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## Management Accounting In Effective Structures Of An Organization.

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### ABSTRACT

The goal of the research was to establish the parameters of management accounting models in effective management structures - divisional, matrix, project organizations. As a result, the authors have developed models of management accounting for various types of effective structures of organizations. Among the parameters of their design: centres of profit, revenues and costs in divisional structures, combined profit centres in matrix organizations, centres of profit, investments and costs in organizational structures of the project type. The study has concluded that management accounting models are determined by drivers of effective management structures, in particular, by the technology structure, infrastructure, administration system, coordination, strategy, environmental variability and others. The novelty of the research is in the argumentation of the correspondence of the parameters of management accounting models to the parameters of effective organizational structures.

**Keywords:** management accounting, effective organizations, organizational management structures

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## INTRODUCTION

Evaluation of the world experience of organizational structuring confirms that the effective functioning of economic entities is provided by the design of an appropriate management structure. Analysis of various types of organizational structures is aimed at identifying the principles of building an effective organization and designing adequate models of management accounting. Multiplicity of management structures determines the plurality of models of management accounting. Each of them must be constructed in such a way as to correspond to the parameters of effective organizational structures.

A considerable number of works are devoted to the problem of designing effective management structures, organizational design and modelling, choice of the organization model from among the basic configurations. A significant contribution to the development of this topic was made by foreign researchers, among them were: [1, 2, 3]. However, despite the high scientific and practical level of existing developments in this field, additional research is needed on what elements are peculiar to models of management accounting in effective management structures. Assessment of management accounting models from these positions is aimed at obtaining an answer to the following questions:

- How effective management structures affect the configuration of management accounting models?;
- What are the parameters of management accounting models in effective management structures?

To answer these questions, it is required, first of all, to investigate methodological approaches to constructing effective management structures.

## RESEARCH METHODS

Mechanistic / hierarchical, bureaucratic, organic approaches, classical theories of scientific management and organization, theory of effective organization, organizational capacity, institutions and institutional changes, strategic management, project management.

## DISCUSSION

The problems of transformational processes of accounting and analytical support for the management of economic entities in unstable economic conditions are disclosed in the writings of the following authors: [4, 5, 6, 7, 8, 9, 10].

In the process of research, the authors studied and critically evaluated the results of scientific research on the concept of forming a business model of an enterprise under the influence of various macroeconomic factors [11]; the problems of building an improved model of management accounting based on ideas of organizational control and efficiency [12]; works on the organization of the budgeting system at enterprises using different management structures [13, 14, 15], questions of the influence of the quality of communication in the system of decision-making on the basis of management accounting [16]. In addition, the authors also have studied the main causes and consequences of changes in accounting systems [17], in particular, the factors that contribute to changing accounting and how to influence the process of creating organizational changes in the future. In the context of the study, it is worth mentioning the works devoted to the problems.

A significant impact on the position of the authors was provided by the works devoted to the description of the role of management accounting in the development of performance evaluation systems [18]; search for prospects for further development of management accounting [19, 20, 21], as well as certain aspects of setting the management accounting system in crisis conditions. Particular provisions characterizing the author's position on the specifics of maintaining a management accounting system in the Russian context are disclosed in earlier works of the authors, in particular [22, 23] and others.

Analysis of the mechanistic / hierarchical, bureaucratic, and organic approaches in the design of the organization makes it possible to identify the evolution of driving factors (drivers) of management structures that have become most widespread in the world experience.

According to the mechanistic approach among such drivers, we have noted:

- components of the organization. This is a production activity, technical structure, infrastructure, administration, strategy [24]. The components of the organization reflect the organization's attention vectors;
- structure. It defines the basis of the organizational structure as a system, characterizes its integrity and emergence. It forms the connections and interactions of the components of the organization. It is achieved by grouping of objects of management, departmentalization.;
- coordination. The most important tool for coordinating the components of an organization is the standardization of work processes, production volumes, knowledge and skills (qualifications) of staff;
- division of labour (horizontal, vertical, functional). It defines the professional specialization of labour, which ensures enrichment of labour, as well as the formalization of staff behaviour;
- guidance (administration, leadership, power). It is achieved by the allocation and implementation of responsibilities, rights and obligations with respect to certain parameters of activities. The most important management tool is the centralization / decentralization of power.

The indicated mechanistic positions of the classical theory of scientific management [25], the theory of organization [25] define the construction of formal (formalized) management structures of hierarchical type - linear, linear-staff, linear-functional.

The bureaucratic approach develops formalized control structures of a mechanistic type by creating on their basis bureaucratic structures (for example, mechanistic and professional bureaucracy [27]). Their drivers are:

- regulation. It is in the development and use of rules, guidelines, and instructions. It provides the implementation of normative acts of an imperative nature, the creation and use of corporate local acts of dispositive nature. Covers various areas of activity and duties, including in the field of accounting and management accounting;
- documenting / document management / document flow. Collectively it provides control on the basis of written documents;
- standardization. It is in the development and use of methodological provisions in various fields of activity, including accounting and management accounting. Standardization is external and internal.

Drivers of bureaucratic management structures create predictable professional behavior, a high level of legal and commercial management in organizations with formalized structures and a divisional type.

The organic approach reveals the dysfunctions of formalized management structures, the drivers of which are regulation and standardization. An alternative to regulation and standardization is an organic approach that considers training (as special training, acquiring knowledge and skills related to work) and personnel development (as an introduction to the organizational environment, mastery of organizational norms). The results of the organic approach are two main points:

- it defines the creation of informal (non-formalized) management structures of the matrix and project type;
- it raises the question of the factors (drivers) of an effective organization

Factors of effective organization are: setting the goals of the organization; making decisions; control; decentralization; growth of competition and changes in the external environment.

These drivers concentrate the attention of managers on the organization's target settings, making decisions, controlling profitability, profitability, competitiveness and efficiency of activities in dynamic environment for all monitoring objects.

It is achieved through decentralization and decentralization. These aspects determine the further development of effective management structures of the divisional type.

Within the framework of the organic approach, the theory of effective organization is developed in the theory of organizational potential [28]. It pays attention to the organization's relations with the environment, and also focuses on strategic aspects due to changes in the external environment. This ensures the construction of complex design-matrix management structures. Institutional approach on the basis of establishing fundamental links between economic changes, technological development and institutional conditions determines the creation of very complex management structures of vertically-oriented integrated type. Thus, the mechanistic, bureaucratic, and organic approaches determine the basic configurations of effective management structures, including divisional, matrix, and design.

### RESULTS AND RECOMMENDATIONS

Divisional management structures correspond to all parameters of an effective organization. Among them are:

in the external environment – diversification, diversity, geographical expansion of markets, increased competitiveness of market participants;

in production and technostructure – diversification of production, transition to complex, multi-product, innovative production;

in infrastructure – increase of the staff professionalism;

in administration – expanding horizontal decentralization, limiting vertical decentralization; delegation of responsibility, control and decision-making to the level of middle managers; grouping of management objects by products, regions, markets (customers), functions; formation of divisions on management objects - product, regional, market (client), functional;

in coordination – standardization of work processes, production volumes, knowledge and skills of personnel;

in strategy – setting strategic objectives of the organization, along with operational.

These drivers design a divisional management structure as a set of divisions united by a central management structure (administration) - headquarters. Streams of authority are moving downward - from headquarters to divisions. The degree of autonomy of divisions depends on the degree of vertical centralization / decentralization. If vertical centralization is strong, then the divisional structure tends to linear-staff. The expansion of vertical decentralization directs divisional management structures to a vertically integrated type. The effectiveness of the divisional management structure is determined by its dynamic variability.

The key parameter of the divisional organization is the control of quantitative indicators of divisions - revenues, costs, investments, profits, and return on investment. Management accounting in divisional structures is organized on a single basis. If the object of management is a product, then a product division is formed. If the region is under control, a regional division is created. By analogy, market (client) and functional divisional segments are formed. Each division operates as a profit centre (PC). If the product is considered as the management object (1, 2, etc.), the product divisions ( $P_1, P_2$ , etc.) are the profit centres ( $PC_1, PC_2$ , etc.). Managerial accounting for the profit centres of food divisions provides accounting for the cost centres (CC) of product divisions 1, 2, etc. ( $CC_1, CC_2$ , etc.) and the revenue centres (RC) of product divisions 1, 2, etc. ( $RC_1, RC_2$ , etc.). The corresponding cost centres of the product division 1 reflect the costs of purchasing / supplying the manufacturing of product 1 ( $CC_1^1$ ), the manufacturing of product 1 ( $CC_1^2$ ). The centre of sales of product division 1 takes into account the sales revenue for this division ( $RC_1$ ).

In addition, product divisions reflect that share of general administrative overheads, which is determined by the degree of limited vertical decentralization. If product divisions are sufficiently autonomous, then general administrative costs are accounted for in product divisions by differentiated cost centres, for example, such as:

- accounting of product division 1 (CC<sub>1</sub><sup>3</sup>),
- finance / financial management of product division 1 (CC<sub>1</sub><sup>4</sup>),
- personnel management of product division 1 (CC<sub>1</sub><sup>5</sup>),
- legal support of product division 1 (CC<sub>1</sub><sup>6</sup>),
- strategy and innovation of product division 1 (CC<sub>1</sub><sup>7</sup>) and etc.

In the divisional management structure, the headquarters of the organization is the centre of investments (CI) and at the same time the centre of general administrative costs (CC). The model of management accounting in the product divisional management structure is presented in the figure 1.

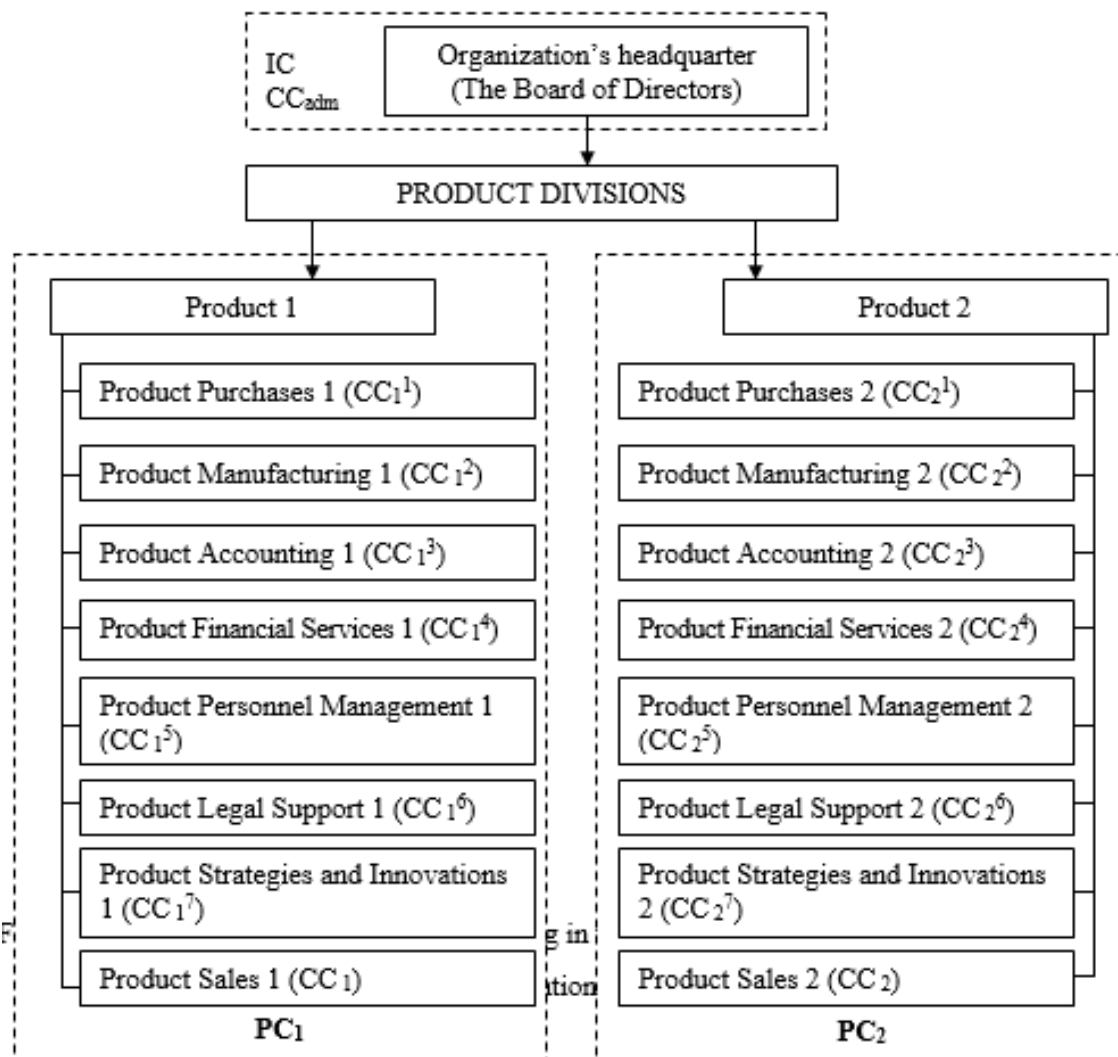


Figure 1: The model of management accounting in the product divisional management structure

If the region 1, 2 and etc. is considered as the management object, the regional divisions (R<sub>1</sub>, R<sub>2</sub>, etc.) are the profit centres (PC<sub>1</sub>, PC<sub>2</sub>, etc.). If the market (client) is the management object 1, 2, etc., then market (client) divisions (K1, K2, etc.) are the centres of profit (PC<sub>1</sub>, PC<sub>2</sub>) and etc. Models of management accounting in regional, market, and functional divisional structures are constructed in a manner similar to the model of management accounting in the product divisional structure of the organization, according to the corresponding control object.

Common to all configurations of management accounting in divisional management structures is that the costs of headquarters are not attributed to any of the divisions directly. To assign (allocate) the general administrative costs of headquarters, the distribution of these costs is based on the degree of vertical decentralization. The problem is that assigning (allocating) the general administrative expenses of the headquarters can reduce profits or increase the losses of divisions. This has an impact on the evaluation of the effectiveness of managers of divisional subdivisions. The solution to this problem includes:

- the development of technologies for the distribution and redistribution of general administrative costs;
- in the grouping of general administrative costs in accordance with the process approach [Andersen] as costs for business management processes, their accounting and distribution, along with the accounting and allocation of costs for main and auxiliary business processes.

Matrix management structures correspond to the following parameters of an effective organization:

- structuring - covers dependencies not on a single, but on several (two or three) signs simultaneously. The parameters of the combination are management objects - products, regions, markets (customers), functions. The interaction of parameters is evaluated horizontally and vertically, in two directions, which forms a two-dimensional matrix and a two-dimensional matrix model of the organizational structure of management. If the interaction of parameters is evaluated horizontally, vertically and diagonally, in three directions, then a three-dimensional model of the matrix structure is formed;
- coordination - standardization in a matrix organization with a stable combination of characteristics; standardization is disrupted in complex multiple matrix dependencies;
- administration - expanded horizontal decentralization, expanded vertical decentralization; the lack of unity of command, double subordination of performers: the manager on a vertical basis and the manager on a horizontal basis; high administrative and communication costs;
- infrastructure - high professionalism and qualification of staff;
- production and techno structure - rapid technological changes, the most efficient use of personnel;
- strategy - multi-purpose strategic objectives of the organization, along with operational.

These drivers construct a matrix control structure. It can be built on the basis of primary functions (research and development, procurement / supply, production, sales) and secondary functions of the organization (general administration, personnel management). Such an organization is a functional matrix structure. The peculiarity of the model of management accounting in it is grouping in the context of primary and secondary functions of the cost centres ( $CC_1^1, CC_1^2; CC_2^1, CC_2^2$ ) and revenue centres (RC) (Figure 2).

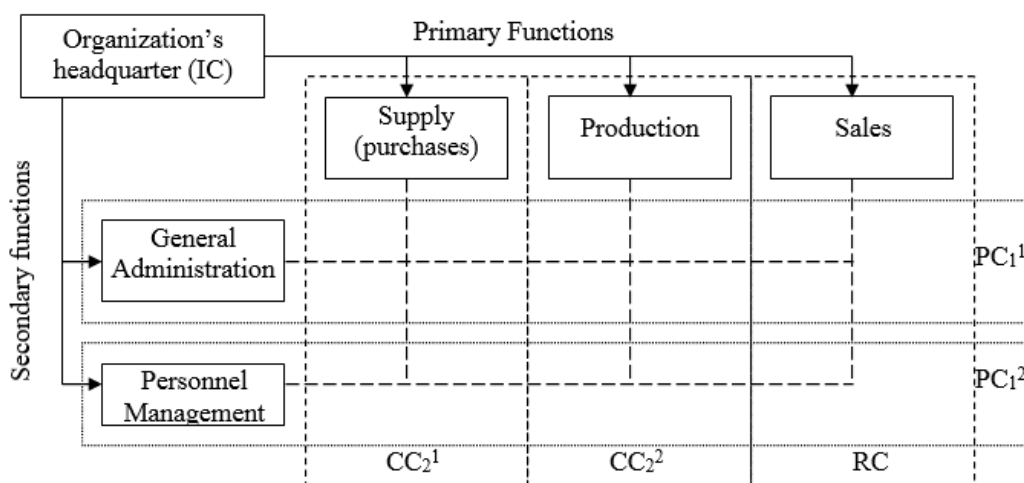
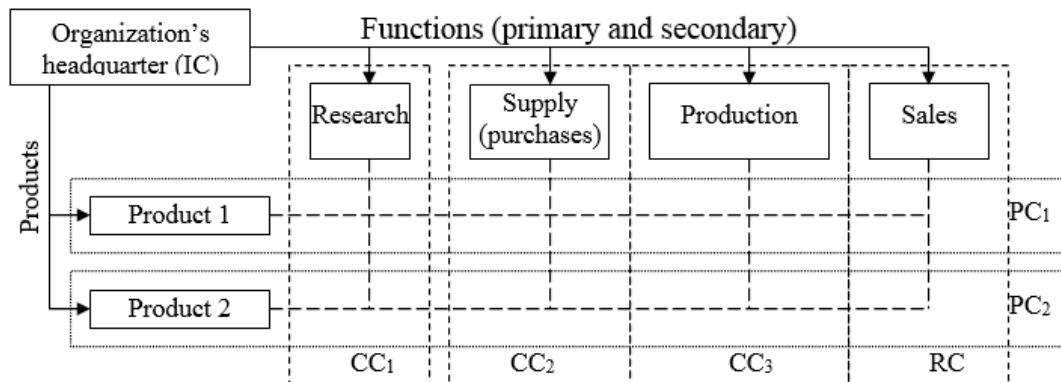


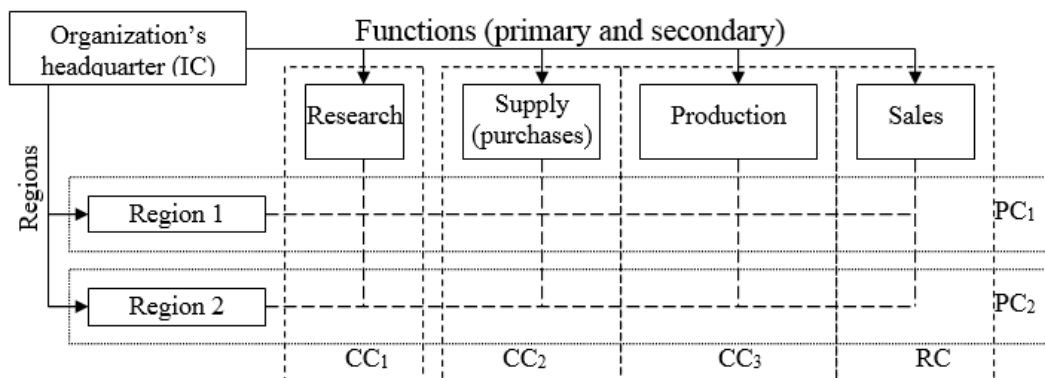
Figure 2: The model of management accounting in the functional matrix structure

In the basis of the construction of the matrix structure can be put functions (primary and secondary), on the one hand, and products (Product 1, Product 2, etc.), on the other hand. Then a functional-product matrix control structure is created. The peculiarity of the model of management accounting in it is the grouping of not only the cost centres (CC<sub>1</sub>, CC<sub>2</sub>, etc.) and revenue centres (RC<sub>1</sub>, RC<sub>2</sub>, etc.) - by function, but also profit centres (PC<sub>1</sub>, PC<sub>2</sub>) - by product divisions (Figure 3).



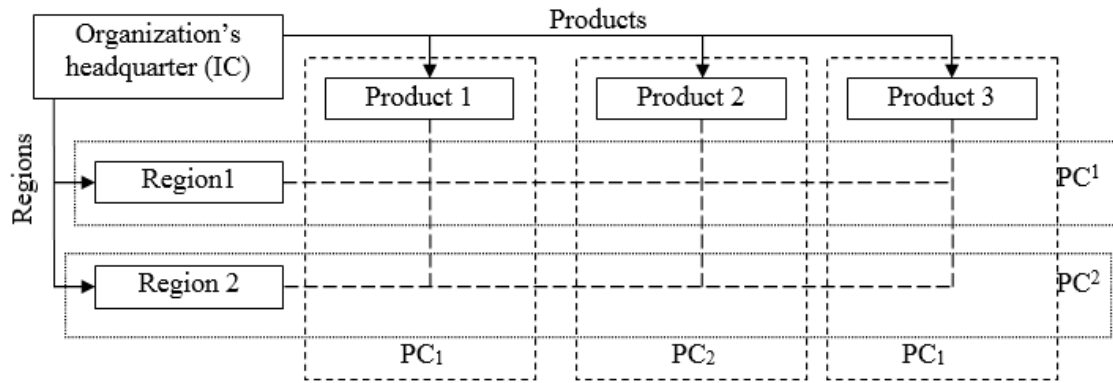
**Figure 3: Model of management accounting in the functional product matrix structure**

If in the basis of the construction of the matrix structure functions are adopted, on the one hand, and the regions of production or sales, on the other hand, then a functional-regional matrix management structure is created. A special feature of the management accounting model is the formation of cost centres (CC<sub>1</sub>, CC<sub>2</sub>, etc.) and revenue centres (RC<sub>1</sub>, RC<sub>2</sub>, etc.) - by function, profit centres (PC<sub>1</sub>, PC<sub>2</sub>) - by region (Figure 4).



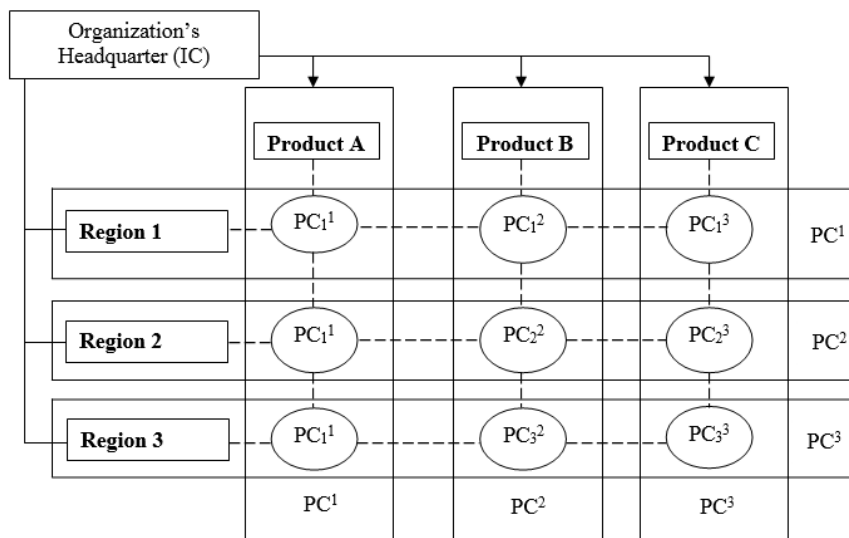
**Figure 4: Model of management accounting in the functional regional matrix structure**

At combined control of managers of product and regional divisions the product-regional matrix organization is structured. A special feature of the management accounting model is the formation of profit centres horizontally - by product divisions (PC<sub>1</sub>, PC<sub>2</sub>) and vertically by regional subdivisions (PC<sub>1</sub>, PC<sub>2</sub>) (Figure 5).



**Figure 5: Model of management accounting in the product regional matrix structure in the range of parameters**

Product regional matrix management structure has one more feature that determines the model of management accounting. If product manufacturing is concentrated in one division, and its sale is carried out in different regions and sales responsibility is delegated to regional managers, then product divisions will be accounted for as product cost centres, and regional units as revenue centres by regions. If each region has a separate unit for products manufacturing for this region only, both the food and regional units in the management accounting model will act as profit centres (PC<sub>1</sub><sup>1</sup>, PC<sub>2</sub><sup>1</sup>, ..., PC<sub>1</sub><sup>2</sup>, PC<sub>2</sub><sup>2</sup>, etc.). This allows monitoring and making decisions on profits in both food and regional divisions (Figure 6).



**Figure 6: Model of management accounting in the product regional matrix structure with a control parameter at the point of intersection**

The project management structure meets the following parameters of an effective organization:

- strategy and external environment – complicity of the competitive environment, limited world fuel and energy resources; search and design of new sources of development; the creation of projects as the implementation of a strategy to achieve the objectives in these conditions;
- administration - development of conceptual provisions of strategic management; orientation on the strategy of growth and development, strategy of using achievements; project investment;
- production and technostructure – widespread development in all areas of human activity: aerospace, defense, automation systems, design / supply / construction, automotive, environmental protection, financial (banking, investment), information systems, international development in the field of infrastructure, transport, agriculture, education, health, mass events,



- government, production, new product development, marketing, retail trade, pharmacy, outsourcing, utilities (extraction and distribution of electricity, water, gas, etc.) [Archibald, 2010];
- coordination – is complicated due to the multiplicity and complexity of projects, their wide territorial distribution;
  - infrastructure – high professionalism, sociability, staff responsibility, propensity to self-actualization;
  - administration – spread of the concept of project management; formation of project teams acting on a temporary basis; administration of projects.

These drivers allow building a project management structure that includes:

- list of projects;
- set of project functions;
- units involved in projects;
- project participants.

Management accounting in the project structure is organized by grouped projects (1, 2, 3, etc.). Each of them functions as an investment centre (IC<sub>1</sub>, IC<sub>2</sub>, IC<sub>3</sub>, etc.) and the profit centre (PC<sub>1</sub>, PC<sub>2</sub>, PC<sub>3</sub>, etc.) simultaneously. Функциональные подразделения, осуществляющие инновации, снабжение, производство, распределение и т.д. учитываются как центры затрат (CC<sub>1</sub>, CC<sub>2</sub>, CC<sub>3</sub>, etc.). The cost centers are also project participants. Based on these drivers, the management accounting model in the project management structure is shown in Figure 7. It allows project managers to control investments, costs and profits on differentiated projects. It is the most difficult, especially if the projects are inter-corporate, interstate, networked.

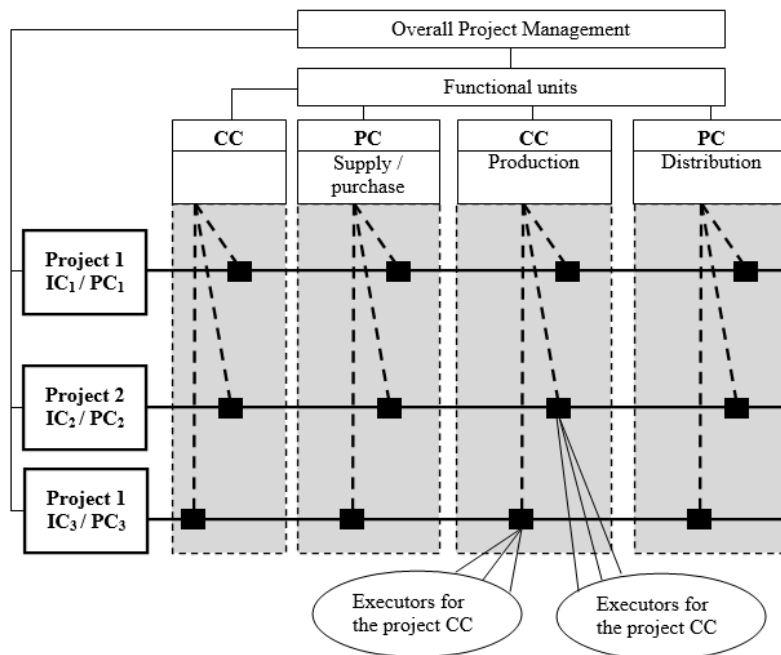


Figure 7: Model of management accounting in the project structure

### CONCLUSIONS

The effect of divisional structures is widely known in the world practice. The experience of its construction in General Motors, General Electric, ITT and other flagships of effective organization demonstrates the stages of transformation of a large corporation of mechanistic functional type into a divisional, and then into an integrated and conglomerative structure. Currently, relatively small companies that differentiate management objects by product, regional, client, functional characteristics design a divisional management system. For them, the formation of an adequate model of management accounting by

profit centers, revenues, costs as accounting drivers for divisional units is most relevant. This is done through intra-corporate standardization of managerial accounting processes.

Matrix organizations consider the combined profit centres as drivers of the corresponding model of management accounting. Organizations of the project type the driving factors of an adequate model of management accounting determine the centres of profit, investment, costs. In all cases, it should be noted that the parameters of management accounting models are different and their effectiveness is determined by the parameters of the relevant effective models of management structures.

The development of the technical structure, infrastructure, administration system, coordination, strengthening of strategic priorities in management due to the objective variability of the external environment objectively provide a transition to management structures that have empirically proven their effectiveness. These are organizationally complex management structures. Designing in them a model of management accounting is an independent task of organizational design. The effectiveness and competitiveness of the organizational unit of any level and the management quality will depend on the success of its implementation.

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