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INVESTMENT PROJECTS AT INDUSTRIAL ENTERPRISES: ACCOUNTING AND IMPLEMENTATION CONTROL

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Балан О.С., Бербер О.В. Облік та контроль виконання інвестиційних проектів промислових підприємств.

У статті досліджується методика і організація обліку та контролю виконання інвестиційного проекту промислового підприємства. Об'єктом дослідження виступає процес обліку і контролю виконання інвестиційного проекту, а суб'єктом є промислове підприємство, що впроваджує в рамках своєї господарської діяльності інвестиційний проект. У статті запропоновано концептуальна модель системи та процедур контролю виконання інвестиційного проекту промислового підприємства на фазах життєвого циклу проекту з впровадженням інформаційно-аналітичного забезпечення інвестиційного контролю.

Ключові слова: інвестиції, інвестиційний проект, життєвий цикл інвестиційного проекту, капітальні інвестиції, облік виконання інвестиційного проекту, інвестиційний контроль

Балан А.С., Бербер А.В. Учет и контроль выполнения инвестиционных проектов промышленных предприятий.

В статье исследуется методика и организация учета и контроля выполнения инвестиционного проекта промышленного предприятия. Объектом исследования выступает процесс учета и контроля выполнения инвестиционного проекта, а субъектом является промышленное предприятие, которое внедряет в рамках своей хозяйственной деятельности инвестиционный проект. В статье предложен концептуальная модель системы и процедур контроля выполнения инвестиционного проекта промышленного предприятия на фазах жизненного цикла проекта с использованием информационно-аналитического обеспечения инвестиционного контроля.

Ключевые слова: инвестиции, инвестиционный проект, жизненный цикл инвестиционного проекта, капитальные инвестиции, учет выполнения инвестиционного проекта, инвестиционный контроль

Balan O.S., Berber O.V. Investment projects at industrial enterprises: accounting and implementation control.

Researched in this article the methodology and organization of accounting and control of the investment project of the industrial enterprise. The object of research is the process of recording and monitoring the implementation of the investment project, and the subject is an industrial enterprise which is implementing as part of its economic activities of an investment project. The authors propose a conceptual model of the system and the procedures for monitoring implementation of the investment project of industrial enterprises in the phases of the life cycle of the project, using information and analytical support for investment control.

Keywords: investment, project investment, the life cycle of the investment project, capital investment, the account of the investment project investment control

The investment activity of industrial enterprises, related to the capital investments, is of essential importance creating grounds for a stable development of the national economy.

The capital investments projects represent an integral part to every industrial enterprise's activity. Process of such project accounting and implementation control has a direct effect onto the industrial entity's final economical results. Therefore improving both theory and practice of industry-implemented capital investments projects' accounting and control embodies a first order need substantiating this study actuality.

The goal herein concerned refers to a brief analysis of the existing methods and principles of arranging the industry-implemented investments projects' accounting and control, with the elaboration of respective proposal as to those methods and principles' improving. Such aim reaching predefines the following tasks to be resolved:

- Investigation into theoretical principles of industrial enterprises capital investments;
- Researching the methods and organisational principles of the accounting and control of an industrial investments project implementation;
- Elaborating the proposals of improving the efficient accounting and control of an industrial investments project implementation.

First relevance point to be considered herein refers to the investments' and investments project's essence, as well as the theoretical bases of capital investments' accounting and control when an investments project implemented at the industrial enterprise.

The investments represent a kind of property and intellectual values invested for a long period into enterprising activity objects that resulting in profit creation. Real or capital investments embody such kind of contribution into core assets and into augmenting the material productional stock.

The investment activity starting point departs from the search for investments conceptions. Here the accessible potential investment assets mobilisation begins together with respective project formalisation. The investment project [4] embraces contributing the material, financial, human and intellectual resources into an enterprise with the aim of getting the expected result within a supposed period. Investments projects are specific with their scale (small, medium, large, ultra-large), complexity (mono-projects, multi-projects and mega-projects), quality (standard and ZD projects), commitment degree (insistent and non-insistent), character and field of applicability (industrial, innovations, organisational, economical and social projects). An investment project is characterised with the life cycle. The life (project running) cycle of an investment project does mean the time delay from the project initiation instance up to the project closing/liquidation moment. Every project cycle is divided into three phases: pre-investment, investment and operational; these phases are respectively subdivided into stages.

Today in Ukraine there exist numerous legal and regulatory acts establishing and controlling the investments sphere relations, thus creating in the whole the investoral activity legal basis. One of the principal juridical acts herein established in the Law of Ukraine «On the investments activity».

The investigation into the organisation of investments project performance control and accounting demonstrated that such accountance contains three stages: methodical (selecting methods and techniques of accounting), technical (selecting the accounting procedure), organisational (accounting office management process arrangement). The process of accounting embraces the three planes: initial, running and total balance. The capital investments' volumes and expenses accounting is effected with consideration to the capital investments type, the construction and installation activities' mode of performing, channels and ways of buying the machines, equipment and technical accessories needed. The actual regulatory documents treat the capital investments as a totality of expenses related to purchasing building of new and modernising the existing non-circulation assets. The Statement of Standard Accounting Practice 7 «Capital assets» exposes the methodological grounds of forming, while accounting, the data on capital assets, other fixed material assets and the capital investments progressing into non-circulating material assets. At that the capital investments in progress are considered as the future fixed material assets. In the balance accounting scheme the capital investments are referred to the account 15 «Capital investments».

One of primordial roles at investment project running is attributed to the investment project control. This control does mean the process of comparing the factual implementation to the planned one, analysis of variances and evaluation of alternatives to the undesirable digression liquidation. Principal goal of

the investment project control is to maintain the scheduled project parameters during its implementation, therefore the essence of the investment project control relates to elaborating the mechanisms which provide forming respective effects that result at every deviation from the scheduled works plan and are directed onto reducing such deviation considering changes at respective environment.

Studying the investment project implementation control schemes do evidence that the investments control system makes an integral component of the whole enterprise management system aimed onto providing its high efficiency. The investment projects are controlled through a program providing the control actions' focusing at most priority directions of the enterprise's investoral activity, detecting in due time its factual results' deviation from the expected and operative management decisions-making that maintains such activity normalizing.

The investment control system structuring main principles are: the investment project control system orientation onto implementation of the enterprise's elaborated investment strategy, control multifunctionality, the controlled parameters system forming, elaboration of the quantitative control standards.

One of the suggested elaborated proposals as to the industrial investments projects' control refers to a conceptual overall model with detailed procedures of the investment project implementation control.

The system of investment project implementation control includes such components:

- Tasks: monitoring the works run, correction of the investment project goals, elaboration of the operative managerial solutions as to such monitoring;
- Methods of controlling (facts registering control, documents control, analytical tests and analytic control);
- Algorithms (calculations control, control of planned within investment project works' schedules and the accounting);
- Control tools (initial and summarizing documents, accountants' registers, checks' acts, calendar plan of the investment project fulfilment, periodical reports of project fulfilment, summarizing network schedule forms);
- risks (systematic, technical, marketing risk).

The detailed procedures of the industrial enterprise investment project fulfilment monitoring at the project lifecycle phases are shown at Table 1.

Table 1. Procedures of controlling the industrial enterprise investment project fulfilment by the lifecycle phases

Control components	Pre-investment phase	Investment phase	Operational phase
Tasks	<p>1. Current monitoring of: investment opportunities analysis running, works related to the project goals' selection, macro- and micro-economical analysis of the project investment opportunities, the project development and expert evaluation, detailed project conception</p> <p>2. Adjusting when needed the project goals with respect to the changes of external investments environment, investments market conjuncture and internal condition</p> <p>3. Elaboration of the operative managerial decisions on adjusting works related to development, experts evaluation and detailed conception of investment project according to the expected goals and parameters.</p>	<p>1. Current monitoring of: tenders' preparing and operation stages, designer technological project development, construction works, productional marketing, staff training</p> <p>2. When required: the additional works on tenders, staff training, designer technological project results' correction to reach goals specified at the investment project pre-investment stage</p> <p>3. Evaluation of the actual construction works' results' alternation from the expected ones.</p> <p>4. Elaboration of the operative managerial solutions on normalising the construction rates and cost estimates according to the scheduled calendar and agreed construction works estimates' documentation</p>	<p>1. Current monitoring of: works on constructed object launching (preliminary tests, pilot tests, performance testing, acceptance tests), productional performance, fixed assets replacing and renewing, expansion and innovations, final evaluation</p> <p>2. Elaborating the operative managerial solutions on fixed assets' (capital assets) rationalised use.</p> <p>3. Evaluation of the investment project's actual results difference with the expected ones.</p>
Methods of controlling	Arithmetic control, formal control, essential control, expert control, economic mathematical simulation, comparative analysis methods	Arithmetic control, formal control, essential control, expert control, economic mathematical simulation, comparative analysis methods, activity results' prognosis, control measurements	Arithmetic control, formal control, essential control, control measurements, inventory check, test launching, laboratory analysis, expert control
Algorithms	<p>– current financial engagements' settling control,</p> <p>– scientific developments and researches-related expenses control,</p> <p>– control of planned within investment project works' schedules according to the cost estimates and the project calendar plan</p>	<p>– current financial engagements' settling control,</p> <p>– scientific developments and researches-related expenses control,</p> <p>– control of stock accounting correctness;</p> <p>– checking the completeness of materials taking in charge and writing off;</p> <p>– checking of the capital assets buying-related expenses documents,</p> <p>– checking the correctness of capitalising the fixed assets' transportation, delivery, and assemblage;</p> <p>– checking the documentation on suppliers' funds transfer for the bought fixed assets;</p> <p>– checking the itemisations on fixed assets' buying at analytical registers and at the general ledger,</p> <p>– control of planned within investment project works' schedules according to the cost estimates and the project calendar plan</p>	<p>– control of fixed assets' inventory check data compared to the analytic accounting data.</p> <p>– comparing the analytic accounting data, synthetic and analytic accounting, inquiring the suppliers (contractors), documents optional check, arithmetic calculations verification, data analysis;</p> <p>– checking the itemisations on fixed assets' buying at analytical registers and at the general ledger,</p> <p>– checking the feasibility of the object's service life duration included into amortization rate calculus. Evaluating the feasibility of the object's service life taken by the economic entity when amortisation assessing;</p> <p>– checking the depreciation rate applied to several fixed assets.</p> <p>– checking the correctness of depreciation amount calculus;</p> <p>– checking the correctness of depreciation expenses classification according to expenses' balance sheets;</p> <p>– checking the correctness of final depreciation sum calculation and its appearance at the report sheets, correctness of fixed assets writing down operations;</p> <p>– control of planned within</p>

			investment project works' schedules according to the cost estimates and the project calendar plan
Control tools	Initial and summarizing documents, accountants' registers, checks' acts, calendar plan of the investment project fulfilment, periodical reports of project fulfilment, summarizing network schedule forms	Initial and summarizing documents, accountants' registers, checks' acts, calendar plan of the investment project fulfilment, periodical reports of project fulfilment, summarizing network schedule forms	Initial and summarizing documents, accountants' registers, checks' acts, calendar plan of the investment project fulfilment, periodical reports of project fulfilment, summarizing network schedule forms
Risks	Systematic risk (general economical, legal, political), technical (poor quality of the investment project's detailed conception), marketing risk (poor quality of the market investoral capacity analysis)	Systematic risk (general economical, legal, political), technical (poor quality of the investment project's detailed conception), financial (increased expenses, reduced financing), marketing risk (poor quality of tenders and of productional marketing) Delayed construction and assemblage works; low efficiency of these works' quality control; non-efficient project financing by construction stages; Poor works' provision with resources needed.	Systematic risk (general economical, legal, political), technical (not convenient technology chosen), financial risk (partners' low solvability, product customers' insolvability) Delayed reaching the project's expected productional capacity; insufficient provision with raw and consumable materials, operational staff poor qualification; deficiencies of marketing policy

Shaping the conceptual model and procedures of investment project performance control by its lifecycle stage will allow essentially increasing the industrial enterprise' investment activity control process efficiency.

The investment project performance control system conceptual scheme is represented at Fig. 1.

Also elaborated are several proposals on improving the investment project implementation control and accounting. One of them embodies reviewing the capital investments' registry accounts' schedule. As the performed investment project implementation control and accounting investigation results evidence, to our opinion convenient is to join some promising proposals submitted by Chirik N.V. [1], Sazhinets S.J. [2], Dotsenko O.V. [3], expanding them with our ones.

The newest ideas on improving the capital investments' accounting exposed by Chirik N.V. and Dotsenko O.V. are promising enough meanwhile of that some points are economically superposed, *ibid.*, represent the same content. That is why, motivated with the aim of correct, economically comprehensive and convenient for every stage management we suggest our own updated vision of the scheme for

capital investments' accounting at industrial enterprise, represented at the Table 2.

Methods of capital investments' accounting on the basis of reviewed scheme of Sheet 15 as proposed provide the opportunities:

- to separate the enterprise's operational and investment activities' accounts;
- to determine the purposed finances' allocation;
- to form faultless the gross expenditures including advance payments not relating to investment activity

For improving the industrial enterprise investment project implementation accounting, convenient is to elaborate the capital investments circulation scheme and the corresponding scheme of an industrial enterprise's capital investments accounting and circulation by the enterprise's investment project lifecycle phases.

To implement the industrial enterprise capital investments at the project's pre-investment stage, the contributions into statutory funds can be brought either as financial participation or as contribution in kind. The recommendations on selecting the financing sources with respect to investment project's lifecycle stages and expenses type are given at the Table 3.

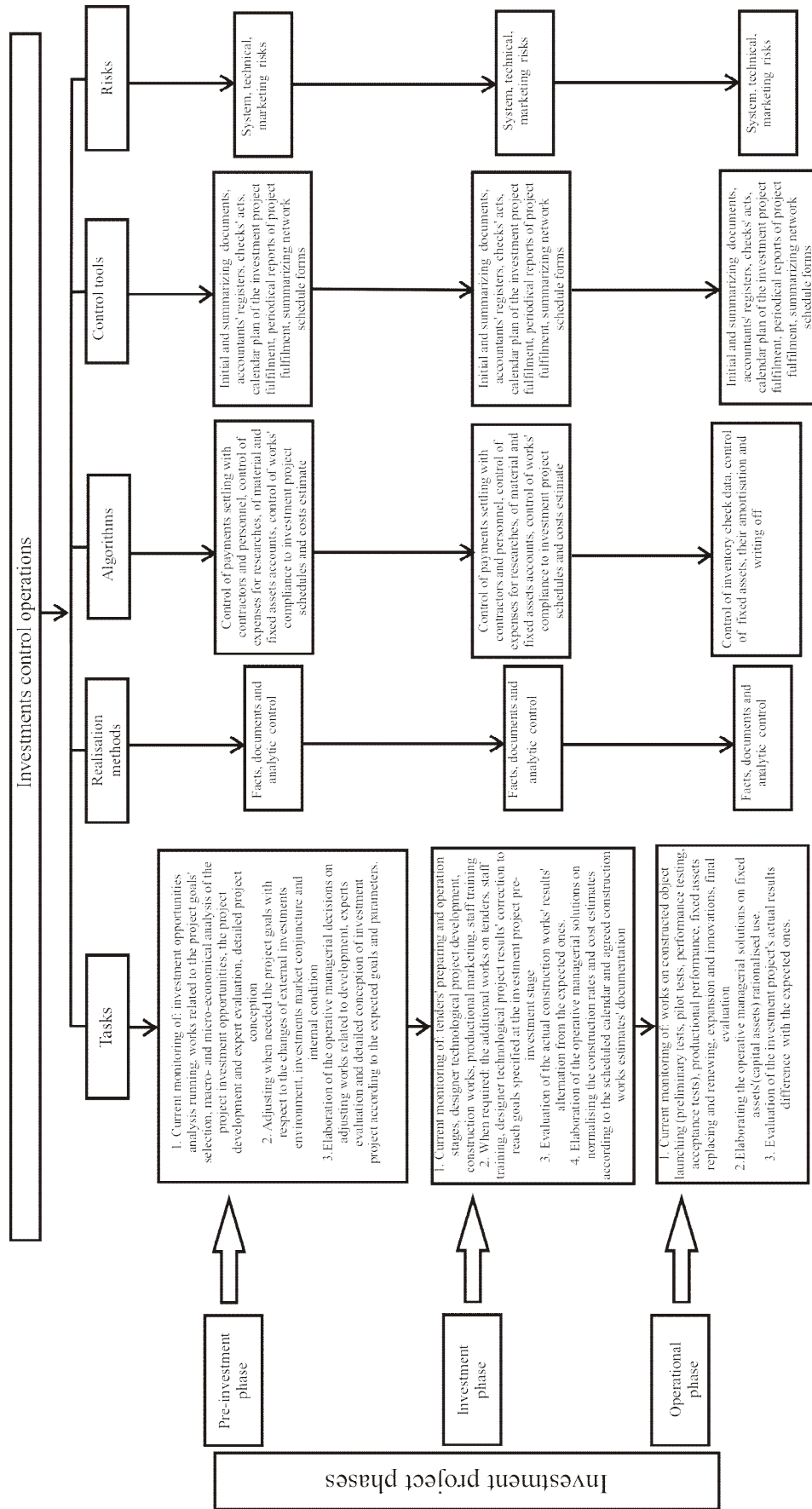


Fig. 1. Scheme of the investment project performance control system conceptual model

Table 2. Proposed scheme for capital investments' accounting at industrial enterprise

15	«Capital investments»	
	151	«Capital construction»
	1511	«Capital investments into new construction»
	1512	«Capital investments into modernization»
	1513	«Capital investments into reconstruction»
	1514	«Capital investments into construction extension/completion»
	1515	«Capital investments into reorganisation»
	1516	«Capital investments into capitalised repair works»
	1517	«Capital investments into non-capitalised repair works»
	152	«Capital investments into buying (manufacturing) fixed assets»
	1521	«Capital investments into buying (manufacturing) machines, mechanisms, tools, equipment, accessories, transportation vehicles»
	1522	«Capital investments into buying (manufacturing) installations, buildings, separate uncompleted construction objects»
	1523	«Capital investments into buying landplots»
	153	«Capital investments into buying (manufacturing) other non-circulating material assets»
	1531	«Capital investments into buying (manufacturing) library funds, temporary buildings and constructions»
	1532	«Capital investments into buying (manufacturing) the regular packing boxes, lease items»
	154	«Capital investments into buying (manufacturing) non-material assets»
	1541	«Capital investments into buying (manufacturing) the natural resources, property, trademarks, industrial property objects, copyright etc. use rights»
	1542	«Capital investments into buying (manufacturing) the software»
	1543	«Capital investments into paying the legal advisers, evaluators, real estate agents services»
	155	«Capital investments into buying (manufacturing) the long-term biological assets»
	1551	«Capital investments into forming the main flock of employable and productive cattle»
	1552	«Capital investments into planting and cultivation of perennial horticultural crops etc.»
	156	«Other capital investment»
	1561	«Capital investments into soils amelioration»
	1562	«Capital investments into buying and updating the leased fixed assets»
		15621 «Capital investments related to buying the fixed assets' objects found at operational lease»
		15622 «Capital investments related to buying the fixed assets' objects found at the financial lease»

Table 3. Recommendations on selecting the financing sources with respect to investment project's lifecycle stages and expenses type

Investment project phase	Investment project stage	Expenses required	Financing sources
Pre-investment phase	Project conception elaboration	For project development and its opportunities' study	Enterprise's own financial resources (income; amortization expenses; insurances paid as losses' compensation)
	Project viability evaluation	For project preliminary technical and economical substantiation	Enterprise's own financial resources
	Project scheduling	For negotiating with potential investors and raw-materials-and-equipments selection by the suppliers	Enterprise's own financial resources
	Technical requirement development	– For project business-plan elaboration; – For credit agreement concluding (if needed)	Investors' internal economical reserve (various money savings from legal and natural persons etc)
	Choosing the project site	For legal formalisation of chosen site's required land plot buying	Investors' borrowed assets (bank and budget credits, bond-secured loans etc.)
	Choosing the land plot	For legal formalisation of chosen site's required land plot buying	Investors' borrowed assets (bank and budget credits, bond-secured loans etc.)
Investment phase	Contract concluding (list of requirement as a basis for operative project development)	– For composing the qualification requirement and contract concluding; – For design and estimate documents development.	Investors' external funds (obtained from shares selling, equities and other contributions by staff, natural and legal persons, etc)

Operational phase	Detailed (operational) project designing	– For equipment ordering; – For worksites preparing; – For equipment delivery and assemblage, assemblage and adjustment works	Investment funds assignation from governmental budget and extra-budget sources; foreign investments
	Project implementation prior to launching	– For staff training; – For advertising activity.	Enterprise's own financial resources either investors' engaged financing
	Work results remittance and acceptance	For required documentary pack	Enterprise's own financial resources
	Resources demobilisation, analysis of project issues	For comparison of the factual project data with the expected ones	Enterprise's own financial resources
	Project operation	For guarantee maintenance and servicing	Enterprise's own financial resources either investors' engaged financing

Convenient is a detailed consideration of the matter structuring a scheme of capital circulation within accounting system when capital investments project at every its lifecycle stages.

The preliminary phase of an investment project is specific with that namely here the investment resources' forming and related researches accounting takes place, in other words at the investment project first stage the industrial enterprise investment activity accounting procedures' objects include: accounting of the invested property, its kinds (natural or money), expenses related to investigations and to the investment project development.

The projects' investments phase corresponds to accounting the capital investments' operations, *ibid*, at this stage the industrial enterprise investment

activity accounting procedures' objects include: new and extended construction, capital assets objects assemblage, buying the capital assets, buying and producing other non-circulating assets, buying and producing intangible assets.

The project's operational phase embraces the investment activity results registering operations' accounting. Therefore at this stage the industrial enterprise investment activity accounting procedures' objects include investment activity results (the enterprise's fixed assets increase, or income/losses resulting from the capital investment object selling, reconstruction, upgrading, capital repairs of basic assets).

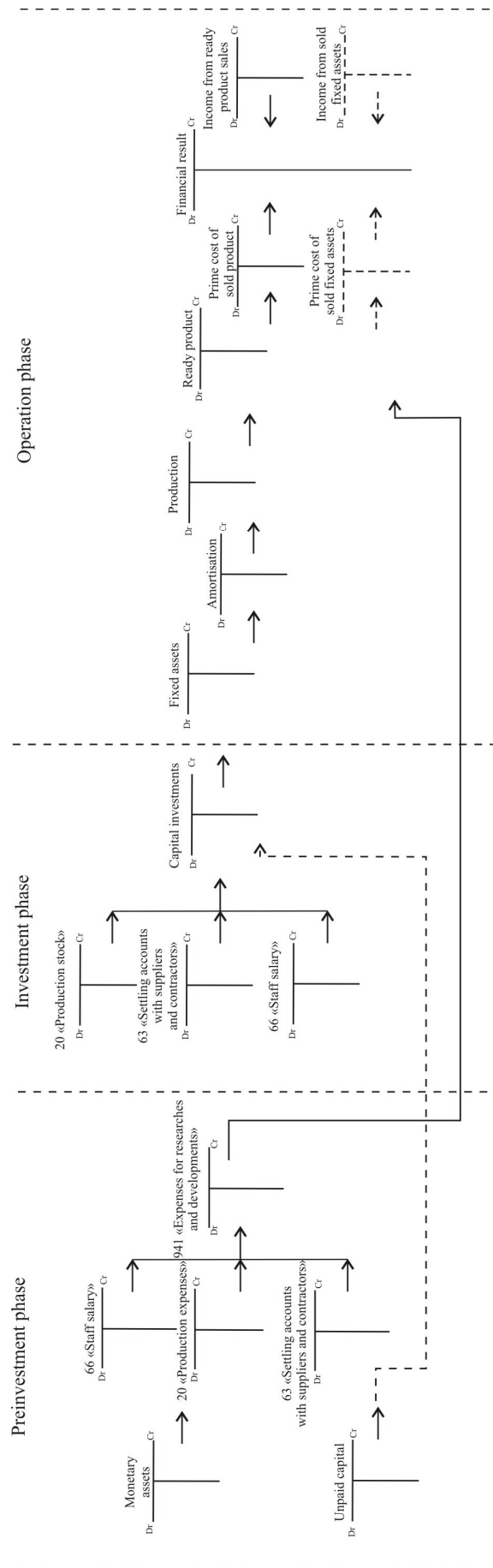


Fig. 2. Scheme of capital circulation within accounting system when capital investments project

The elaborated scheme of capital circulation within accounting system overarches the capital investments at the project's lifecycle all stages, from the instance an investment idea initiated up to the project's operation phase liquidation stage.

For the scheme of capital circulation within accounting system when capital investments project refer to Fig. 2 below.

Conclusion

The development of the country's investment potential and accounting reform served to intensify the researches on accounting and industry capital investments control topics as making tactical and strategic decisions on capital investments management needs for the timely obtained, accurate analytical information that can be provided only through regular accounting and depends on its quality. Therefore, under present day's social and economic development conditions, improving both theory and practice of accounting and capital investment

operations' control is a task of primary urgency. The developed control procedures applicable to an industrial enterprise's investment project considered by its life cycle phases allow detecting the actual work results' deviation while implementing a the project form the expected ones and therefore taking the operative management decisions to ensure the work's schedule normalization with correct achievement of the investment project strategic goals. The proposed accounts scheme for registering the capital investment allows: to separate the enterprise's operational and investment-related accounts, to determine the target financing direction for accurate and proper forming the gross expenditure sheet, including the down payments not related to investment activities. Also developed is a scheme of the capital investments circulation at industrial enterprise with respect to the project life cycle phases.

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