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STRUCTURAL-ELEMENTAL APPROACH TO PRICING CONTRACTUAL R&D PROJECTS

One of the fundamental principles of the structural-elemental approach is the step-by-step decomposition of the research process into logically complete elements, each possessing its own resource, temporal, and functional structure. This approach not only enables detailed cost breakdowns but also ensures transparency in the formation of research pricing. Specifically, the preparatory stage encompasses the development of the technical assignment, formulation of the research hypothesis, selection of methodological tools, and creation of a project timeline. The economic essence of this stage lies in providing methodological justification for the research, which reduces the risk of inefficient resource use in subsequent phases. Costs at this stage include remuneration for researchers, expenses for information support, expert consultations, and organizational overheads.

The next phase is the core research stage, which involves conducting experiments, collecting empirical data, modeling, hypothesis testing, and other scientific procedures. This stage is the most resource-intensive, requiring specialized equipment, consumables, software, and highly qualified personnel. Its economic essence lies in the need for precise cost planning, which helps avoid budget overruns, ensures efficient resource utilization, and facilitates the achievement of planned scientific outcomes. The cost of this stage

is calculated based on direct expenditures and incorporates risks associated with the uncertainty of results.

The analytical stage entails processing the collected data, interpreting findings, and formulating conclusions and recommendations. The economic significance of this phase lies in generating added value through the transformation of raw data into applied knowledge with practical relevance for the client. Expenses at this stage include analyst salaries, the use of specialized software, and costs related to result verification.

The final stage involves the presentation of research outcomes in the form of reports, presentations, technical documentation, patent applications, and similar deliverables. Its economic essence is rooted in ensuring the communicative effectiveness of results, which is a prerequisite for their subsequent commercialization or implementation. Associated costs include editorial and publishing services, graphic design, translation, and intellectual property protection.

Special attention within the structural-elemental approach is given to the complexity index of the research. This index is formed based on quantitative and qualitative assessments of parameters such as the level of scientific novelty, degree of interdisciplinarity, volume of experimental work, need for unique equipment, and the risk of failure. The economic rationale behind this provision is the ability to adjust pricing according to the actual complexity of the project, ensuring fair compensation for intellectual efforts and motivating researchers to engage in challenging and high-risk studies.

Another important provision is the inclusion of indirect costs, which are not directly tied to the execution of specific stages but are essential for maintaining the research infrastructure. These costs include equipment depreciation, energy consumption, administrative management, accounting services, occupational safety, and information security. The economic essence of incorporating indirect costs lies in forming the full cost of research, which helps prevent underfunding and ensures the operational stability of the research institution.

The relevance of the structural-elemental approach to pricing contractual research and development (R&D) projects is driven by the transformation of the contemporary scientific landscape, the growing

demand for transparency in research funding, and the need to ensure the economic efficiency of innovation activities. In the context of the transition to a knowledge-based economy, where scientific research serves as a key source of value creation, the issue of substantiated pricing becomes strategically significant. Traditional methods of determining research costs - based on general estimates or normative approaches - often fail to account for the specific nature of scientific work, its complexity, associated risks, and intellectual components. This leads to inefficient resource allocation, reduced motivation among researchers, and limitations in the development potential of research institutions.

The structural-elemental approach addresses these limitations by enabling detailed breakdowns of the research process, accounting for all its components, and adapting pricing to the actual conditions of project execution. Its application enhances transparency in contractual relations, fosters trust between clients and executors, and creates conditions for effective project management. In today's environment, where research institutions increasingly rely on diverse funding sources - public, private, and international - the need for a flexible, substantiated, and adaptive pricing mechanism becomes critical.

Thus, the structural-elemental approach to pricing contractual R&D projects serves not only as a tool for cost calculation but also as a methodological foundation for strategic management of scientific projects. Its application enables a balance between the interests of clients and executors, enhances transparency in contractual relations, promotes efficient resource utilization, and supports the development of research activities as a vital component of the innovation economy. In the context of contemporary challenges such as digitalization, global competition, and the need for rapid knowledge commercialization, the structural-elemental approach emerges as a key instrument for ensuring the economic efficiency and scientific productivity of contractual research.

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