



Integrated Marketing Information and Communication System: New Quality of the Communication Interaction

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ABSTRACT

The control system of marketing functions in real time. Therefore, to reduce the degree of uncertainty and risk, the company must have reliable, correct, sufficient and timely marketing information. Market research and obtaining the necessary information allows us to assess their capabilities and determine the target market segments, which leads to the profit increase. Therefore, special employees find out what information about the market first are necessary for heads of various ranks, and design marketing information and communication systems. The marketing information and communication system includes subjects, equipment and procedures of collecting, sorting, analysis and assessment current and accurate information used in making marketing decisions. The role of marketing information system (MIS) consists in definition of information needs for marketing management, its receipt and timely provision of the relevant managers. In article based on the critical analysis of concept definitions of the commercial organization MIS and taking into account current trends of its functioning, development and transition to the integrated marketing information and communication system is reasonable. Definition of the last is given, the principles are concretized and the algorithm of its design and introduction in business processes of the enterprise is developed.

Keywords: Marketing Information System, The Integrated Marketing Information and Communication System, The Principles and Algorithm of Design and Introduction

JEL Classifications: L23, M1, M31

1. INTRODUCTION

The economic agents commercial success in the hostile competitive environment at the domestic and international levels bearing on itself negative consequences of globalization in overwhelming cases is caused not only by the ability to use collecting effective means, systematization and the information volume analysis, but possession of "clever" technologies and expeditious acceptance of decisions on the basis of the gained knowledge (Crawford, 1997). Reducing timing management of the commercial organization, within which the development, adoption and implementation of effective management solutions, is organically linked with the processing of large volumes of relevant marketing information about various aspects of internal and external environment of the enterprise. The implementation of this informational function rightly associated with modern marketing information system (MIS).

However, operating experience of MIS in commercial organizations shows their limited communication capabilities in a variety of IT environments and weak cumulative power in the formation of the marketing potential, it is necessary to ensure flexibility in the organization in a changing market environment. This is due primarily limitations of existing approaches to the design and implementation of MIS. Today, essential elements such as marketing system that will not only allow to provide content business process relevant information are necessary. They should prepare and implement a new competence for the commercial organization in the interaction process with the customer at the expense of integration in different environments. Ultimately, they need to create a uniform for the producer (seller) and consumer senses (common values) in a shorter period in order to achieve mutually beneficial results of these economic agents.

2. THE DEFINITION OF INTEGRATED MARKETING INFORMATION AND COMMUNICATION SYSTEM (IMICS)

In order to establish compliance with existing notions of MIS, a critical analysis of a number of scientific papers was carried out to set out the provisions of it as an important tool (technology) of marketing (Cox and Good, 1967; Smith et al., 1969; Lucas, 1994; Crawford, 1997; Kotler and Armstrong, 1991; Jobber, 2009; “AMA Dictionary”, 1995; Rozhkov, 2013; Kotler and Keller, 2013; Oyner, 2001; Mkhitarian, 2006; Yakunin, 2005; Kovalyova, 2006; Bazzel et al., 1993; Shilovsky, 2006; Malkhotra, 2002). As a result, the inherent shortcomings were revealed and the author’s position concerning the basic elements demanding the reflection in the studied object was created: (1) MIS components and structure; (2) functionality of MIS, tools and means of its realization; (3) main objective of MIS functioning; (4) sources, which operates on the basis of MIS; (5) characteristics of information accumulated in MIS; (6) parameters of MIS functioning (on a regular, planned basis); (7) necessary conditions of MIS effective work. Together with the aforesaid, an intensification of two interconnected tendencies of the commercial organization MIS functioning consists in: (1) Activation of its communication function and (2) the need for updating MIS implantation in endogenous and exogenous enterprise information networks (intra, extra and internet), determined the need for a change of MIS name in accordance with the newly identified features on its substantial features on the IMICS. The last should be determined as a set of integrated into the intra-, extra-, internet-structured interconnected elements (technically and technologically educated personnel, organizational, technical and technological, program, methodical providing) interacting (in a uniform motivational field of the organization development and resources rational use) for collecting (including by means of communication interaction with the consumer), processing, the analysis, storage and expeditious representation on a regular planned basis in the demanded volume and a form in compliance with management needs of relevant information (Oleinikova et al., 2016) on the enterprise external and internal environments for the interests of development, acceptance, realization, control and updating of administrative decisions for all directions and spheres of its activity, and implementation of communication interaction with subjects of the commercial organization marketing environment with the aim of gaining its competitive advantages.

The offered interpretation, in our opinion, allows to discover the IMICS essence fully, having reflected all basic elements taking into account current trends of media and communication development.

3. IMICS DESIGN AND IMPLEMENTATION PRINCIPLES

IMICS design and implementation of the commercial organization are the key stages of marketing information and communication functions realization. It is caused by that the designated stages act the first in process of information and

marketing ensuring activity of the organization. Mistakes during their implementation can lead to full dysfunction of IMICS and, therefore, to need of its fundamental reorganization that will demand considerable expenses of time, financial, labor and other types of resources.

The objective (market) assessment of IMICS design quality and its introduction in business processes can be given only on the basis of practical results of its use, however, to assess the adequacy of its functionality and tools for goal-setting organization can be given only by checking compliance with the latest principles of construction and commissioning IMICS in the managing subject activities.

The marketing development principles information analysis (information and analytical) systems presented in scientific literature and their integration into the enterprise business processes (Oyner, 2001; Bazzel et al., 1993; Bagiyev, 2007; Gnezdova, 2005; Mamychev et al., 2016; Bliznuk, 2008; Kharkov, 2014; Klochko et al., 2016; Novikov et al., 2015) revealed a number of shortcomings: Excessive abstractness (S.V. Mkhitarian, Yu.V. Bliznuk, V.P. Kharkov, O.K. Oyner), not allowing to use fully them as the guide to action; fragmentariness (Gnezdova; Bazzel et al.), consisting in that, they cover only separate aspects of realization process of information and communication functions of marketing.

Thus, there was a need for specification of the contents and structure of the IMICS creation principles of interconnected and complementing each other. The principles specified on structure and the contents, being put into the basis of design and implementation IMICS, on the one hand, will significantly reduce the likelihood of errors in the implementation of these steps and, thereby, increase the efficient use of resources, aimed at building and integration IMICS the internal environment enterprise, on the other hand, to realize the mission IMICS as a system integrator and innovator in the marketing of the commercial organization system (Mishulin, 2013; Mishulin and Taranukhin, 2016; Shchepakina et al., 2015). Besides, classification of the concretized principles, depending on degree of their integral and functional belonging to separate processes of marketing information and communication problems implementation (Table 1), is executed.

The knowledge formed due to the principles given above and their classification allows to provide complexity of stages maintenance and all realization stages of marketing information and communication functions, to consider plurality of criteria at realization of process approach in construction and introduction of IMICS.

The offered approach with the insignificant adjustments caused by the activity specifics of the commercial organization and the functioning environment can be used in the modern business practice as the guide to action, because it takes into account the sequence of the operations and processes for the IMICS design and its implementation in the information model of the economic entity.

Table 1: Classification of the design and implementation principles of the IMIKS commercial organization

The basic establishing principles

1. Motivation of the enterprise management and staff in the development, implementation and ensure the efficient functioning, and permanent improvement of IMICS innovation;
2. Definition of strategic/long-term, tactical/medium-term and quick/short-term goals of the company;
3. The individual characteristics of the business processes establishment that take place within the framework of pre-acceptance, sphere specifics of its activities and operational environment, as well as the degree of variability;
4. IMICS modular design as a whole and its organizational, technical and technological, software and methodical provision, in particular;
5. IMICS compatibility with other components of the CIS of the enterprise at different levels of information networks (intra-, extra- and internet);
6. Standardizing and commonality of IMICS procedures and tools;
7. Determinism of the enterprise information model and its features, a clear understanding of the IMICS past developers and potential users.

The recourse filling principles

1. Correlates the information needs of the enterprise with its capabilities and resources;
2. A minimum level of certainty competencies (knowledge, skills, experience) potential user needed to work effectively with each IMICS module individually and the whole system;
3. IMICS focus both on external and internal sources

The functionally focusing principles

1. Functional distinctiveness of the IMICS enterprises and conditioning means and instruments of its implementation;
2. Correlate the features and potentials of improving all IMICS elements;
3. IMICS provision of appropriate to its functions, methods, and tools processing and information analysis, as well as the means of its storage and presentation in the required form

The communication adapting principles

1. Determinism of the enterprise information needs as a whole, and its individual structural units, in particular;
2. IMICS focus on use for information collection as continuous marketing supervision (monitoring) of the enterprise environment, and periodically conducted (dot) market researches of various aspects of the last;
3. Complexity of the qualitative information characteristic of IMICS in various aspects both endogenous, and exogenous environments of the enterprise;
4. Formalization and volume of information contained in IMICS;
5. Openness and availability of information provided in IMICS according to information requirements of functional divisions of the enterprise, hierarchy of a control system and the level of information networks (intra-, extra- and the internet);
6. Automation of information and document flow within the IMICS enterprise operation.

The principles of productivity control and assessment

1. The validity of IMICS economic efficiency;
2. The controllability of relevance, reliability, completeness of information arriving and containing in IMICS, its securities from unauthorized internal and external accesses

CIS: Corporate information system, IMICS: Integrated marketing information and communication system

4. ALGORITHM OF IMICS DESIGN AND INTRODUCTION

IMICS design needs to be carried out according to the certain sequence of stages, their interrelations and conditions of realization including reflecting the principles of IMICS construction and implantation designated above on endogenous impact of the economic subject and in its information networks of various levels (intra-, extra- and internet), which have to be observed to its developers. The previously mentioned is a key requirement for achieving target levels of efficiency and reliability of the information and communication functions of marketing, as well as providing start-up on their implementation of the system on time and within budget. The decision is subject to the designated tasks developed by the authors of the algorithm design and implementation IMICS commercial organization (Figure 1).

The intentions implementation to build and input IMICS in the organization activities it is advisable to start with the definition of how to implement these changes in its internal environment focused the overwhelming part of the management and staff of the managing entity, taking into account fixed in the organizational structure of the organization hierarchy management. If the majority of senior and

middle managers of commercial organizations are not motivated in the desired extent in the design, implementation and effective functioning, as well as continuous improvement of IMIKS, then proceed to the implementation of this project is not appropriate, as the overcoming of barriers would entail serious costs.

The maintenance of the blocks of actions and blocks of conditions is given in Table 2.

These arguments are confirmed by the current practice of the entrepreneurship. According to statistics, about 75% of the commercial organizations implementing reengineering occurring in the business processes, to which the pronoun refers undoubtedly IMICS design and implementation, did not get a positive result at all, or it was significantly different from the expected management companies (Alesinskaya, 2005; Sozinova et al., 2016; Silnov, 2016). At the same time one of the most common factors as low efficiency of re-engineering within the framework of economic entities is called the resistance offered by the staff planned and/or put into practice changes, the reasons and means and instruments to overcome which a lot of works in both the scientific and business literature are presented (Stepanov, 2015; Mardanov, 2009; Shipilova, 2004).

Figure 1: Algorithm of integrated marketing information and communication system design and introduction of the commercial organization

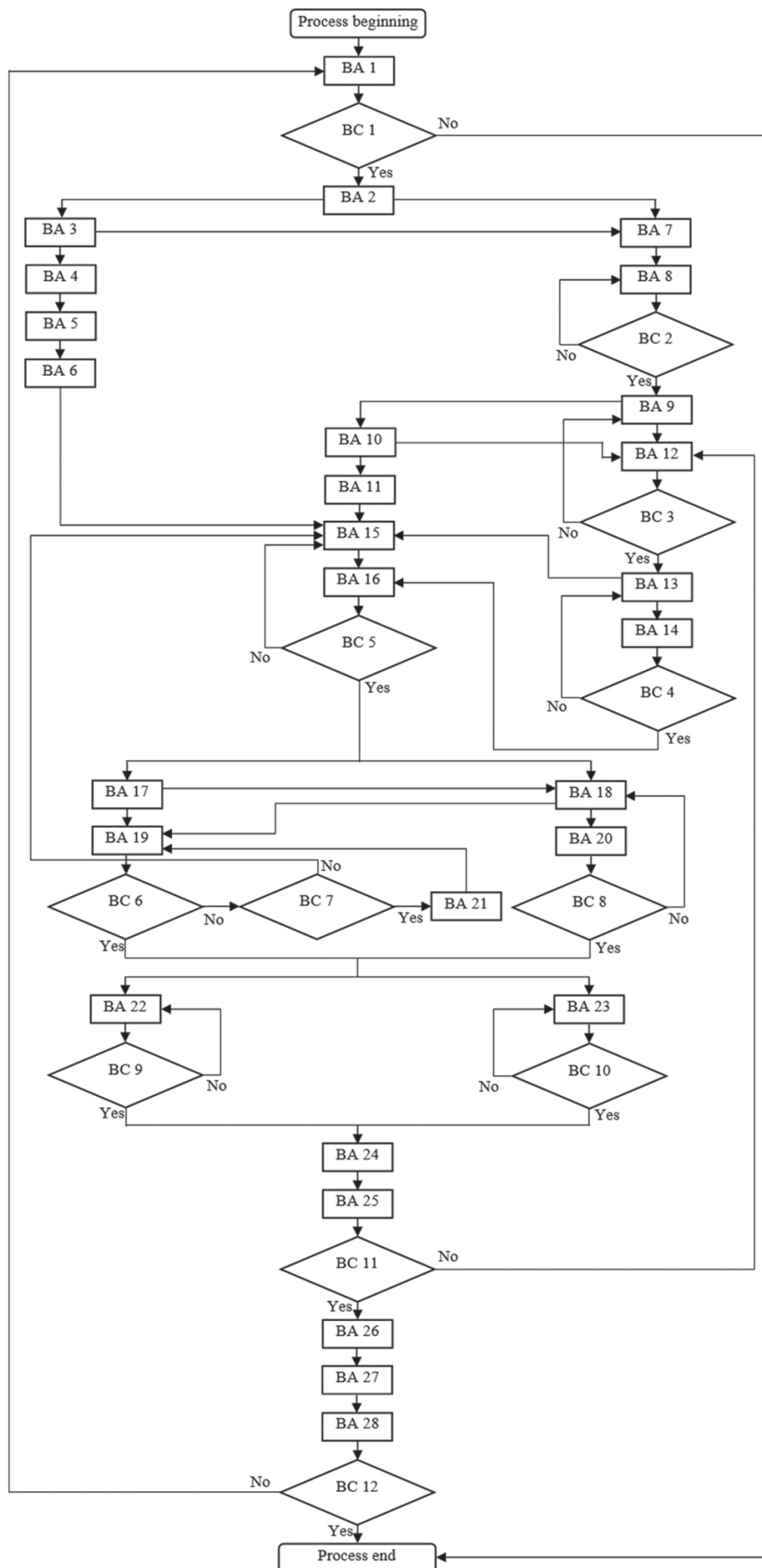


Table 2: The maintenance of blocks of design algorithm and IMICS introduction of the commercial organization

Block title	Block maintenance
BA 1	Assessment of the commercial organization management and staff motivation in the design, implementation and effective functioning, as well as the permanent modernization of IMICS
BC 1	The commercial organization management and staff sufficiently motivated for designing, implementing and maintaining effective functioning, as well as the permanent modernization of IMICS?
BA 2	Specification of strategic/long-term, tactical/medium-term and operational/short-term goals of the commercial organization activity
BA 3	Identification of individual characteristics of the business processes that take place within the commercial organization framework, the specifics of its operation areas and media functioning, as well as the degree of variability of the last
BA 4	The determination of the commercial organization marketing potential level, as well as factors, means and instruments of its implementation
BA 5	The assessment of the marketing integration degree (embedded) in innovative and resource-saving processes of the commercial organization
BA 6	The determination of the commercial organization information model and its features, ensuring distinctness of understanding of the last with developers and potential users of IMICS
BA 7	The commercial organization information needs determination as a whole and its separate structural divisions, in particular
BA 8	Checking the information needs of the structural divisions impersonate-profit organization with their functionality
BC 2	Does the information requirements of structural divisions of the commercial organization correspond to their functionality?
BA 9	The definition and statement of formal, substantial aspects of providing and submission of information to certain users and their groups
BA 10	The determination of external and internal information sources
BA 11	The ranking of information sources on the basis of their compliance with the commercial organization facing challenges, as well as the degree of accuracy, completeness, relevance of the information contained therein
BA 12	The assessment of the correlated information needs of the organization with its capabilities and resources
BC 3	Does the commercial organization information requirements sufficiently correspond to its opportunities and resources?
BA 13	The IMICS functional determination, as well as tools and means of its implementation
BA 14	Check of IMICS security corresponding to its functions, methods and tools of collecting, processing and the information analysis, and means of its storage and representation in the required form
BC 4	Is IMICS provided corresponding to its functions, methods and tools of collecting, processing and the analysis of information, and means of its storage and representation in the required form?
BA 15	The IMICS set of elements determination that aim to ensure effective implementation of its functions on the basis of available labor, organizational, technical and technological, software, methodical providing
BA 16	The assessment of correlate features and improvement potential of the IMICS elements
BC 5	Are functionality and potentials of improvement of the IMICS elements correlated?
BA 17	IMICS model development
BA 18	The definition of the software, information technologies and means of implementation IMICS
BA 19	The determination of the competences minimum level (knowledge, abilities, skills) the potential user necessary for effective work with each IMICS module separately and system in general
BA 20	Check of IMICS compatibility with other components of a CIS of the commercial organization at various levels of information networks (intra-, extra-and the internet)
BC 6	Do the potential users of IMICS have the minimum level of competences (knowledge, abilities, and skills) necessary for effective work with each its module separately and with system in general?
BC 7	The commercial organization has the resources necessary to ensure the training of the potential IMICS users working with each its module separately and with system in general
BA 21	The study of potential IMICS users in work with its every module individually, and the system in general
BC 8	Does IMIKS compatible with other components of the commercial organization CIS at different levels of information networks (intra-, extra- and internet)?
BA 22	The assessment of the access mode compliance to information provided in IMICS, information requirements of functional divisions of the commercial organization, hierarchy of a control system by them and to levels of information networks (intra-, extra-and the internet)
BA 23	Checking the efficiency and reliability of the control system relevance, reliability, completeness of information arriving and containing in IMICS, its securities from unauthorized internal and external accesses
BC 9	Does settings and open access correspond to information, presented in IMICS meets the information needs of the commercial organization functional units, management system and hierarchy of information networks levels (intra-, extra- and internet)?
BC 10	Is the monitoring system of relevance, reliability, completeness of information arriving and containing in IMICS, its securities from unauthorized internal and external accesses capable to provide permanently demanded level of information security?
BA 24	The methodical approach development to an assessment of the IMICS functioning efficiency of the commercial organization
BA 25	The assessment of the IMICS functioning efficiency of the commercial organization
BC 11	Does the IMICS of the commercial organization function effectively?
BA 26	The completion of the IMICS design process of the commercial organization
BA 27	IMICS implementation in the structure, business processes and information model of the commercial organization
BA 28	Check of IMICS reliability of the commercial organization and stability of its functioning in the regular mode
BC 12	Is IMICS of the commercial organization sufficiently reliable and its state in the regular mode of functioning is stable?

CIS: Corporate information system, IMICS: Integrated marketing information and communication system, BA: Blocks of actions, BC: Blocks of conditions

If the motivation degree of the management and company personnel vast majority to make changes in the information and communication component of its activities as a result of the measures taken to rise to the required level or initially will match it, then you can proceed to the next stage of IMICS development and implantation, is to clarify its objectives as a strategic, tactical and operational as characters (long, medium and short term).

After the various purposes of the commercial organization are established and brought in the demanded form to the attention of all labor staff of the enterprise, its management and the IMICS developers will be able to start realization of two following stages: (1) Definition of peculiar features of the business processes proceeding within the economic entity, features of spheres of its activity and the environment of functioning, and the degree of variability; (2) identification of information needs of the market agent in general, and its separate functional units, particular.

Within the first actions vector (Silnov and Tarakanov, 2015), taking into account the established exclusive aspects and exogenous conditions of the commercial organization activity, the level of its marketing potential, and the factors, means and tools allowing to open the last most fully is determined. Among factors of the enterprise marketing capacity realization of the special importance at the present stage of the economy development and technologies is gained by the innovations capable to provide growth of use efficiency of available different economic entity of resources. The most important condition for improving the innovation degree and, as a result, profitability is the system of innovations commercialization on the market, the effectiveness of which is provided by marketing, to create the appropriate support, including information and communication. Qualitative characteristics of the latter influences the success of the innovation introduction into real business practice, determined by the integration degree of marketing in the innovation system of a commercial organization. Further, proceeding from the established features of the enterprise internal environment, its activity sphere, external operating conditions, and taking into account the revealed level of marketing potential of the economic agent and the marketing embedded degree in its innovative system, which is the driver of disclosure of the designated potential information model (Kunelbayev et al., 2016) of the market subject developed to provide which effective functioning by means of harmonious integration with it and intended to IMICS.

In the second stage of the above-mentioned need to check the correspondence newly, established information needs of departments and their functions. In the event of discrepancies, as follows from the above algorithm, the cycle repeats.

The next stage of IMICS design and implementation logically continues the previous series, and reflects the essential aspects of the described vector action, to determine and approve the formal and substantive aspects of the software, as well as the presentation of structured information to specific users and groups, that is, to meet their information needs. At the same time the enterprise management and IMICS developers need to set the information

support parameters of potential users such as the functional orientation information, the nature of their content, the medium of finding the study object, comprehensiveness of coverage of the latter and the detail level of its descriptions, used system of measurement form and presentation mode structured data, the frequency of their receipt and updates, etc.

By the enterprise administrative personnel and the IMICS developers, the resource providing necessary for collecting, processing, analysis, storage in the demanded volumes and representations in the these required forms containing in the selected sources on the basis of what the assessment of correlated information degree the economic subject needs with its opportunities and reserves, is given and defined with earlier established list of information sources on various aspects and endogenous environments of the commercial organization. If discrepancy between the designated parameters takes place, the cycle is repeated, the balance between the specified elements will not be reached yet.

On the basis of the determined information requests of the enterprise, its departments (services, departments), and proceeding from earlier allocated and ranged internal and external data sources necessary for their satisfaction, the functionality of IMICS, means and instruments of its realization is specified. After that management of the commercial organization and designers of system estimate equipment of IMICS by methods and tools of collecting, processing and the analysis of information, and the means of its storage and representation in the demanded form corresponding to the tasks which are carried out by it. In a case when during check it is found out that, IMICS is not provided methodically and instrumentally in necessary degree, the cycle is repeated. On reaching the established criterion work within the described stage comes to the end and is carried out to action for determination of the IMICS elements in total allowing to provide productive realization of its functionality based on the available resource providing.

After the developed system components set is established, the enterprise designers and management carry out an assessment of functionality and potentials of improvement of the IMICS elements. Existence of essential differences in functionality and potentials of the system components modernization, which are not connected with features and exogenous conditions of its activity, and with specifics of the commercial organization operating information model, can become the reason of formation of the disproportions capable to undermine operability of system in general and its separate modules, in particular. Correction of the revealed deviations possibly by means of entering of the corresponding adjustments into earlier established set of the IMICS elements and parameters of the last.

Rather equal level of functionality and potentials of the system components improvement is a necessary condition for transition of its management and the IMICS developers to implementation of actions in two interconnected directions. The first of them consists in the IMICS model formation. Within the second direction the program environment, information technologies and technical

IMICS implementers on which, in turn, depends not only overall performance of the developed system in general and its separate modules in particular, but completeness of its compliance to requirements of potential users is defined.

Continuation of the first of the management actions directions of the enterprise designated above and the IMICS designers is the determination of a minimum level of potential users' competences. In a case when competence degree of the potential users is insufficient, correction of a set of the IMICS elements, and character and level of its providing is carried out or training of future users is organized.

If the selected software, information technology and technical means of IMICS realization provide its automated compilable at the desired level with the other modules of CIS economic entity and at the same time they are at the minimum required level mastered potential users of the designed system, its developers, and commercial organizations management can begin to carry out parallel works on conformity assessment regime on access to structured information accumulated in IMICS databases, the information needs of the functional units, the control system of hierarchy and levels of its information networks (Intra-, extra- and Internet), as well as to verify the effectiveness and reliability of control systems relevance, accuracy, completeness of incoming and stored in IMICS information, its protection against unauthorized internal and external access.

Within the following stage of the described formation and introduction, process of IMICS on endogenous environment of the commercial organization decisions or on modification need of the information requirements ratio of the enterprise and the resources located by it, or on completion of realization system design of information and communication marketing functions are made. In a case when during the assessment efficiency of IMICS functioning is established, works on its introduction in structure, business processes and information model of the market agent begin. Then check of the information support system reliability of the economic entity and its communication interaction with representatives of the marketing environment and stability of its functioning in the regular mode is carried out. If any deviations become known, all process of IMICS design and introduction repeats anew if the system is sufficiently reliable and its state in the regular mode of functioning is stable, the characterized process comes to the end.

The presented algorithm allows us to implement a comprehensive approach to the development and the information support system input of the interaction and communication in the company activities, providing registration of its main aspects, such as: (a) The set of IMICS elements and functional relationships between them; (b) the complete list of its functions; (c) the marketing potential level of the entity and the degree of its involvement in innovative and resource-saving processes; (d) IMICS involvement in the management cycle of the economic entity; (e) spheres of potential use of information accumulated in its databases.

5. CONCLUSION

Compliance of the realized actions of the economic subject head of and the system direct developers intended for the solution of the marketing information and communication problems, to the principles given above and algorithm significantly reduces probability of an assumption them mistakes and, as a result, provides effective use of different types of the resources directed on formation and input of IMICS in the commercial organization business environment.

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