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VALUE OF MODERN INFORMATION SYSTEMS FOR INVESTMENTS

Statement of a problem and the aim of the study. Internet technologies are used for analysis of financial and money markets, for estimation of the attractiveness of investment projects. In the present, on international markets are used two main types of analysis: fundamental analysis and technical analysis. Most of the participants-investors of foreign markets involve tools and methods, in parallel, of both types of analysis, because the modern problem of estimation of a level of innovations involving into the information economy and determination of profit, development of universal algorithm of investment management into information technology plays an important role, and that is the main aim of this study.

Analysis of the problem of the study. The influence of the development of modern information systems upon the effectiveness of investment processes was investigated in the works of such leading specialists and scientists in the field of economics, as O.I. Amosha [1], V.S. Ponomarenko [2], O.I. Pushkar, E.M. Grabowski [3], N.V. Apatova [4] and others.

Purpose of Article. Conceptual issues of involving of information systems in investment design according to the world experience requires a more detailed study.

The main results of the study. For Ukraine it is very important to improve State policy in the sphere of investment. It is stipulated by the fact that during political and economic reforms the investment activity in the country is largely limited first of all by the lack of own funds of enterprises for economic activities [8].

Two main types of analysis, that are used in international markets: fundamental analysis and technical analysis - have certain peculiarities and differences (table 1).

Technical analysis has the biggest advantage - technical analyst can study the situation at the same time on several markets, but an analyst of fundamental analysis makes a detailed study of a separate sector of the market.

Analysis of methodological approaches to solving problems of technical analysis is contained in classical works, devoted to the problems of investment. This is "Investment" by U. Sharp, G. Alexander, J. Bailey [5], "Investment management" by J. Fabocci [6]. Practical aspects of applying of technical analysis in Ukraine were researched by I. V. Pen′kova [7], V. M. Guzhva, K. V. Ponomareva, Khimich O.M. and other scientists.

Information systems of technical analysis of markets allow doing directly the operations and procedures of technical analysis. Among the most used systems should be noted such as Reuter, Dow Jones, Telerejt, Bloomberg, Tenfor and others.

Features of applying of fundamental and technical analysis when using Internet technologies in international markets

fundamental analysis	TECHNICAL ANALYSIS
1.The aim of the study is a situation that can be realized in the market. – In order to forecast a conjuncture of the market price they examine following factors: – demand and supply; – season cycles; – weather; – State policy	1.The aim of the study is the actual situation in the market. 2.The situation in the markets is reflect by the changes graphics: – prices; – a number of agreements in all markets; – the volume of open positions (only in the future's market).

In order to increase the effectiveness of investment processes in the national stock market, we can assume the conceptual scheme of use of information systems in the investment design, which should be based on bringing information systems during the procedures of fundamental and technical analysis according to the world experience:

1. Fundamental analysis.

A situation that can be carried out in the market, is highlighted through the sketch design. In order to forecast the conjuncture of market price, taking into account the research of factors of supply and demand, season cycles, weather, state policy, alternatives of the project are revealed, their estimation of factors. Various risks are modeled.

2. Technical analysis.

Is researched the actual situation in the market, is calculated the profit of IT- project. The probability of the behavior of IT - product in the market reflects

the graphics of changes of: price, number of agreements in all markets, number of open positions (for the futures market). Is been developed business investment project.

In Ukraine are created the necessary information systems that may use technical analysis as a public method of a functional analysis of commodity and financial markets. Moreover, the prospect of the future development of a direction of structural organization of commodity and investment market is further classification of information systems directly to technical analysis and spreading, development of information systems of support, which can meet the needs of users in the support functions.

The development of modern information systems positively affects the effectiveness of investment activities that require processing of multiple information streams and constant updating of data about a particular object, and allows the investor to estimate the initial indexes of the project.

So, the conceptual scheme of use of information systems in the investment design should be based on the inclusion of information systems for making the procedures of fundamental and technical analysis (fig. 1).

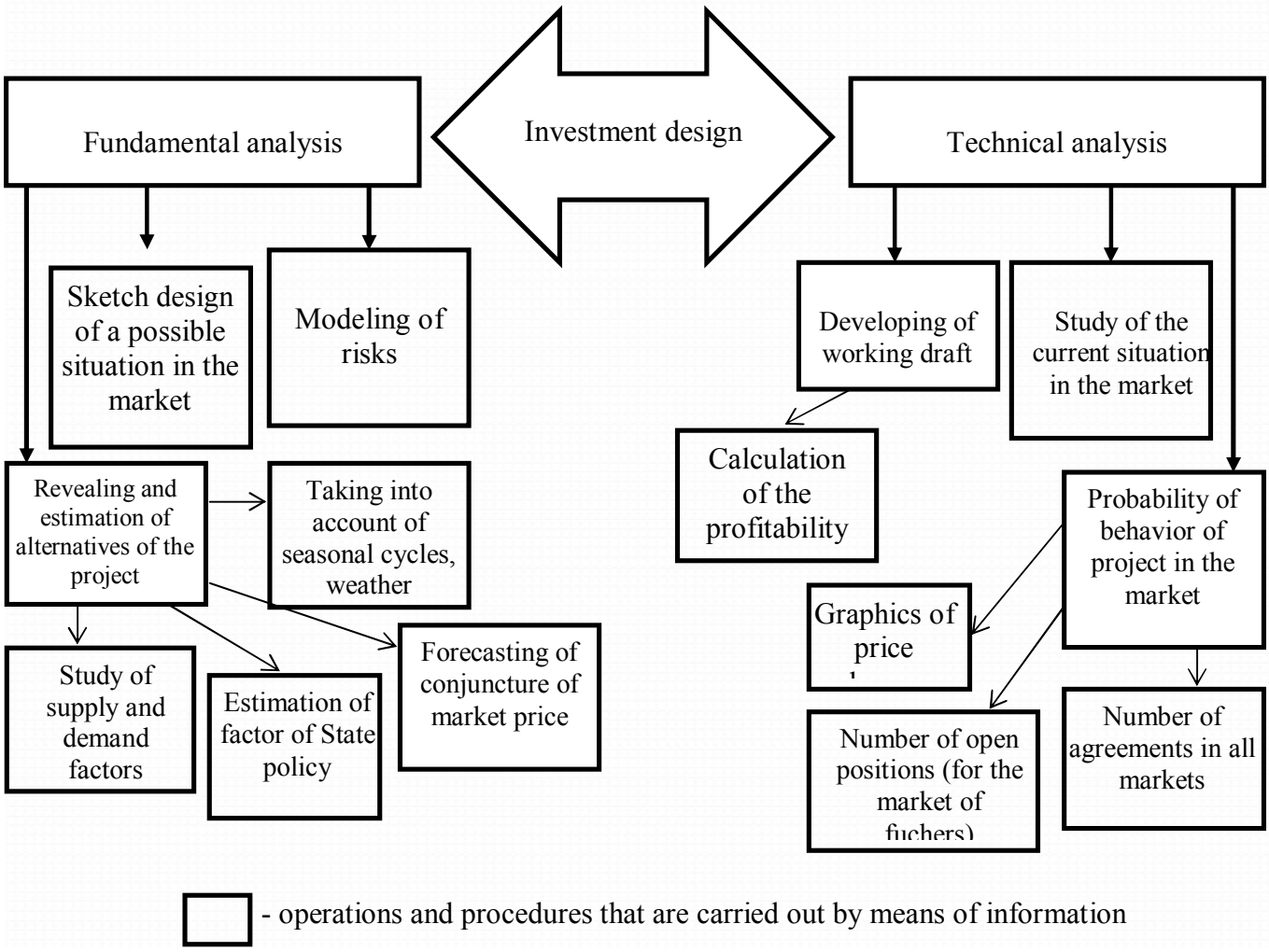

Fig. 1. Scheme of use of information systems in the investment design (developed by the author)

But, nowadays, value of the electronic information product, which is an object of intellectual property, from our point of view, depends on additional factors, namely:

- expenses of the owner of exclusive rights for patenting (registration) of the object of intellectual property;
- the costs for organizing of use of the object of intellectual property, which include expenditures for marketing;
- expenses for insurance of the object of intellectual property;
- the period of patent or certificate validity, for the moment of assessing of its value;
- expected incomings of license fees for this object under the condition of fixing the amounts of payments along the license agreements that are registered in the order established by current legislation;
- expected fee payings from the sale of copies of information product;
- expected saving of current expenses while using an object of intellectual property in the production.

Must be conducted the correct calculation of volume, set of functions of electronic information product.

It is necessary to foresee the inclusion into the project of following phases:

- accumulation of information about characteristics of the project;
- literary research of the problem;
- empirical research of the problem;
- designing;
- confirmation;
- starting of exploiting;
- exploiting period.

When collecting information, it turns out the imperfect portion in each time interval. At the same time there are several options for solving the problem. The final decision comes as a result of a choice of the optimal technology.

The process of investment management into information technologies foresees the estimation of investment opportunities and needs, dividing of resources and budgets of investment projects, determining and appointing of powers as for the project management, support of projects that meet the requirements of the company, refocusing or terminating of projects that do not meet the requirements of the company.

During process of investment management company should engage in choice of new projects, cancellation or termination of projects, which not appropriate to the mission of the company or its investment opportunities. The process of investment management into information technologies we offer to show like a form of block-scheme of step algorithm (fig. 2).

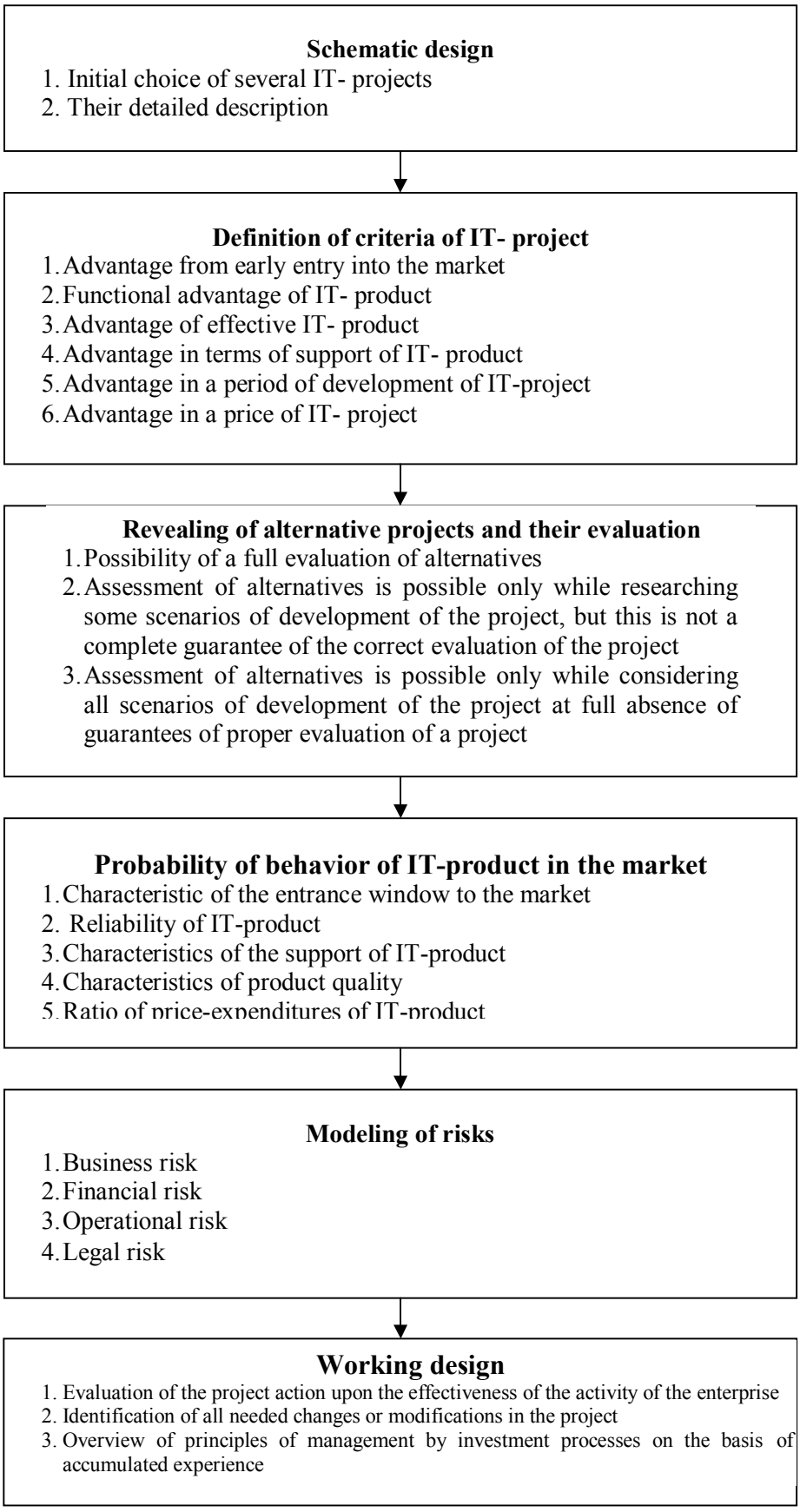

Fig. 2. Universal algorithm of investment management into information technologies

From the given scheme we can come to the following considerations. For searching of the efficient investment project, into the program providing must be selected few anticipated projects and evaluated the advantage of the development of each project. Thus, there are few alternatives of solving the problem of investment funds.

Then it is necessary to value, how possible is a complete assessment of alternatives. Taking this into account, the next steps are made.

Each electronic information product is characterized by the specific conduct in the market. During the implementation of each of the electronic information product is required the consideration of the expected risk of its operation.

Let's describe the kinds of risks that mostly occur during the use of the program providing in a business company.

These include:

– risk in the world financial market. Sources of financial risk lead to direct losses of income or to the appearance of unexpected expenses from incorrectly calculated amount of program means that are required, or loss of access to the information system;

– operational risk which is connected with the lack of reliability of the information infrastructure, differences in the world economic space;

– legal risk. Companies that do not have the license policy within one region often can suffer from fines or legal persecution. In addition, the company's reputation may suffer and will be lost the customer's trust. This risk is most frequent in the following situations: the use of unlicensed program providing; non-compliance with license conditions as for the program providing; breach of copyright; inappropriate use of electronic equipment; illegal dissemination of confidential information.

The most common indicator of estimation of level of investment risks in economic activity is a standard deviation [2, 4, 7]. The calculation of the given indicator takes into account fluctuations of supposed profit from various investments. It is calculated as follows (Formula 1):

$$\sigma = \sqrt{\sum_{t=1}^{n} (\varepsilon_t - \bar{\varepsilon})^2 \times p_t}, \quad (1)$$

where σ – level of investment risks;

ε_t – estimated income of investment project at different values of conjuncture, th. hrn.;

$\bar{\varepsilon}$ – expected average income according to the project, th. hrn.;

p_t – value of probability, corresponding to the estimated income;

t – number of periods on quantity of which observations are conducted;

n – number of observations.

Indicator of estimation of the level of investment risks takes into account fluctuating of expected profits from different investments: when identical values of the level of expected income more attractive is the project which is characterized by lower value of indicator of the level of investment risks, what means better correlation between income and risk.

Taking into consideration all the characteristics of each investment project, is held its final assessment and is calculated the index of project profitability with the known discount norm (formula 2):

$$ИП = \frac{1}{K}\sum_{t=0}^{T}(P_t - B_t)\frac{1}{(1+НП)^t}, \quad (2)$$

where $ИП$ – profit index;

K – initial investment, th. hrn.;

P_t – the results that have been achieved at t step of investment design, th. hrn.;

B_t – expenditures at t step of investment design, th. hrn.;

$НП$ – norm of profit;

T – quantity of steps of investment design;

t – number of the step of investment design.

Value of profitability index, that is more then one unit, means the efficiency of capital investments into the project, according to which calculation is carried out, at planned, by the subject of investment, norm of profitability, as well as the payback of initial investments and expenses for the next steps of investment design during the period of project implementation. When getting the value of the index of profitability, lower per unit, it is possible to reduce the rate of profit within an acceptable for the investor level, to take measures as for the improving of results of investment projecting or to refuse from realization of the project.

Despite the great advantages of this method, determining of index of profitability of investments into information technologies, its application must take into account some nuances. Yes, we have a high percentage of complete uncertainty in deciding of problems of implementation of electronic information product into investment projects. While considering specific situations, can be aroused a solution that has a substantial difference from beforehand stipulated. In such cases it is necessary a restructuring of the entire project. In addition, the conditions of entrance into the market substantially depend on the time of the entrance. It is unknown how much electronic information product will be

supported in the future because program providing in the market is been improving extremely. For the same reason the reaction to information that is used in the method, is often quite late. However, in general, the method can be considered acceptable in the investment design.

If the calculation will be held correctly, then the company can avoid additional expenses and thereby increase the effectiveness of the providing of electronic information services.

While evaluating investment proposals, except the presented calculations before the director of informatization is arises a problem of thoroughly thinking about the possible reaction of competitor's and its effect upon the profitability of the company. Above all, he must come to a conclusion, who will have benefit from the expected savings of costs or increase of productivity – the company or consumers. In addition, an objective decision is needed, if expected return from investments of possible risks is worth.

Conclusions. 1. Are generalized methodical approaches to the evaluation of source-level of innovations in information economy. In connection with the increasing of value of Internet for improving the efficiency of the original level of innovations in economy, there is a need to inculcate the concept of a unified information space of Ukraine: the information should be provided according to international standards, in a standard analytical form, initiated for further analysis, information modules of mass usage should be widely represented in the market of program providing products, and have an ergonomic interface.

In order to increase the effectiveness of investment processes in the national stock market, it is developed a conceptual scheme of use of information systems in the investment design, based on the inclusion of information systems during the fundamental and technical analysis according to the world of experience:

- fundamental analysis (a situation that may be carried out in the market, is highlighted through conceptual design. In order to forecast the market price, taking into account the research of factors of supply and demand, seasonal cycles, weather, public policy, we can reveal the alternatives to the project, their estimation according to factors. Risks are modulated).

- technical analysis (is researched the actual situation in the market, is calculated the profit of IT-project. Possibility of behavior of IT-product in the market is reflected by graphics of changes in: prices, volume of agreements across all markets, volume of open positions (for the futures market). Is been developed a working investment project.

The prospect of further development of the direction of structural organization of goods and investment market is the classification of information systems directly of technical analysis and widening, development of information

systems support, which can meet the needs of users in additional functions. The methodological basis of the preparation of specialists in innovations in the information economy is the formation in experts shared information through the application of methods and tools of innovative activity under the conditions of globalization and economy knowledge, which are based on the project, fundamental, process and system approaches.

Profit in the information economy of knowledge can be seen as a kind of certain paying for risk, since suspense always generates disparity between what is expected and what actually occurs. Profit is the reward for technical improvement and successful entrepreneurial activities.

2. It is determined that the most effective will be the result of economic activity with the use of a universal algorithm for development of an electronic information product and it's easy resetting when needed. Also is defined a methodology for calculating of expenditures for creating of electronic information product, which essentially is an object of intellectual property.

Is developed a universal algorithm of management with investments into information technologies, which has the following stages: conceptual design, determination of criteria of IT-project, calculation of the main parameters of IT-project, identification of alternative projects and their evaluation, the probability of the behavior of IT-product in the market, modeling of risks, operating design, and is proposed the application of the method of determining of the index of investment profitability into information technologies, which can be considered as acceptable in the investment design and with which is calculated the indicator of estimation of the level investment risks into information technologies - that allow to avoid additional expenditures and in such a way to increase the effectiveness of the given electronic information services.

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Наливайченко К.В. Значення сучасних інформаційних систем для здійснення інвестицій. В статтті доведено, що перспективою подальшого розвитку напряму структурної організації товарного та інвестиційного ринку є класифікація інформаційних систем безпосередньо технічного аналізу та поширення, розробка інформаційних систем супроводу, які можуть задовольняти потреби користувачів у допоміжних функціях.

Nalivaichenko K. Value current information systems for investment. It is proved that the prospect of further development direction of the structural organization of commodity and investment market is the classification of information systems directly technical analysis and dissemination, development of information systems support that can meet the needs of users in support roles.