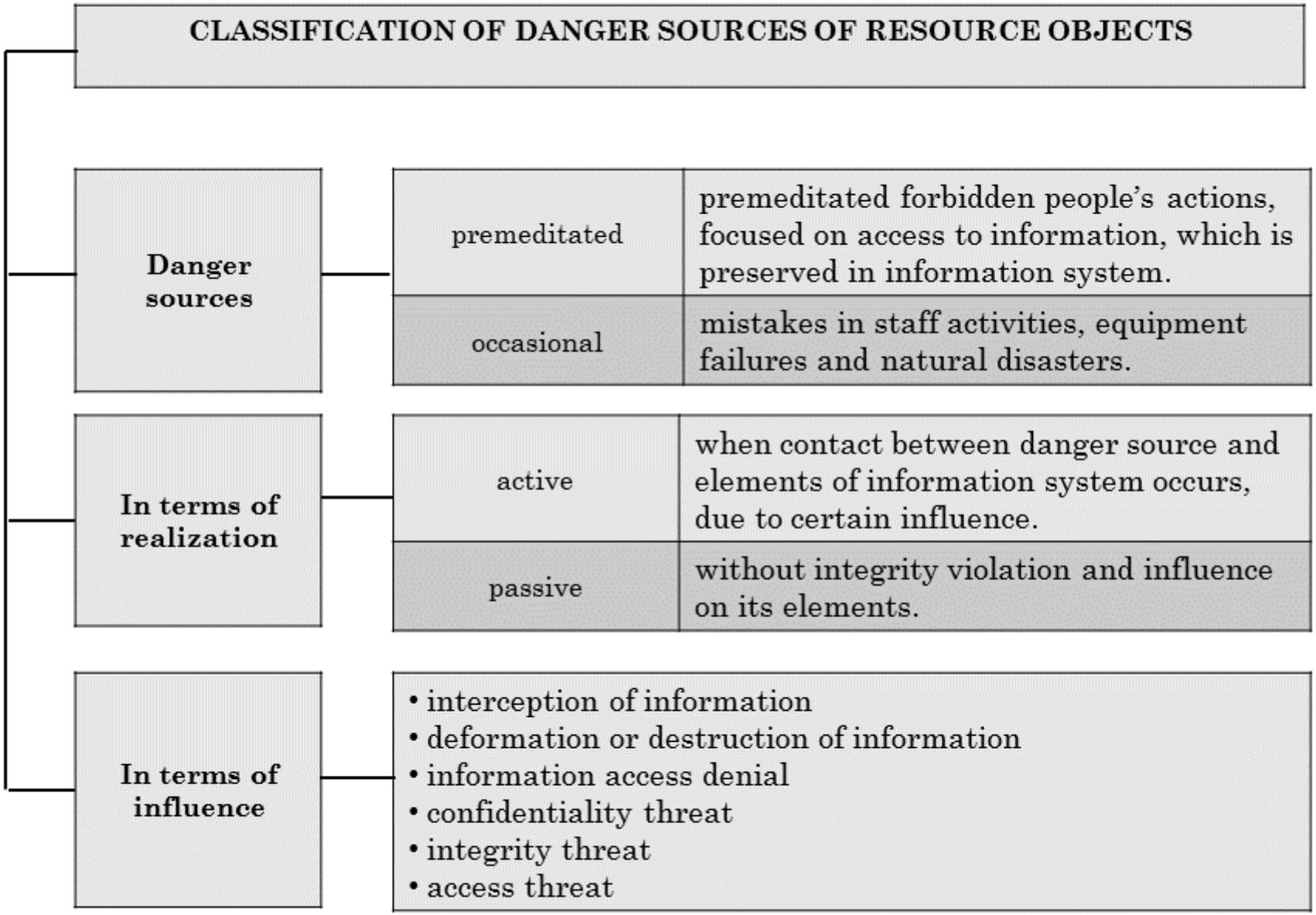
	Content	Source of a threat	Parameters of information security
Social object	Human, society, state	A part of information environment of society, which, for a variety of causes, inadequately depicts the world around.	• provision of free speech and access to information; • preservation of value system, spiritual and physical health of a person, society; • prevention of public opinion manipulation by state authorities, financial and political circles.
Resource object	Information resources, information infrastructure	Cyber crime, physical destruction of information infrastructure, including due to actions of natural forces.	• security of information networks, transportation management system, energy and bank spheres, government control, military units, etc.; • protection of large amounts of confidential information, which accumulates in governmental and non-governmental structures.


"Information warfare"
Large scale promotion of beneficial information and silencing of disadvantageous information; planned interpretation of current events.


Security
Is an absence of threat or possibility to be protected from it. Information influence, which has destabilizing consequences, violates the interests of a person, society or state is considered to be dangerous.
Information security of a person, society, state
Is a condition of their information armament (spiritual, intellectual, ethical and moral, political), when none of information influences are able to cause destructive opinions and actions, which result in negative deviations on their way to consistent and progressive development

5.
INFORMATION PROTECTION
Information Security


Information access mode
Procedure of acquisition, utilization, distribution and storage of information, provided by legal provisions.
Classification of information by access types
Public information
Information with controlled access:
Secret
Confidential

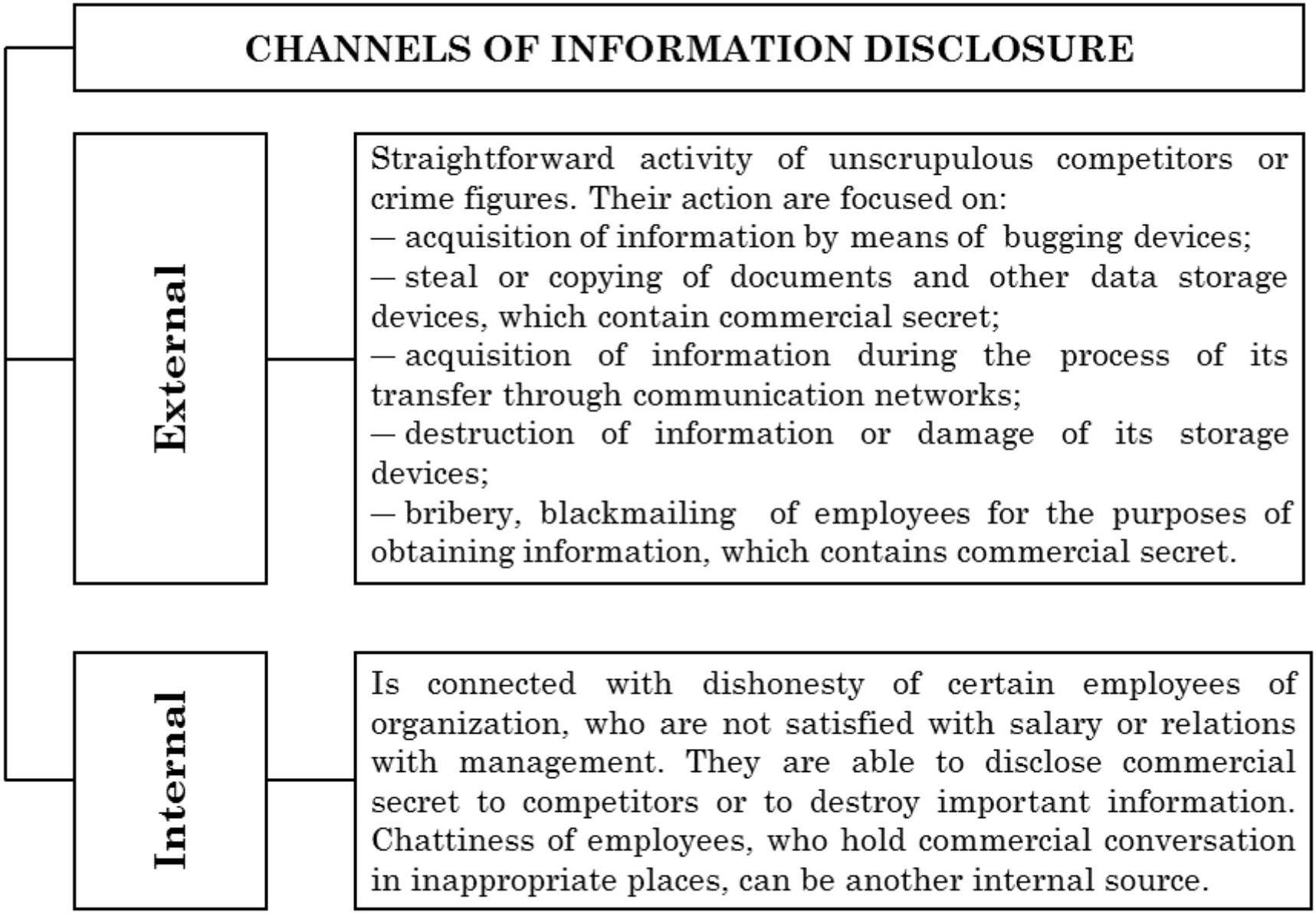

CLASSIFICATION OF DANGER SOURCES OF RESOURCE OBJECTS
Danger sources
premeditated
premeditated forbidden people's actions, focused on access to information, which is preserved in information system.
occasional
mistakes in staff activities, equipment failures and natural disasters.
In terms of realization
active
when contact between danger source and elements of information system occurs, due to certain influence.
passive
without integrity violation and influence on its elements.
In terms of influence
• interception of information
• deformation or destruction of information
• information access denial
• confidentiality threat
• integrity threat
• access threat

METHODS OF INFORMATION PROTECTION

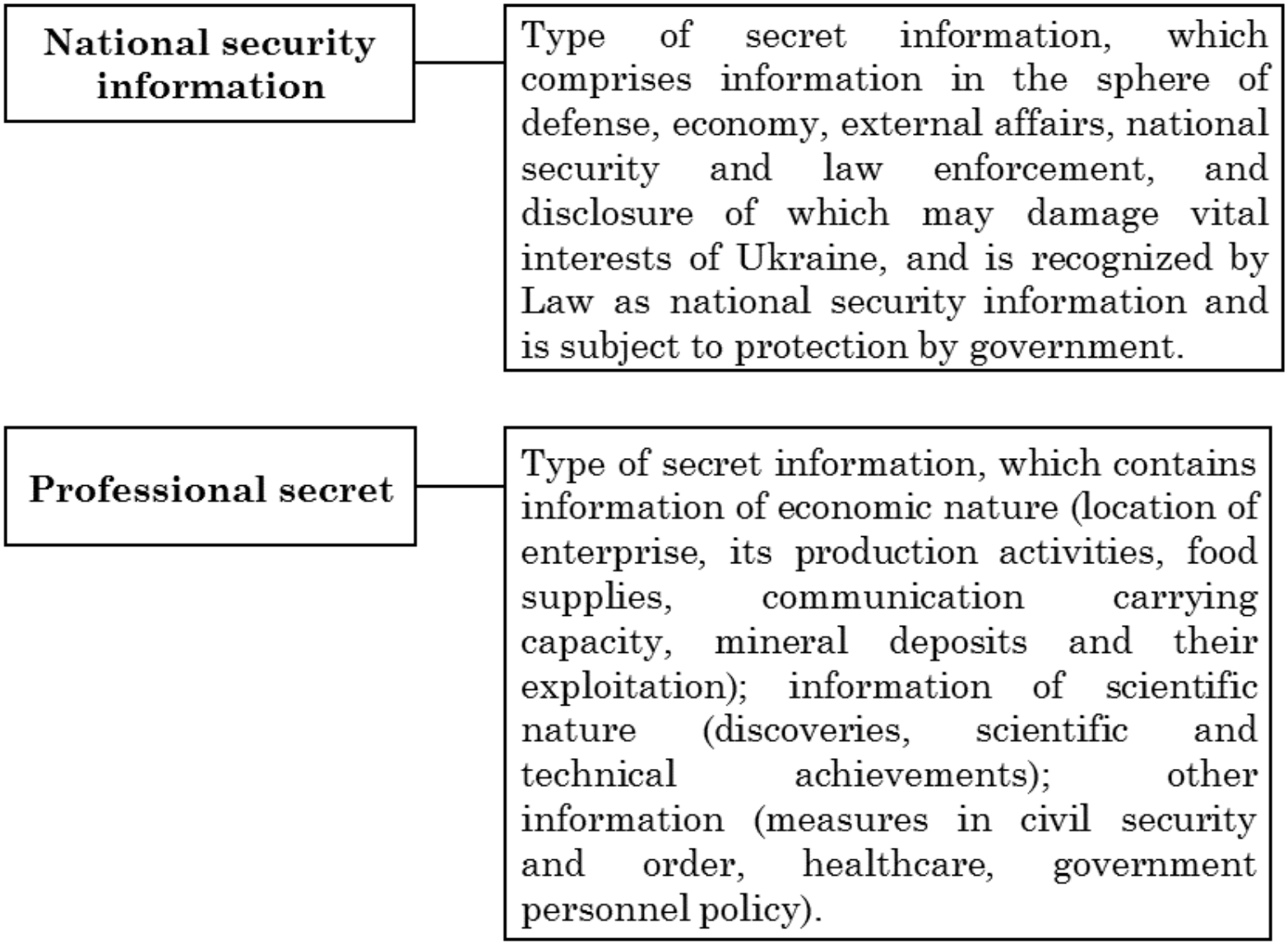
Information protection	Set of administrative and technical measures and legal provisions, intended to prevent damage to interests of information owner or automated information system and individuals, who use this information *(The Law of Ukraine "On Protection of Information in Automated Information Systems").*

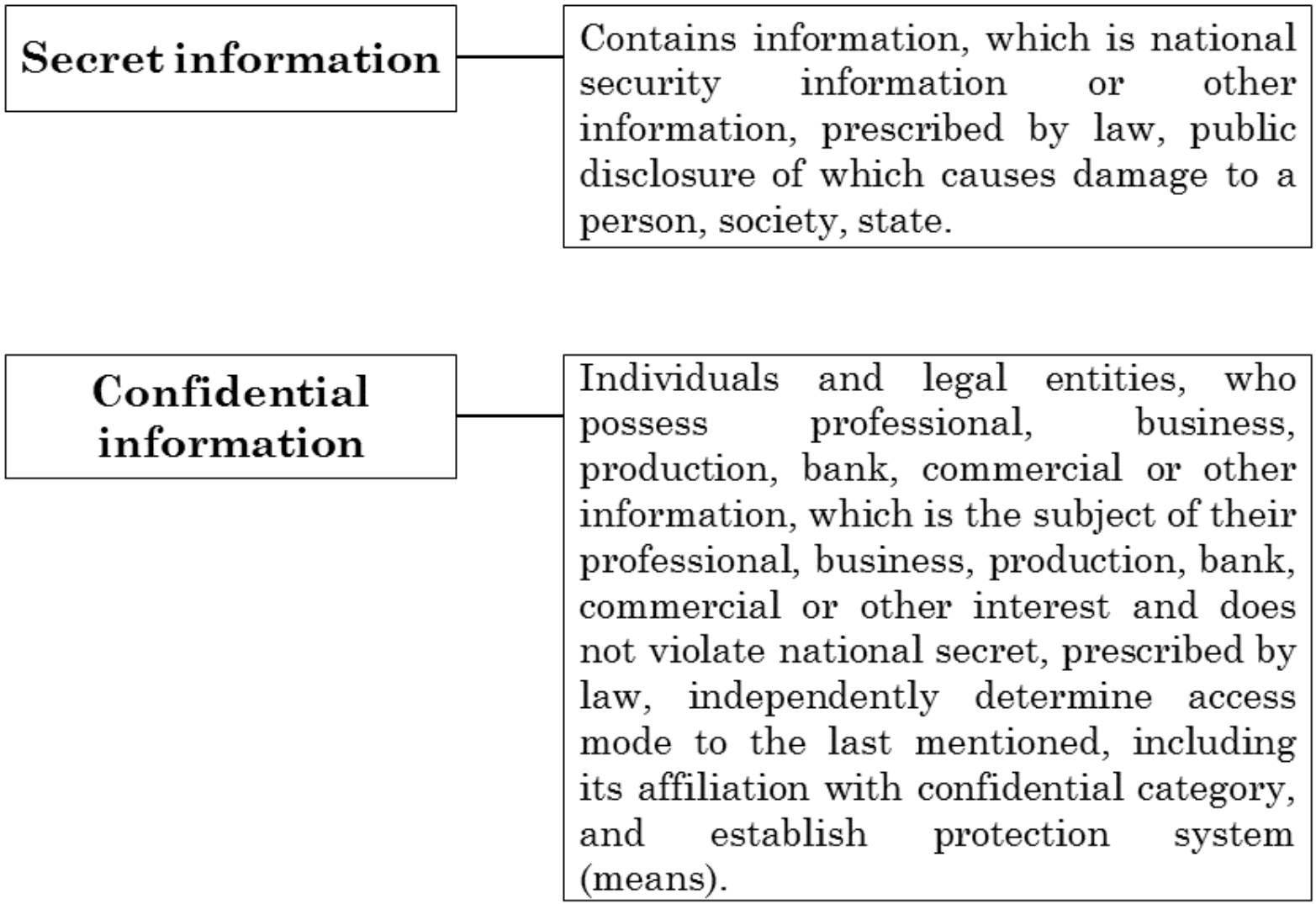
Information security support facilities

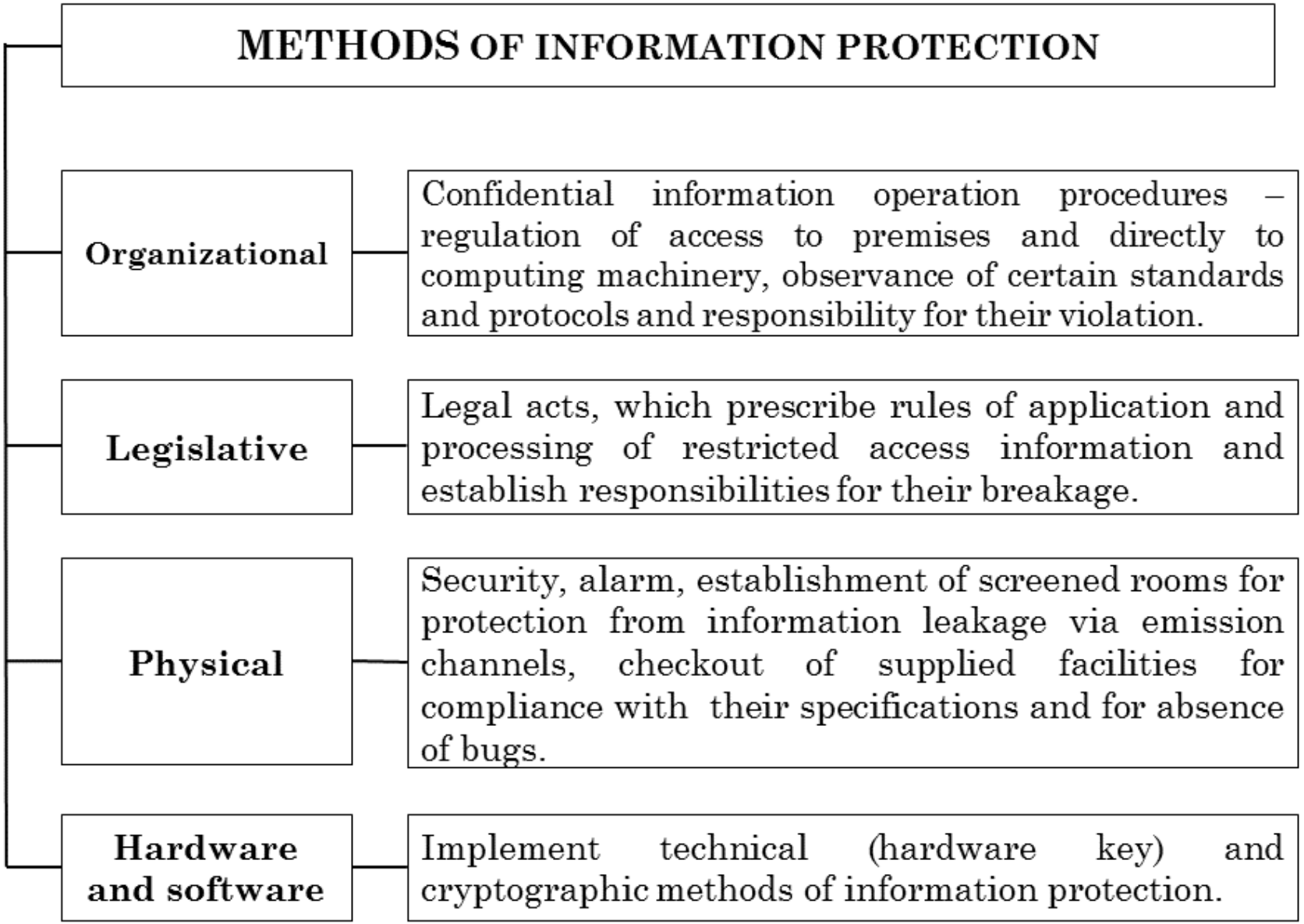
- Buildings, premises and areas, where automated information systems are located and where negotiations and exchange of confidential information can be carried out;
- technical means of automated information systems – computer facilities, local network equipment, cabling systems, telecommunications equipment;
- automated information systems software;
- information, stored and processed in automated information system; self supporting data carriers (CDs, floppy disks, etc.);
- organization's employees, who work with automated information system and are carriers of confidential information on system protection.

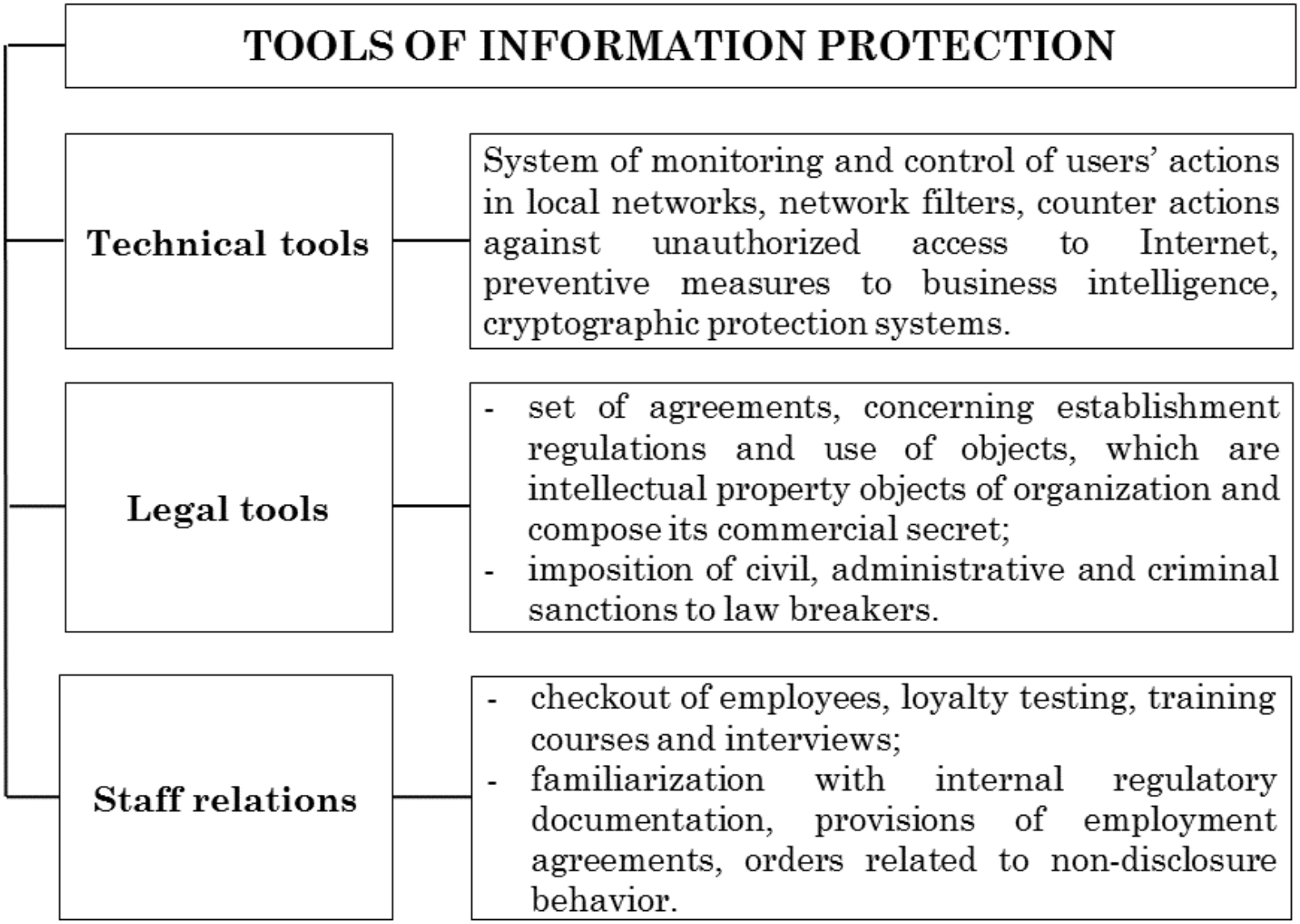

CHANNELS OF INFORMATION DISCLOSURE
External
Straightforward activity of unscrupulous competitors or crime figures. Their action are focused on:
— acquisition of information by means of bugging devices;
— steal or copying of documents and other data storage devices, which contain commercial secret;
— acquisition of information during the process of its transfer through communication networks;
— destruction of information or damage of its storage devices;
— bribery, blackmailing of employees for the purposes of obtaining information, which contains commercial secret.
Internal
Is connected with dishonesty of certain employees of organization, who are not satisfied with salary or relations with management. They are able to disclose commercial secret to competitors or to destroy important information. Chattiness of employees, who hold commercial conversation in inappropriate places, can be another internal source.

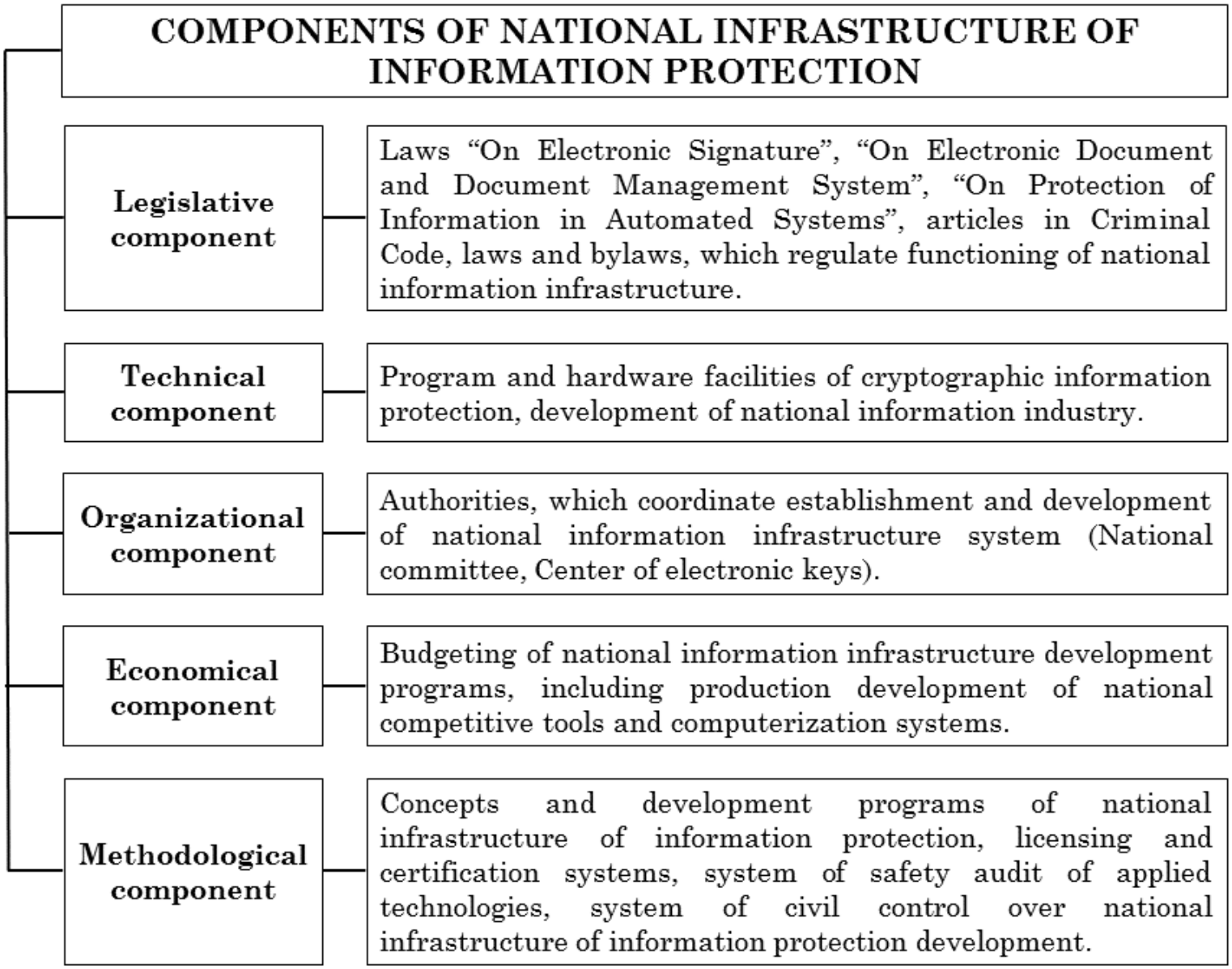
Commercial secret	Information related to production, technologies, management, finances and other activities of organization, which is not regarded as national security information and disclosure (transfer, flow out) of which can cause damage to organization's interests. (Law of Ukraine "On Enterprises").
Information security threat	▪ anthropogenic ▪ industrial ▪ natural

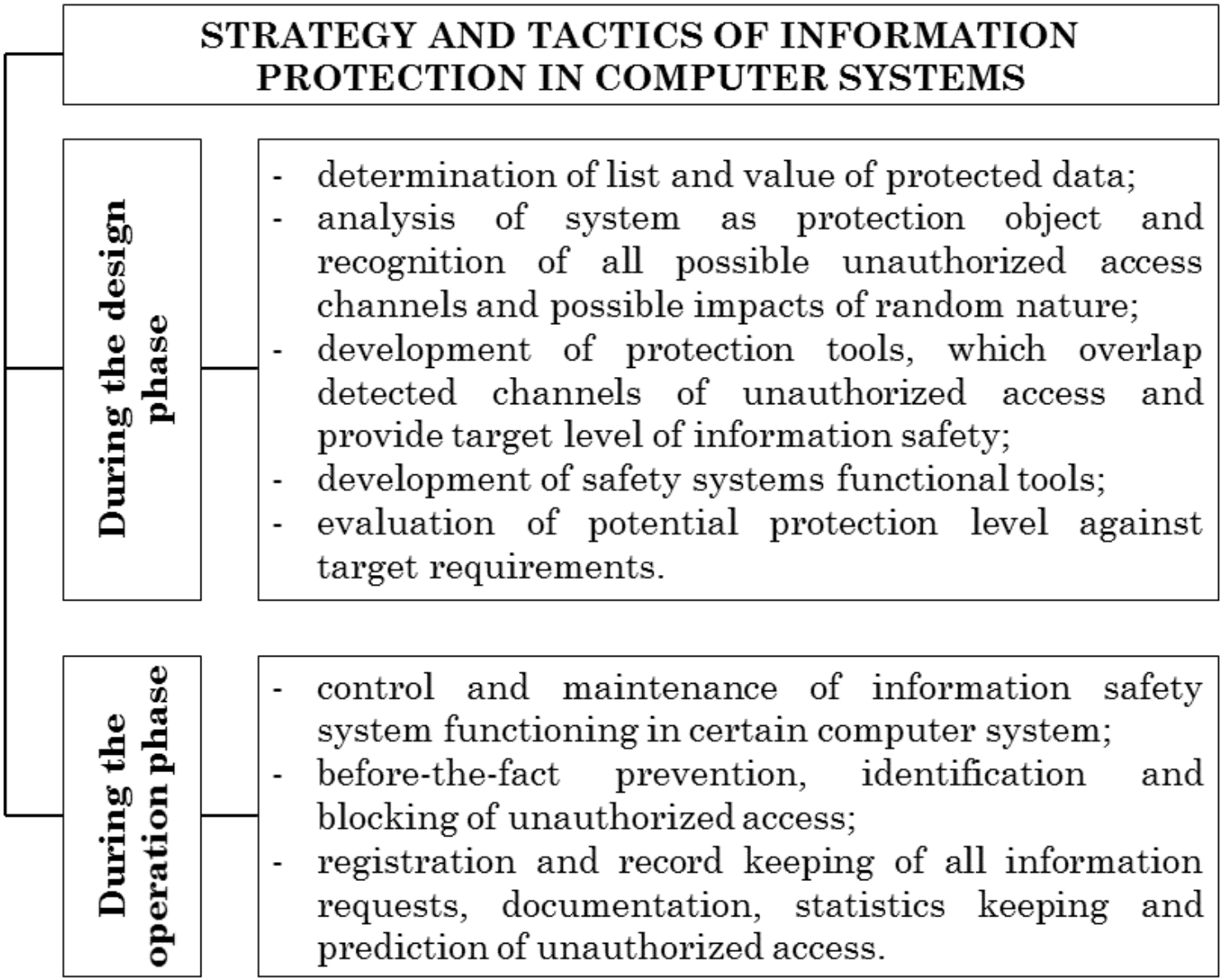

National security information
Type of secret information, which comprises information in the sphere of defense, economy, external affairs, national security and law enforcement, and disclosure of which may damage vital interests of Ukraine, and is recognized by Law as national security information and is subject to protection by government.
Professional secret
Type of secret information, which contains information of economic nature (location of enterprise, its production activities, food supplies, communication carrying capacity, mineral deposits and their exploitation); information of scientific nature (discoveries, scientific and technical achievements); other information (measures in civil security and order, healthcare, government personnel policy).

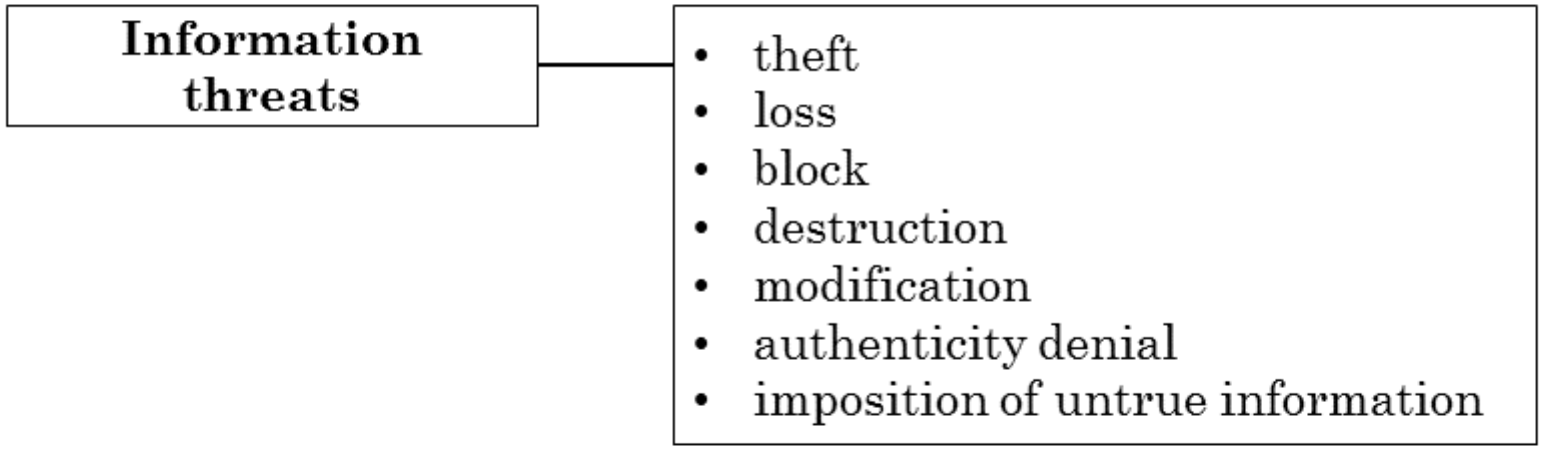

Secret information
Contains information, which is national security information or other information, prescribed by law, public disclosure of which causes damage to a person, society, state.
Confidential information
Individuals and legal entities, who possess professional, business, production, bank, commercial or other information, which is the subject of their professional, business, production, bank, commercial or other interest and does not violate national secret, prescribed by law, independently determine access mode to the last mentioned, including its affiliation with confidential category, and establish protection system (means).


METHODS OF INFORMATION PROTECTION
Organizational
Confidential information operation procedures – regulation of access to premises and directly to computing machinery, observance of certain standards and protocols and responsibility for their violation.
Legislative
Legal acts, which prescribe rules of application and processing of restricted access information and establish responsibilities for their breakage.
Physical
Security, alarm, establishment of screened rooms for protection from information leakage via emission channels, checkout of supplied facilities for compliance with their specifications and for absence of bugs.
Hardware and software
Implement technical (hardware key) and cryptographic methods of information protection.


TOOLS OF INFORMATION PROTECTION
Technical tools
System of monitoring and control of users' actions in local networks, network filters, counter actions against unauthorized access to Internet, preventive measures to business intelligence, cryptographic protection systems.
Legal tools
- set of agreements, concerning establishment regulations and use of objects, which are intellectual property objects of organization and compose its commercial secret;
- imposition of civil, administrative and criminal sanctions to law breakers.
Staff relations
- checkout of employees, loyalty testing, training courses and interviews;
- familiarization with internal regulatory documentation, provisions of employment agreements, orders related to non-disclosure behavior.


COMPONENTS OF NATIONAL INFRASTRUCTURE OF INFORMATION PROTECTION
Legislative component
Laws "On Electronic Signature", "On Electronic Document and Document Management System", "On Protection of Information in Automated Systems", articles in Criminal Code, laws and bylaws, which regulate functioning of national information infrastructure.
Technical component
Program and hardware facilities of cryptographic information protection, development of national information industry.
Organizational component
Authorities, which coordinate establishment and development of national information infrastructure system (National committee, Center of electronic keys).
Economical component
Budgeting of national information infrastructure development programs, including production development of national competitive tools and computerization systems.
Methodological component
Concepts and development programs of national infrastructure of information protection, licensing and certification systems, system of safety audit of applied technologies, system of civil control over national infrastructure of information protection development.


STRATEGY AND TACTICS OF INFORMATION PROTECTION IN COMPUTER SYSTEMS
During the design phase
- determination of list and value of protected data;
- analysis of system as protection object and recognition of all possible unauthorized access channels and possible impacts of random nature;
- development of protection tools, which overlap detected channels of unauthorized access and provide target level of information safety;
- development of safety systems functional tools;
- evaluation of potential protection level against target requirements.
During the operation phase
- control and maintenance of information safety system functioning in certain computer system;
- before-the-fact prevention, identification and blocking of unauthorized access;
- registration and record keeping of all information requests, documentation, statistics keeping and prediction of unauthorized access.


Information threats
theft
loss
block
destruction
modification
authenticity denial
imposition of untrue information

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