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СИНЕРГЕТИЧЕСКИЙ ПОДХОД К ПОСТРОЕНИЮ СИСТЕМЫ УПРАВЛЕНЧЕСКОГО УЧЕТА

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A SYNERGISM APPROACH IN THE MANAGEMENT ACCOUNTING

Аннотация

Актуальность. Характерным признаком развития управленческого учета в конце XX – начале XXI века стали процессы взаимодействия с другими науками, так называемый «эффект синергизма», когда объединение сведений из различных областей знания позволяет создать новую теорию, невозможную в рамках одной науки.

Методы. Методологической базой исследования является диалектический метод познания предмета исследования, предполагающий изучение экономических процессов в их развитии и взаимосвязи; исторический и логический подходы; общенаучные методы исследования – наблюдение, группировка, обобщение, системный подход, комплексность, анализ и синтез.

Результаты. В статье обоснована необходимость поиска возможностей совершенствования кросс-функционального взаимодействия двух подсистем – управления и управленческого учета. Это взаимодействие может выражаться как в междисциплинарных исследованиях, так и в создании кросс-функциональных команд, обеспечивающих успех инновационных проектов по совершенствованию бизнеса.

Перспективы. Научный поиск в области менеджмента в настоящее время направлен на развитие стратегического, инновационного и процессного подхода в управлении, внедрение которых на практике требует реинжиниринга бизнес-процессов. Система управленческого учета должна обеспечивать информационно-аналитическую поддержку таких проектов. Условием для успешного внедрения новейших методов управленческого учета является позиционирование бизнес-структур как открытых синергетических систем.

Ключевые слова: управленческий учет, информационные системы, синергетика, интегрированные информационные системы.

Abstract

Introduction. In this paper we consider a new tendency in development of the management accounting, which called «the synergism effect» as the data integration from the various knowledge fields for creating the new science theory and methods.

Methods. Methodological basis of the study is the dialectical method of cognition research subject, involving the study of economic processes in their development and relationships; historical and logical

approaches; scientific methods of research – observation, grouping, aggregation, systematic approach, complexity, analysis and synthesis.

Results. The article draws attention to the need to find ways of improving cross-functional interaction of two subsystems – the management and the management accounting. This interaction can be expressed as a cross-disciplinary research, and the creation of cross-functional teams to ensure the success of innovative projects to improve the business.

Discussion. Research in the field of management now aims to develop strategic, innovative and process approach to management, the introduction of which in practice requires business process reengineering. Management accounting system should provide information and analytical support to such projects. Prerequisite for the successful introduction of new methods of management accounting is to position businesses as open synergetic systems.

Keywords: management accounting, information technology, synergism, Enterprise Resource Planning system (ERP).

Introduction. In the end of the 20th – at the beginning of the 21st century the interaction processes between the different sciences, so called «the synergism effect», have been become the main stream of management accounting development, when the data integration from the various knowledge fields is being permitted to be created the new theory which is quite impossible in the framework of only the one science. Essential influence on the management accounting development was rendered by the economics, the management theory, the information science, the cybernetics, the philosophy, the mathematics.

Deepening mutual areas of scientific activity is the result of two divergent processes - integration and specialization of scientific knowledge in the modern world. Today, on the one hand, economists continue to search for a common denominator to various accounting systems, international rules are developed to standardize. At the same time, the development of the world market, economic and social relations of production and information technology in the twentieth century led to the emergence of new kinds of international practice of accounting: tax, management, macroeconomic, megaeconomic, social, environmental, creative [1, p. 56].

Research in the field of management now aims to develop strategic, innovative and process approaches to management, the introduction of which in practice requires business process reengineering. Management accounting system should provide information and analytical support to such projects. Prerequisite for the successful introduction of new methods of management accounting is to position businesses as open synergetic systems.

Purpose. The article aims to justify the theoretical and methodological bases use the synergistic approach to building management accounting system

Methods. Methodological basis of the work is the dialectical method of cognition research subject, involving the study of economic processes in their development and relationships; historical and logical approaches; scientific methods of research – observation, grouping, aggregation, systematic approach, complexity, analysis and synthesis.

Results. Strategic approach to planning, the accounting and the analysis. In the 50-es the twentieth century the choice of the efficiency criteria has been considered after the economic theory in the accountancy. At the beginning the enterprise profit maximization has been appeared as the special-purpose target. So, the utility principle for the decisions making, having formulated in the economic theory, has been used in the management accounting. Later on, the approach suggested by the American Rochester School, at which all the

business participants profit maximization has been announced, as the business foremost target. The main point of this theory was the statement that the firm is the set of the implicit and implied agreements between the selfishly acted sides and so «the rational decisions making theory» is being laid in the basis of the management choice.

And, moreover, the other newest developments in the management theory have been applied in management accounting: «the representation theory», «the agency relations theory». Thus an owner acts in the principal's role, and the company's business managers – in the agents' role by their errands carrying out. The contractual expenses called transaction expenses settle into the central role. For all this, the management accounting information acts as contingency rundown factor so the transaction expenses can be reduced.

The new approach of the management is connected with the harmonious and the balanced firm's development. The specialists in the management accounting research new possibilities of the data preparation for these targets.

One of the balanced development instruments is the system called «Balanced Score Card» (BSC). In order to improve the methods of performance appraisal of business segments with balanced scorecard, it is suggested to use different weighing coefficients for separate organization development directions that consider the level of current achievements of business segments. R. Kaplan and D. Norton consider that the Balanced Score Card allows to coordinate a strategy of the enterprise with operative activities. Besides, the BSC gives an opportunity to make more objective decisions in the distributing of resources. The Balanced Scorecard includes not only traditional financial indicators reflecting the information about last events. R. Kaplan and D. Norton wrote in their book: «This information was sufficient for managers in conditions of the industrial economy, when investments in long-term possibilities and relations with consumers were not critical factors for success. Financial indicators are insufficient in conditions of an information economy when the companies should increase the future effect working with the consumers, suppliers, workers, new technologies and innovations» [2, p. 12].

Traditional systems of the management accounting are mainly focused on financial indicators. But recently, the necessity of using new quantitative and qualitative non-financial indicators increases. This information is essential for competing in the market more effectively, and for supporting of the organization strategy. The Balanced Score Card system differs from the other models - financial and non-financial target rates are based on relationships between the key performance indicators and the factors under which influence they are formed.

Achievement the same purposes of separate divisions and the organization as a whole is a necessary condition of success of the command work directed on achievement of strategic targets of the organization. The choice of a small amount of important and interconnected key indicators among themselves allows to measure and to optimize company's activity.

It is a formation of a new tendency in development of the management accounting at the beginning of the 21st century. These scientific researchers are characterized by the strategic approach to planning, the accounting and the analysis of industrial activity of the enterprise. The strategic approach to planning, the accounting and the analysis of expenses is developing into a highest level of registration-analytical system of the enterprise. At this level a choice of the key performance indicators and a choice of the adequate mathematical function describing

process of forecasting of expenses are made. At the present stage the defining role of the strategic approach in the management accounting in relation to operative becomes more and more obvious [3, p. 161].

There are new methods in the field of the strategic system organization of registration and administrative processes: Activity-Based Costing (ABC), control systems Orgware, Workflow, philosophy «Just-in-time», Drum-buffer-rope scheduling (DBR), the Target-costing, the Kajzen-costing, Value-Chain Concept, Total Life Cycle Costing, Material resource planning (MRP), Enterprise resource planning (ERP).

The strategic management developed a number of models aimed at continuous improvement of business [4]. The proposed classification models based on the allocation of the leading areas of business improvement: changes in market positioning, re-engineering of internal business processes, human capacity construction, the coordination and stability development (table 1).

Table 1

Modern models of the management

Category of models	Models of management	Authors
Orientation to the external positioning of the company in the market	Ansoff Matrix	H.I. Ansoff
	BCG Matrix	Boston Consulting Group
	Porter five forces analysis	M. Porter
	Greiner Growth Model	L. Greiner
	SWOT-analysis	J. Armstrong, T. Hill
	Strategic alignment	J. Henderson, J. Venkatraman
Orientation to the improvement of internal business processes	Just-in-time	Toyota
	Purchasing model	P. Kraljic
	Six Sigma	Motorola
	Kaizen	M. Imai
	Value chain	M. Porter
	4P	Ph. Kotler, B.Dubois

Continued Table 1

Orientation to the improvement of human resources	6 thinking hats	E. de Bono
	Blue Ocean Strategy	W.Kim, R.Mauborgne
	Management team	R. Belbin
	Roles in management by Mintzberg	H. Mintzberg
	Fifth discipline	P. Senge
Orientation to the stability development	Balanced Score Card	R. Kaplan, D. Norton
	7S	R.Pascale

Source: Author on the basis [4]

In conditions of the modern global economy companies compete more actively in such parameters, as quality of the goods or services, timeliness of their delivery, reliability, volume service and degree of consumer`s satisfaction. Recently the management accounting did not represent data about the indicators playing a key role in the increasing of competitiveness [5, p. 605].

Information technology as an instrument of management accounting automation.

Advances in computer science, cybernetics and information technologies can substantially lift the restrictions on the complexity of accounting operations, processing of statistical data sets, changing approaches to the processes of storing, sharing and aggregation of financial information. Increasing the speed of information processing, memory capacity, the use of networking technology improves the recording and analytical services for the periodic reporting to higher levels of management, makes available the introduction of regulatory indicators in the system of accounts and the automatic counting of various indicators. Using specialized software creates the necessary prerequisites to examine the relationship between accounts using the methods of linear algebra, computer simulation tools. Automated information systems for management accounting must have the following properties:

- the rational distribution of essential elements in the primary documents, registers and reporting forms,
- the balance between various registers,
- the effective combination of chronological and systematic recording,
- reducing the path information being processed from its inception in the primary documents to balance.

At the present stage of development of information technology for the automation of accounting and economic analysis the following classes of tools are using:

- non-specialized software tools that have the analytical modules,
- specialized software tools for creating a warehouse accounting data,
- integrated enterprise management system.

The most commonly used in non-specialized software packages that have analytical capabilities, is Microsoft Excel, which is part of Microsoft Office. Spreadsheets are used for calculations of varying complexity. In Microsoft Excel, including the developed mathematical tools, specialized technology, statistical analysis, graphical means of presenting data. For solving dynamic problems of engineering and computing, use the package MATLAB. This is an interactive, open software development environment has properties for high performance computing.

Specialized software products are a wide range of developments for the automation of accounting processes, depending on the size of the enterprise.

One of the management accounting functions is the communication with other subsystems in a total computerization of administrative processes. It is a problem of incompatibility of data, duplication of various accounting transactions and unjustified increase in options for the software you use. Reports received from various sub-systems are long-term coordination at all levels of the organizational structure. These and other problems can solve the integration of different use of information systems and manual data processing in a single information system. This system supports multidimensional data analysis, decision-making in complex situations, manage corporate data bases and knowledge, expert systems and staff training.

In 90 years of the twentieth century the evolution of the automation led to the creation of the integrated information systems (ERP - enterprise resource planning). Feature of ERP is an information and analytical supporting of enterprise management system's needs at the various

levels for the interaction of all its business processes. At the core of the ERP is the business model. The technology of such systems is founded on splitting the whole of the company on business processes. And the goal is to diagnose and improve their theoretical description in accounting and management system with the help of certain methods and software products.

In the ERP system enterprise resource planning are integrated with financial planning. They are based on a systems approach to management of the enterprise. ERP systems are focused on improving the company profit growth through the quality of relationships with customers, increasing productivity, reducing irrational expenses and downtime, reducing production cycle, reducing the insurance stock of goods, reducing the cost of administrative personnel. Single out a few basic principles of integrated information systems: continuity and "transparency" of information flows, documentation of all transactions, comparability of data from previous reporting periods, consistency of rules and procedures for information processing, protecting information from unauthorized access.

The ERP systems are based on the system approach to management of enterprise activity. In the Russian market of corporate control systems those products of the foreign companies presents: SAP AG (system R/3), Oracle corporation (system Oracle Application), Baan Company (system Baan IV), Navision AXAPTA. The Russian workings out of corporate systems are presented by following software products: GALACTICA, FLAGMAN, PARUS, 1C 8.0, Info-bookkeeper.

Information basis of modern management accounting system should be an open system, with the possibility of a gradual accumulation of necessary data, as well as different ways of grouping and processing. Currently, scientists from many countries are working to develop algorithms for constructing information systems in an "artificial intelligence" (AI) or "expert systems" (ES). In the future, precisely this type should include an automated accounting system.

The basis of such systems, in contrast to the traditional approach, is two principles - management of uncertainty and self-study. In operation of the system is collected, coding, storing the information in the form of a knowledge base consisting of descriptions, relationships and procedures relating to the area of interest. The system can also perform such complex classes of problems, as an interpretation, diagnostics, debugging, design, planning, monitoring, coaching, as well as to clarify and expand knowledge through automatic detection of new knowledge from experience.

Another feature of AI systems is the mechanism of self – training as the dynamic of the system in obtaining new knowledge about the surrounding world and how to conduct it. This approach is dictated by the global changes in the control systems of modern business organizations, which have the following features:

- uniqueness - each individual control system,
- poor or lack of certainty of formalized goals;
- subjectivity management criteria, which are often entirely dependent on the personal characteristics of managers,
- agility and adaptability - the control system is constantly evolving.

Despite the fact that in the field of artificial intelligence and expert systems already have some developments (parallel distributed networks, neural networks, hybrid algorithms,

evolutionary computation), creation and commissioning of information systems of such high class - for the future.

Management accounting and management: problems of cross-functional teamwork. Undisputed need for close functional relationship management and management accounting in the modern organization, meanwhile, in practice, is not always possible to establish the optimal model of interaction between the two subsystems. In theoretical studies also often we observe a tendency of scientists - experts in specific fields of knowledge "to pull the blanket over himself," or simply ignore the advances in related scientific specialty. In the scientific community the recriminations in a related discipline unscientific are voiced by managers and accountants, disputing ownership of separate techniques and methods to the specific area of research (budgeting, transfer pricing), the struggle for supremacy in the definition of a hierarchy of elements in the organizational structure.

In this connection we appreciate the inclusion in the document developed by a reputable international professional organization CIMA (Chartered Institute of Management Accountants), entitled «Global Management Accounting Principles» [6], the provisions of the significance of the process of studying the business model of the organization as a basis for constructing a system of management accounting. Of course, that is not a system of management accounting thus should guide the development of the organization and management system to set goals and functioning actively use the information to improve management accounting business. Agree with the opinion of Prof. M.A. Vakchrushina, that management accounting is not a substitute for the management of the company, and translates it to a new level [7]. A clear understanding of the tasks of the individual subsystems will remove a lot of contradictions between units in the current activity, to ensure reduction in the number of conflict situations and more successful implementation of innovative projects. Thus, the actuality of interdisciplinary research in the field of management and management accounting, as well as, due to the practice-oriented both disciplines seek opportunities to cross-functional interaction of accounting and control systems.

In a constantly changing economic reality competitive business greatly depends on the properties of the adaptive management system. Constant updating, search for the best ways of management characterize an innovative style of modern business.

Any innovation project is the reason for the dramatic changes in the style and rhythm of activity. This means that the business system goes into a state of instability, and it is necessary to find ways to stabilize the use of new, innovative tools. Historically, the management of the industrial enterprise based on the principles of cybernetics, which suggest that for the manage action should be a direct reaction of the controlled object, which is possible to control and adjust. Currently, researchers are increasingly considering business structure as a synergistic system.

Synergetic studies the common processes of self-organization of complex systems, and modern economic system, of course, belong to the class of complex. Synergetic in Greek means «joint action». There are two understandings of synergetic:

- 1). The theory of the emergence of new properties in the whole composed of interacting elements.
- 2). The approach requires the cooperation of specialists from different fields.

In the first sense Synergetic studies the laws that are common to the behavior of complex systems. The non-linearity of innovative processes and finding ways to increase the degree of openness of business structures in modern conditions have to be taken into account and experts in the field of management accounting. This means expanding the sources of information used, the use of data-processing methods of fuzzy logic, use as a tool for analysis of neural networks [8].

Second, the term «synergy» is used to describe the scientific approach, which requires cooperation of specialists from various fields. And this aspect is crucial when considering cross-functional communications subsystem management and management accounting. As a method of grouping and processing of information in the system of management accounting that is - implementation of the principle of targeting, a clear separation of information to the primary (collected in real-world business processes) and secondary (which is a consequence of the subsequent calculations and analysis), improvement of technical methods of gathering information. Standard management accounting «Managing Cross-Functional Teams» [9], developed by a professional organization specialists of Management Accountants of Canada (SMAC, Society of Management Accountants of Canada), recommended the active use of various techniques of interaction between user and personnel management personnel (Brainstorming, Delphi method, Role-playing, etc.).

Researches in the field of cross-functional interaction between subsystems management and management accounting are relevant to modern business. The purpose of scientific research - to develop ways to ensure the flexibility and adaptability of control systems in the dynamically changing market conditions based on strategic, innovative and process approaches. And in this quest, of course, close cooperation of specialists in the field of management accounting and management requires.

Conclusions and Prospects. However it is completely possible to confirm quite positively – we can observe the growing influence the other sciences on the management accounting development throughout the whole world.

Research in the field of management now aims to develop strategic, innovative and process approach to management, the introduction of which in practice requires business process reengineering. Management accounting system should provide information and analytical support to such projects. Prerequisite for the successful introduction of new methods of management accounting is to position businesses as open synergetic systems.

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ВОПРОСЫ РАЗВИТИЯ НАЦИОНАЛЬНОЙ СИСТЕМЫ БУХГАЛТЕРСКИХ СЧЕТОВ