V.G. Balan *(Kyiv Taras Shevchenko National University, Ukraine)*
M.V. Sytnitskyi *(Kyiv Taras Shevchenko National University, Ukraine)*

ROLE OF PORTFOLIO ANALYSIS IN FORMATION OF ENTERPRISE COMPETITIVE STRATEGIES

The paper outlines the place of portfolio analysis and the peculiarities of its application in the enterprise strategic planning. The stochastic model is proposed to increase efficiency of the analysis with an opportunity to define bottlenecks and problems, related both to the account of dynamic and turbulent character of the functioning conditions and a choice of a corresponding portfolio analysis tools and coordination of the strategies of enterprises` business units.

Keywords: *strategic planning; enterprise strategy; strategic business unit; portfolio analysis; stochastic model.*

В.Г. Балан *(Київський національний університет ім. Тараса Шевченка, Україна)*
М.В. Ситницький *(Київський національний університет ім. Тараса Шевченка, Україна)*

ПОРТФЕЛЬНИЙ АНАЛІЗ У ФОРМУВАННІ КОНКУРЕНТНИХ СТРАТЕГІЙ ПІДПРИЄМСТВА

У статті розглянуто місце портфельного аналізу в стратегічному плануванні діяльності підприємства, зазначено особливості його застосування. Для підвищення ефективності його проведення запропоновано стохастичну модель, яка дає змогу заздалегідь визначити «вузькі місця» та проблеми, пов'язані як з урахуванням динамічного й турбулентного характеру умов функціонування, так і з вибором відповідних інструментів портфельного аналізу та узгодження стратегій бізнес-одиниць підприємства.

Ключові слова: *стратегічне планування, стратегія підприємства, стратегічна бізнес-одиниця, портфельний аналіз, стохастична модель.*
Форм. 1. Рис. 3. Літ. 19.

В.Г. Балан *(Киевский национальный университет им. Тараса Шевченко, Украина)*
М.В. Ситницкий *(Киевский национальный университет им. Тараса Шевченко, Украина)*

ПОРТФЕЛЬНЫЙ АНАЛИЗ В ФОРМИРОВАНИИ КОНКУРЕНТНЫХ СТРАТЕГИЙ ПРЕДПРИЯТИЯ

В статье рассмотрено место портфельного анализа в стратегическом планировании деятельности предприятия, указаны особенности его применения. Для повышения эффективности его проведения предложена стохастическая модель, которая дает возможность заранее определить «узкие места» и проблемы, связанные как с учетом динамического и турбулентного характера условий функционирования, так и с выбором соответствующих инструментов для портфельного анализа и согласования стратегий бизнес-единиц предприятия.

Ключевые слова: *стратегическое планирование, стратегия предприятия, стратегическая бизнес-единица, портфельный анализ, стохастическая модель.*

Definition of the problem. There is no doubt that application of strategic approaches and business management methods is of utmost importance today. Well-organized process of strategic planning can provide not only mere survival under difficult conditions of functioning, but also consistent and stable growth because it gives the chance to make more use of opportunities and to avoid threats appearing on this way. It is especially important under conditions of global financial and economic crises. One more condition of achievement of high efficiency in the activity of any establishment is management balance, simultaneous focus on different branches. The most famous and efficient strategic planning tools for both foreign and domestic enterprises are the methods of portfolio analysis. They give the opportunity to formulate strategic recommendations for business units of the diversified enterprises and also to solve the problems of strategies coordination in their activity and the increase of strategic management efficiency.

The analysis of recent researches and publications. Different aspects of strategic analysis of enterprises' activity with the usage of matrix approaches have been studied by the classics of strategic management – I. Ansoff, J.J. Lambin, M. Porter, A.A. Thompson, A.J. Strickland, P. Drucker and others. The majority of modern publications dedicated to the topic of conducting a portfolio analysis are focused on the description of matrix methods, on the opportunities and limitations of their applications. A number of works contains examples of carrying out a strategic diagnostics at an enterprise. The diagnostics is carried out either on the basis of portfolio matrixes in different spheres of national economy or with the linkage to different levels of strategic planning.

Parts of the general problem not considered before. Despite the fact that there are groundworks in the field of diagnostic approaches use for strategic analysis, a number of important problems still remain unsolved. These problems are connected with the efficiency increase of the enterprise-based portfolio analysis and the strategies worked out on its basis. Lack of scientific investigations of the mentioned problems determines the aims of this article: to consider the role of portfolio analysis in the enterprises` strategic planning, its peculiarities and problems in its application in order to warn against the mechanic and formal approaches to the usage of portfolio analysis methods while forming the strategies of an enterprise. Another direction of the research is aimed at the increase of the portfolio analysis efficiency. In order to do it, the task to construct the stochastic model is posed. It would enable defining in advance bottlenecks and problems connected both with dynamic and turbulent conditions of functioning and with the choice of corresponding portfolio analysis tools and coordinating the strategies of the enterprises` business units.

Key results. The analysis of an enterprise's economic portfolio is aimed to diagnose current and future kinds of activity for preparation of strategic decisions in order to have "portfolio planning" for strengthening an enterprise's competitive positions at a market. At the same time the optimal structure of business portfolio is defined. This structure must provide an enterprise with key factors of success both for short-term and long term and with strategic recommendations for each business unit and for an enterprise as a whole. The place of portfolio analysis (with the list of its most used tools) in the system of strategic planning is shown on Figure 1.

Thus, it is possible to state that the analysis of a businesses portfolio is the basis for strategic planning. However, it should be kept in mind that the matrixes of portfolio analysis are just a mere instrument of structuring the strategic thinking, and the results obtained on the basis of the portfolio analysis recommendations are not the prescriptive models of market behaviour.

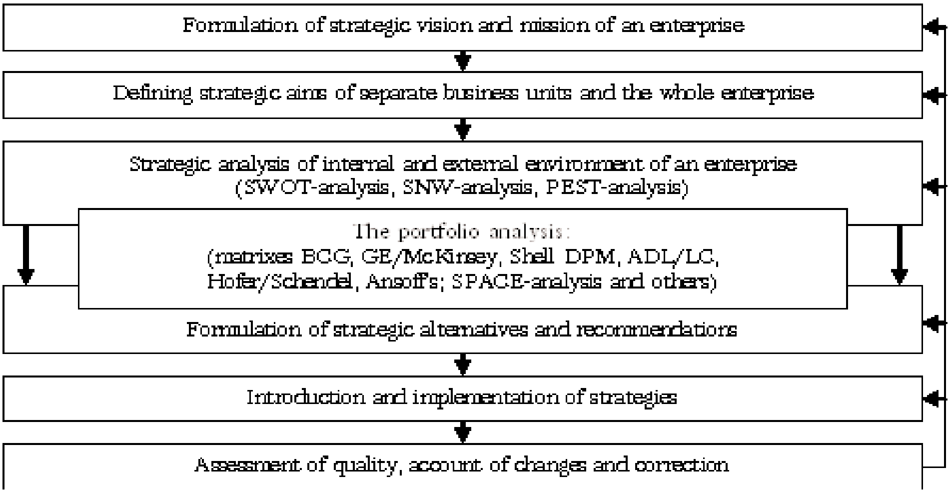


Fig. 1. **The place of portfolio analysis in the system of strategic planning at an enterprise,** *constructed by the authors*

We will not go into details on the existing methods of portfolio analysis in the present research, but we'll mention some characteristic and important peculiarities and problems in their application:

1. Even when a portfolio analysis at an enterprise is carried out professionally enough, with formulation of strategies for each business unit, it still requires essential improvements and adaptation with regard to the specifics of its functioning and uniqueness; and what is most important – it requires constant correction in accordance with changes of both internal and external environments of an enterprise.

2. One more problematic issue of the usage of portfolio analysis tools is incompleteness, inaccuracy, unreliability of information both about the parameters of the competitors` functioning, opportunities to provide enterprises with strategic resources, consumer behaviour at a market and about the level of influence of different factors of macro-environment even for quite a short-term period, let alone more distant perspective.

3. Taking into account the synergetic interconnections between separate business units and of the whole synergy effect during strategies formulation on the basis of the constructed matrixes is reduced to simply opportunity to use financial recourses obtained by other business units. This statement is not absolutely true for the enterprises which implement non-connected diversification. This fact is supported by P. Drucker, one of the experts in strategic management, who considered financial synergism (i.e., the expected synergetic effects from conglomerate diversification) to be "good on paper, but it fails to work out in practice".

4. On the other hand, while forming competitive strategies of business units and especially corporate strategy of an enterprise on their basis, the potentiality of synergism as one of the most important factors of success is ignored. It happens because information about possible synergetic effects (except for financial ones, as mentioned above) is practically not used during the construction of matrixes for portfolio analysis.

5. Majority of the portfolio analysis matrixes are aimed at forming strategies for business units in the short term. If in more distant perspective parameters of activity are too different from the current ones, it is necessary to supplement the analysis of strategic positions with the thought-over correlation between the sets of strategic business units in the short-term and long-term perspectives. The problem is providing reasonable balance between short-term and long-term profitability.

6. One more problem, connected with the previous remark, is that majority of matrixes don`t have strategic recommendations for nonstandard behaviour of business units during the dynamic analysis (some matrixes propose the set of strategies for static conditions only). It results in the necessity of deeper understanding of trend at a market, of the cause-effect relations, existing in the field, conditions of enterprises` functioning, consideration of future influences of different factors and strategic unexpectedness. It requires serious analytical work of top managers (planners) on the issue of forecast and beforehand preparation of correction measures.

All the mentioned remarks concerning the usage of portfolio analysis methodology in strategic planning require application of modern methodological approaches. These approaches should be directed at solving problematic issues and consideration of stochastic nature of influence of different endogenous and exogenous factors on particular business units and an enterprise.

In order to increase the effectiveness of the portfolio analysis application it`s appropriate to use stochastic models on the basis of W-functions and the theory of closed flow graphs, which gives the opportunity:

1) to present visually and fully enough all the stages of conducting the portfolio analysis;

2) to define problematic areas and bottlenecks in this process;

3) to take into account the stochastic nature both of the very process of portfolio analysis and of the influence of different factors (taking into account possible considerations about both the time of performing each operation and about the probability of its accomplishment);

4) to define main risks connected with conducting the portfolio analysis;

5) to estimate the duration of fulfilling the stages and the whole portfolio analysis in general;

6) to define the probability of these or that results in the process of conducting portfolio analysis;

7) to distribute optimally the financial resources between separate business units of an enterprise;

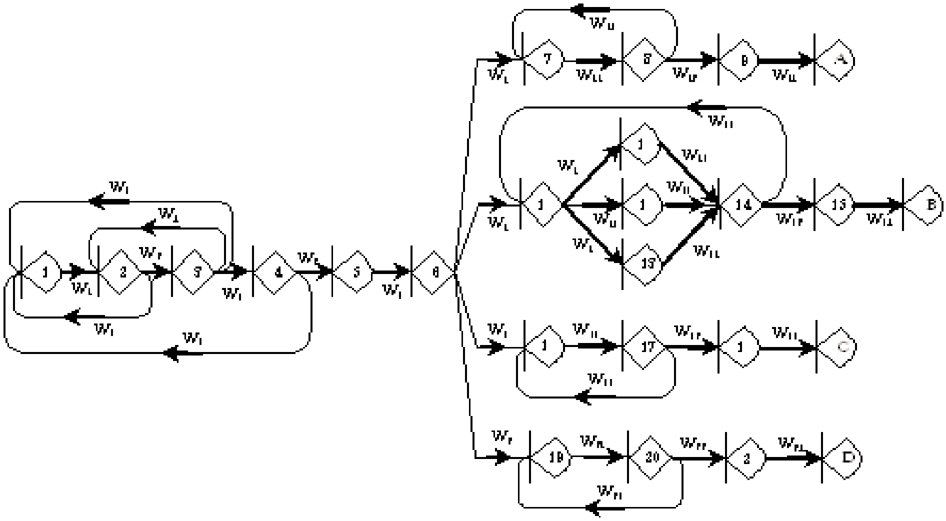
8) to balance business strategies more effectively using synergetic mutual support and interconnection between economic departments of an enterprise;

9) to consider possible changes of influence factors in the activity of separate business units and of the enterprise as a whole;

10) to increase the efficiency of the formulated strategies both from the point of view of their validity and from the point of view of future implementation;

11) to give "food for thought" about further administration of the business portfolio of an enterprise from the point of view of its restructurization.

Fig. 2 shows the corresponding stochastic model devised by the authors. There are the following correspondences between W-functions and certain operations in conducting portfolio analysis for an enterprise.



W_1 – conducting the portfolio analysis of internal and external environments of enterprises (SWOT, SNW, PEST-analysis); W_2 – new information retrieval about the changes of internal and external environments in the enterprise; W_3 – the strategic segmentation of enterprise's activity with singling out strategic business-units for portfolio analysis; W_4 – adjustment of portfolio of business units; W_5 – correction with consideration of new relevant information about the functioning conditions; W_6 – estimation of the level of interconnection and mutual support of strategic business units and of the level of synergism; W_7 – adjustment of interconnections between separate business units for the sake of providing enterprise with strategic flexibility; W_8 – construction of scenarios of business directions' development within enterprise's activity; W_9 – to select methods of analysis for the business units portfolio; W_{10} – preparation to select the information, necessary for conducting SPACE-analysis of an enterprise ("financial force" estimation, estimation of the level of enterprise's competitive advantages, of the attraction and stability of sector in which an enterprise is functioning); W_{11} – construction of SPACE-analysis matrix; W_{12} – correction of the matrix with regard to changes in factors of external and internal environments; W_{13} – the analysis of SPACE-analysis matrix; W_{14} – formulation of strategic recommendations for business units, their balancing and coordination; W_{15} – preparation for conducting portfolio analysis via one of the classical methods (W_{16} – GE/McKinsey matrix; W_{17} – Shell DPM, W_{18} – ADL/LC); W_{19}, W_{20}, W_{21} – correspondingly, construction of GE/McKinsey, Shell DPM, ADL/LC matrixes; W_{22} – correction of the defined matrixes; W_{23} – the analysis of the results of matrix analysis; W_{24} – formulation of strategic recommendations for business units, their balancing and coordination; W_{25} – preparation for portfolio analysis conduction with the help of Hofer-Schendel matrix; W_{26} – construction of Hofer-Schendel matrix; W_{27} – matrix correction with regard to changes in conditions of market functioning and competitive positions of business units; W_{28} – Hofer-Schendel matrix analysis; W_{29} – formulation of strategic recommendations for business units, their balancing and coordination; W_{30} – preparation for portfolio analysis by means of integral approach making use of several methods of portfolio analysis (for example, BCG and Ansoff matrices); W_{31} – construction of matrices of the defined methods; W_{32} – matrices correction with regard to changes in the conditions of enterprise and its business units' functioning; W_{33} – analysis and coordination of the results; W_{34} – formulation of strategic recommendations for business units, their balancing and coordination.

Fig. 2. **The stochastic model of portfolio analysis at an enterprise,**
constructed by the authors

In order to apply closed stream graphs theory, for each unit it`s necessary to introduce additional arc with W-function ($W_A(s)$, $W_B(s)$, $W_C(s)$ and $W_D(s)$), connecting the initial item with terminal A, B, C and D correspondingly.

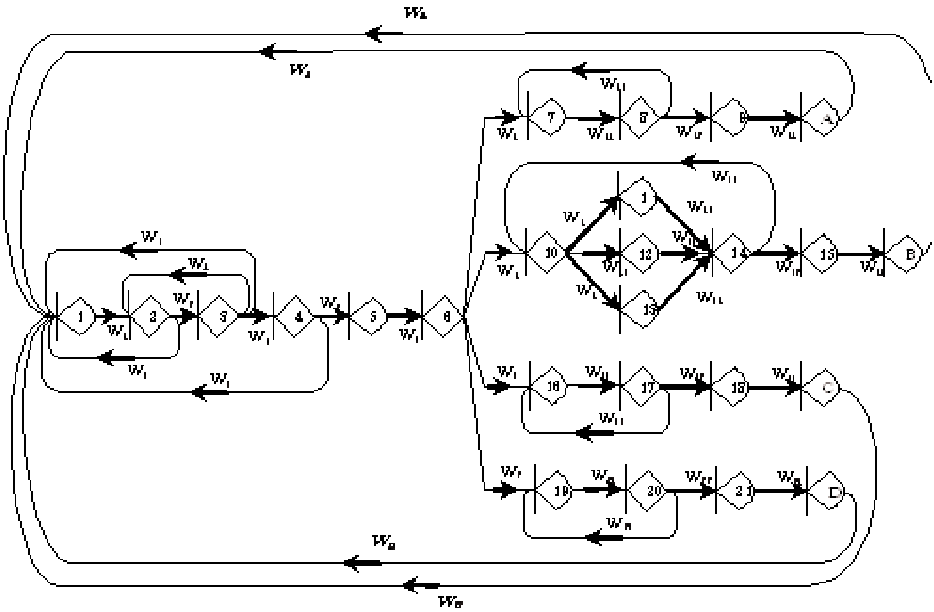


Fig. 3. **Closed graph of stochastic model of conducting the portfolio analysis at an enterprise,** *constructed by the authors*

According to [13], W-function of work ($i;j$) is defined as $W_{ij} = p_{ij} \times M_{ij}$, where M_{ij} is generating function of variate, and p_{ij} – the possibility of carrying out this operation. Now it`s possible to make use of the rules of net model reduction and to put down the topological equation (the Mason equation) for each closed stochastic graph. In general, this equation looks like this:

$$1-\sum_i W(L_i(1))+\sum_j W(L_j(2))+\ldots+(-1)^m\sum_p W(L_p(m))=0, \qquad (1)$$

where $\sum_i W(L_i(k))$ is the sum of W-functions of all the k-array loops in a closed graph.

It should be mentioned that with the help of this equation it`s possible to calculate mathematic expectation and time dispersion of net implementation, and also the probabilities of implementation of each of its terminal units. Besides, one more important result which could be obtained from the Mason equation analysis is the meaning of mean-square deviation of the expected time of the end of each terminal unit of the stochastic model. The latter gives the opportunity to define corresponding risk level.

Conclusions. To sum up the obtained results, it`s possible to conclude that the existing problems of conducting a portfolio analysis are explained by:

1) underdevelopment of the theoretical basis (lack of strategic recommendations for non-standard behaviour of business units during dynamic analysis in the majority of matrices);

2) the objective factor — the lack of precise, complete and reliable information on the current and predicted state of macro- and microenvironment of an enterprise;

3) the subjective factor, namely insufficient competence and insufficient professionalism of strategic analysts and enterprise's managers, lack of deep understanding of cause-effect connections of the sector and the logic of market functioning, lack of entrepreneurial intuition etc.

It should be mentioned that a number of problematic issues can partly be eliminated by using the proposed methodological approach with the usage of stochastic models on the basis of the closed stream graphs theory. This approach increases the validity of portfolio analysis measures and finally it ensures higher effectiveness of strategic administration of an enterprise.

The obtained results can be used to define and specify the stages of business-portfolio analysis at an enterprise, to ground the choice of matrix analysis instruments, and also to ensure higher efficiency of portfolio analysis and implementation of the defined strategic recommendations.

Perspectives for further research. Further research following this work can be aimed at:

1) consideration and analysis of enterprise's business portfolio in dynamic conditions, i.e. formulation of strategic recommendations for business units with the account of short- and long-term projections and different future scenarios;

2) correction and improvement of the stochastic model on the basis of its adaptation to the specifics of functioning of a particular enterprise acting at a market;

3) conduction of model experiment by using the variations of expert estimations:

a) duration of carrying out different operations and stages in portfolio analysis;

b) the probability of realization of different variants.

1. *Ансофф И.* Стратегическое управление. — М.: Экономика, 1989. — 519 с.

2. *Друкер П.* Эффективное управление. Экономические задачи и оптимальные решения. — М.: ФАИР-ПРЕСС, 1988. — 288 с.

3. *Ефремов В.С.* Классические модели стратегического анализа и планирования: модель BCG // Менеджмент в России и за рубежом.— 1997.— №7—8 // www.cfin.ru.

4. *Ефремов В.С.* Классические модели стратегического анализа и планирования: модель ADL/LC // Менеджмент в России и за рубежом.— 1998.— №1 // www.cfin.ru.

5. *Ефремов В.С.* Классические модели стратегического анализа и планирования: модель HOFER/SCHENDEL // Менеджмент в России и за рубежом.— 1998.— №2 // www.cfin.ru.

6. *Ламбен Ж.-Ж.* Стратегический маркетинг. Европейская перспектива. — СПб.: Наука, 1996. — 589 с.

7. *Мак-Дональд М.* Стратегическое планирование маркетинга. — СПб.: Питер, 2000. — 320 с.

8. *Портер М.* Стратегія конкуренції. — К.: Основи, 1998. — 390 с.

9. *Прудка Н.В.* Портфельний аналіз в корпоративному управлінні в в сфері телекомунікацій (на прикладі ВАТ «Укртелеком»): Дис... канд. екон. наук: 08.07.04. — К., 2003. — 165 с.

10. *Ревуцька Н.В.* Використання портфельного аналізу для побудови проектної бізнес-моделі компанії // Маркетинг в Україні.— 2004.— №5. — С. 52—55.

11. *Скригун Н.П.* Використання портфельного аналізу в маркетинговому стратегічному плануванні // Харчова промисловість.— 2009.— №8. — С. 112—115.

12. *Томпсон А.А., Стриклend А.Дж.* Стратегический менеджмент: концепции и ситуации для анализа / Пер. с англ. — 12-е изд. — М.: Вильмс, 2002. — 928 с.

13. *Черваньов Д.М., Балан В.Г.* Сіткові моделі у менеджменті. — К.: РВВ ІМФ, 2003. — 160 с.

14. *Яшин С.Н., Корнилов Д.А.* Некоторые аспекты методологии портфельного анализа // Финансы и кредит.— 2006.— №2. — С. 24—27.

15. *Ansoff, H.I.* (1987). Corporate Strategy, revised edition. Penguin Books.

16. *Hammer, M.* (1996). Beyond Reengineering: How the Process-Centered Organization is Changing Our Work and Our Lives. 285 p.

17. *Hammer, M., Champy, J.* (1993). Reengineering the corporation: a manifesto for business revolution. Business Books, New York. 272 pp.

18. *Hammer, M., Stanton, S.A.* (1995). The Reengineering Revolution. Harper Collins, London. 352 p.

19. *Porter, M.* (1980). Competetive Strategy: Techniques for Analyzing Industries and Competitors. New York: Free Press.

Стаття надійшла до редакції 4.11.2011.

КНИЖКОВИЙ СВІТ

Фінансово-економічний розвиток України в умовах глобалізації: Колективна наукова монографія / За ред. Я.В. Белінської. — К.: Національна академія управління, 2008. — 212 с. Ціна без доставки — 25 грн.

Монографія присвячена фінансово-економічним проблемам розвитку економіки України в умовах глобалізації. Викладені теоретико-методологічні питання розробки стратегії входження України у світове господарство та формування фінансово-економічного механізму цього процесу. В основу викладу матеріалу монографії покладені багаторічні дослідження науковців в галузі економічної теорії, фінансів та банківської справи, які були апробовані на сторінках авторитетного журналу "Актуальні проблеми економіки" в 2004—2007 роках. В монографії обґрунтовано шляхи забезпечення структурно збалансованого економічного зростання економічної системи Україні та її ефективного міжнародного співробітництва, визначені напрями вдосконалення всіх ланок господарської системи.