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INNOVATION-ORIENTED DEVELOPMENT STRATEGY OF ENTERPRISE INFORMATION-ANALYTICAL ACTIVITY

Monograph

Warsaw – 2017
Monograph is devoted to research of modern development of information- and analytical provision of managing an enterprise that caused by complex of changes in organization and methods of making decisions and information processing with priority of new technologies and concepts. Information-oriented approach to development management system under impact of constructive attributes, trends and conditions of business activity is substantiated. Proposals and recommendations that are set out in monograph and are formed for development information provision of managing and aimed at promoting intellectual and technological innovations, adaptation to changes, which inherent stage of transformation modern economy, achieve efficiency of change management and obtaining results from their implementation.

Scientific research contains proposals that collectively solve tasks sustainable development of enterprises by making effective decisions based on relevant managerial information.

For leading and young scientists, representatives of business and professional organizations and all interested persons, whose business is related to entrepreneurship.

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PREFACE

Definition of information as effective factor in production is the characteristic of modern world business environment that, in turn, affected on forming of information economic, which is characterized by intensity of modification and transformation concerning development trends and conditions of business activity. Modern economy is characterized by prospects of information development of business entities that has positive effect on transition to era of information society with provision of sustainable development of economic and social systems.

Development of informational and analytical provision of managing an enterprise as environment for formation of relevant data to substantiate managerial decisions, provide the real benefits of economic and corporate character on their basis received special significance under impact of transformational changes in economy and priority of information resources in dynamism of economic systems. Today business is more responsible to economy and society as a whole that requires its sustainable development, which, in turn, requires proper information provision of management. New information policy for business in issue of regulation, development and implementation of managerial decisions in accordance with ideology of modern economic relations has gained significance due to modification of information process and technological processing of data.

For now the information system provides complete competitive advantage, through of which enterprise gets stable positions in external economic environment and becomes priority in achieving stable development of economic activity. Existing information system has been substantially reformed and developed, but unfilled niches are remained at gaining flexibility concerning expanding the boundaries of information provision of developing alternative decisions concerning directions of development of enterprise activity with forecasting their results for making the most optimal and effective of them. Its improvement is due to using the best results
of implementation of innovative technologies to provide expected effect in optimizing managerial activity and rational development of enterprise.

Direction of scientific research is selected given the fundamental transformations in theory of information, new concepts of economic management and results of optimization of information system that resulted in change of philosophy of information management. This allowed to solve topical issues in development and increase of efficiency of information and analytical provision of managing an enterprise that substantiates expediency of its conduct.

Purpose of research is development of theoretical, organizational and methodical basis of forming information and analytical provision of managing an enterprise in context of development of economic and management system under impact of globalization and technologization of economic processes, requirements of balanced development of information-oriented society.

Monograph consists of three sections, which have unified logic of presentation of material and designed to achieve corresponding results of strategic task – improvement of information and analytical provision of management in conditions of modernization of management system in order to optimize enterprise activity, strengthening its competitive advantages and financial condition that in future will contribute sustainable development of domestic economy and will positively affect on its overall image in world economy.

In first section – «Development of information and analytical provision of managerial innovations in enterprise system» – scenario cards of sustainable enterprise development are developed; constructive attributes of modernizing information and analytical provision of management an enterprise are defined; concepts information development of enterprise management system are substantiated; priority directions of intellectualization at development of information and analytical provision of management an enterprise are characterized; information and analytical provision of modification management process enterprise is substantiated.
In second section – «Progressivity of information and technology innovations of development of enterprise management system» – information-analytical basis of systematic-competency approach to management enterprise development is defined; organizational and technological approach to modeling of information and analytic provision of managing an enterprise is characterized; modification technologies of formation and update of accounting data was made for development of information provision of management.

In third section – «Organizational basis for development of effectiveness of information and analytical provision of management» – cognitive distortions in information and analytical provision of managing are defined; innovative models of increasing effectiveness of information provision of making decisions are developed.

Obtained results of research and made suggestions concerning development of information and analytical provision of managing an enterprise is aimed at solving actual task of adapting information system to requirements of sustainable development of enterprise with increasing qualitative parameters of its activities.

Results of research, which described in monograph, will be useful for representatives of business, scientific institutions, professional associations and all those, who are interested in obtaining useful economic knowledge.
SECTION 1
DEVELOPMENT OF INFORMATION AND ANALYTICAL PROVISION OF MANAGERIAL INNOVATIONS IN ENTERPRISE SYSTEM

1.1. Scenario cards of sustainable enterprise development

Extensive changes in world economic space, becoming of global media society, changes of priorities and regulators of enterprise activity, active dominant of knowledge, technologies intelligence are influenced on organization and development of economic systems. Organization of business entity carried out in extremely difficult development conditions, for which inherent ambivalent character – turbulence and expanding range of tools and activation of business. However, more opportunities have many difficulties during adaptation economic systems to changes, because such systems are not completely ready to transformations and trying to preserve positions without risk that accompanies changes. Mainly enterprises are chosen traditional pattern scenario of management – preservation of competitive positions without introduction of innovations that characterized by lack of guaranteed effect. The main limiting factors are excessive caution and leveling of individuality in management. Enterprise has to determine its vector of development with considering strategy of transformation, business values, target activity (meaning and causes of existence), on the basis of which management scenario is developed, actualization of which should be carried out according to time and spatial context of enterprise activity at economic external environment (Figure 1.1) [10, P. 144].

Enterprise during formation of development scenario guided by choice, changes and context, namely by circumstances, factors and conditions (context), in which economic entity is carry out and develop activity. Availability of choice contributes to assessment advantages and disadvantages of option selected management scenario, elements of which are updated and modified according to actual
Changes accompanying development of enterprise in active coordination of relations at management horizontal plane, communication phenomenon of which is to achieve continuous coordination between subsystems of economic entity management.

Changes are logical and objective process that accompanies development and involves rejection of traditions in favor new, for which information is needed with quality parameters that allow to promptly respond to changes and make decisions on prospect.

Enterprise activity is limited by spatial and temporal context, resulting information and analytical environment should be flexible with active coordination of information relations between management subsystems and external environment. Hierarchical (vertical) order of information relations and information regulation been transformed into horizontally integrated system. Such option of organization information and analytical environment of enterprise is most conservative, because provides internal needs with external conditions of business activity.

Figure 1.1. Scenarios of development enterprise according to temporal and spatial context of its activity
Management scenario is needed to improve efficiency of formation and implementation leading influence with provision of continuous process of changes and innovations that are most correspond to characteristics of enterprise activity. The main marker of efficiency of enterprise activity is its ability at minimal amounts of time to transform important strategic and operational decisions into action, that is implementation of developed management scenarios [23].

Effectiveness of management scenarios depends on several of economic, social and environmental criteria and indicators that indicate practice of enterprise economic activity and characterize the effectiveness of decisions made. System of criteria are proposed for real evaluation of enterprise sustainable development in the long term and adjustment of strategy parameters: financial and economic sustainability (economic efficiency of enterprise activity); social sustainability (efficiency of enterprise business relationships); environmental sustainability (effectiveness of environmental activities) [33, P. 307–308] that provides comprehensive research of status and prospects activities of economic entity.

Enterprise should come out from «comfort zone» to «opportunities zone» for provision of development and for this risk taking and responsibility for partnerships with external economic environment are inherent.

Such outcome should carried out according to necessary conditions that provides development of management scenario with unique set of factors and functions as core competencies with contributing to achieving of balance in changes of internal and external environment of enterprise activity with forecasting of trends and causes of changes world economic space. This is justified foresight of business activity without reference to warranty of getting results and willingness to timely development of model reaction to transforms in economy with architectonics of risk management.

Models that provide unquestionably positive, conditionally positive and negative results should be balanced for more objec-
tive of decision. In other words arithmetic mean between development and risks that accompany any changes and transformations should be found. Architectonics of risks is complicated, because is based on evaluation and processing of risks that can be accepted and to which guiding impact are apply and risks, occurrence of which not amenable to prediction. Information-analytical knowledge are complex of relevant data and rules, on basis of which internal monitoring of enterprise activity can be made and development projects with definition of aggregate results different levels of efficiency are developed.

Processing of hypotheses and subsequent develop models of reaction should be carried out taking into account following principles:

1) scalability of planning. Scalability of planning continuous process of changes and innovations, updates and transformations of all processes, mechanisms and models of enterprise activity with provision of parallel implementation should be made. Phased organization should be replaced by composition that will have greater positive effect, because will provide readiness to making changes by all management system and not only by its individual subsystems.

2) collective control way. Control impact should be carried over from vertical plane to horizontal plane that will allow to provide active monitoring of enterprise activity and provide effective information exchange between enterprise management subsystem.

3) behavioral style of thinking. Conclusions and decisions should be generated based on concept, according to which economy develops as result of impact behavior and guidelines that adopted by individuals and integration with social institutions taking into account increase valuables of eulogistical human qualities. This is continual process of revising values, traditions, strategy of enterprise activity that provide simple or multivariate updating of hypotheses.

4) minimizing of time. Time for forming hypotheses and developing models of reactions to them should be maximally reduced
that provide preliminary work concerning forming of base rules and knowledge base, which are updated by results of functioning of all subsystems management.

5) sustainability of changes. Each hypothesis should be instrument of gradual changes with harmonization of enterprise activity and collective way of adapting of all management subsystems to realities of external economic environmental and needs of enterprise internal environment.

Such principles are coordinated map of decisions concerning hypotheses and models of reactions to them that allows to develop effective information relations in enterprise management system.

Scenario constructions allow to increase effectiveness of management decisions. Decisions are formulated based on organization of information array, processing of which should be carried out taking into account factor of systematic approach, in which innovation, organizational architectonics, rational and irrational thinking are implemented.

Namely thinking is foundation of creative approach that change qualitative characteristics of information system as complicated structure that is prototype of reality in thinking of individuals, which united by same idea and strategy. Multivariate and ambivalence of information system are explained by personalization of their architectonics, which is defined at first organization that is changing under impact of internal and external conditions with impact on behavior of system and its interrelation with other systems.

Organizing information system is a necessary element of enterprise management, in which time that is necessary for obtaining high result is important factor.

Generating information for making decision acquires new meaning at modern conditions of global changes that caused by intellectual and technological transformation paradigm of economic and social systems. Users from information-analytical system expect not data, but knowledge, ie result of reflection realities of phenomena and processes, interpretation of which allows to effectively implement guiding impact.
Necessity of changes in information and analytical provision of management with implementation of prediction for increasing efficiency of management decisions that is outside traditional processes of processing, transmission and storage of information acquires particular relevance.

Formula generation of management information is based on three important factors that necessary for provide qualitative changes, which corresponding to time requirements:

\[ S \times H \times A > T \]  \hspace{1cm} (1.1)

where \( S \) – current situation; \( H \) – hypotheses; \( A \) – actions; \( T \) – tasks.

First components determine possibility of implementation defined task, each of which should be provided sufficient information for making decisions. Current situation in enterprise activity is characterized after monitoring changes and external conditions of business activity, for which information is taken from different databases and rules taking into account timeliness of data and conclusions.

Hypotheses are formed using new data and posteriori knowledge, amount of which depends on qualitative and quantitative parameters of priori information. Such information should constantly be evaluated concerning conformity to temporal context of enterprise activity and level of subjectivity that allows substantially reduce information losses and increase level of efficiency implementation of data in operative managerial decisions.

Models of reaction (active actions) which include complex of decisions with different expected effect are developing according to formed hypotheses (them should be at least two).

It is important to effectively and on time to processing, transmit and interpret data in order to avoid risks that associated with information. Information allows not only describe enterprise activity and appropriately to understand logic of its organization and development that is implemented in decoding of goals, objectives and technologies.
Functioning information system can be estimated by obtained results, which is not enough, because forecasting of events and consequences are not done. Therefore is not only necessary traditional information provision with array of relevant data, and also multifunction information system, content of which should include priori, relevant, posterior, new information that characterizes information complexity of system.

Quantitative and qualitative characteristics of database, algorithm of processing and servicing of information, communications channels and also number of data that are needed for making decision define information complexity of system. Enterprise information system is complex of organizational, technological, hardware and communication and information instruments that used to processing, transmission and storage of data, which are updated by means of technologizing and intellectualization processes (Figure 1.2).

Knowledge Base as developed form processing, transmission and storage of information takes central place in contour of enterprise information system and for it inherent technological, hardware and communications and intellectual aspects. Forming, servicing and development of Knowledge Base (its technical and logical components) are carried out based on criteria organization of logical rules of conclusions, network models, algorithms of processing data, archiving of information: integrity; traceability; clarity; correctness; completeness; effectiveness [43, P. 181–182].

Figure 1.2. Contour of enterprise information system
enterprise information system and for it inherent technological, hardware and communications and intellectual aspects. Forming, servicing and development of Knowledge Base (its technical and logical components) are carried out based on criteria organization of logical rules of conclusions, network models, algorithms of processing data, archiving of information: integrity; traceability; clarity; correctness; completeness; effectiveness [43, P. 181–182].

Knowledge of various types are accumulated in base [1, P. 383–384]:

1) Probabilistic knowledge – least one condition, probability of transition in which is different from other probable transitions is available in system.

2) Structural knowledge – condition, in which transition is inappropriate that explained by constraints, which identified by internal and external environment turns out in system.

3) Deterministic knowledge – any transitions besides that, which defined by basic, according to which amount of knowledge contributes to reducing of entropy are prohibited in system.

Knowledge Base is structured according to organizational and informational architectonics taking into account requirements and restrictions of formal and informal institutions. Servicing of Knowledge Base is carried out to optimize its logical parts, in which knowledge for making decision are generated that by means of encoding / decoding are transmitted by communication channels for understanding of processes, factors and phenomena of enterprise activity.

Information system should be updated all time, because only one version of its design is not guarantee for effectiveness of expected result. Biggest mistake is forming of information system once and forever without further changes and adapt to conditions and factors of business environment, information and communication space, technological environment. Strategy of organize productive information system and obtain in future benefits from its functioning is unjustified, because level of performance will decrease over time.
Essence of information-analytical system is beyond traditional understanding of processes of processing, transmission and storage of data and determined by highly complex constructions of information relations with foundation of rational and irrational interpretation information for its onward transmission in order to obtain knowledge and making decision. Forming semi-open information platform, for which is inherent flexibility in comparison with traditional information systems is carried out as result of intellectual and technological approach to development of information-analytical systems.

1.2. Constructive attributes of modernizing information and analytical provision of management an enterprise

Information is an integral component of the world, providing its evolution through formation of real images matter and energy and its dissemination for the purpose of get «perfect» knowledge. Philosophy of information has been developed on the basis of integration of technology, communications and human. Economy of modernity depends on information more than from material resources, because is functioning at time of aggressive competition and difficult financial and economic relations. Information or rather knowledge allows to predict course of events, to focus on purpose and objectives, to determine with opportunities and restrictive factors.

Modern business depends on relationships between economic, social, ecological systems that are customers of complex versatile information about results of enterprise activity and persons, who determine direction of its development. Thus, information relations are modified, putting forward new requirements for methods and means of processing, transmission and storage of information, mastery of which creates knowledge. As a result of dynamic changes in business conditions increased demands to development management system that anticipation of formation result as complex of principles (rules), tools, methods, means and ways to achieve effectiveness of enterprise activity. For business development need
provide internal users information about general approaches to accounting organization; be the basis of gradual development of new and revision existing accounting regulations; facilitate making decision on issues that are not regulated by normative documents; assist consumers of accounting information to understand reporting.

Management information-analytical system is interdependent and integrated aggregate of components of organizational, legal, informational, methodological, program and technical characters that provide required quality of management decisions through rational use of information resources and technologies [62, P. 299–300]. Information-analytical system is characterized not only by information processes, communication environment and basic provisions concerning processing, transmission and storage of data. Information system should be extraordinary with continuous transformation of its structure and connections that corresponding realities of time and spatial context of enterprise activity (Figure 1.3).

Figure 1.3. Strategies of forming enterprise information system

Type of such system that affects the final result – management information is actually elected when choosing strategy of forming, servicing and development of enterprise information system. Priory and simple systems are on same line of development, because
first system is source type, which is universal for economic entities and other – result of using pattern unchanged, which has provided efficiency for enterprise at particular period of time. Posteriori system is peculiar to enterprises, in which update of information process (its contents) is carried out that is a result of experience gained during operation with enterprise system and processing functional possibilities of information systems – analogues.

Reengineering as classical instrument redesign of business processes contributes to qualitative reconstruction of information system, thus expanding group of its functions that allows to management personnel pursuant to extend range of tasks and decisions, which necessary to achieve particular purpose of enterprise activity. Reengineering of information systems is efficient technology of design that used for updating project of information system and increase its functional implementation as parallel process of modification enterprise management system. Optimization and synchronization of information flows, adapting of information architecture to changes in organizational structure of managing an enterprise, increasing quality parameters of information for making decision are achieved as result of reengineering.

Reengineering of information system involves changing organization, management, taking into account relevant strategic objectives of business. First and foremost changes are defining to philosophical character of information provision that correspond to reality of modern economy development. Idea of reengineering consists not only in radical transformations, and also in reasonable allocation of functions and responsibilities within system without excessive their complication.

Information system includes a group logically related elements: technological basis of forming data; communication channels of information cooperation; levels of information processing; database with established mechanism of archiving; target groups of addressees; budget expenditure on servicing of information system. Reengineering is designed to obtaining new construction of information system as result of change its size and structure in ac-
cordance with time and space of enterprise with configuration of information processes for generating messages that are suitable for efficient data transmission that are provide making management decisions. Information system acquires multifunctional character through reengineering, because it as result of redesign acquires new characteristics, which reflecting qualitative level of implementation innovations in processes of processing, transmission and storage of information.

Enterprise development model, in which information relations, communication links and information architectonic of making decisions are reviewed and updated is changed based on active dominant of new paradigm economic development. Distinctive feature of modern information and analytical provision of managing an enterprise is actualization of its organizational and technological structure that provides streamlining of information flows, structure, relationships with implementation process of coordination and cooperation in reactive and proactive development strategies (Figure 1.4).

Figure 1.4. Grid of information and analytical provision of managing an enterprise (developed by materials [1, P. 383–384; 57; 58])

![Figure 1.4. Grid of information and analytical provision of managing an enterprise](developed by materials [1, P. 383–384; 57; 58])
Three zones of information provision of making decisions according to typology of Knowledge Bases, which are characterized by combination of factors management that correspond policy of managing an enterprise, its mission and development strategy are allocated in grid (refer to Figure 1.4). Certain knowledge, use of which provide solving defined task: from formation and implementation of leading impact to generation of information for making decision are generated at each point of intersection. Grid managerial knowledge is universal instrument for executing internal monitoring of enterprise activity, its partnership relations, forming hypotheses, development of managerial strategies and implementation of active actions. It allow to form managerial constructions to increase efficiency of business processes.

Conclusion concerning synergetic of information system functions that are designed to facilitate presentation of information to interested users in timely manner and in full is logical at considering information system and determining this phenomenon in environment generation and dissemination of innovations concerning information relations:

1) Information exchange (institutionalized – between management subsystems and external economic structures; no institutionalized – in working groups and free information networks).

2) Informational support (generating information, update of regulations base, making decision).

3) Information interpretation (conversion of messages by means encoding / decoding in knowledge with reflection of its essence at continuous process development of enterprise activity, formation and implementation of leading impact manipulation of models of reactions to management hypothesis).

4) Information cognition (objective reflection of reality concerning enterprise at different users of information with generation of knowledge as result of comprehension of known and previously unknown factors, facts, events, processes, regularities in enterprise activity).

5) Information activity (multivariate of methods and prototypes reflection of objects, processes and phenomena while forming mes-
sages that intended to transmit information for accumulating and use knowledge).

6) Information communicativity (communication in internal and external environment based on representation of knowledge by means of communication channels with relevant data security when transferring for users).

7) Information constitution (new opportunities to processing of information that allows panoramic reflect features and specifics of enterprise activity with forming objective view of its advantages, opportunities, culture, business processes, constraints, business image).

Modernization as condition of effective and sustainable development is status of continuous process of generation and implementing new based on existing that is embodied in strategy to provision of realization of potential in conditions, which inherent to external environment. When modernization should be guided by aggregate of changing organizational, information, technological character, which is caused by innovations that stimulate potential, reproduction of properties, expansion of competencies, strengthen competitive positions.

Modernization of information system characterized by maximal compatibility of innovations with existing information processes, phenomena and objects, sequence changes, accessibility and systematization of transformations in information environment, stability reproduction in system of guidelines, conditions and information models that directs to provision of complex implementation new knowledge.

Advantages of modernization are unconditional, but probability occurrence of risks, which associated with formation and implementation of changes is reverse side of this process. Risks modernization of enterprise information system arising as a result probability of a negative result from generation and implementation of fundamentally new technologies, intellectualization processes of processing, transmission and storage of information, making decisions concerning actualization of information environment. Neg-
ative result consists in probability of information asymmetry, loss of data, complication of algorithm processing data, delay of transmission information, data redundancy, discrepancy of information requests of decision making system.

Risks are simultaneously factors of modernization and negative consequence of its implementation as objective phenomena that explained by impact conditions for generation and implementation of changes, for which inherent technological, technical, communication, competence character. Modernization is specific process that related with identifying need of changes, emergence of new idea, identifying opportunities and constraints at its implementation. Logically, this process is accompanied by uncertainty, contradictions, alternative, asymmetry that inherent for condition, which are characteristic to transformational change, which can be defined as risk syndrome of modernization. Risk syndrome of modernization is combination of groups conditions that characterize unity of detecting adverse factors concerning violations efficiency of process improvements and updates.

Risk syndrome of modernization is caused by such groups of factors:

1. Space-external group – risks arise as result development of global space with its reorientation on new factors, conditions, guidelines and culture. Defining new type of world order, which based on primacy of technologies knowledge and information, substantiation demarcation line between technological and intellectualized aspects of development are reasons risks modernization in this group.

2. Systemically-external group – risks are caused by constraint projects of modernization by rules and guidelines of formal institutions, substitution of process changes and innovations to archaic process of saving existing state system with partial updating by means stereotyped decisions that not allow to extend its functionality.

3. Internal group – risks caused by systemic phenomena occurring inside system as result of slow reaction to changes and external en-
vironmental conditions with delay reformatting system and increase unaccomplished tasks concerning formation new properties of system.

Parameterization risk syndrome of modernization is characterized by internal and external parameters. Internal group of parameters consists of: condition leading impact (interactive communication; influence groups with interest to change; conditions of stability for existing state system); connectedness of management (latent dimension of expectations changes; ability to co-management; scalability of system transformations); communication infrastructure (presence and complexity of communication channels between management subsystem; direction of communication; branching of channels information exchange). External parameters risk syndrome of modernization are interests of external economic and information systems; trend of development paradigm; primacy of global multimedia environment; active dominant of cooperation and integration. External parameters inherent to greatest impact on probability of risks when modernization, because correspond to prototypes of technological, information, communication, information, economic systems as patterns that do not always correspond to possibilities, needs and characteristics of economic entity.

Scenarios processes of modernization that depend on resource base (characterized readiness), grounds for changes (substantiation), susceptibility of novelty (operability) are different according to parameters of risk syndrome of modernization. Possibilities of modernization with avoidance of risks and clearly defined processes that have to ensure effectiveness of changes are concretized in scenarios:

1) Capsulation scenario – modernization plan is developed with deposition of its implementation and expecting better conditions for changes and gradually preparing system to transformations in order to avoid probable risky processes.

2) Simplification scenario – aggregate of changes is caused by not strategic innovative transformations and mobilization of possibilities and potential that is required to reduce risk associated with acceleration of transformations.
3) Scenario «single use» – developmentt of modernization plan, including spatial and temporal context of enterprise activity that is canceled after implementation.

4) Scenario «new ideas» – consistent patterns of changes process are studied in accordance with activity and needs of enterprise development, based on which aggregate of innovations that provides transition of system to qualitatively new condition is developed.

Each scenario is version of changes process that based on internal monitoring and using new instruments and methods of implementation potential of enterprise development, for which inherent overcoming complex of risks concerning generation and introducing innovations.

Enterprises are personalized scenarios to provision of individual algorithm of development and leveling stereotype of standard transformational impulses and using strategies updating and actualization that equally corresponds requirements, factors, guidelines and restrictions of internal and external environment. Development scenarios carried out according to alternatives and ambivalence of factors of modernization, which taken into account when compiling card modernization as illustrative plan of evaluation this process for enterprise (Table 1.1).

Table 1.1

Matrix of information system modernization in conditions of impact of risky syndrome

<table>
<thead>
<tr>
<th>Scenario of modernization</th>
<th>Alternativeness of result</th>
<th>A1</th>
<th>A2</th>
<th>…</th>
<th>Am</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>R11</td>
<td>R12</td>
<td>…</td>
<td></td>
<td>R1m</td>
</tr>
<tr>
<td></td>
<td>E11</td>
<td>E12</td>
<td>…</td>
<td></td>
<td>E1m</td>
</tr>
<tr>
<td>M2</td>
<td>R21</td>
<td>R22</td>
<td>…</td>
<td></td>
<td>R2m</td>
</tr>
<tr>
<td></td>
<td>E21</td>
<td>E22</td>
<td>…</td>
<td></td>
<td>E2m</td>
</tr>
<tr>
<td>…</td>
<td>Rn1</td>
<td>Rn2</td>
<td>…</td>
<td></td>
<td>Rnm</td>
</tr>
<tr>
<td>Mn</td>
<td>En1</td>
<td>En2</td>
<td>…</td>
<td></td>
<td>Enm</td>
</tr>
</tbody>
</table>

R – risk of modernization
E – level of efficiency
Such card (refer to Table 1.1) allows to identify most essential risks factors, determine weight of each in modernization scenarios, minimize inconsistency and uncertainty of managerial decisions concerning changes, transformations, activation in information environment. Results evaluation of each modernization scenario are grounds for define strategy of changes, ie definition complex of processes, phenomena, objects for establishing leading and control impact impact on risks and definition of directions and means of its minimizing (servicing) to preserve expected result from modernization of information system.

Modernization as process of update (actualization) contributes to forming integrated information system that allows servicing information processes, communications, user requests with higher level of effectiveness. It is organization of new system that corresponds to new requirements, standards, regulations, guidelines for forming servicing, development and using information that affects perception by users reality of enterprise activity and is instrument for making decision, stimulus and substantiation of changes. Integrated information system of enterprise integrates levels coordination, monitoring, control, servicing actualization of information with accumulation of data in bases that cumulatively are formed information servicing system of making decisions (Figure 1.5).

In integrated information system: information flows and enterprise communications of internal and external level are combined; servicing management information according to user requests are provided; support of information relations in internal and external environment of enterprise is organized; data processing algorithms are developed; basic rules and regulators are defined; information boundaries of management system are extended; dynamism, flexibility, coordination of information processes are activated.

Information prototypes that include characteristics of information environment, business processes, business relationships, organizational culture and defined development strategy correspond to each level integrated information system of enterprise. Formation, servicing and development of integrated information system car-
Figure 1.5. Integrated information system of enterprise

ried out technical, communication, technological means with in-
telligent support that are implemented in algorithms and models of
information environment.

Updating information processes and communication environ-
ment is not enough carry out in modern, highly complex, con-
tinuously changing conditions of development of economic, social, in-
formation systems, because formation of new properties and attri-
butes that qualitatively different from previous ones – modification
is more effective. Modification of information system based on
group of changes and innovations concerning improvement pro-
cesses of processing, transmission, storage, actualization of com-
munication environment and organization of information activi-
ty. Modification of information system is result of organizing new
information order in the world that defines new requirements for
«input», «interpreters», «exit» of information taking into account
queries, data sources, characteristics of users and information pro-
viders, content of databases and base of rules considering impact
of inherent risks. Relevance modification of enterprise information
system conditioned by necessity to forming communicative image of economic entity based on active impact of processes of globalization, informatization and intellectualization on economy on world scale of changes and transformations.

Modification is carried out not for changing essence of information processes, and for obtain new features, which associated with improvement generation of managerial information according to user requests and needs of enterprise development. This process contributes to provision of new quality of informational environment with expansion of functional capabilities and formation of knowledge base for actualization of professional decisions and opinions.

Enterprise information system acquires new qualitative characteristics that caused by technological developments and intellectual projects as part of institutional and informational paradigm of economic development. Forming new features significantly changes information system contributing to its multivariate, ie condition of complicated, flexible, integrated system that is designed to generate knowledge, corresponding to models, processes, scenarios, decisions in enterprise environment considering temporal context of its activity. Multivariate information system determines new scale of information provision of managing an enterprise as goal and mean of development with adaptation to changes in external environment and harmonization of regulations of formal and informal institutions that determine order of processing, transmission and storage of information (Figure 1.6).

Multivariate information system consists in information result that is making managerial decision, priority of which has professional judgment as result of implementation of knowledge, experience, point of view, skills. Modern development of enterprise is needed exactly variant management, and also variant information system that contributes to foresight changes for provision of effectiveness of enterprise development. Nowadays is not enough to make effective decisions, because necessary to predict events, develop hypotheses and construct models of reactions to changes that
can be implemented, if expand management variants and provide of timely response to needs of internal and external economic environment.

Thus, information system is key of development and instrument for effective process of changes that provide sustainable progressive development of enterprise activity with organizing necessary information base for innovations and upgrades, which are basis for models of reactions to new trends of information economy. Information systems of internal and external environment are extremely complex structures that are regulated by process of collaboration, based on integrated impact, communication, globalized exchange of data, compositional thinking, which are effective factors of positive changes (Figure 1.7).

Arrays of information, which affect to making decisions and generation of development strategies are formed in internal and external economic environment. Decisions are inherent variability, because subjectivity is feature of information with inaccessibility of its absoluteness that consists in forming all possible information, interpretation of which allows to use known and unknown data about particular object or phenomenon.
Personalism of information needs its full decoding, i.e., interpretation of content, logic, semantic content of messages that carried out by means theme and rema. Theme is inherent minimum informative, because it is fact of message, and rema is characterized by more informative with provide to users detailing of message. Theme could be described as known and relevant information and, rema as unknown and new information that provide better understanding of essence events and phenomena. Size of rema is directly proportional to size of theme – intellectual content is necessary to extent, which insufficiently to users for objectively making decisions. The larger the amount of information in database that correspond to temporal and spatial context of making decisions, the less...
size of message should be that provide objectiveness evaluation of events and phenomena.

Information provision systems should be organized with operative adjustment to changes of internal and external environment, especially concerning information requests of users. Algorithm identification of requests with monitoring of database for consideration of possibility of their satisfaction, condition of existing information resources, their correspondence to temporal context, determining amount of data, which are necessary to additionally generate with evaluation of necessary time and financial costs is necessary to ensure at level of subsystem.

System should be organized in a way that at minimal level expenditure of time information request that is different from previous can be provide. Information primarily for internal management purposes should be individualized when forming standard data («mass appointment»).

It is expedient to have awareness about quantitative and qualitative parameters of management information at receiver that will allow to adjust amount of data, which should be transferred to pleasure of requests. Reducing the load at processing large amounts of information from different databases and optimizing analytical work with regulated information systems that are coordinated based on preliminary developed mechanisms of processing, transmission and storage of data is anticipated.

Monitoring of integration processes in information strategy of internal and external environment should be adjusted at level of systems. Objective assessment of information risk should be implemented for provide effectiveness of data. Process of identifying and attracting of information potential should be organized in integrated information system with forming objective knowledge about enterprise activity and its development strategy.

Established internal processes, actualized traditions with increasing reactions to changes and innovations should evolved in above systems with adapting to them information and analytical management systems. Level of above systems is construction with
complicated organized structure with inputs, outputs information, databases and base of requests, communication with external bases of rules and knowledge.

Updating of internal and external information environment is implemented based on trends of transformation platform to stimulate technological, communication, intellectual initiatives as part of global information environment.

1.3. Concepts information development of enterprise management system

The modern economy is the product of changes and transformations that caused by the development of theoretical and axiomatic constructions of economic systems, activation of dissemination of knowledge, definition of intelligence as driving force of business activities, changing of social order – incipience of «Generation Z». An illusory has become attempts to neutralize irresistible process of transformation of the modern world, which is characterized by information and communication phenomenon and prevalence of technology. The radius and vector of enterprise management have changed under impact of substrates (basic moments of effectiveness) of modern economic systems development. Therefore the question of management efficiency has become new dimension and topicality that has prompted to the study of dialectic of information intercourses concerning formation and dissemination of management influence without its asymmetry and absolutising of mono-control at acceptance alternatives of management decisions.

A topical task is formation of management constructions that is a necessary condition of its modification and actualization with minimization of control subjectivity respectively the reality of modern economic environment. This promotes the effective communication at all levels of management impact, the growth of reputational benefits, expansion of business and obtaining new competitive advantages.

The question of business management development is disputable among the scientific community, because scientists solve the
problem of provision long-term competitive success of enterprises that depends on management decisions, projects and development scenarios. Scientists are multidimensional considered issues of improvement of mechanisms, instruments and means management of business structures. At the undeniable value of scientific researches of domestic and foreign scientific community is topical need to develop theoretical and methodological recommendations and organizational provisions of compositional management and creating a fundamentally new subsystem of enterprise management that developed through the formation of flexible constructions of solutions and development scenarios.

For the purpose of development modern paradigm of management in the information economy output parameters of making decisions is modified, taking into account the actualization of methods and principles of management with the prospect to maximize its effectiveness by following trends of economic environment transformation. The new paradigm of management philosophy is based on combination of system, situational and innovative approaches, but the main preconditions of success determined by the level of adaptation to the external environment [68, P. 91]. The new ideas, notions, concepts, paradigms and constructs of knowledge that contribute to qualitative change of management are developed and modified [52, P. 193].

At management attention is concentrated on the characteristics of enterprise activity with achievement of objectives of tactical and strategic character according to substrates of management (time, management impact, indicators of processes, systems thinking, collaborate) with combination of its patterns, scenarios and projects.

Managing is carried out through constructing as a result of which models are generated which are complex integration structures of information images, professional competencies, temporal and spatial context of enterprise activity that while solving of defined task is transformed into decision (Figure 1.8).

Development and implementation of management decisions involves the use of scenario approach, logic of which revealed in the
alternativeness constructions of decisions and models of response to impacts of external environment. The radius of management impact varies according to the time and spatial context of enterprise activity, basis point of which is future because especially for future decisions and strategies are developed.

Thus time context in management is shifted because decisions are made with going beyond the scope of expected results (both in positive and in negative aspect). In constructing of decisions entirely objective is access to the sector of unexpected consequences, occurrence of which is explained primarily by external causes – changing conditions of economic management, complications of economic interrelationships, the level of aggressiveness of competitive environment, state and direction of economy development, customer requests, demands of formal institutions, impact of informal regulators etc.

Subjectivity of control complicates the process of management because reality of control significantly different from its actual detection when making decisions, formation and implementation of management impact. This is the most common problem to man-
management which can be solved through the reconstruction of traditional notions with determine the management as algorithm of decisions, alternatives, developed by the certain times of enterprise activity that is the beginning of transition to new phase of life cycle of business (Figure 1.9). Management decision is taken one-time with followed combining, improvement taking into account reality of enterprise activity.

Difference between past and future is change of entropy (measure of uncertainty) that characterizes the effectiveness or ineffectiveness of management decisions and, therefore, spent resources, potential, time, knowledge, and so on. Management is complex category that encompasses formal and informal levels of modern world development and the realities of becoming an information economy leading to its complications that is solved through the formation of new constructions of decisions alternatives, scenarios as substrates of technological, information, resources, professional provision of modification economy. This is advancing of transition to new level of generating and implementing impact management that provides for strengthening intellectual component at formation constructions of management decisions. The relevance and necessary of new intellectual technologies of management cause the appearance of new tools and structures that provide comprehensive management [63].

Intellectual provision of decision making is based on collaborative processes (mutual activity and coordination of conclusions)
Accordingly of essence of the task (T1…Tm) and time context (t1…tn) of enterprise activity (Figure 1.10) [11, P. 9].

According to matrix of alternativeness of management decision making (refer to Figure 1.10) the algorithm of conclusions formation and development scenario of action have the next steps:

1) investigated and evaluated the complex of tasks (T1…m) according to time context (t1…n) and the results of past events and decisions (d0).

2) is determined by the system of invariants that are static for decision making, alternatives and variants.

3) is formed the complex of hypotheses in which implemented various action scripts with assessment of possible consequences and determination of advantages and disadvantages of each of possible options, which is the prototype of final conclusion.

4) is formulated the final version taking into account a priori knowledge and a new data with generation of a posteriori information that is transferred to future hypotheses, scenarios of development and decisions patterns.
5) is implemented selected option and evaluate its implications and results.

The algorithm of making decisions is the result of intellectualization of information systems that allows evaluating data and increasing alternativeness of conclusions. Intellectualization is a holistic perfect process that is a factor of development global information society, objective requirement of social and psychological adaptation to the new conditions of life that is due to certain features of development information society and also form of social and personal growth [56, P. 60].

For making decisions are guided by a priori knowledge and new information that is absolute knowledge, but «...achieve of which in real conditions is impossible because cannot be transferred all possible amount of information» [1, P. 378] (Figure 1.11). Every decision has results and consequences that make direct and indirect impact on guidelines, factors and prototypes of environmental.

![Figure 1.11. Information content of making decisions](image)

Effectiveness of management decisions is multidimensional, because includes not only evaluation of formal processes, for which leading impact is possible to use, and also subsystem, in which ambivalence of coding / decoding information is implemented. Generation of management decision is carried based on compositional thinking that is implemented in professional judgment and makes leading impact on process of interpreting information according to previous evaluations and monitoring of enterprise activity and its
partnerships with economic entities and external economic environment (Figure 1.12).

![Diagram of Architectonics making managerial decision]

**Figure 1.12. Architectonics making managerial decision**

Each stage of making decision is integrated set of operations and procedures that are performed by staff of management system based on differentiation and coordination managerial work [50, P. 39]. Making decisions consists of ambivalent processes with different time context and information provision. Operational decisions are accepted primarily based on priori and posteriori knowledge with automatically evaluating existing situation and tasks, which should be decide. Perspective decisions have more time context of generating, because depend on variability of hypotheses and models of reaction to existing situation and situations, which should happen according to development plan.

Information for decision making is characterized by subjectivity therefore most value to management has information that is formed in complicated flexible constructions, architectonics of which corresponds trends of development modern information and communication systems and strategies of activation the implementation of scientific and intellectual resources. The transformation of information into the important production resource changes the paradigm of social evolution, reduces the dependence
economic growth from extensive factors, for which is inherent greatest entropy ie the chaotic scattering [30].

Architectonics of decisions should be corresponding to necessity of expansion key competencies of enterprises as the required attributes of business that personalize its development and are competitive advantages.

The construction of key competencies is built on the basis of collaboration and communication factors that used for forming model of actions, which determine line of restoration and the use of attributes activity according to the time context of the task (Figure 1.13).

<table>
<thead>
<tr>
<th>Cooperation</th>
<th>Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>Information architecture</td>
</tr>
<tr>
<td>Experience</td>
<td>Collaboration processes</td>
</tr>
<tr>
<td>Abilities</td>
<td>Active interaction</td>
</tr>
<tr>
<td>Foresight</td>
<td>Compositional management</td>
</tr>
</tbody>
</table>

Figure 1.13. The construction of key competencies

Collaborative environment on micro- (business organizations), meso- (sectoral environment) and macro level (non-content environment) is organized according to different compositional decisions concerning technologies, tools and technology resources [18, P. 152] In a collaborative environment is implemented idea of intersubject communications and mutual impact on system of knowledge formation as an integrated form of organizational unity. Collaborative environment contributes to communication between participants in the process of management (Figure 1.14).
Managed common context of collaborative environment is result of synergy at organization of partnerships in working team that activates potential of collaboration and provides advantages of development enterprise activity. Organization of joint context is necessary factor of expansion of enterprise core competencies when implementing of horizontal prototype of management.

A prototype of communication environment of enterprise is formed individually by predetermined parameters and defined information communications that should correspond to logic of development, change strategy and expected results. But mandatory elements of communication environment should be team, scenario, management (Figure 1.15).

Image of actions and processes is implemented in the prototype of enterprise communication environment that determines line of management impact according to the time context of enterprise activity. This is expansion of influence factors, adapting them to modification of primary plan that is achieved by results of past experience and new decisions.

In communications environment the logic of training is implemented because alternatives decisions take into account presence of errors, which should be assessed beforehand being guided expe-
The scenario management is launched in control loops based on feedback that allows to solve tasks of strategic and tactical management [69, P. 239].

To management and expansion of competencies is inherent cyclicity of evaluation, the ranking of development factors, detection of inefficient elements and update of strategy, for which new decisions are developed (Figure 1.16). This is inverse order of management, when the first stage should be assessment of available resources, opportunities, constraints, factors after which is formed opinion about the strategy, scenario and objectives of development.

The curve of expansion competencies is constructed to enhance the key competencies and information, knowledge, abilities, prototype of management, rules, skills, experience, patterns of decisions going beyond the limits of internal environment to increase the information capacity of conclusions and sententiae concerning the tasks of strategic development.

![Figure 1.16. Cyclicity of strategy development and actualization of competencies enterprise](image)

To summarizing the conducted scientific research should be noted that sententiae about plurality of information policy is became more actual because is basis of management policy as initiative of formation of new business properties, changing its qualitative state, increase of competencies and development potential.

With the development of new technologies will win most innovative and intellectual part of the world’s population [54], thus the logical continuation of management concepts should become new paradigm of information development with active dominant of technologies, processes, collaboration, communication interactions.

Today for companies and organizations primary should be the objective is not growth but prosperity [64]. Therefore compositional projects are means and objective...
management, when the first stage should be assessment of available resources, opportunities, constraints, factors after which is formed opinion about the strategy, scenario and objectives of development.

Picture of the development each competencies with allocation of interrelationships between them is multifaceted in the cycle of servicing and expansion management constructions that promotes forming conclusion about current configuration of core competencies. The result is establishing the upper and lower limits of effectiveness with structuring of intercourse between management subsystems with attraction of material and immaterial resources.

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Today for companies and organizations primary should be the objective is not growth but prosperity [64]. Therefore compositional projects are means and objective of provision of conditions for activation development business, principles and methods of cooperation that is implemented on the basis of systematic generation and application of innovations.

Compositional aspect of management is characterized transformational changes that affect not only at micro level (enterprise) and
is regulating the development of business structures and economic systems. For this reason it is necessary to predict formation of compositions decisions with qualitatively new level of management provision for adaptation of business to the changes and transformations the external environment.

1.4. Priority directions of intellectualization at development of information and analytical provision of management an enterprise

New type of society is starting point for transformation of information processes, modification of information environment, development of communication relations that influenced on forming modern information system. Information for making decisions acquires new status for economic entities that are chosen innovativeness and introduction of new intellectual projects as line of development for increasing level of implementation of creative initiative, expansion of professional competencies, acquiring new knowledge with motivation of development unconventional competitive decisions.

Problems of intellectual content of information activities and making decisions was not such important as today, when reassessment of traditional factors of production is implemented, development priorities are changed, management concepts are transformed. Number of methods, instruments and technologies are needed developed for improving theory, organization and methodology of information and analytical provision of managing an enterprise that will define paradigm of management present and future. Process of scale redesign of information and communication relations with development and implementation of scientific and intellectual projects as purposeful process of modification of information system on basis of intellectualization has become prerequisite for changes.

Intellectualization (in narrow sense) is to develop of new mechanisms of production, which would require availability of certain specialized knowledge among employees; intellectualization (in
broad sense) of public life is qualitative information content of information resources, increasing of its quantity and accessibility for different groups of population, raising level of public education and information culture [55, P. 88]. Intellectualization is much deeper concept that encompasses continuous and dynamic processes of generation, storage, reproduction and dissemination of knowledge, implementation of which contributes to forming new knowledge, thus increasing level of development of economy and society. This is increasing of overall level of intellectual development of individual that is prerequisite for development of information society, in which is large-scale involvement of knowledge. Intellectualization is penetration of intellectualism in people’s lives, its saturation by mental activity, increasing and strengthen of spiritual, mental, intellectual foundations [2].

Intellectualization can be interpreted as phenomenon that includes permanent and dynamic processes of generation, storage, reproduction and dissemination of knowledge with forming of new knowledge and increasing level of economy harmonization. This is increasing of overall level intellectual development of individual as prerequisite for development of information society that characterized by large-scale involvement of knowledge.

Intellectualization has become means of organizing economic and information systems by using intellectual content of their processes with providing of unified service of knowledge generation in collaborative environment that makes processing, transmission and storage of information more effective according to user expectations and requirements of internal and external economic environment. This contributes to optimization of organizational structure of information activities and provides additional advantages in development of scenarios and projects of management with contributing to their individuality and effectiveness over analogues of competitors. Exactly activity concerning intellectualization economy characterize country as innovative, open to innovations and intellectual partnership.

Intellectualization is process of irreversible qualitative changes of economic and information systems based on development of
new knowledge, methods, concepts, approaches, events of forming complex relations, stable reproduction of guidelines that focused on constant striving for newness.

Intellectualization is not limited to framework of formal manifestation of knowledge, intelligence and experience with assuming implementation of behavioral aspects of individual activity that consist in creatively, irrational approach to perception, evaluation of information and making decisions. Irrationality and behavior are effective development factors, because allow to evaluate unexplored boundaries of transformations and find «empty niches» of actualization of information systems.

Intellectual characteristic is defined as part of individual and group activities of individuals with expression of subjective form that changes according to task and hypotheses development. Group of features are inherent for intellectualization as qualitative characteristics of developing information and economic systems based on personalized character of modern society and economy (Table 1.2).

**Table 1.2**

<table>
<thead>
<tr>
<th>Sign</th>
<th>Characteristic</th>
<th>As development goal</th>
<th>As development means</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flexibility</td>
<td>Ability to operative adaptation to the conditions, events and circumstances that are changing</td>
<td>Modification that occurs in information system when changing features, properties, characteristics of external economic environment</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>--------</td>
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<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Integra-</strong></td>
<td><strong>Quality that defines composition of different elements of systems for achieve common goal</strong></td>
<td><strong>Forming stable relations, reproduction complex of conditions, images, guidelines, scenarios, projects that focused on transformational restructuring in system with generation and implementation of innovations</strong></td>
<td><strong>Modernization of system based on using additional knowledge as reaction to changing matching of development factors</strong></td>
</tr>
<tr>
<td><em>tivity</em></td>
<td><strong>Integrity that characterizes level of quality interaction and interdependence of elements at structuring of information relations</strong></td>
<td><strong>Quality of forming conditions for generation and implementing new intellectual projects that is implemented taking into account factors of internal and external economic environment</strong></td>
<td><strong>Ability to create and maintain integral structure with functions and guidelines that are corresponding hypothesis of internal environment</strong></td>
</tr>
<tr>
<td><strong>Variability</strong></td>
<td><strong>Necessary factor of forming conditions, guidelines, patterns that are implemented in compositional decisions and influence on constructive properties of object</strong></td>
<td><strong>Recovery and significant deepening of knowledge, skills, competencies based on proposal of choice among variants with different expected consequences</strong></td>
<td><strong>Providing of generating independent alternatives of development with different constructive peculiarities and interaction of elements and factors</strong></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
</tr>
<tr>
<td>Activity of actions</td>
<td>Characteristics of quality level of motivating action to generating innovations, managing an modification, adaptation to changes and transformations</td>
<td>Ability to formation of conditions to implementation of development potential with generating ideas that corresponding to requirements and attributes of environment</td>
<td>Qualitative level of generating and perception of new ideas with provision of transformations in system</td>
</tr>
<tr>
<td>Mobility of coordination</td>
<td>Quality level of provision of interaction with study information effects and formation of new information relations</td>
<td>Continuous process of monitoring and changes with updating of communication channels and optimizing technologies of servicing information</td>
<td>Systemness of complex changes that provide balanced development of information system</td>
</tr>
<tr>
<td>Primacy of creativity</td>
<td>Sustainability of ability to generating innovations according to requirements and characteristics of development external economic environment</td>
<td>Adaptive reaction on need to generating innovations with define development potential according to rational and irrational character of changes</td>
<td>Suitability of original modification of object with proposal new knowledge that adequate to task and determined scenario of development</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
</tr>
<tr>
<td>Extended area of search</td>
<td>Variety of sententiae and conclusions concerning managerial task that induces to higher performance of decisions</td>
<td>Active contradiction of different perspectives with simultaneous and parallel consideration of different hypotheses</td>
<td>Investigation of combinations of hypotheses among potential decisions with decoding groups of conclusions for their greater substantiation concerning effectiveness of business activity</td>
</tr>
</tbody>
</table>

Primacy of motives and intentions of individual with prevalence of corporate objectives over individual goals are distinctive feature of intellectualization that makes knowledge, experience and skills at macro level with stimulating transformation and changes. This is increasing of development potential not separate economic agent, and all system with provision of new quality of making decisions.

Modern conditions of economic development characterized by turbulence, namely the unstable conditions of of economic phenomena, processes, policies, mechanisms and instruments of development. This phenomenon is lead comes from multiple and accompanied by complexity, permanence, depth of changes and transformations, transition state of formal and informal institutions, spatial and temporal discontinuities in the development of economic systems, feedback of micro- and macro level that cumulatively leads to new reality of global economic environment. The changes are accompanied by definition of new driving forc-
es, which become objects of investment policy and are develop in order to achieve greater scale of economic development. Initially this force became information and communication technologies and technical support that at short time allowed automating the socio-economic processes and attitudes, setting a new size of transformations and changes in the rules, basic provisions and patterns of economic systems development. The tendency of informatization has become objectively and organic phenomenon of transition to a new level of economy, increasing it adaptability to the planetary scale of production and dissemination hardware and communication technology, software, information systems and networks. Though namely information and communication technologies have become stimulus for the development of new economy, this has appeared insufficiently for modern conditions and phenomena of increase of innovative activity. Greater value for economic development have the knowledge, intelligence, information, generation and dissemination of which have led to qualitative changes in the socio-economic attitudes and became the basis of a new formula the formation of economy. Priority of intelligence and knowledge explained by the possibility of producing new kind of capital and resources, which provide greater quality results in comparison with exceptionally technical and technological servicing. Knowledge allow to model the situations, to forecast, to develop events and models of reaction to changes in the external economic environment, namely to anticipate events that improves manageability of economic systems. Technologies do not develop on their own, and are the result of deep study, incorporation of experiences, knowledge, rational and irrational thinking, personal approach and individual opinion. After successful start in economic processes the knowledge and intelligence found themselves needed in the development of information systems and attitudes, in processes of processing, transfer and storage of information.

The relevance of intellectualization in the development of information provision of managing increases as the understanding of direct dependence of business on the quality of information and
visual examples of successful implementation intellectual resources during the formation of data to inform management decisions. Information in management, decision making and fulfillment of tasks need special, which is characterized by signs of relevance, timeliness, clarity and reliability. Last property is crucial for the development of enterprise activity, as it enables realistically assess existing situation and make decisions corresponding of place and time.

Intellectualization can be interpreted as the phenomenon, which covers permanent and dynamic processes of generation, accumulation, reproduction and dissemination of knowledge with producing new knowledge, to increasing the level of economy harmonization. This is growth of the general level of intellectual development of the individual as premises of becoming of information society, which is characterized by large-scale involvement of knowledge. Intellectualization is considered as result of informatization development [59, P. 189] and the basis of technological transformation [56; 63; 71]. These polar approaches to defining the essence of intellectualization and its role in the development of modern economy are explained by ambivalent position of scientists to provision of stability of progressive economic systems development. We share position of scientists who define priority of intellectualization in large-scale economic development and evolution of economic paradigm. Intellectualization is a process of irreversible qualitative changes of economic and information systems based on the system of new knowledge, methods, concepts, approaches, events, formation of complex relations, stable reproduction of principles, which oriented to constant pursuit of newness. Intellectualization is not limited to framework of formal manifestations of knowledge, intelligence and experience, assuming implementation of behavioral aspects of an individual's activity that manifested in a creative, non-standard, irrational approach to the perception, assessment of information and decision-making. Irrationality and behavior are effective factors of development since they allow to evaluate unexplored aspects of transformations and fill «empty niches» at actualization of information systems.
The distinctive feature of intellectualization is primary of motives and intentions of the individual with dominance corporate objectives over personal that raises knowledge, experience, competencies and skills to the macro level, stimulating the transformation and changes. This increase of development potential not only of separate economic agent, and entire system with achievement of a new quality decision-making.

If one proceeds from the postulate that developing and implementation of scientific and intellectual resources is one of the most important attributes of the information economy development, then logical beginning of modification of accounting and analytical provision of managing an enterprise is to encourage the use of intellectual potential in processes of registration, synthesis, analytical research of the economic information.

This means a transition to definition of new indicators of accounting and analytical provision of managing an enterprise development that involves developing of integrated programs and scenarios of professional competence development, regulation of developing intelligent solutions and control of events to adapt the accounting and analytical processes to new ideas with provision of innovation as system of basic principles and conditions. We suggest considering the system of changes in accounting and analytical provision of managing an enterprise at three-dimensional space of informatization, intellectualization and institutionalization for achievement of new quality of accounting process and analytical research with their coordination in compliance with the formation of multivariate tree hierarchy of objectives of activities and enterprise development (Figure 1.17) [9, P. 141].

By axis «intellectualization» reflect the fundamental components of a large-scale, socially and economically necessary event of increasing of qualitative parameters of knowledge development as new policy of modern world development. It is not only the mind (integration of minds), but its implementation in the cognition process, balancing with consciousness, realization of irrational thinking influenced by behavioral aspect that determines ability to
generate of new knowledge, ideas with creation of basis for plasticity of accounting and analytical processes.

Axis «informatisation» characterizes potential of technical, technological and communication actualization of processes, which regulate and coordinate the legal, organizational, socio-economic, production, scientific and technical processes with stimulate changes of information processes as tendency of changes in the conditions of economic systems development.

By axis «institutionalizing» passes a line modern paradigm of economic development as objective process of development and fixing rules, regulations, principles, requirements, their systematization and implementation to satisfy developmental needs socio-economic relations. Modern institutional paradigm of economic systems development acquires intellectual basis because is characterized by motivating factors with development of reaction mechanisms on the model of socio-economic relations, in which implemented personal aspect of analysis the existing situation.

Figure 1.17. Graphic interpretation of intellectualization of accounting and analytical provision of managing an enterprise development
Intellectualization of accounting and analytical provision of managing an enterprise is the process of formation accounting and analytical information in the quantitative and qualitative parameters, which are more appropriate for temporal context of user requests and expected effect from define task, based on the continuous process of change and learning, opening up possibility of organizing system that adapted to complicated and multifaceted innovations. This process does not only updating of accounting and analytical provision of managing, but improving all the processes taking place on the stages of its formation, provision, development and implementation.

Intellectualization of accounting and analytical provision of managing promotes readiness to changes, their dissemination in the stages of the accounting cycle and analytical research.

Intellectualization envisages accumulation of development and improvement of structure intellectual potential in order to ensure strategic objectives of the enterprise at the conditions of deepening globalization and hypercompetition [20, P. 55]. Intellectualization of accounting and analytical provision of managing is the method of implementing continuous transformations in the qualitative characteristics of accounting cycle and analysis through the integration of processes and events that necessary for creation and dissemination new methods, ensuring an intellectual activity of specialists.

Main emphasis is on: the expansion of professional judgment through activization of intellectual potential without restriction only professional knowledge, using a multidisciplinary approach to improve the skills of staff; creating team «with the same interests», motivating increased activity for self-development and self-learning, focusing at practical results and given the responsibility for the decisions made; taking into account features of character, thinking and implementation acquired knowledge of staff for determining restrictions which may hinder the development of intellectual potential during updating of accounting and analytical provision of managing.
Prospects and prerequisites of accounting and analytical provision of managing consists in the implementation of new technologies and intelligent decisions at stages of accounting cycle and analytical research.

This increases the plasticity of processes of registration, generalization and analytical processing of economic information with the expansion of methodological boundaries of the basic provisions of accounting and analysis, helping to improve efficiency of accounting and analytical decisions by achieving a visualization of logic considerations of experts as a higher level of implementation of professional competences. Intellectual changes contribute to development of accounting and analytical processes, the result of which is the relevant information for decision making.

1.5. Information and analytical provision of modification management process enterprise

Information, amounts of which are growing faster than the ability to master all range of data to making decisions acquires new meaning for business activity, because phenomenon of modern world are globalization of information processes and technologization of economic systems. Modern business is developing in conditions of virtual and augmented reality that companies – leaders of era technologies Facebook and Google, expenses of which for instruments of artificial intelligence reach several billion dollars are actively building. Systems are guided by primarily management information that is formed by results of accounting and analytical process modification of which is associated with technological and intelligent aspects of development socio-economic environment at importance of data, which are obtained through predictive web-analytics.

Actual implementation of changes in theory and methodology of accounting and analysis was made possible by unity of institutionalization, informatization and intellectualization that inherent for modification of economy and economic relations. Methodology of institutionalism (T. Schultz, G. Myrdal, H. de Soto) contributed to extension
of analysis of economic development and priority of knowledge, values, traditions, culture (developed by materials [49, P. 65–94]).

Identifying new institutions destroys traditions, according to which economic activity is carried out that accelerates business development and has positive impact on ability of enterprises to adapt for modification of economy. Changes begin from detailed analysis of external economic environment for timely detection of changes and transformations that allows operatively develop models of reaction (formulation of hypotheses) based on the redesign of enterprise information environment. Accounting and analytical provision of management is focused on solving problems of information provision of multifaceted needs of different users that changes its mono-targeted guidance while displaying results of enterprise activity [21, P. 175]. This is necessity of synchronization of developing accounting and analytical process with new institutional paradigm of economic theory that corresponding to strategy and conditions of developing information society, main features of which are generating and projection of new knowledge.

Traditions of information provision of different institutions from position of present time have dualistic character: on one side, there is conceived system of information provision of business on micro- and macro levels (positive aspect); on other side – excessive formalization led to decrease effectiveness of its coordinating role [4, P. 15].

Accounting and analytical context of updating process of managing an enterprise consists in comprehensive implementation of «effect data» (forecasted potential is always inherent to information) that is designated on modification of accounting process, taking into account development and dissemination of technological innovations and scientific and intellectual resources (Figure 1.18) [8, P. 208]. Changes in accounting and analytical provision of managing an enterprise are result not only of internal environment; guidelines, conditions, restrictions, relations in economic and social systems that caused by globalization of information and communication space and accelerated rates of increasing amount of
data, which are basis for generating compositions of management decisions have affected on its modification.

Thus, changes are objective circumstances of modern world that allow to acquire to information systems, including accounting and analysis, new properties, thus contributing to increasing quality parameters value managerial information. It is not only transfer accounting and analytical process on technology platform, this is thorough work concerning modification of its traditional restrictions, which are ineffective for modern economy based on knowledge.

Economic foundation of postindustrial society is named special type of economy that based on knowledge (knowledge economy) [66, P. 94]. Thus, economy and society are included in «knowledge
space», namely, in environment where are intersect and consistent intellectual resources of subjects, provided its rational use and activated potential. Knowledge Economy evolutionarily developed in the direction of awareness role and importance of scientific and technological factor in process of economic growth and then towards disclosure of the essence knowledge and search tools and mechanisms of management intelligent (knowledge) resources as key competencies of economic system [51, P. 347].

New characteristic of economy is behavioral context, according to which from a descriptive and measurable science economy turned into social and its laws – in temporary existing laws, because individuals are changing and with them and their economic behavior, on which depends the truthfulness of established laws that have influence in making decision [25]. Principle priority of managing mind envisages substantiation making decisions not only on the basis of professional knowledge, received information and evaluation of real results business processes adjusted for degree influence of external economic environment. Rationality of thinking is criterion management efficiency and making decision. Rationality is a many-sided concept that demands presence different properties of thinking, which allowing to overcome inefficient trends regarding the processing of information that dependent on the availability different knowledge bases, associated with probability and scientific thinking [48, P. 48].

Normative approach to making decision, which is characterized by rationality and objective logic, has long been was reference, because is characterized by overall rationality, where are available different information resources for choosing best alternative of management solutions. However regulatory approach is inefficient by deficit of time and unconventional problems, which have to decide with minimum risk and maximum effectiveness.

Irrational approach as a less reference allows making decisions till the time to research management alternatives. Irrational approach is based on impact of consciousness of the individual and model of human behavior on restriction in making decision and
to generate information that provides real and probability user requests. Irrationality is not a negative factor of the organization of management system and business, because meets the need of non-standard solution of problems for expanding key competencies of enterprise and strengthening its competitive positions.

Changing each of factors indirectly affects at coordinating of accounting and analytical system – not all, but its information and communication functions that are the basis financial and economic relations. Individuality in organization of accounting borders on collectivity since the right to determine nuances and peculiarities in the conduct of accounting does not negate obligation to comply regulated rules, methods and procedures in organization accounting and reporting.

In management concept is necessary implement different levels of information and communication links as a whole by modifying accounting practice in information benefit of reporting for internal and external users. As a result of need to modernization theoretical basis of accounting for its practical development has been proposed multivariate accounting concept that is continuation idea adaptation of accounting information to modern demands of different users that is basis of development simultaneously accounting practice and theory according to concept of sustainable development.

This is new approach to management of economic information, basis of which is triune development of information, technological, technical, professional providing of management, which characterized by implementation of new technologies and intelligent solutions, expansion of professional competence. Generation and dissemination of changes cannot be «spontaneously» and should take place in accordance with fundamental provisions that updated concerning external context.

Modification based on actualization of values through different results, receiving of which provides by developing intellectual and technological solutions that make up individual model of business system.

This is more profound and complicated category than tradition-
al group of values and traditions, which are adopted as structure of relationships between workers of enterprise – organization-methodical and information-technical means and receptions for performing activities within the limits of purpose that is corrected through the assessment of financial, economic, information and cognitive reactions of internal environment to rules, which are generated and apply formal and informal institutes.

Because for regulations and rules are inherent requirements of necessarily implementation, then at situation of choice it leads to a clash of interests and motivations micro- (enterprise) and macroenvironment (economic system) that requires regulation and choice, taking into account individual values, rules and regulations of enterprise. This affects on information and analytical process, organization of which has be carried out with flexibility and adaptation to individual character of information relationships in internal and external environment. Information-analytical providing of management is subordinated to requirements of formal and informal institutes, therefore naturally is take account of behavioral aspects that allow to synchronizing changes at irreversible process of transition system to higher level, while avoiding conflicts between formal and informal institutes, internal and external environment.

General trend of modernization modern accounting theory became institutionalization that is important step of successful generation new accounting knowledge and forming expanded information-analytical providing of enterprise management.

According to institutional mechanisms of accounting development its organization and reporting new value has acquired question of institutional approach to innovative development of accounting process and reporting for satisfaction of modern user requests.

Modern concepts of accounting are result of the development fundamental accounting concepts: strategic, social, ethical, fair value, creation concept, market-oriented reporting, institutional. Modernized accounting system (in primarily through theoretical
justification) is focused on different directions of development – as a social institute, economic category, tool business and science. All these directions are parallel and indivisible, because uniqueness of accounting lies in its multifunctionality. In management concept should be implemented different levels of information and communication links as integrated system, thus transforming accounting practices in information benefit of reporting for internal and external users.

Multivariate accounting concept is continuation idea of adapting accounting information to modern different users requests that is basis of development theory and practices of accounting through adherence to concept of sustainable development.

Deepening of accounting concept on the subject of forming universal information for providing multivariate decisions in accordance is accompanied actualization subject of accounting, interpretation of which lies in the plane of development institutional theory.

Accordingly modification of accounting and analytical process is reflected in phase of life cycle information-analytical providing of management that is both aim and means of enterprise developing. Formation of new and relevant information is result of previously defined algorithm for primary registration, fixation, storage, filtration, synthetic and analytical processing of accounting and other economic data that developed on basis of complex information, normative and methodological, technological and professional providing, thus is expanding core competencies for the possibility individual trajectory of transform initial data to multivariate accounting reporting.
Conclusions section 1

The section is devoted to decision of actual problems of development organizational and methodological basis for improvement of enterprise management in conditions of information economy development. Expediency of compiling compositions in management when making decisions is substantiated. A number of recommendations concerning conceptual development of enterprise management based on processes of collaboration and communication are elaborated. Transition to a new level of management is suggested that envisages strengthening of intellectual component at formation of its constructions in information and communication decisions. Main conclusions and results that obtained in first section of monograph are as follows:

1. Enterprises are personalized scenarios to provision of individual algorithm of development and leveling stereotype of standard transformational impulses and using strategies updating and actualization that equally corresponds requirements, factors, guidelines and restrictions of internal and external environment. Development scenarios carried out according to alternatives and ambivalence of factors of modernization, which taken into account when compiling card modernization as illustrative plan of evaluation this process for enterprise. Proposed matrix of information system modernization allows to identify most essential risks factors, determine weight of each in modernization scenarios, minimize inconsistency and uncertainty of managerial decisions concerning changes, transformations, activation in information environment.

2. Forming new features significantly changes information system contributing to its multivariate, that is, condition of complicated, flexible, integrated system that is designed to generate knowledge, corresponding to models, processes, scenarios, decisions in enterprise environment considering temporal context of its activity. Developed multivariate information system determines new scale of information provision of managing an enterprise as goal and mean of development with adaptation to changes in external envi-
environment and harmonization of regulations of formal and informal institutions that determine order of processing, transmission and storage of information.

3. Proposed prototype of communication environment of enterprise is formed individually by predetermined parameters and defined information communications that should correspond to logic of development, change strategy and expected results. Image of actions and processes is implemented in the prototype of enterprise communication environment that determines line of management impact according to the time context of enterprise activity. This is expansion of influence factors, adapting them to modification of primary plan that is achieved by results of past experience and new decisions.

4. To management and expansion of competencies is inherent cyclicity of evaluation, the ranking of development factors, detection of inefficient elements and update of strategy, for which new decisions are developed. This is inverse order of management, when the first stage should be assessment of available resources, opportunities, constraints, factors after which is formed opinion about the strategy, scenario and objectives of development. Picture of the development each competencies with allocation of interrelationships between them is multifaceted in the cycle of servicing and expansion management constructions that promotes forming conclusion about current configuration of core competencies. The result is establishing the upper and lower limits of effectiveness with structuring of intercourse between management subsystems with attraction of material and immaterial resources.

5. Accounting and analytical context of updating process of managing an enterprise consists in comprehensive implementation of «effect data» (forecasted potential is always inherent to information) that is designated on modification of accounting process, taking into account development and dissemination of technological innovations and scientific and intellectual resources. Changes in accounting and analytical provision of managing an enterprise are result not only of internal environment; guidelines, conditions,
restrictions, relations in economic and social systems that caused by globalization of information and communication space and accelerated rates of increasing amount of data, which are basis for generating compositions of management decisions have affected on its modification.
SECTION 2

PROGRESSIVITY OF INFORMATION AND TECHNOLOGY INNOVATIONS OF DEVELOPMENT OF ENTERPRISE MANAGEMENT SYSTEM

2.1. Information-analytical basis of systematic-competency approach to management enterprise development

Formation of preconditions development of enterprise core competencies provides for modification of information provision of management and its organizational and methodological bases according to influence of factors, features and characteristics of information paradigm of socio-economic development. Objective reality of enterprise activity at space and time is formed through information provision of management that due to interpretation of management information contributes to generation of new knowledge about the state and prospects of business entity development. Stability in aggressive competitive environment is achieved not only through resource potential, but also based on the use of information provision of management that promotes the development of attributes of enterprise activity – core competencies.

Logic of economic and information systems explained by dominant of knowledge and information as competitive factors of development that gets hyperscale as result of information, technological, knowledge and behavioral transformation of economy, novelty of which is caused by change of form and essence of relations in internal and external environment. Today for companies and organizations primary should be goal is not growth but prosperity that is achieved through different types of organizational structures such as corporation of public benefits, cooperatives and companies in property of workers [64]. Such socially-oriented approach to business organization is completely reasonable consequence of ineffective predominance of technocratic paradigm that with varying degrees of effec-
tiveness influenced the economic, information and social relations. Factor of relations, skills, experience becomes the key to business development, because possession of exceptional properties and characteristics is additional advantage for enterprise.

Enterprise is a combination of competencies, which are contributing to getting fundamental benefits as «invisible actives» – attributes of business entity that have the potential for its development [46]. If before the indicator of enterprise activity effectiveness and its competitive advantages was determined of lower level of expenses or combination «product – market», then today it is about possession of competences [36, P. 57]. Competences (from the Latin competentia) are associated with category «ability to act», i.e. the ability to apply and use knowledge and skills in practical activities and during management decision making [36, P. 57–58]. This is individual properties of enterprise that contribute to getting competitive advantages and strengthening of business positions in the external environment.

Core competencies are group of developed skills, knowledge, technology, templates, possession of which ensures for company achievement of sustainable competitive position in comparison with other business entities.

Group of core competencies provides uniqueness (individuality) of business model and project of decisions, to repeat (imitate) of which competitors cannot that is ensured not only by group of technology solutions, but knowledge, ideas, professional competencies, skills, information. Preferably competencies were associated with an individual that solves range of issues on the basis of acquired knowledge, experience, skills, etc. At present competences are transferred to the enterprise, because «what is applicable to individual personalities is suitable for enterprises» [42].

Thus, core competencies are undoubtedly, inalienable features of enterprise that have absolute character in all areas of its activity with determining mission of existence, development strategy and values based on assessment of factors and requirements of external environment and functional benefits of internal environment (Figure 2.1).
Group of enterprise core competencies has personalized character because as source of competitive advantages and factor of productive business is determined individually by business entity, on the basis of values, conditions, features, characteristics, factors of external environment that are envisaged reflection of enterprise environment, methods and principles of its institutional, informational, economic, social interactions.

Most typical are core competencies that are characterized by following features:

1) Individuality – refusal from patterns of informational, organizational, management policies that is implemented during formation of models and prototypes of enterprise activity.

2) Feasibility – justification of changes, implementations, designing, feasibility of development projects and activity scenarios, provision conditions for innovations.

3) Peculiarity – possession of distinctive properties that cannot be copied competitors.

Figure 2.1. Formation of enterprise core competencies

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2) Feasibility – justification of changes, implementations, designing, feasibility of development projects and activity scenarios, provision conditions for innovations.

3) Peculiarity – possession of distinctive properties that cannot be copied competitors.
4) Activity – qualitatively new level of development that influences the organizational, methodological, informational aspects of modifications with provision of introducing innovations on the basis of increasing the level of its susceptibility with expectations of economic and non-economic character.

5) Stability – provision of long-term character of fundamental features, properties, characteristics of environment enterprise, its corporate image, management pattern and business model.

6) Adaptability – flexible response to changes in external environment with research of economic, social, information effects of changes and increasing the ability to modification of internal environment, generation of new knowledge, basic provisions, approaches and instruments of management.

7) Complexity – multidimensional nature of changes at all levels of enterprise, taking into account necessity of update all the attributes of enterprise with formation the group of development factors according to implementation of complex distinctive features of business entity.

8) Progressiveness – openness to change and innovations with upgrading and expansion of distinctive attributes of enterprise with increase of its activities effectiveness, with generation of new knowledge, properties, characteristics of enterprise activity and formation new hypotheses of development with proposal of scenarios and projects for their implementation.

Formation and expansion of core competencies carried out based on chosen hypothesis of creating value enterprise and its activity in external environment. Hypothesis begins with determination and assessment of problem situation that for core competencies is implemented by formulation of five basic tasks of its management: definition of priori (existing) core competencies; development of programs acquisition of core competencies; generation of core competencies; expansion of core competencies; monitoring and development of measures to protect core competencies with preservation of leadership [27]. Hypothesis should be regarded as category of progressive opportunities for definition of direction of
enterprise development with most effectively using the internal potential, opportunities, constraints, resources on the basis of external environment conditions.

Management of competencies carried out based on development of methodological, organizational, informational basis of economic and social relations in internal and external environment. This is system of certain value, conceptual, organizational, methodological factors that determine intersubjectivity of sphere enlargement of competencies. Map of competencies management is formed for decision options according to defined hypothesis, what is personalization of attributes enterprise (Figure 2.2) [13, P. 13].

Most optimal variant is determined according to the time and spatial context of enterprise environment with using the map of competencies management. Competencies management is a definition and implementation of potential that is located in knowledge, skills, experience, technology, intuition. Level of changes and transformations (mini, maxi) for each block of plan (potential of competencies, implementation of changes, control of result) is identify based on general plan of competencies expansion. After choosing solution alternative (A1…An) and formation of development strategy (S1…Sn), is formed composition of competencies management that is not limited to one version and can be integrated according to expected final result.

Architectonics of competencies management is not limited to one strategy and one alternative that is why elements of blocks are combined at different levels and can be duplicated according to necessity. Each variant has characteristics of plasticity, integration, labor availability, security, relevance, systematization, wear resistance, uniqueness; progression of development, availability of dynamic capabilities.

Competencies enterprise is its actives immaterial nature that designed for its harmonious development with provision of basic benefits, competitive advantages, reputation potential, unique technologies that incorporated in process of creation of business value. Formation prototype of competencies management implement-
ed through standard with focusing to internal priorities and constraints of enterprise. Group of core competencies is constructed on the basis of typical factors of collaboration and communication.

Collaboration involves cooperation upon receipt of new knowledge, skills and abilities of development technological environment and creation of innovative products. Instruments of collaboration (on-line cooperation, off-line cooperation) are de-
signed for debugging communication, organization of joint projects, synchronous and asynchronous generation of knowledge, easily find and exchange information, accumulation of cooperation results that accumulation of cooperation results implemented in projects, programs and scenarios.

Collaborative environment at the micro- (business organizations), mezo- (branch environments) and macro level (non-themetic environment) is organized based on different compositional decisions concerning technologies, instruments and technique, resources under the influence certain characteristics [18, P. 152]:

1. Global interactivity, when can be organize communication not only «individual – individual», «individual – group», «individual – society», but also provide multilateral communication through use of websites, mailing lists, discussion panels (web-board), chats.

2. General availability that provides an opportunity to anyone at any time to be participant of group communication and to know results of discussion.

3. Storage of communications results – storage capability final results of communication of Internet-community and intermediate data that allows to track and understand development of discussion: how appeared this or that text, when and who wrote it.

4. Integration – possibility of organization archive for messages of e-conference with subsequent classification.

5. Operativeness of communication that contributes to development internal and external information networks as verbal forms of communication (such as chat that allows in real time promptly respond to colleagues remarks).

6. Total single space of communication that allows each participants of group interaction at any time to join the discussion, regardless of location.

In modern collaborative environment are dominated means and instruments of remote access communication that provided of technological possibilities and functionality of virtual reality that has developed through formation of social networking. For business the instruments of collaboration have more functional possi-
bilities than those, which are in social networks, although the latter are effective mean for search and exchange information in global multimedia environment. Group of solutions for transmission of information, knowledge, experience and skills by means of video, audio messages, files, symbols is implemented in collaborative environment. Components of formation and coding of messages are include means of individual and collective encoding / decoding of information that are implemented in internal and external environment by different means of interaction.

Collaborative environment is organized in business structures to organize joint work, management of tasks, development of hypotheses of decisions, exchange of knowledge and information, i.e. for creating common context as deployed information map of enterprise with implementation of multilevel communication.

Communication is the second important factor of expansion of core competencies that is implemented based on trust, respect, culture, independence, moderate leadership, educational strategies, free exchange of information, study of full-life, attention, etc. Communication environment is organized as fully functional systems, solutions of which increase productivity activity, provide competitive advantages and promote harmonious modifications. At adjusted communication environment is accelerating decision making process, is expanding hypotheses and alternatives and is increases the level of knowledge fullness of information processes. Effect from use of standardized relations system at all levels of enterprise management helps to reduce time spent on processing, transmission and interpretation of information that promotes increasing quality parameters of decision and maximally minimizes asymmetry of information and managed impact. Such environment provides integration with expansion of limits of communication channels as effective instrument of partnership that rationalizes information processes and allows estimating each channel of information with determination of its performance and expediency.

At any form of communication is implemented accessibility of information and knowledge that makes possible to obtain prefer-
ences in decisions at different combinations of factors, conditions, restrictions, principles of direct and indirect impact.

Reality and ideology of external environment reorients enterprises on collaboration and communication as highest form of competition and guarantee of business development. Effectiveness of collaboration and communication is provided by integration of knowledge, skills, experience, abilities in configuration that is most optimal for enterprise environment and policy of its development. Communication benefits are inaccessible to objective analysis and its evaluation carried out by received results. But namely communication skills of management environment are promoted expansion of core competencies, which are prospect of enterprise, its characteristics in external environment. Competencies, which acquired during process of collaboration and communication are a posteriori, ie obtained by results of experience, cooperation that is implemented by transmission of information and knowledge. This is continuous process of acquisition, development, the expansion of business attributes based on individual approach according to capabilities and limitations of internal environment. Series-parallel formation, service and transmission of information include multivariate information system that is designed to meet various user requests without prevailing strategy, but with active dominant of competencies.

If consider competencies in notions of knowledge, experience, skills, their essence is to generate information resource with certain properties and characteristics that reflecting enterprise history, experience, culture, character, distinctive features of activities, strategy, development idea. This is result of objective reflection of reality enterprise environment at strategy, projects, scenarios of development, content of processes by performing tasks that correspond to hypothesis, which is formulated based on interpreters of organizational structure, taking into account time context.

Each of users needs information for decision making that orients on definition of key type of information, for obtain of which resources and time are allocated – management information. This
is documented (and publicly announced) information about events and phenomena occurring in internal environment of business entity and is integral part of effective management of organizational and economic processes and economic activities [37, P. 16].

Management information has essential to expansion of core competencies of enterprise, because its feature is continuous use in management system that effects on internal and external environment and contributing to spread of information paradigm for economic development. Requirement of today is strategic prediction that is implemented by working team, in which are integrated creative, procedural, axiological, motivational characteristics of each members with formation area of multilevel operational and technological, informational, economic, corporate relations. Strategic prediction is carried out based on information prediction, in which is implemented base of a priori information and information for making decision that is most broad category, because includes range of information with different degrees of novelty, relevance, logic of generation.

Tasks of strategic prediction are revealed by results of enterprise activity at economic and social spheres of society that provides adaptation of development strategy and information system of business entity to requirements, factors and conditions of external market environment. Model of enterprise management is constructed based on levels of management according to time context of economic transformation that determines different level of priority of management tasks and activation of changes in internal environment (Figure 2.3).

Understanding the importance of redesigning of management model and modernization of enterprise information system, adapting it to real requirements and needs of decision-making alternatives, information provision of enterprise management is used as developed resource for timely evaluation of management scenarios and projects that contributes to their adjustments to improve the efficiency of enterprise activity.

Enterprise for provision of competitive advantages creates management projects and develops making decision system n accor-
dance with level of development of core competencies, totality of which promotes adaptation of enterprise to global character of competitive environment. The main marker of enterprise activity efficiency is its ability to transform important strategic and operational decisions into action at minimal amount of time, i.e., execution of developed management projects [23].

The effectiveness of management projects, decisions, scenarios depends on the number of economic, social, and environmental criteria and indicators that indicate the practice of enterprise activity and characterize the effectiveness of decisions, which are implemented in developed projects.

Figure 2.3. Model of enterprise management according to time context (developed by materials [29; 32, P. 123])
Business development through optimization of information provision of management an enterprise is achieved through transition to new level of management impact at making decision that provides different approaches to formation of information prediction.

Information prediction is result of comprehensive analysis of technological, economic and social trends, rules and postulates of external environment development, management styles that can be used to modernization of rules of information activity and creation of information environment that contributes to expansion enterprise core competencies.

Information prediction allows determining form of interaction between management subsystems, amount of information in accordance with time context and essence of user requests, qualitative characteristics of information for modification of a priori knowledge.

Information prediction is base of formation and development of strategic architecture, essence of which lies at generating and expanding of enterprise core competencies with development of general growth hypotheses, for which are created compositions of decision and management scenarios, changes in which happening according to requirements of adoption of new hypothesis that is adequate time context of enterprise activity. Strategic architecture is management configuration of servicing information that expanding range of alternative decisions and promotes choosing of most an optimal of them in conditions that have been formed on the basis of modifying factors of internal and external environment.

Information prediction is specific instrument for formation of core competencies as a base of enterprise competitive policy with development of strategic potential and provision distinctive qualities of information environment, thus sustaining its actualization by means technological and intellectual innovations.

Competence approach to enterprise management and development of its information environment allows achieving high results that are impossible at traditional approach without prevalence of skills and abilities as defining attributes of enterprise. Area of in-
formation prediction is expanded to limits of provision of development and choosing alternative management decisions that involves changing approach to the evaluation of management information, in which not only incorporated data about results of enterprise activity, but also showing prospects and potential of its development. Information provision of managing an enterprise carried out according to developed strategies that include complex of decisions, projects, scenarios of formation, servicing, development and realization of information with use of technology and communication decisions (Figure 2.4).

Figure 2.4. Strategies of information provision of managing an enterprise

Strategies of information provision of managing an enterprise (refer to Figure 2.4) are constructed taking into account key factors of activity enterprise development at each stage of import and servicing of information. Strategy of information provision of managing an enterprise is trinity of approaches to formation, servicing
and development information in accordance with individual characteristics of enterprise activity and policy of its management.

At management is necessary special attention paid to strategy of formation data, because development of activity policy, scenario of management decision and evaluation of core competencies, which are map of management activity of enterprise depends on information import. Should be implemented individual approach to primary surveillance, cost measurement, operative grouping and final generalization of economic information without disrupting rules and postulates of formal institutes and implementing rules of informal institutes.

Subsequently strategy of information provision of managing an enterprise passes to stage of servicing that envisages its actualization through implementation of professional judgment. Economic information is used in according to management decisions, i.e. takes into account the formation of new enterprise business model, adjustments to its development strategy and implementation of innovations that servicing by additional information with formation of expansion database, which is integrated with enterprise information environment.

Stage of development of information provision of managing is a result of developed scenario of management policy, in which is dominated by informal regulators and indicators of external environment are decisive factors that is projected on enterprise business model. Processing, evaluation and analysis of information carried out according to of professional judgment that envisage formation of data for enterprise management process with provision of quality characteristics, which make it possible to improve the efficiency of management decisions.

Implementation of changes is motivation of development and has imperative character when developing alternative decisions to data formation. Diagram of construction of information flows of management system not has statistic character, because is dynamic of changes at relationships, are defined new priorities, are attracted additional sources and are modified rules and principles. This in-
duces to organization of effective management policy as complex of decisions concerning enterprise development strategy.

Information provision of expansion of core competencies is formed, serviced, developed on micro-, meso- and macro level. Information on micro level is formed based on assessment of enterprise internal environment, its organizational, social, information culture, potential of development, architectonics of information relations between management subsystems and policy of servicing technological changes and intelligent innovations. Information on meso level describes relations with partners, evaluation of their competitive advantages and management policy, definition of competencies of other business entities. Information of this level is paramount for enterprise because it allows to objectively evaluating development potential as compared with competitors, to develop an optimal development scenario and qualitatively individualize management policy, taking into account spatial and time context of activity. Information of macro level is formed for provision of awareness about requirements, factors, changes and transformations of external environment. Such information is necessary for enterprise to operative reacting on trends of changes in conditions of business activity that envisages actualization of hypotheses, strategy and changes for development of management system.

The effectiveness of enterprise activity depends on effectiveness of its information activities, organization of which is complicated due to global scale of information development of economy and society with their transition into a qualitatively different state that is characterized by transformations and innovations. Effectiveness of developed management alternatives is defined by qualitative and quantitative parameters of information provision of managing, analysis of which allows evaluation of effectiveness its implementation at management decisions and timely development of necessary measures to create of information prediction.

At the stage of development of information economy in Ukraine and taking into account impact of global information environment,
the enterprises are necessary to adapt activity to information paradigm of development economic theory that is characterized by integration of relevant factors of modernity – information, communications, knowledge, and the formation of new socio-economic relations. Transformation of economy leads to increase in requirements to qualitative and quantitative parameters of management information that is implemented during the formation and implementation of management impact. Exactly in conditions of information economy, priority of technological and intelligent decisions in activities of business entities the necessity to development of enterprise core competencies becomes particular relevance for revitalize its activity.

2.2. Organizational and technological approach to modeling of information and analytic provision of managing an enterprise

Modern information and technological transformation of socio-economic relations are causing scientific developments to provision all levels of information requests with minimization of information asymmetry. Not only factors of «physical world» (such as physical capital), but also technology, communications, institutional paradigm of economic theory, intelligence, knowledge, thinking are contributing development of enterprise information environment. Information and analytic provision of managing an enterprise is formed and developed under impact of environment, in which business entity carries out activities according to processes of processing, transmission and storage of information, implementation of technological and communication innovations that are result of technological development of global economy.

With the development of information economy the proprietors and managers in a new way evaluate need for modernization of management on technological and communication basis that is substantiated the computerization of information system as an integrated organization of data, technologies, communications, algorithms, methods, principles, etc. Modification of information pro-
cesses gets particular relevance, for what are formed their models on the basis of personalized characteristics of enterprise activity.

Formation model of information and analytical provision of managing an enterprise envisages announcement of transition to new methodological level of information processes on the basis of implementation of technologies with modification of enterprise information environment for increasing the efficiency of making decision.

It is necessary to generalization of empirical experience of processing, transmission and storage of information, modification of theoretical, organizational and methodological foundations of information processes, organization of enterprise information environment taking into account the need for customization (formation of data at new quality for satisfaction of user’s inquiries).

Task for modern scientific research is creating a radically new subsystem of enterprise management that should be developed through implementation of technologies and approximation of theoretical and methodological foundations of modern management concepts.

Economy needs changes, transformations and innovations that provided by generation and dissemination of new knowledge that directly depends on planetary information sphere as result of adapting social and economic institutions to becoming of information paradigm of modern world development. Need at change of inertial industrial development to development, which would correspond to requirements of modern stage of scientific and technological revolution has become a logical [53, P. 26]. The science as highest level of developing management, rational and irrational thinking, creativity of intellectual decisions, development of new information tasks are the basis of such changes.

Innovations that needs to modern economy are emerging from chaos. Practical recommendations on intensification of critical thinking and promote integration of sustainable development at enterprise model with expansion of core competencies are proposed in scientific research [41]. Provision of enterprise development is
implemented through complex system of organizational, informational, technological, methodological and philosophical redesigning of information process in accordance with achievement of multipurpose aspect information. Processes that reflecting the impact of formal and informal institutions, rules of which regulate sustainable economic development, provision of business interests and increasing its value through functionalities of innovative products are integrated and interrelated by use of computer technologies in information process.

Forming model of information and analytical provision of managing been developed on organizational and methodological level that has revealed new possibilities for modification of enterprise information processes. Modeling of information and analytical provision of managing carried out on methodology stage, when methods, objects, elements, principles of organizing enterprise information environment that is base for making decision is elected according to activity purpose.

Information and communication technologies have become a tool that allows to most effectively organizing movement of information with ignoring boundaries and time. Technical provision of information system is complex of hardware and communication tools that are necessary for forming, processing, transmission, storage of economic information. Software includes totality of programs, which adapted to solve specific functional tasks that correspond to technical specifications of hardware and communication system. Software is basis to organization, management and control of information. Linguistic provision is organized in order to optimize work of person and machine and elimination of contradictions at interpretation of entered data with their subsequent processing and generation cumulative information result. Quality servicing of information and communication technologies depends on three groups of factors: 1) that are not directly depends on enterprise (political, economic, scientific and technological factors); 2) which are directly depends on enterprise activity and staff qualifications; 3) subjective characteristics and the uniqueness user [34, P. 87].
The uniqueness of technologies at their modification is provide the individual approaches to automation of information and business activity that contributes to development of various software decisions that is more developed in comparison with boxed software. Technologies contributed to intensify «creative destruction» of economy under which business entities should to carry out activities [19]. Destruction at this sense has creative character that consists in actualization of rules of formal and informal institutions and achievement of balance at their impact on functioning of economic, social and ecological systems. Modern technological decisions are implemented as creative, in which experience not only of programming but also interdisciplinary knowledge from various sciences are generalized that are qualitatively developing information activities of enterprise, market, economy and the world.

Approaches to organizing and servicing of business and information processes are implemented at enterprise software as unity of software and technological decisions and hardware and communication equipment. Universal approach to computer decisions is replaced by individual approach that is more effective for modern enterprises activity. Big enterprises are organizing own corporate information system that automates core directions of business activity [65]. In according to analogy with corporate culture the uniqueness of software complex is justified considering complex information, financial and economic relations that in need consideration of additional nuances of organizing and serving enterprise information system.

Information and analytical provision of managing an enterprise is organized by its inclusion to integrated information and communications infrastructure, which operates through contours of internal and external appointment. Contours of internal appointment adapted to servicing of information and communication activity inside the enterprise and implemented by complex of technical and technological means, organizational systems and regulatory base that serve internal management processes and information flows.
External contours serve information infrastructure of economic systems with creating basis for flexible information and communication activity and contributing to servicing of centers and channels of processing, transmission and storage of data. Internal infrastructure interacts with external infrastructure through open channels of communication within limits of access that allows to continuous monitoring of requests of different users.

Automatization management of information processes is not strategic goal of enterprise activity but instrument (base) for its achievement. The functionality of technologies to conversion of input data on relevant information in order to meet requests of management process is implemented in technological provision of information system. «Input» and «output» of data are necessary to coordinate with organizing automated system to provide integration between information subcenters and to overcome isolation of information processes.

Technological organization of information and analytical provision of managing an enterprise has powerful instruments and technologies for constructing full-featured integrated platform, which is necessary to support all business applications that are adapted to exploitation, servicing and modification. This is not only work at certain operating system, but also environment of technologies to organizing technological, methodological and professional provision. It is important to organizing the processing of information in accordance with determined algorithm and makes it such, which corresponds to organizational structure of business entity. Consideration of enterprise information policy that reflects nuances of forming information to satisfy of multifaceted different users queries is compulsory.

Technological decisions contribute to efficiency of information and analytical process with new level of servicing corporate database, in which accumulates information that is needed for management decisions (Figure 2.5) [14, P. 51]. It is actualization of information process in developed, flexible system that is organized as internal network structure, which operatively reacts to changes of
internal and external environment with increasing rate of reaction for forming quality management information.

Information flow needs to synchronize at enterprise development considering the communication «subject – subject» in context of symmetry and content of information, frequency of communications, etc [39, P. 174]. In this context expedient to use phrase

**Figure 2.5. Technological foundation of modernizing information and analytical provision of managing an enterprise**
«parallel connections» that more correctly reflects opinion about customizing information processes, because happens not only synchronization, but also parallel execution of tasks with varying complexity and focus is implemented. It’s organizing bilateral information relations that contribute to detailed elaboration of management information with identifying interdependencies between indicators and impact factors on their receiving.

Information communications are process of information exchange between elements of management system of different hierarchical levels based on diversity of connections between such elements to improve coherence of their functioning and interaction (internal communications) and between systems of external environment (external communications) [40, P. 224]. Communication in information system has economic orientation in spite of dominance social subtext.

Information and communication possibilities of information and analytical provision of managing an enterprise are developing in accordance with modernizing innovative technologies considering the mass character of data and complexity of management tasks.

Servicing of information and analytical provision of managing with implementation of functionalities information and communication technologies is achieved by forming of structure of information relations in integrated enterprise information system, in which logic of development strategy of business entity incorporated with timely identification of changes, setting goals and developing models of appropriate reaction.

The results of enterprise activity, information of which the information system is processing and generalizes that is coordinated by management decisions, which depends on subsystems of control and analysis.

New opinion of organizing information and analytical provision of managing is used by modification processing, transmission and storage of information by forming of information complex, in which functionality of management subsystems, technological
support and communications are integrated. Their implementation actualizes organizing of information system and provision of effective connections between management subsystems with optimization of enterprise information environment. Information complex is designed to measure, forming, processing, transmission and storage of information about: current indexes of business processes; maximum allowable parameters values in accordance with business goals and strategies; planned indicators according to decisions as unity of opportunities, potential, risks and development strategy; tax payments of reporting period with possibility of analysis their dynamics; indicators of enterprise activity; data for objective making decision.

Technological process of forming output data is actualized and information process is developed in information complex – database, processing, transmission and storage of data, relevant information in accordance with distinctive characteristics of enterprise, general trends of its development and external context. Information base is not limited to relevant data in information complex and including data that are obtained from alternative sources and contribute to increasing professional competence of specialists.

Organization of this part information and analytical provision of managing is coordinated by professional regulators with creating environment for consultation and forming relevant data that necessary for continuous optimization of enterprise database.

Proposal of organizing information complex is direction of scientific development of information and analytical provision of managing an enterprise going beyond the traditional approach to forming system and considering the functionality of modern information and communication technologies. Processes of upgrade technical, technological and information provision are synchronized in information complex that minimizes disintegration of economic information and reducing risks in management decisions.

Forming information based on software systems and provides designing of database with filters to regulation of information by levels of making decision that is necessary for qualitative infor-
mation exchange. Information processes are included in shell of database management systems and their organization is aimed at rational distribution of information resources and to prevent accumulation of unnecessary data [15, P. 113]. Technological processes in information systems are based on developed databases and search services that provide forming information resources and regulation of time factor with the balance «operativeness – price – quality».

Technological organizing information and analytical provision of managing includes search, filtering, synthetic and analytical processing, operative displacement and implementation, systematization, publication and archiving of information in all forms that should be regulated by relevant internal and external standards of legal, organizational and methodological character.

Extremely complicated conditions of economic activity, which are caused by impact of technological and intellectual transformation of society and the economy, require the development and implementation of new management decisions, basis of which is information and analytical provision of managing an enterprise. Its forming and using allow improving information content of decisions and will contribute to their effectiveness.

Organizing information and analytical provision of managing an enterprise should be modeled according to different levels of its regulation that cumulatively contributes to result that expressed by universal information resource for database, which is accessible and relevant to all management subsystems. Now is demanded not only developed model of information and analytical provision of managing an enterprise, but also such model, in which information process is actualized with expansion of competencies of enterprise information system.

Information and analytical provision of managing is core source of management information. It is advisable to consider not only information, for which economic and legal interpretation is inherent, and also take into account the facts of business activity that are describing strategy and business tasks with forming basis to ade-
quate assessment of financial and business condition of enterprise by indexes of reporting.

Information and analytical provision of managing should be developed through internal and external parallels of impact, interconnection of which coordinates theory, methodology and organizing of information processes at actualization of its model at three interpretations according to level of openness and structuring of information concerning different sides of activity enterprise (Figure 2.6) [16, P. 225].

Model of information and analytical provision of managing an enterprise is formed according to individual characteristics of corporate culture, information environment and strategy of business entity development on the basis of characteristics the external environment.

Model of information and analytical provision of managing acquires organizational and methodological features, which contribute to forming information that performs some group of management tasks.

Enterprise gets opportunity to establish effective information basis of management during the forming model of information and analytical provision of managing that fully corresponds to own strategy with objective assessment of possible risks and their prevention and skillful implementation of potential and affects not only to revitalization of activity enterprise, but also increases objective possibility of partnerships with external economic environment. Pattern of integration and presentation of data at a predetermined form is incorporated in model of information and analytical provision of managing that causes conditional digits, which are characterized the business system with its assets, liabilities, real capital, risk, prospects etc.

Improving efficiency of information at information and analytical provision of managing is carried out at the expense of «...synergetic effect as a result of integrating theoretical, methodological and organizational components of forming and provision of all spectrum of information into single system and their complex interactions» [38, P. 11].
Figure 2.6. Model of information and analytical provision of managing an enterprise
Information and analytical provision of managing to management environment of enterprise should be conscious choice, business position, which business entity selects for revitalization of activity through reliable information lever that certain extent ensures dynamic of business. Information and analytical provision of managing an enterprise has high potential as environment of relevant economic information for decision making system.

Management information characterized by complex set of multilevel communications with multifaceted internal organization; considerable massiveness and volume are inherent for it that are directly related to object management, development of which carried out in synchronization with general transformations at external economic environment. Management process in this context is based on provision of accurate results of information process and timeliness meets the needs of users in making management decisions.

Proposals for informatization of information and analytical provision of managing an enterprise designed to: continuity of processing information regardless of its volume in real time; coverage of the entire cycle of processing indicators of enterprise activity; simplify the processing of large amount of information taking into account different criteria with provision of various information requests; operative synthesis of information during its circulation on different levels of management; operative transformation of indicators at convenient form for users.

Technology of information and analytical provision of managing has not only processes, and also elements, characteristics of which determine the order of information processing.

Development of information and analytical provision of managing an enterprise contributed to organic combination of information with characterizing of past, present and future that corresponds to stages of information process in according to recent results of the implementation of software products and intelligent decisions in processing, transmission and storage of information.
Information and analytical provision of managing is individual information model of enterprise, which is formed as set of formal and informal rules according to business model, draft decisions and scenario of development that shall be redesigning in accordance with trends information economy. Forming conditions to development requires actualization of information process with synchronizing of changes in enterprise management subsystems. Creative potential as a result of expansion of professional competencies should be implemented at development of information and analytical provision of managing for correct choice of methods, technologies and procedures for its redesign.

2.3. Modification technologies of formation and update of accounting data

Information technologies are a tool transforming social, administrative and economic systems in modern multimedia society. To information systems are put forward higher requirements that implies processing of different types of dynamic data with different levels of structuring. Big Data Systems are new solution for organizing socio-economic relations with the development of professional competencies as a basis for optimization of modern information and analytical provision of managing. Big Data as an expanded analytical application of global information environment is widely used for processing large amounts of information. The results of such processing are mostly used to evaluate changes in social systems and are less common in economic environment, particularly in accounting. So if Big Data is new effective direction development of technology of analytic applications, their functionality is appropriate to use for development of accounting provision of managing. Big Data are registered in various formats and difficult structured that is their characteristic feature. In traditional bases the data are organized and structured that is effective for use in accounting. Therefore the question arises whether the Big Data is an effective tool for accounting development and also whether it is possible to extend professional competencies
through increase level of analyticity at information processing in internal and external environment of enterprise. Big Data is significantly influence on modern socio-economic relations and could provide new opportunities for development of professional competencies in accounting. Necessity of substantiation of organizational and methodological bases of functioning of accounting system through the use of Big Data is special urgency, because trends of information technologies development and prospects of Big Data are defining new direction in development of accounting functions.

The issue of Big Data is relevance and has become a major at development of proposals for the improvement of data processing technologies. Traditionally, studies of Big Data were carried out along two directions – as universal analytical information system and network data of different formats and structures. In scientific research basic attention is given to Big Data as element of global information process. At the same time the actuality issue of Big Data is conditioned by necessity of harmonizing with accounting system for provision of developing methodological level of accounting process based on the use advanced information technologies. Implementation of comprehensive approach to updating accounting provision of managing will increase professional competencies and modify information processes.

Technological modification of forming information provision of managing is carried out individually for each enterprise with considering the permissible amounts of new information from various sources that not limited to information, which is obtained during ordinary activities. Advisability of predominance in the information environment of new information as a form of reflection business process of enterprise and results of its relations with external environment is substantiated to management systems.

Big Data is valuable research information which is inherent novelty and its implementation in accounting process contributes to formulation of right conclusions for activation of enterprise activity and to strengthen its competitive positions. Big Data is new gener-
ation of information in planetary scale of its processing, transmission and storage.

Various technological and communication projects that contributed to increasing level of information quality, its productivity and efficiency of processing, transmission and storage of data are suggested for modern stage of business development. Necessity of timeliness forming relevant information is caused by speed that accompanies business, economy, technology and society. This all is significantly different from traditions of the past, when balance and reasonableness were a trend, and time is not considered as economic development factor.

Technological and communication servicing of information contributes to effectiveness of using Big Data. Data are «Big» not only concerning number, but also according to their variety, transfer rate and complexity. The advantages in external economic environment are inherent to companies, which earlier than other will have technologies for processing, analysis and transmission of Big Data [24].

Big Data is a group of methods and means to data processing with different structuring that are used for increasing substantiation of managing decisions. It’s an efficient alternative to traditional database management systems with increasing effectiveness and speed processing of data.

Data analysis technologies are developed rapid pace with swift accumulation of information. If a few years ago the segmentation of customers into groups was carried out according to similar preferences, today is possible build a model for each customer in real time and in accordance with his interests of makes concrete proposals [61]. Organizing information with using Big Data System is carried out for increase its performance, analyticity and significant time reduction without loss of quality indicators [3, P. 35].

In summary, Big Data technology is analytics direction that involves statistic, data analysis, gain knowledge and prediction of events [26]. This concept was developed at the time of no computer
data processing, because it’s allowed to expand the boundaries of planning through global external information environment.

Using of Big Data contributes to increasing analyticity of information through its segmentation that stimulates development of different scenarios of managing decisions and increases opportunity to consider and evaluate alternative of development enterprise activity. Multivariate and flexibility of scenarios business processes contribute to quality of activities and, therefore, increase efficiency of management decisions and development projects. Future development of economy depends on Big Data and today due to developed information and communication technologies there are no problems with their search, processing, transmission and storage.

Big Data System as trend of innovative business development is effectiveness on enterprise of IT-sector. Reasons of their slow application in companies activity of other sectors has identified based on studies of effectiveness Big Data for business: management does not understand the very concept of Big Data and does not see instantaneous financial return; middle managers do not trust to conclusions and predictions that based on analytics of Big Data; established business models and internal processes make inefficient changes based on analytics of Big Data [70]. Liquidation of these reasons and effective management policies contribute to new level of using different information.

Concept of Big Data is to not in processing large amounts of information from different databases and in analytical work with regulated information systems that are coordinated by based on pre-designed mechanisms of processing, transmission and storage of data. This concept is ineffective at unorganized information base, in which cannot be traced integration and achieve balance between intellectual and technological decisions in processing, transmission and storage information. Established internal processes, a weak point of which is slow at reaction to new decisions and excessive caution in changes within the enterprise have to evolve. Concept of Big Data has identified new direction developing technologies of analytical applications, particularly two traditional classes of
corporate applications – Business Intelligence (BI) and Enterprise Information Integration (EAI) of Big Data; associated with transformation of data from different sources, and therefore with the means Extraction, Transformation, Loading (ETL), Data Cleansing or Master Data Management with coordination in system the integration components [31].

Management function by Big Data is important to develop for modern business, because it allows you to effectively predict activity and minimize risks.

Functionality of modern accounting system are implemented not only through information function but also are expressed by communication function that provides integrated process of importing, processing, synthesis, evaluation and data transmission by request of different users. Intelligent side of communication involves the implementation of collective work during the generation «cumulative knowledge» that available for transfer and exchange.

Information boundaries of accounting provision of managing are considerably expanded and optimized through introduction of innovative technologies that became the basis of structural changes in accounting process. Changes have affected not only methodological basis, and also technical part that connected with servicing information and its transformation in accounting and analytical resource for using in decision making process at all levels enterprise activity. Developing information and communication technologies contributed to these changes.

Implementation of new information systems and software technologies, reassessment of dominant and priorities concerning quality managing an enterprise, changing of information value – all this requires comprehensive approach to accounting organization [17, P. 59]. Forming comprehensive computerization system of accounting provision of managing involves the integration of components of enterprise information system, elements of infrastructure, communications and technologies, legal and methodological regulation of accounting and reporting that is subordinated to impact of requirements and factors of internal and external environment.
with forming developed accounting provision of managing for effectiveness using information according to requests of different users [16, P. 171].

Basic configuration of innovative accounting technologies has functionalities that are identical to traditional accounting with difference that provides: unified structured base and history of relations with partners and counterparties; account of contractual relations; account of cash flow, purchases, sales, resources in real time; planning and account of enterprise activity; registration and distribution of incoming primary documentation; operational monitoring of actual financial condition; tax accounting; development of financial and management reporting and analysis of data; interaction with other financial systems, modules of management and marketing, systems of business intelligence; introducing a unified integrated information system and provision of information channels coordination; minimizing risks that associated with errors, distortions and loss of information; convenient import and export of data; transfer reporting data to supervisory authorities [6, P. 334].

Programs are supported formats of documents with clear and weak structure, unstructured documents and documents with applications in image format. Processing of documents with bar codes, labels, etc. has become possible [35, P. 40]. The only thing that is controversial – control functions in automated systems of information processing. Methods of automated control in systems are used not enough to control of data entry from paper carriers [45, P. 249]. Computerization of accounting process contributes to promptness and analyticity information, but thus decreases management control function [47, P. 279]. This is continuous information monitoring that operator should implement with performing control functions on stages of processing, identification and export data. Controller should provide monitoring and to respond quickly to any risks to protect enterprise information system from possible negative consequences of technical information processing.

«Manufacturing» method of forming final information seems reasonable at large volumes of activity and, therefore, significant
amounts of information that are formed at all levels of business processes.

Complicated information processing system is economically irrational to form at low amounts of information load: these actions can execute accountant without the need for considerable organizational and technological changes at the level of information and business processes.

Traffic data, definition of recipients and senders, control inputs and outputs of information, monitoring flow of information and regulation of communication centers are stipulated at information infrastructure of accounting provision of managing. Organizational and methodological provision is focused on build architecture of business processes, establishing rules and standards of exploitation system, analysis of results of information process, identify «weaknesses», construction of information-logical data model for each objects of system and appropriate staffing that is intellectual part of servicing of enterprise information system.

Development of accounting provision of managing based on innovative technologies is contributed to qualitative change of its properties in the direction of continuous processing of big amounts of data [44, P. 35]. Most existing accounting software that automates accounting – spreadsheets that independently carry out only account registers [22, P. 215]. Accounting system adapted to logical data exchange between the levels of accounting process according to possibilities of innovative technologies that is basis of managing impact at certain period of time according to business processes.

Technologies servicing of accounting information have to carry out functionality of automated enterprise information environment. Implementation strategy of project managing information system should be considered at organizing accounting process to provision of effectiveness forming automated information process [12, P. 197].

Simultaneous strategy – parallel functioning of enterprise system and managing information system with relevant decisions. Managers choose this strategy in case if fully integrated system is
functioning, but computerized mechanism of forming accounting database that is needed for analysis, planning, control and activation enterprise activity is underdeveloped. Concurrent using systems occur in short time, after which the system is fully transformed according to software decision of management system of ERP class (Enterprise Resource Planning).

Strategy of substitution – transformational replacement of functioning system on new management information system and its adjustment in the process of enterprise activity. Using new software decision is associated with high risk, because adaptation of system to needs of the database organizing implies a high level of information provision of managing.

Strategy of element – gradual adaptation of system through partial using management information system to individual processes with simultaneous analyzing efficiency of formation of information database. Such strategy may be assessed as most safe because it allows reducing risk of inefficient servicing of system.

Choosing strategy implementation of management information system is affects on organizing accounting provision of managing an enterprise, because software algorithms have to be synchronized to improving efficiency of processing, transmission and storage of information. Accounting system can be expanded by data that are necessary for servicing primary information concerning enterprise activity according to its individual characteristics. Data are not limited to accumulated information from documents, registers and forms of financial reporting. Special part is non-financial information with reference to methods, principles and procedures accounting organization and reporting. This contributes to forming developed database accounting as informational and reference component that adapted to internal «regulator» (accounting policy) and external «controller» (normative legal acts).

Expansion of accounting database can be defined in different ways, depending on result that will expect according to objectives of enterprise activity. Improving economic situation in business to
some extent dependent on the level of systematic approach to organizing and expanding accounting database [28, P. 280]. This means to change the traditional view concerning processing, transmission and storage of data.

Information is expanded both the input and output data. This is typical for system management decisions, for which economic information is used that is formed based on accounting indicators. Expansion of information in accounting system is typical for data output (export) that makes it possible to increase of general result from use of reporting information. Users of data are different and expect to gain information that is needed to making decisions and generate management strategy [7, P. 49]. Users of information make decisions based on enhanced indicators, because it contributes to «move beyond» of informational fact and to substantiation of managerial decisions in time context.

Modified accounting system is able to make decisive informational impact on processes, methods, principles and procedures of managing an enterprise at innovation-technological manifestation.

When developing scenarios of future development is necessary to be guided by different alternatives that are defined based on accounting data for managing an enterprise. Indisputable advantage of accounting information in comparison to other information resources is forming integrated information system based on technologies of business intelligence that contributes to development, forming competitive advantages, financial stability [5, P. 83].

Each business entity is forming system of information links according to characteristics of organizing its activity and information environment with modernizing accounting process.

Cumulative information effect that is obtained as a result of adaptation of accounting system to new requirements of internal management system and multifaceted changes in external environment and has ambivalent (double) effect – from getting economic results to development of intellectual resources that are suitable for reproduction and increasing business value.
Forming accounting provision of managing an enterprise based on information and communication technologies has expanded analytical possibilities work with economic information.

Integration of accounting technologies with information technologies had different impact on organization and methodology of accounting and development of technological decisions, because necessity of develop accounting software became the beginning of developing a new direction for technologies. Software products had to meet organizational and methodological aspects of accounting, result of which is new approach to their servicing.

Appointment of accounting in general terms is identical to any information-technology products: processing, store and transmit information. Information processing in accounting system requires additional knowledge concerning to theory and methodology, technologies of primary accounting information processing that recorded in documents and regulatory requirements, which regulating the procedure of organizing accounting and reporting.

Accounting provision of managing is other (modified) according to conditions of developing modern economic systems that is subordinated to «network rules». Technological provision of organizing accounting provision of managing includes search, filtering, synthetic and analytical processing, rapid movement and performance, systematization, compilation, publication and archiving of information in all forms that should be regulated by relevant internal and external standards of legal and organizational-methodical character. Improve the efficiency of information processes in general and in particular accounting process was made possible by using information and communication technologies that contributed to reducing time necessary to organizing accounting.

Accounting information is characterized by complex multi-level relations with multifaceted internal organization; its characterized by much massiveness and volume that directly dependent on object of management, development of which is carried out simultaneously with general transformations in external economic environ-
ment. In this context management process is based on provision of accuracy of accounting process results and timeliness information for making decisions.

Proposals for informatization of accounting provision of managing an enterprise were developed for: continuity of processing accounting information regardless of its volume in real time; organizing cycle of processing accounting data from input array of information to its output as accounting reporting; simplify the processing of large amount of information taking into account different criteria with forming multifaceted information; efficient synthesis of information during its circulation at different levels of management; operative transformation of accounting indicators in convenient form for users.

Conclusions concerning organizational and methodological aspects informatization of accounting provision of managing an enterprise will contribute to increasing timeliness of forming information for management with convenience of its decoding (interpretation) with increasing efficiency of substantiation and implementation of management decisions.

Expansion of opportunities processing different data, organizing information culture and art of information management are modern factors quality of accounting process. Large amounts of information are important not only to use and also for modernizing accounting system.

Organizing accounting should be made as complex methods, principles and procedures concerning information management with increasing analytical possibilities of accounting process. This is interfunctional approach to processing, transmission and storage of data with prevalence of innovative technologies. Organizing accounting should be formation of professional information complex with integration of accounting methodology, functionality technologies and information as a factor of production.

New technologies are associated with new data and new analysis, which make adjustments in organizing information processes and promote complexity of information decisions for management.
Managing an enterprise envisages continuous processing of large volumes of various information [60]. Category new information is characterizing more quality level of rational knowledge and allows forming new knowledge as key elements of enterprise management. New information (for which data are forming) is information that is able to make changes to structure of social and individual thesauruses (sum of knowledge) [67, P. 21]. New information actualizes management decision according to spatial and a time context that affects on enterprise activity within the framework chosen strategy of development and substantiation of activity motivation.

Rationality of information provision at generating new knowledge should include complete group of relevant data necessary for development of professional judgment, based on which decisions are made. Deficiency one of information resource causes the corresponding reduction quality of forming accounting provision of managing – basics of enterprise activity. Firstly, necessary to forming information, which stimulates individual development that includes not only economic data but all information resources, which can be useful for cognitive activity and development of irrational thinking. Information concerning professional judgment of an individual, but not highly specialized, such as covering the whole field of knowledge is needed to further complete development of knowledge. Significant proportion of information that interesting for specialist is professional information: information needed to complete the task, and information for professional development. Information that allows to identify impact factors and prediction of dynamic developing enterprise with substantiating management decisions according to realities of business activity in market environment that is changing being influenced becoming of information economy is needed for specialist to increasing core competencies of enterprise. System of managing an enterprise requires substantiated conclusions and recommendations (new information), important and substantial facts (relevant information) that comprehensively provide generation of knowledge (through new information) and
substantiate it with prove of reality and feasibility (through relevant data).

Impact on enterprise activity through professional judgment, based on which is determined by amount of relevant information, carried out its evaluation to forming several alternatives, the effectiveness of which is determined by qualitative and quantitative parameters of management information are characteristic feature of decisions.

Convergence of accounting information with analytical applications of Big Data System allows to increasing the level of quality parameters of relevant information and promotes increase of information potential and also management quality.

Individual model of information links that manifested in organizing information and analytic provision of managing, which is forming according to some combination of data that provide for its distinctive features and characteristics with evaluation of enterprise business model and complex of its managerial patterns and development scenarios is inherent for each enterprise.

Technological paradigm of accounting is developed through results of trend technologies and forming another type of thinking in the information society that influenced on updating conceptual and categorical apparatus and methodology of accounting science.

Beginning of transition on new methodological level is characterized by introduction of information and communication technologies with modification of accounting provision of managing an enterprise as flexible, complex, semi-open system of generation and dissemination of relevant information among economic agents.

Construction of integrated automation system of accounting is carried out through integration of enterprise information system components, elements of information infrastructure, communications and technologies, regulatory, methodical and professional provision that regulates procedure of forming database for different users to making decisions.

Forming the base of accounting information is necessary to make based on Big Data Concept that is the new direction of mod-
ification technologies of servicing of forming, transfer and storage data.

Organizing expanded technological base with actualizing accounting process is appropriate. Using Big Data is potentially effective tool for increasing analyticity of information through its segmentation that stimulates dynamic of accounting process to provision of multivariate and flexible managerial scenarios for implementing decisions. This are newly created competitive technologies of creating conditions for servicing accounting information with actualizing processing, transmission and storage of data with qualitatively new level to developing organization and methodology of accounting.
Conclusions section 2

For development of information provision of managing in monograph have been formulated recommendations on organizational and methodological bases of information activity as basis of information regulation of control and making decisions in conditions of communication phenomenon and paradigm of information development of economy.

Main conclusions and results that obtained in second section of monograph are as follows:

1. The system of enterprise competencies has been formed for evaluating effectiveness of its development that allows to measure performance of hardware, technical, communication, programming and professional provision of activity and are controlled quality and informativeness of management impact during making decisions. Such information contributes to identification of reserves and developing of measures to improve the efficiency of enterprise management through optimization and efficient use of hardware, technical, communication, programming and professional provision.

2. Map of management of enterprise core competencies has been formed for modification scenarios of its development, therefore being implemented appropriate approaches to provision of quality of information activity at organization internal environment for modeling hypothetical situation as some events in activity enterprise. Scenarios of organization for enterprise management is proposed create through use of combinational approach to formation of core competencies. Thus complete picture of enterprise activity scenarios is available with possibility of its evaluation in different ranges of input variables that makes it possible achieve efficiency of business processes and minimization of negative aftereffects of reasons concerning probable disadvantages of activity.

3. For each enterprises is inherent individual model of information relations that is to provide of information management, which is formed by particular combination of information with taking
into account distinctive features that is characterized the enterprise business model, complex of its management patterns and development scenarios. Formation of management system model has been proposed according to time context that is organized based on processes, decisions, competencies and motivations that is developing by relevant management information.

This contributes to obtaining of additional advantages at satisfy informational requests of management process with achieving balance between condition of enterprise information environment and prospects of its development by mobilizing information potential for increase argumentation and effectiveness of management decisions.

4. Strategies of information provision of managing an enterprise that are constructed taking into account integration of key factors of development business entity at each stage of import and processing of information is substantiated. Evaluation of information is proposed to perform according to developed strategies that include complex of decisions, projects, scenarios of formation, servicing and development of information with using technology and communication decisions. It contributes to increase of efficiency provision of information requests, which changing and become more complex under the influence factors of internal and external environment.

5. Forming complex automation system of information and analytical provision of managing an enterprise was carried out through integration of information system components, information infrastructure elements, communications and technologies, normative legal, methodical and professional provision that regulates procedure of forming information base to meet the modern user requests in accordance with certain level access of each of them. Information boundaries of enterprise management been expanded on the basis of information and communication technologies and integration of formal and informal regulators of organizing information environment that allows to increase the total cumulative effect of using information.

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6. Organizing information and analytical provision of managing depends on conditions and factors of institutional environment development, technological potential and dynamics of professional provision that is basis for making managerial decisions, development of business and economy as a whole. Forming model of information and analytical provision of managing as information microenvironment with generation of managerial data and communication links of two-dimensional character (inside and outside), with data integration at clearly defined information boundaries that depend on regulation of formal institutions been substantiated.

7. Individual model of information links is inherent to each enterprises that involves organizing information and analytical provision of managing, which is formed by some combination of information that provides distinctive features and attributes that reflect business model of enterprise, complex of its management patterns and development scenarios. Model of information and analytical provision of managing an enterprise is proposed to formation according to the individual characteristics of business entity on the basis of processes, decisions, competencies and motivations, which organized and provided by information.

8. Approximation of Big Data Concept is potentially effective for increasing analyticity of information that is modifying accounting process with forming relevant information for various scenarios of management. Expanding base of accounting information will develop its qualitative parameters according to the need making different decisions that envisages processing large arrays of information, which is characterize internal and external environment of enterprise activity.
SECTION 3

ORGANIZATIONAL BASIS FOR DEVELOPMENT OF EFFECTIVENESS OF INFORMATION AND ANALYTICAL PROVISION OF MANAGEMENT

3.1. Cognitive distortions in information and analytical provision of managing

Managing an enterprise is based on complex of methods, principles, provisions and organizational basis of making decisions, in which distortion is inherent to part of relevant information. It is caused by internal and external factors on which it is possible to produce guiding influence and that cannot be eliminated. It is necessary to harmonized information system of enterprise with opportunities of external information and communication environment for provision of management efficiency. Thus informational maturity of management has to implement in decisions that allows to adjust development strategy of enterprise on time.

Informational maturity is a level, which enterprise reaches by development of processing, transmission and storage of data, establishing communication links, use of database capabilities. It means timely identification of processes and phenomena that should be operative optimized in according to requirements of business at micro- and macro levels. That is, principle of integration by levels of the information system with its organization as a semi-open system is implemented. The presence of links (including reverse) with ordering of elements and organization of multi-level data exchange with taking into account features of managing subsystems should be inherent for such system.

Activity of technical, technological and managerial innovations, advantages of which consist in modifying of processing, transmission and storage of data and implementation relevant information of managerial decisions extends the range strategies development
of enterprise activity that is observed in context of modernizing of information provision of management. Information processes have modernized in accordance with introduction information and communication technologies and intellectual decisions in their models with establishing structure of their interaction taking into account the need for adaptation technological and knowledge paradigm of economic theory development.

This is transformation of information provision of managing an enterprise in flexible internal network system with input and output channels of data to internal and external environment. That is, the organization of developed system of processing, transmission and storage of information with increased its qualitative parameters.

As a result, information processes evolve into flexible, integrated network structures that are achieved through development and implementation of information and communication technologies, which make possible interactive mode of information circulation with forming extended database by separate featured as on-line environment of local using with isolation of communication nodes. Continuous updating of information processes based on intelligent decisions, which provide and regulate the modernization of data processing in accordance with horizontal subordination of managerial system contributes to updating of enterprise information system.

The development of information provision of management is aimed at unity, integrated functioning and centralization of information subsystems with appropriate degree of consistency between internal and external environment that cumulatively makes effective coordination and regulatory environment for making decisions. Complications in processes of enterprise activity are caused logical need at formalization of information flows and construction of system, in which various elements and properties of information exchange are multiplied inside the integrated system and beyond its borders.

Managerial decisions cannot be simple, because cover many business aspects and take into account ambivalent effect of inter-
nal and external economic environment. In knowledge economy complex of information links and informal factors affect formation of information for management. Such information is ambivalent, because prompts a conflict of interest between guiding groups of influence, for which multivariate managerial decisions are effective.

Managerial information should be accessible and understandable for all participants in management process in accordance with their professional duties, personal and corporate motives. It allows to balance the information provision of managing an enterprise in such a way that chosen alternative of decisions will be appropriate to managerial compromise.

Differentiation of managerial information for making decisions should be carried out with avoidance of asymmetry of information. Minimization of information asymmetry is mandatory condition of achieving synchronized development of enterprise and reduction of risks and uncertainty of activity, because timely and complete information provision of managing makes possible formation of a reaction model for change conditions of business activity.

Information asymmetry is a complex phenomenon and occurs as a result conflict of interest of guiding groups of influence, as a result of which cognitive distortions in information and analytical provision of management are increased. Exactly cognitive distortions are reason for formation of inefficient information models as undeveloped templates of processing and transmission of information for making decisions.

The essence of cognitive distortions is, firstly, at different perceptions and interpretations of the primary data that makes problems for generation of information at initial stage of developing projects of decisions. Secondly, this is difference in the organizational and methodical features of management subsystems, namely, in information requests for making decisions. Cumulative cognitive distortions affect the relevance, reliability and effectiveness of the information (Table 3.1).

Formation of information for management is complex and multilevel process as a result of development of new technological and
intellectual projects for increase of effectiveness processing of data. Business involves information interaction of managers, owners and external counterparties that regularly raise conflict of interests (Figure 3.1).

Table 3.1

<table>
<thead>
<tr>
<th>Cognitive distortion</th>
<th>Impact on information and analytical of provision of managing an enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superficial processing of primary data</td>
<td>Underestimation of all complexes of data. Lack of full understanding of events and phenomena. Insufficiency of relevant information for making decisions</td>
</tr>
<tr>
<td>Leveling of possible information risks</td>
<td>Unforeseen negative impact on process of generation of managerial information. Untimely adjustment of data. Inefficiency of information security</td>
</tr>
<tr>
<td>Difference in information interpretation of events and phenomena</td>
<td>Inconsistency in formation of information. Ambivalence of informational impact on managerial decision</td>
</tr>
<tr>
<td>Defining different time limits for making decisions</td>
<td>Short-term information for management. Disintegration of guiding influence on formation of information</td>
</tr>
<tr>
<td>False axiom of relevance of information sources</td>
<td>High risk of information asymmetry. Availability of information overload. Lack of alternatives of information sources</td>
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</tbody>
</table>
Reasons of conflict of interests are different, but namely three conditions are basic that without alternative leads to complication of information and managerial interactions between groups of impact. Disintegration of making decisions process is a primary factor that induces conflict of interest. That is, inconsistency of temporal and spatial context of the formation of information for making decisions. Various data sources, algorithms of processing information and its interpretation lead to ambivalent conclusions that not take into account expectations of all groups of guiding impact.

Inaccuracy in hierarchy of information impact, namely false axiom concerning unconditional effectiveness of information that belongs to highest guiding management level is second condition of conflict of interest. Each information source can contain irrelevant and distorted information, that’s why information decisions should be multipurpose.

Harmonization of different risk management scenarios requires special attention. Generalized combinations of minimization of negative impact of risks should be developed that will allow timely response to manifestations of situations of uncertainty.

Cognitive distortions can be controlled, for which it is necessary to develop a map for different types of distortions that will allow to promptly correcting information provision of management (Figure 3.2).

**Figure 3.1. Conditions of occurrence conflict of interests**

Reasons of conflict of interests are different, but namely three conditions are basic that without alternative leads to complication of information and managerial interactions between groups of impact. Disintegration of making decisions process is a primary factor that induces conflict of interest. That is, inconsistency of temporal and spatial context of the formation of information for making decisions. Various data sources, algorithms of processing information and its interpretation lead to ambivalent conclusions that not take into account expectations of all groups of guiding impact.
When destructiveness of information provision of management the actions should be take for unification of data, which will be relevant for each management subsystem without informational asymmetry. In this case, the cognitive distortions are minimized at the initial stage, before process of data processing that allows to avoid beforehand wrong decision.

Leveling of relevant conclusions can be made by development personalized management scenarios, in which informational conclusions are taken into account without a hierarchy, but according to managerial task. This will increase efficiency of decision, because information from different experts will be taken into account, and also their general conclusions will be integrated.

Opportunity to preliminarily make combination of risk management aims to control their quantitative and qualitative parameters. Therefore, complete scheme of business activity scenarios with opportunity to its assessments in different ranges of input variables that makes it possible to achieve flexibility of business processes.
and minimization of negative consequences of reasons identified deficiencies is available.

Processes of identification of information resources, data updating, adjustment of information, holding «information cleaning», data filtering, provision of reliable information through focus exclusively on documented information, results of analytical processing of data, using information technologies, communications and hardware technology for processing, transmission and archiving of information and analytical provision of managing an enterprise are implemented at integration of information control and information monitoring.

Insurance reserve for force majeure circumstances is being created when accepting the fact of risk based on accounting data.

To minimize risk the experts are involved with modeling and forecasting consequences, ranked risks. Experts suggest measures and sizes of insurance coverage in accordance with rank of risks. Eliminating risk is complex process, because provides exercise modification of business processes, conducting reengineering, benchmarking (systematic search and implementation of best practices), redesigning processes simultaneously with the work of experts and creation of insurance reserves. This requires additional managerial decisions concerning organizational aspects of business.

To provide effectiveness of information should be determined in a timely manner, which decisions are really strategic, and therefore, to form a personalized model of information provision of management (Figure 3.3).

Tactical and strategic managerial decisions have different information provision, created and implemented according to different levels of guiding influence. Primary information and analytical data taking into account probable impact of information risk are enough for tactical managerial decisions. Tactical decisions are developed for operational management based on information monitoring without complication of information process.

Information structure of managerial decisions is more complex and should include not only primary and analytical information,
and also informational equivalent, forecast information and data from big databases. Scenario of management of information risk should be necessarily taken into account. At this stage, there is turns out more guiding influence, because events and phenomena are estimated for perspective, therefore interests of management subsystems should be agreed. After focusing on strategic decisions it is necessary to evaluate them in detail in accordance with two basic objectives – independence in external economic environment and constancy of change of final development point. First objective (independence in external economic environment) determines the level of unconditional competitiveness of enterprise as effective participant of economic relations. Second objective is formed on basis of principle of continuity of activities, for what it is necessary to increase level of qualitative parameters of business. At different levels of making decisions the information can be effective or counterproductive that increases level of risk and minimizes sustainability of enterprise activity development.

Instruments that intended for leveling cognitive distortions can be implemented after diagnostics of information provision in accordance with the levels of making decisions.

First instrument (soft influence) – differentiation of information expectations groups of guiding influence from actual results that al-

Figure 3.3. Architectonics of information provision of making decisions

| Sd – Strategic managerial decisions | Td – Tactical managerial decisions |
| Pi – Primary information | Ai – Analytical information |
| Ie – Informational equivalent | Ir – Information risk |
| Pd – Forecast data | BDi – Information of big databases |
| I Gi – I level of guiding influence | II Gi – II level of guiding influence |
allows to objectively analyze internal and external processes that are basis of strategic decisions. Using of this instrument allows to organize feedback to forming integrated database for making decisions with timely coordination of information interests.

Second instrument (constructive decision) – when developing decision it takes into account not only internal information, and also independent data from external database. This instrument is effective, if time is enough to processing data from different information sources. Different databases is necessary to systematically integrate with supplementation of internal information by new objective data that characterizing facts and forecasts of the development of external economic environment. Binary approach is implemented exactly at constructive decision, that is integration of two different points of view concerning one event that increases objectivity of information.

Third instrument (acceptability of multipurpose character) – differentiation of information provision for current and strategic decisions. Each decision has explicit and hidden organizational, managerial and economic motives, risks, prospects and limitations. Therefore, it is necessary to thoughtfully evaluate their and forming information personified for each project and decision. Projects should include composition of decisions, alternatives, for what is necessary to form different information provision in accordance with quantitative and qualitative parameters of enterprise activity.

Described instruments can be effective, if they are integrated into organizational and management system of enterprise. This is should be not precautionary measures, but thoughtful actions to increase efficiency of management in accordance with chosen development strategy. It is necessary to simultaneously analyze several alternatives and develop multipurpose information provision of management as complex of information without subjective guiding influence. Such instruments should supplement the developed decisions card, in which task is defined, for which relevant information is formed. This is highest level of compliance information to management tasks that significantly increases qualitative parameter.
ters of information and analytical process with minimizing cognitive distortions.

3.2. Innovative models of increasing effectiveness of information provision of making decisions

Any decision is based on information that encourages expansion array of input data and its processing for comprehensive understanding of essence of events and phenomena. Modern software technologies allows to instantaneously processing any amount of information with generation of preliminary conclusion. However, such conclusions may be objective, but not effective for business development. Reason of this situation is that algorithms of processing information do not take into account nuances of events and phenomena that leads to incomplete processing of data, but provides their «superficial» analysis.

Effective decisions are made by specialist, which has knowledge, experience and opinion, own view on activity and development of enterprise. Information for any user is different and its interpretation provides multidimensional conclusions that are manifested in different directions of development strategy and definition of new goals of activity.

Information should be «individual», that is, designed for execution of specific task and for concrete decision-making person.

Of course such individuality almost impossible to get, but it is possible to maximally approximate the process of formation of relevant information to forming correct conclusions. That is, to provide maximum efficiency of information with maximizing its qualitative parameters for making decisions. Therefore, it is important not to increase amount of information, and correctly allocate data segments for their processing in accordance with characteristics of enterprise activity and management tasks.

Information has a complex nature, therefore it is difficult to objectively evaluate its effectiveness for development process of enterprise, because material resources are basic for business activity. Information is intangible in nature, but in modern economy sig-
significant amount of money is spent to information that increases its importance as effective resource of economic development.

Information is used in accordance with quantitative and qualitative parameters for enterprise management system.

In quantitative terms the summary information is result of «physical increase» of data. Information develops without changing the quantitative indicator in accordance with qualitative characteristics, that is amount of data remains unchanged at increasing its effectiveness at time of justification of management decisions. Risks, opportunities and results characteristic for each managerial scenario are equally. By taking managerial decision it is necessary to determine minimum values of core indicators and their maximum values, on the basis of which arithmetic mean is calculated for developing optimal managerial project.

Information cannot store qualitative characteristics, because its properties are depreciating with passage of time, in particular, timeliness, relevancy, reliability, rightness. To improve effectiveness of information it is necessary to control its qualitative and quantitative parameters in according with changes in factors of impact of external and internal environment, intensity of modernization of information environment of enterprise and time contexts of its activities.

Control procedures and information evaluation are part of information management tasks that involve its processing, transmission and storage. Control procedures aimed not only at identifying information that suitable for use in management process and making decisions. Information is devalued faster than tangible assets, because relevance of useful information decreases with passage of time (carrying out activities especially in today’s dynamic conditions). Control procedures at quantitative and qualitative information parameters should be organized in such a way as to be as full as possible, precisely, promptly and clearly provide list of species types and categories of resources, organize their effective using, processing and protection that are needed according to objectives of enterprise.
Gradual performance degradation is characteristic to information resources due to relevance and novelty. Reducing the value of information is happening in process of data movement, but it does not change its essence as the goods, for which inherent changes in transfer and storage process. It is no accident timeliness is one of main characteristics of managerial information, that is ability at right time and in full to satisfy user queries, which are evaluated data by different parameters according to managerial tasks.

Requirements of control procedures to information originated from need to provide information security and should be carried out based on conditions and factors of enterprise activity and impact of external environment. At organization of control procedures for assessing quantity and quality of information should be highlighted privacy criteria, create regime of informational discipline, define parameters that should be laid in basis of grouping information (this may be security parameters, character of reproduction (document in paper form, electronic environment on computer/server, cloud technologies)).

Conduct of control procedures involves identification of information, its user, level of consistency with business processes and forms of processing, transmission and storage of data.

There is risk instead of generating and disseminating of effective information get poor quality data, which distort the real financial performance of the business, if not to provide appropriate control and regulatory procedures that eventually lead to lower economic durability, unfavorable dynamics of the level of competitiveness, loss of business reputation of enterprise in external economic environment.

Focusing attention on need to control qualitative and quantitative information parameters allows to develop strategy of updating data for organization of complex technical and technological activities that aimed at increasing efficiency using information in business processes. Changing opinion on data processing process into real economic outcome has by own basis for expanding functional purpose of information, its transformation into object of in-
formation communications, resource, capital, placement of its in
information economy is estimated higher compared to alternative,
which has material character. Information is not spinning in cir-
cle – its cycle is aimed at moving toward the result, which every
time supporting transition of business to next level.

Efficiency of information for managerial process is difficult to
determine, but possibly, for what properties of information should
be converted into quantitative indicators and is necessary deter-
mine level of its impact on process of making managerial decisions.
Effective using information is associated with identification and
evaluation data that suitable for use by enterprise management sys-
tem and intended for systematic monitoring of information flows,
which aimed at identifying opportunities and threats that inherent
to information. Data is imported from the information array and
after processing they are converted to multipurpose, reliable evi-
dence that are adequate to time and acquire additional properties,
which update the data by forming primary information. Informa-
tion in further technological process should be processing accord-
ing to different criteria with generalization in form convenient for
interpretation by user.

Evaluate the effectiveness of information is possible by different
parameters. Method of evaluation, according to which information
at levels of its using and impact on results of enterprise is most ef-
fective (Figure 3.4).

Degree of information provision for task execution and make
decision is evaluated at first level (primary reaction). At this stage
information is not structured and adapted for use in management
process. At this stage evaluation is subjective, because its result de-
pends on specialists, which involve information for further pro-
cessing and using. Amount of information to use at developing
tactical decisions and preliminary conclusions exactly depends on
their opinions.

Result of processing of information and progress of decisions is
estimated at second level (mastering). It allows to objectively eval-
uate the changes in conclusions and decisions, to analyze necessity
of adjustments of activity and to argue following measures and actions. Specialists are formed basic complex of relevant information, which is used to perform specific task. Experts conclude on effectiveness of information processed and determine its sufficiency or need to attract additional data.

At third stage (effectiveness) productivity of using information is estimated, namely changes that have taken place at current stage of management. This is evaluation of relevance of changes, that is relevance and importance for defined tasks concerning formation of conclusions to generation and implementation of novelty. It is advisable to compare state of management system for time before using new and on current moment. This will provide objective picture of relevant changes and assess their sustainability for development of enterprise activity.

At fourth level (result) final impact on core competencies of enterprise is estimated, that is changes are considered that have affected on qualitative parameters of activity. At this stage evaluation of effectiveness of information is most objective, because state of core parameters of enterprise activity (profit, sales, capital, etc.) is analyzed.

External factors also affect on core business indicators, but exactly decision and also managerial information directly affect on
final result. Information determines the effectiveness of any process and phenomenon, therefore, on its basis the decisions are developed and forming strategy that changes in accordance with internal and external conditions of activity.

Productivity of business processes is result of obtaining economic benefits from information, which indirectly embodied in managerial decisions that are developed for expanding activities, formation of financial base, cash flow management and offers of strategy of investment attractiveness. Understanding significance of search of rational measuring of efficiency of information caused actualization of methods of its measurement and evaluation. Evaluation is implemented at all stages of information process that consists in sequence of information forming stages for its analytical processing, determination of economic expediency of phenomena and processes of enterprise with revealing level of preservation of property of owner and their impact on financial and economic results. Evaluation is carried out continuously and implemented in processing of information with final generalization of obtained result, which is basis for making decisions and developing measures to increase efficiency of enterprise activity.

Productivity of information can be determined through the evaluation of entire information system, effectiveness implementation of which is to achieve optimal balance between costs and results. That is comparison of economic result of system implementation and cost of its acquisition, installation, operation and improvement.

Reducing effectiveness of information provision of management in new conditions of enterprise activity is associated not only with insufficiently developed management policy and control of quantitative and qualitative parameters. This is due to leveling out of role of risks as reason reducing effectiveness of information that needs to develop policy of evaluation, control and management of such risks.

Managing risks is not only implement them evaluate, rank, measure, analyze degree of impact on future events, calculate probable consequences and develop measures response to manifestation of
risks. Managing an risks is process of impact on object of management that provide forecasting probability of risks, using all methods of influencing them through adoption of managerial decisions and reduction of exposure to identified risks on enterprise activity to minimum limits.

When managing risks, it is necessary to processing information about types of risks, their sources and processes, on which these risks make impact (different levels and consequences). This stage begins with formation of risk base. Situations that are defined as unfavorable are modeled according to external information flows, results of observations and expert evaluation of information policy, experience of other enterprises. For such situations appropriate characteristics are established, according to which situations are identified as risky and criteria are determined that become basis for formation of database about sources, facts, consequences, means of minimizing risks. Accumulation of information about the reasons that caused their occurrence is characteristic feature of managing risk base. It is necessary to define and differentiate of their factors that make possible risk control and avoidance of their negative manifestation on basis of proposed measures and conclusions drawn, because risks are caused by causal relationship.

Development of risk management policy in information provision of management is based on implementation of preliminary impact on factors of their occurrence. It contributes to prediction of probable risks, effective impact on them through synthesis of evaluation results, on basis of which decisions are made concerning necessary measures for their avoidance and (or) minimization with control of implementation of these measures and assessment of their effectiveness.

Risk management is part of general policy to increase effectiveness of information provision of management. It creates basis for development of its principles, functions, technologies and methods that cumulatively affecting on final result – information for management. Respectively more qualitative decision of managerial tasks is achieved taking into account impact of internal and exter-
nal factors that make it possible to individualize events for increasing efficiency of enterprise activity.

Transition to technologies, on basis of which construction of information system is carried out that provide conditions for rational interaction between groups of guiding influence and organization of reverse information flow is effective measure for development of enterprise activity. Formation of model (Figure 3.5), which, firstly, provides optimal conditions for systematization of information process at all levels of making decisions, is new qualitative stage of development

<table>
<thead>
<tr>
<th>Risk zone</th>
<th>Level of implementation:</th>
<th>Level of choice:</th>
<th>Level of designing:</th>
<th>Risk zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Predefined managerial decision that may be ineffective.</td>
<td>- definition of variables for selected alternative;</td>
<td>- analysis model of managerial decisions;</td>
<td>- development of model of managerial decisions;</td>
<td>1. Uncontrolled situations of uncertainty.</td>
</tr>
<tr>
<td>2. Complexity of operative adjustment of choice</td>
<td>- definition of managerial assumptions;</td>
<td>- determination of reaction on decision;</td>
<td>- definition of development alternatives;</td>
<td>2. Errorneous selection of alternatives.</td>
</tr>
<tr>
<td></td>
<td>- organizational provision of decision;</td>
<td>- introduction of chosen optimal alternative;</td>
<td>- evaluation of forecasts;</td>
<td>3. Incomplete spectrum of qualitative parameters.</td>
</tr>
<tr>
<td></td>
<td>- forming conclusions</td>
<td>- formation of plan for increase result of activities</td>
<td>- adjustment of management policy</td>
<td>4. Supposition</td>
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<tr>
<th>Risk zone</th>
<th>Level of implementation:</th>
<th>Level of choice:</th>
<th>Level of designing:</th>
<th>Risk zone</th>
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<tr>
<td></td>
<td>- definition of variables for selected alternative;</td>
<td>- analysis model of managerial decisions;</td>
<td>- development of model of managerial decisions;</td>
<td>1. Cognitive distortions.</td>
</tr>
<tr>
<td></td>
<td>- definition of managerial assumptions;</td>
<td>- determination of reaction on decision;</td>
<td>- definition of development alternatives;</td>
<td>2. Information asymmetry.</td>
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<td></td>
<td>- organizational provision of decision;</td>
<td>- introduction of chosen optimal alternative;</td>
<td>- evaluation of forecasts;</td>
<td>3. Information overload.</td>
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<td></td>
<td>- forming conclusions</td>
<td>- formation of plan for increase result of activities</td>
<td>- adjustment of management policy</td>
<td>4. Supposition</td>
</tr>
</tbody>
</table>

| Tasks statement:                                                          | 1. Information on results of enterprise activity.    | 1. Accounting and analytical information. | 1. Information on results of enterprise activity. |
| - processing of organizational objectives;                               | 2. Data from external databases concerning condition of economic systems and market. | 2. Information from management subsystems. | 2. Data from external databases concerning condition of economic systems and market. |
| - evaluation of limitations and prospects of enterprise activity          |                                                                                       |                                     |                             |

**Figure 3.5. Model of target information provision of management**
of information provision of management. Secondly, new approach to integration of a posteriori and new information for generation of relevant information, which is used in development of conclusions and strategies, is implemented.

System approach to processing, transmission and storage of data is theoretical basis of model of information provision of management. Tasks of development of enterprise activity are main system-forming factors, because exactly tasks determine content and rational option of processing information from internal database and external information resources.

Architectonics model of target information provision of management includes four levels: formation of information concept of enterprise activity; designing of information provision of management according to defined managerial tasks; selection of information decisions for management; implementation of selected alternative of information provision taking into account its target appointment.

Levels of model of target information provision of management are relevant to organizational and methodological aspects of enterprise and its development strategy.

Information provision of management should not be static. It is necessary constant changes and adjustments that correspond to trends of economic transformations in internal and external environment. Organization of information provision of management has cyclical and purposeful character with transition to initial stage after execution of defined task.

Modeling of target information provision of management begins at conceptual stage, at which managerial task defines and information resources evaluated that describe events and phenomena according to definition of task. At this stage assumptions and forecasts are dominated, because situation is evaluated by trends of external economic system and compared with counterparts. At this stage information provision of management is simplified, because data are variables to describe limitations and prospects of development of enterprise activity. Real tasks are determined exactly at conceptual stage, after identification of its features and level of impact on enterprise activity.
At level of designing the information provision of management is being processed according to identified directions of changes and execution of managerial task. In model at this level the abstraction of information process is carried out to identify necessary qualitative and quantitative parameters of relevant information. At this stage is necessary to control accordance of information provision of management to model of making decisions.

To make right decision is necessary to identify components of information model, organize information flows, build structure of information resources, determine amount of informational equivalent and develop scenarios of information provision of management in accordance with alternatives to project of development of enterprise. At level of designing choice are not implemented, but decisions are made concerning alternatives that is need extension of information provision, which most fully corresponds to specified task.

At level of choice recommended decision to defined task is accepted. Such recommendation consists of complex of structured relevant information that interpreted in accordance with objective and subjective character of managerial task. At this stage information should be most relevant and sufficient, because choice is subjective, since unworked zones of enterprise activity and external environment always are remain.

For selection can use analytical models that based on optimization of decisions by comparing different alternatives. It is necessary to form separate blocks of information that will describe certain alternative. Descriptive models are simpler; information flows are characterized and ranking information by specific scenario is planned in this models. Reaction of enterprise activity to decisions in real time can be analyzed through using simulation model. Such model is effective, if there is probability of information risk.

By choosing decision use the developed information model that is functionally complete concerning evaluation of alternatives. At this stage, the information model should change architectonics to increase qualitative parameters of alternatives decisions

At stage of implementation behavior of management system is evaluated concerning implemented alternative and result for enter-
prise development is determined. Conclusion on the impact of results on enterprise activity and its prospects and limitations of development, core competencies and positions in external economic environment is needed to make.

Targeted organization of information flows between management subsystems with forming system connections in accordance with specifics of enterprise activity is main instrument of building model of targeted information provision of management.

For disclosure features, trends and prospect of functioning and development of information provision of management are necessary to define and substantiate basic principles concerning processing, transmission and storage of data, which should be agreed with principles of economic management. These principles can be divided into two groups (Table 3.2).

<table>
<thead>
<tr>
<th>Organizational principles</th>
<th>Methodological principles</th>
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<tr>
<td>Designation</td>
<td>Gist</td>
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<tr>
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<td>2</td>
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<td>Accor-</td>
<td>Qualitative man-</td>
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<td>dence to manage-</td>
<td>nagement parameters are</td>
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<td>management objectives</td>
<td>priority.  Amounts of</td>
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<td>data should be re-</td>
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<td>duced to avoiding</td>
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<td>information overload</td>
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<tr>
<td>Completeness of analysis</td>
<td>Comprehensive processing of information concerning integration, timeliness, reliability and relevancy for providing the making decisions</td>
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<tr>
<td>Sufficiency</td>
<td>Amount of information should be sufficient for correct interpretation of events and phenomena, formation of conclusions and adoption of managerial decisions</td>
</tr>
<tr>
<td>Legal priority</td>
<td>Information should be reliable. It is necessary to take into account needs of management, but adhere to truth of data without distorting them</td>
</tr>
</tbody>
</table>

Continuation of Table 3.2
Indicated principles (refer to Table 3.2) provide:
- take into account objective regularities of enterprise development;
- argumentation of managerial information;
- need to determine interdependence of qualitative parameters of information and managerial systems;
- need to streamline information flows in communication complex;
- determining character of relationship elements of information provision and management system;
- selection of relevant data at complex of information flows;
- consistency of information with regulatory and legal principles of organization of business activity;
- ensuring implementation of tactical and strategic tasks;
- flexibility to modernize in accordance with changes of requirements internal and external environment.

Principles of organization information provision of management are demanded for monitoring and regulation of information resources and information flows, modification of which is connected with chosen direction of development that providing ability to: objective interpretation of major changes; establishing economic feasibility of using new decisions; skill of efficiently and quickly change architectonics of information provision of management; forming of information decisions; evaluation of possible risks during implementation of decision; purposeful using data and integration of internal and external information resources.
Each strategy in business, example, gaining competitive advantages, customer loyalty management, reduction of aggregate costs at preserving quality of product, etc., provides engagement not only actual resources, and also information, resource, financial potential that should increase value of business under condition of substantiated management.

At managing an enterprise information potential is being realized in decisions as core competitive advantages that contributing to exit business to higher level of functioning and follow concept of information and communication development of economy. Information potential in system of making managerial decisions expressed through additional information that implemented in management process from relevant information sources of internal and external environment. Information potential includes not only technological context of data processing, but also reflects modification of rational information process with proposal of new data for making decisions. Therefore, integration of a priori information with information potential is necessary instrument for comprehensive modernization of information provision of managing an enterprise.

Holistic character of systemicity should be inherent to information provision of management that contributing to activating of enterprise information potential for provision of synchronized development of management subsystems. Redesigning of information system with taking into account preliminary evaluation impact of information and communication complex on integrated connections and construction of management architecture should be objective reaction to development of information potential.

Information provision of managing an enterprise is based on adaptive architecture, that is, on integrated unity of organizational, financial, technological and information architectures.

Technological architecture is basis for providing necessary software and communication environment to managing information and through them – for the realization of business functions. Organizational architecture is under construction based on mission,
strategy, objective of development and long-term business plans, on basis of which determines general structure of internal business environment that is basis for development of management policy.

Information architecture consists of processes and schemes of organization, structuring, formalization, navigation, processing and movement of information in management system and beyond its borders. This is much wider than usual structuring of data. This is setting of information space that is environment for implementation of all business processes of tangible and intangible character, which provide enterprise activity and contribute to its following of concept of sustainable development. Core position at increase of business informativeness and further implementation in development strategy of universal platform for processing, transmission and storage relevant information for making decisions inherent to initiative of modification information architecture.

Principle of systemic congruence (conformity, coherence) is one of main principles for setting up general architecture of enterprise, especially in its information aspect that in context balancing of elements management system means necessity coordination of interconnections between such elements of management system as goals, structure and organizational culture. Among other obligatory principles that regulate complex construction of information system, it is necessary to indicate mandatory single database for all algorithms of information process. This contributes to avoiding duplication of information, since parallel configuration of different databases can breaking information security and, as consequence, affect on effectiveness of information provision of managing an enterprise.

Architecture of information provision of management and its structure are not identical notions. Structure of information provision of managing an enterprise is formed from complex of technical and technological instruments, communications and documentary array of organizational and methodological, financial, economic and technical purposes, professional competencies. Architecture is not group of components, but unique idea, basis of which is un-
derstanding of preferences, interests, future work, expectations, development prospects, individual characteristics of core user that represents all internal organization of object of management. Integration of different points of view of management apparatus in some way reflects hidden constructive part of organization of information that contains exceptional features of each participant and is environment of movement of their intelligence, culture, motivation, own ethical norms and rules. In architecture, integrated connections has not technical, but above all intellectual character that contributes to continuous reproduction of innovations, methods and approaches to organization of information environment of enterprise.

Architecture is order of magnitude more complex notion. For its construction is necessary to understand logic of information provision of management, which should be adapted to reality of particular business, and establish appropriate information security. Is necessary to organize complex of information-related and information-dependent functions, to define main mission of all tasks of managerial, production, economic, project character, arrange all modes of receipt, modification, processing, movement and transmission of information. At explicit functional character the architecture of information provision of management has organizational structure, in which its functional parts, technological and hardware are organically combined, principles of designing, debugging, monitoring of information lines are organized.

Centralized data processing is the basis of architectural structure information provision of managing an enterprise that: maintains processes for automated accounting with support for technical processing and data monitoring; carries out processing of normative and reference information; performs function of updating information with filtering of data according to criteria of time, quality, quantity, materiality, etc. Objective centralized data processing is effective redistribution of functions of information service to synchronize processing, transmission and storage of information.

Effectiveness of enterprise activity depends on effectiveness of its information activities, which is complicated by global scale of
information development of economy with its transition to qualitatively different state, for which inherent complex of changes and innovations. Organization of informational activities involves its processing that requires appropriate methodological approaches to evaluation and control for increase informativity of data concerning making decisions. Effectiveness of chosen managerial alternative is determined by quantitative and qualitative parameters of information provision of management, analysis of which makes it possible to evaluate effectiveness of its implementation in managerial decisions and timely development of necessary measures concerning mobilization of information potential and substantiation of economic expediency of costs for processing, transmission and storage of information.

Result of enterprise activity directly depends on policy of information management, developed model of information environment and level of costs incurred in formation, maintenance, development and implementation of relevant information. Real result of enterprise activity can be estimated on basis of complex of information that influences on management decisions, which are regulated business processes.
Conclusions section 3

Effectiveness of enterprise activity depends on various factors, among of which information occupies last place that adversely affects the development of managerial decisions. Enterprises should not ignore information provision of management at forming strategy and organizing of business processes. Exactly information has qualitative parameters that can improve results of activity and ensure sustainable development of enterprise. Measures, politics, risks, cognitive distortions that are complex of organizational regulators are affected on effectiveness of information. Necessity of improve the effectiveness of information provision of management as instrument of impact on conclusions, decisions, processes and conditions of activity acquires of particular relevance. Recommendations for modeling of information provision of management are formulated, necessity of defined of reasons for occurrence of risks concerning information management is substantiated, scenarios of risk management are developed, recommendations for reducing cognitive distortions in the information management system are proposed in section to improve effectiveness of information provision of management. Main conclusions and results that obtained in third section of monograph are as follows:

1. Individual model of information connections is inherent every enterprise that is manifested in organization of information provision of management, which is formed by certain combination of data that gives for its the distinctive features and features, which reflect the business model of economic entity, complex of its management templates and scenarios of development. Essence of cognitive distortions is determined and their impact on information and analytical provision of management is characterized. Cognitive distortions can be managed, for this the map for different types of distortions is developed that allowed to promptly adjust information provision of management.

2. Personalized model of information provision of management is formed that allows to control managerial decisions according to
their tactical and strategic character. This contributes to additional benefits at forming information for making decisions with reaching balance between state of information environment of economic entity and prospects for its development by mobilizing information potential to increase argumentation and efficiency of managerial decisions.

3. System of parameters for evaluation of efficiency of information provision of management, on basis of which is measured effectiveness of relevant data at levels of enterprise management is formed. Evaluation is implemented at all stages of information process that consists in sequence of information forming stages for its analytical processing, determining economic feasibility of phenomena and processes of enterprise with detection of level of preservation of owner’s property and their impact on financial and economic result. Implementation of system of parameter contributes to identification of reserves and development of measures to increase effectiveness of information by levels of its using and impact on results of enterprise activity.

4. Is substantiated that model of target information provision of management expedient to make to take into account properties and characteristics of enterprise model at forming of information for making decisions. System approach to processing, transmission and storage of data is basis of model of information provision of management. Tasks of development of enterprise activity are main system-forming factors, because exactly tasks determine content and rational option of processing information from internal database and external information resources.
CONCLUSIONS

Theoretical research is made and scientific problem of compliance methodological and organizational basis of information provision of management to modern tendencies of economy modification is resolved in monograph. Proposals for increased information system of enterprise with managing information risks and improving effectiveness of information to make right managerial decisions has been developed for this purpose. Most significant results that characterizing conclusions and proposals of scientific research are as follows:

1. Individual vector of development need to be determined for enterprise taking into account strategy of transformation, value of business, purpose of activity (meaning and causes of existence). Enterprise development scenarios in accordance with temporal and spatial context of its activities are developed taking into account impact of factors, conditions, principles. Enterprise during formation of development scenario guided by choice, changes and context, namely by circumstances, factors and conditions (context), in which economic entity is carry out and develop activity. Availability of choice contributes to assessment advantages and disadvantages of option selected management scenario, elements of which are updated and modified according to actual conditions of internal and external environment of enterprise activity.

2. Formation of management scenarios is carried out in accordance with principles that are theoretical foundations of laws, standards, and postulates with defining general and individual characteristics, observance of which is a necessary condition for normative and methodological provision of enterprise activity. Principles for handling hypotheses of management and formation of reaction models for events and phenomena taking into account risk management are suggested. Such principles contribute to coordination of decisions concerning activity and development of enterprise that allows to establish effective information relations between management subsystems. Implementation of proposed principles involves
identifying and continually reproducing in information provision of managing an enterprise the core constraints that focused on forming of universal information, which contributes to increasing variability of managerial decisions.

3. Enterprise development model, in which information relations, communication links and information architectonic of making decisions are reviewed and updated is changed based on active dominant of new paradigm economic development. Distinctive feature of modern information and analytical provision of managing an enterprise is actualization of its organizational and technological structure that provides streamlining of information flows, structure, relationships with implementation process of coordination and cooperation in reactive and proactive development strategies. Grid of information and analytical provision of managing an enterprise has been developed, in which three zones of information provision of making decisions according to typology of Knowledge Bases, which are characterized by combination of factors management that correspond policy of managing an enterprise, its mission and development strategy are allocated.

4. Constructing of management is carried out, as a result of which models are generated which are complex integration structures of information images, professional competencies, temporal and spatial context of enterprise activity that while solving of defined task is transformed into decision. Development and implementation of management decisions involves the use of scenario approach, logic of which revealed in the alternativeness constructions of decisions and models of response to impacts of external environment. The radius of management impact varies according to the time and spatial context of enterprise activity, basis point of which is future because especially for future decisions and strategies are developed.

5. Management of competencies carried out based on development of methodological, organizational, informational basis of economic and social relations in internal and external environment. This is system of certain value, conceptual, organizational, methodological factors that determine intersubjectivity of sphere
enlargement of competencies. Map of competencies management is formed for decision options according to defined hypothesis, what is personalization of attributes enterprise. Most optimal variant is determined according to the time and spatial context of enterprise environment with using the map of competencies management. Competencies management is a definition and implementation of potential that is located in knowledge, skills, experience, technology, intuition.

6. Technological decisions contribute to efficiency of information and analytical process with new level of servicing corporate database, in which accumulates information that is needed for management decisions. It is actualization of information process in developed, flexible system that is organized as internal network structure, which operatively reacts to changes of internal and external environment with increasing rate of reaction for forming quality management information.

7. Forming the base of accounting information is necessary to make based on Big Data Concept that is the new direction of modification technologies of servicing of forming, transfer and storage data. Organizing expanded technological base with actualizing accounting process is appropriate. Using Big Data is potentially effective tool for increasing analyticity of information through its segmentation that stimulates dynamic of accounting process to provision of multivariate and flexible managerial scenarios for implementing decisions.

8. To provide effectiveness of information should be determined in a timely manner, which decisions are really strategic, and therefore, to form a personalized model of information provision of management. Tactical and strategic managerial decisions have different information provision, created and implemented according to different levels of guiding influence. Primary information and analytical data taking into account probable impact of information risk are enough for tactical managerial decisions. Tactical decisions are developed for operational management based on information monitoring without complication of information process.
9. Productivity of business processes is result of obtaining economic benefits from information, which indirectly embodied in managerial decisions that are developed for expanding activities, formation of financial base, cash flow management and offers of strategy of investment attractiveness. Understanding significance of search of rational measuring of efficiency of information caused actualization of methods of its measurement and evaluation. Evaluation is implemented at all stages of information process that consists in sequence of information forming stages for its analytical processing, determination of economic expediency of phenomena and processes of enterprise with revealing level of preservation of property of owner and their impact on financial and economic results.
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