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WHAT FACTORS ARE IMPORTANT TO ORGANISATIONAL BUYERS WHEN CHOOSING A SUPPLIER? – A MAJOR AREA OF RESEARCH IN THE FIELD OF INDUSTRIAL BUYING BEHAVIOUR

VIRGINIA BĂLEANU*

Key words: industrial buying behaviour, buying centre, buygrid framework, buyphases, buyclasses

Abstract: This paper gives a brief introduction to industrial buying behaviour and the most reviewed concepts in the literature and research on this area: the buying process and the supplier selection decisions.

Many industrial market research projects trying to asses why buyers choose one supplier in preference to another, or why some quantity of some product is bought from supplier X, rather than from supplier Y. There are three main distinctions between industrial buying and consumer buying that has an impact on research metodology and these are still sufficient distinguishing features for the two remaining separate areas for study. A fundamental distinction is decision making by a buying centre comprising a number of individuals. The term "buying centre" was defined by P. Robinson, C. Faris and Y. Wind as "the individuals who are related directly to the purchasing process, whether users, buying influences, decision makers, or actual purchasers" [5, p.101]. Also the great number of buyers of industrial companies, or the complexity of the supply chain has a major impact on the buyer-seller relationship and the methods used to research buyer behaviour.

The most important concepts in the field of industrial buying behaviour (hereafter IBB) are related to the understanding of the buying process and the decision-making process. F. E. Webster and Y. Wind [8, p.1] define industrial buying as "a complex process of decision-making and communication, wich takes place over time, involving several organisational members and relationships with other firms and institutions". According to Y. Wind and R. Thomas, "from the time at wich a need

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arises for a product or service, to the purchase decision and its subsequent evaluation, a complex myriad of activities can take place" [9, p.242].

There is a basic conceptual model – the buygrid framework – elaborated by Robinson, Faris and Wind [5], commonly referred to in IBB literature. This model for analysis of industrial buying situations combines the eight buyphases of the standard buying process with three types of buying situations (buyclasses) wich are presented in table 1. The buyphases are summary described below:

Phase one is related to the recognition of a problem (a need) and of the fact that the general solution is a purchase.

Phase two consists in the determination of a specific way to solve the problem (the decision makers that are involved must determine what type and quantity of products or services should be supplied the need).

Phase three takes the form of an extention of the phase two, it is a detail specification of needed products/services, which can be communicated to others.

In phase four, the potential sources are screened and evaluated for the qualification of suppliers.

Phase five consists in the acquisition and analysis of information/proposals about prices and deliveries: in a simple buying situation may involve just checking a catalogue or telephoning the suppliers, but in more complex situations may appear some counter-proposals and new offers what should be considered.

Phase six is related to the selection of suppliers: the proposals/offers are analysed on the basis of some relevant criteria for the buying organisation; the "optimal" supplier is selected when the buyer approves a proposal and rejects the others.

In phase seven, buying organisation gives an order to the selected supplier; the order routine involves many internal and external activities, so that the procurement stage is not completed until the product/service is delivered and accepted for use.

Phase eight is related to the evaluation of suppliers performance (how well the selected suppliers and their products/services solved the buyer problems).

In the buygrid framework has been considered three basic buyclasses (buying situations): new task, modified rebuy and straight rebuy. Any buyclass can be characterised according to the newness of the problem, information requirements and considerations of new alternatives (see table 2 below). The new task refers to the situation when industrial buyers are buying a product or service for the first time and requires extensive information and evaluation of alternatives; industrial buyers regard this buyclass as the most difficult situation and associate them with high risk. According to Dholakia and Johnson, "...the modified rebuy involves a somewhat familiar purchase with some new information requirements and some further evaluation of alternatives" [1, p.284].

The result of some situation may be that the industrial buyer purchases the same product/service from the same source, but after the re-evaluation of some new alternatives. The straight rebuy describe "the buying situation where the purchasing department reorders on a routine basis" [10, p. 588]; in

this buyclass no new information or evaluation is required, so that the straight rebuy situation is the most common in industrial buying.

Table no 1

The Buygrid Framework for Industrial Buying Situations

Buyphases	**Buyclasses (buying situations)**		
	New task	**Modified rebuy**	**Straight rebuy**
Anticipation or recognition of a problem (need) and a general solution	x	–/x ?	–
Determination of characteristics and quantity of needed item	x	–/x ?	–
Description of characteristics and quantity of needed item	x	x	x
Search for and qualification of potential sources	x	–/x ?	–
Acquisition and analysis of proposals	x	–/x ?	–
Evaluation of proposals and selection of supplier(s)	x	–/x ?	–
Selection of an order routine	x	–/x ?	–
Performance feedback and evaluation	x	x	x

Notes:

The most complex buying situation occur in the upper left portion of the buygrid matrix, when the largest number of decision makers and buying influences are involved. Thus, a new task in its initial phase of problem recognition generally represents the greatest difficulty for management.

Clearly, a new task may entail policy questions and special studies, whereas a modified rebuy may be more routine, and a straight rebuy essentially automatic.

As buyphases are completed, moving from phase 1 through phase 8, the process of "creeping commitment" occurs, and there is diminishing likelihood of new vendors gaining access to the buying situation.

Source: Adapted from [5, p.14] and [3, p.406]

Table no. 2

Distinguishing Characteristics of Buyclasses

Buyclass	**Level of the:**		
	Newness of the Problem	**Information Requirements**	**Consideration of New Alternatives**
New task	Maximum	Maximum	Maximum
Modified rebuy	Medium	Medium	Medium
Straight rebuy	Minimal	Minimal	Minimal

Source: Adapted from [5, p. 25]

Among the eight buyphases, phase number six in the buygrid framework is one of the most important and has been a central focus for many industrial market research

over the time. Recently, C. Swift and K. Gruben state that "with fewer suppliers being considered, the task of supplier selection becomes increasingly more important,... and consequently, the industrial buyer dependency on each individual supplier in terms of reliability and credibility increases" [6, p. 502]. For this reason, the industrial buyers' supplier evaluation and selection criteria are critical elements in the field of IBB. Relevant in this area, the study performed by G. Dickson (1966) on 273 purchasing agents and managers in the USA and Canada distinguished 23 relevant selection criteria, evaluated with extreme, considerable, average and slight importance (see table 3 below).

Table no 3

Dickson's selection criteria

Rank	Criteria	Evaluation
1	Quality	Extreme importance
2	Delivery	
3	Performance history	
4	Waranties and claim policies	
5	Production facilities and capacity	Considerable importance
6	Price	
7	Technical capability	
8	Financial position	
9	Procedural compliance	
10	Communication system	
11	Reputation and position in industry	
12	Desire for business	
13	Management and organization	
14	Operating controls	
15	Repair service	Average importance
16	Attitude	
17	Impression	
18	Packaging ability	
19	Labour relations record	
20	Geographical location	
21	Amount of past business	
22	Training aids	
23	Reciprocal arrangements	Slight importance

Source: Adapted from [2, p.38]

Twenty-five years later, C. Weber, J. Current and W. Benton [7] reviewed and classified 74 articles refers to this part of the buying process, published since 1966. This study found that 47 of the articles mentioned more than one Dickson's criteria and, among these, 22 were addresed in at least one of the articles. Related to importance evaluation of the selection criteria, 13 of the articles mentioned the most important criteria of quality and delivery, 8 of them mentioned net price and 6 of them mentioned production facilities and capacity. These criteria were ranked 1, 2, 6 and 5

in the Dickson study [2]. On the other hand, 13 of the 74 articles, published in the last part of the period, were specifically related to JIT (Just In Time) – a new philosophy and practice in the production and supply sistems, what has however changed the importance of the selection criteria.

More recently (2001), an empirical study of Scania and Volvo truck corporation performed by A. Krig and M. Stenstrom [4] compared the two firm's supplier selection criteria for buying components with the same Dickson list (see table 4 below). As visualised in table 4, environmental friendliness and safety are the criteria of extreme importance (highest priority, rank 1 and 2) to Scania, while Volvo ranks the two criteria only as being of average importance (rank 10 and 11). These criteria and spare parts (ranks as considerable importance, rank 7, by Scania and Volvo) are not included in Dickson's study. Krig and Stenstrom state that "this may be due to an increased environmental awareness among various stakeholder or interest groups and escalting safety concerns...", also, related to spare parts: "this is an interesting issue and may depend on the industry chosen as the turnover of spare parts in the heavy truck industry is huge" [4, p. 35, 36].

Among the top ten criteria from Dickson list there were two, not all mentioned by Scania and Volvo: technical capability and procedural compliance. According to Krig and Stenstrom, the two companies probably considers these criteria but they do not exert a major influence on the selection decision. They concluded: 1) apart from three criteria (environmetal friendliness, safety and spare parts) Dickson's study reflects Scania's and Volvo's selection criteria; 2) the most important supplier selection criteria shared by both companies are quality, delivery and communication system (due to new changes, i.e. environmental regulations, JIT philosophy, electronic data interchange systems), because circumstantial Volvo's high evaluation (under financial pressure, address the price criterion as a dominant variable).

Conclusions

A buying situation may be familiar or new to the buying organisation. The three buyclasses described previously in the buygrid framework are defined based on the relevant experience of a buying organisation, ranging between the familiar and simple one (straight rebuy) and the two more unfamiliar and complicated ones (modified rebuy and new task). The supplier selection has long been recognised as vital and has been a central focus for much of the industrial market research over the time. When the decision of purchasing a product/service is taken, the members of the buying centre establish a set of selection criteria that can be used when comparing offers of the potential suppliers. The type of buyclass, also the type of buying organisation affected the relative importance of some selection criteria. Here, the supplier selection decisions tend to vary according to the specific situation in which the decision must be made.

Table no.4

Selection Criteria at Scania and Volvo, compared with the Dickson's list

Criteria	Scania's Evaluation		Volvo's Evaluation		Dickson's Evaluation	
	Importance	Rank	Importance	Rank	Importance	Rank
Quality	Extreme	3	Extreme	2	Extreme	1
Delivery	Extreme	4	Extreme	3	Extreme	2
Performance history	–	–	Considerable	5	Extreme	3
Warranties and claim policies	Average	9	Considerable	6	Extreme	4
Price	Considerable	6	Extreme*	1	Considerable	6
Financial position	Average	10	Average	9	Considerable	8
Communication system	Extreme	5	Extreme	4	Considerable	10
Geographical location	Considerable	8	Considerable	8	Average	20
Environmental friendliness	Extreme	1	Average	10	–	–
Safety	Extreme	2	Average	11	–	–
Spare parts	Considerable	7	Considerable	7	–	–

Source: Adapted from [4, p. 35, 40, 45]

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GENERAL CONSIDERATIONS CONCERNING THE PERFORMANCE CONTRACT

MOISE BOJINCĂ, MELINDA SZASZ *

Abstract: The performance contract means the consent of will established between the economic agents by its official designated by the shareholder's meeting, in trading companies, by the Board of Directors in Autonomous Administrations and the economic agent leader and its objective is to fulfill the criteria and the objectives of performance approved in the budget in exchange of the wages established in the individual labor agreement.

Key words: draft, reglementation, manager responsibilities, responsibility of the parts

Draft and reglementation

The performance contract means the consent of will established between the economic agents by its official designated by the shareholder's meeting, in trading companies, by the Board of Directors in Autonomous Administrations and the economic agent leader and its objective is to fulfill the criteria and the objectives of performance approved in the budget in exchange of the wages established in the individual labor agreement.

The Emergency Ordinance of the Romanian Government regulated the performance contract. In this Ordinance means by economic agent understands: Autonomous Administrations, societies and national companies as well as the trade companies in which the state or an administrative- territorial unity is a stockholder.

By the time of concluding the contracts of performance, the contracts of administration concluded on the basis of the Government Emergency Ordinance no. 49/1999, concerning the administration of the companies/national.

l societies or the trade companies in which the state or an authority of local public administration is a stock holder as well as the Autonomous Administrations both in the contracts of management concluded on the basis of the Law 66/1993 with the subsequent modifications and completions for Autonomous Administrations.

The contract of performance is an enclosure to the individual labor agreement.

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The contracting parties are:

1. the economic agent, as he was defined above;
2. the leader of the economic agent (natural person)

The contract of performance's object is leading, organizing and the management of the economic agent's activity in view to fulfill the objective and the performance criteria (enclosure to the contract), in exchange of the salary wages established in the individual labor agreement.

The contract of performance is concluded on an equivalent term with those of the individual labor agreement and it is revised yearly in 30 days time from the budget approval of the contacting economic agent.

The rights and the obligations of the managers.

► Receiving of a basic wages in the quantum established in the individual labor agreement taking into account the volume and the importance of the activity. The basic wages are increasing yearly with the annual rate of the salary's growth in the enterprise, in conformity with the collective labor agreement, but not more than the level stipulated in the law.

The manager salary rights are distinctly emphases in the wage fund stipulated in the budget. The monthly basic wage cannot exceed the monthly indemnity for the position of secretary of state established by the law. Every month, the manager can be granted, besides the basic wage, with a sum equal with at most 50% of this sum, as additions, benefits, prizes and other salary rights.

After the approval of the annual report, conditional upon the achievement of the criteria provided for the contract of performance included the programs for reducing debts and the outstanding payments, the damages as well as the other objectives, the manager can be granted with a yearly prize of 12 basic wages at most.
The salary rights are granted wholly, every month, only if the performance's criteria included the program for reducing the outstanding payments in comparable prices are fulfilled accumulated since the beginning of the year.

The salary rights, established on the terms of the law are reduced pro rata with the degree of unfullfilment the terms provided for the paragraph 1), but not more than 30% of the basic wage.

► The unlimited information right on the activity of the Autonomous Administrations/trade societies, having access to all documents.

► The settling up, on the basis of the documents in proof of the accommodation expenses, traveling expenses, the daily allowance and other expenses, for travels on duty interest, both in the country or abroad, between the limits established in the yearly budget.

► The right of utilization a car with or without driver, from the commercial society endowment for travels on duty interest.

► The workmen's compensation insurance, life insurance concerning the professional activity.

► Proper protection equipment for each type of activity of the trade society.

► To fulfill the objective and the performance's criteria concluded in the contract. The performance's criteria enclosed to the contract, are materialized in annual programs for reducing the outstanding payments as well as for the damages reducing. These programs for reducing debts and the outstanding payments must include the respective ratio, expressed in current and comparable prices, depending on the prices increasing ratio regarding the 31st of December of the previous year.. In these programs are established limits of maxim for the debts and outstanding payments.
► To transmit monthly, on the level of authority (reported on the degree of subordination: to the local administration authorities, public administration authorities, ministry or to the APAPS) the report concerning the expenses with salaries realized in the previous month and accumulated from the beginning of the year, the structure of the wage fund, for manager, and the report of the objective and the performance criteria, together with an analyze of unfulfilment causes.
► Do not surrender the contract to somebody else;
► To participate in specializing courses organized both in the country and abroad.

Manager responsibilities.

► He lead directly and effectively the whole activity of the society;
► He selects, employs and dismiss the staff, respecting the disposals of the law and the individual labor agreement.
► He negotiates the collective labor agreement and the individual labor agreements as well.
► He represents the Autonomous Administrations/trade societies in its functional relations with natural or legal persons.
► He concludes the legal acts on behalf of the society.
► He discharges the obligations entrust by the society's board of directors and by the chain of command.
► He concludes contracts of performance with natural persons which hold the leading position in the trade society.
► He pursues the salary wage granting due to the other persons with the leading position in the society.

The rights and obligations of the Board of Directors.

The Board of Directors has the following obligations:

1. To ensure the wholly freedom for the manager in leading, organizing and the management of the society's activity.
2. To ensure the manager all the rights due stipulated in the contract of performance.

The Board of Directors has the following rights:

1. To adopt measures for diminish the manager salary wage in conformity with the enclosure to the contract.

The manager is bonded:

- To use all his capacity of labor in the society's interest, behaving as a good leader.

- during the whole contract, the manager obligation is to keep the confidentiality of the dates and information concerning the activity of the society.

The responsibility of the parts

For unfulfillment the obligations or for inadequate achievement of the obligations stipulated in the contract of performance, the parts are responsible for in keeping with the laws. Contingency protects the parts from responsibility in agreement with the disposals of the Civil Code.

The manager activity estimation is made by analyzing the global rate of achievement the objectives and the performance criteria stipulated in the enclosure to the contract.

All the provisions stipulated into the contract of performance can be modified after a notification and only with the agreement of the both parts, in an additional clause.

The subscriber parts of the contract of performance established that it could cease the effects in one or more of the following situations:

- at the deadline of the manager individual labor agreement;
- the changing of the manager position;
- the manager surrender of his mandate;
- the mutual agreement of the subscriber parts;
- the manager death;
- the manager laying under interdiction.

In the cessation of the contract, excepting the case stipulated on the manager death, the manager is obliged to return immediately all the documents hold in exercise his competence.

The litigation resulted from the concluding, executing, modifying or interpretation of this contract clauses are solving amicable. If it is impossible, the litigations are solved by the territorial courts of the trade society**.**

1. The manager has the right to ask for consultation or other protection measures from the local authorities, confederation, federation or from the association of employers to which is belonging the trade society, in view to solve the conflicts with the trade unions or other organizations, authorities or institutions.
2. At the cessation of the contract the conditions of paragraph 2,3, and 4 of chapter 11, the society, at the former manager request, will ensure him a job, or a proper position according with his professional training.
3. The provisions of the contract of performance are completing with both the disposals of the Commercial Code and Civil Code.

The contract is in force in the moment of its signing by the parts and it will be hand in together with the parts signatures in the Register of the territorial Chamber of Commerce in 15 days time from the signing the contract.

COMPETITION AND COOPERATION IN THE GLOBALIZATION PROCESS OF ECONOMY

IOAN COSMESCU, DENISA COSMESCU *

Abstract: By globalization we understand a relatively recent process which consists in creating a world market. This can be possible due to the leveling the consumers' needs and product standardization, as well as to an unbelievable development of communications and mass media.

Key words: world market, highly competitive market, a specific stage of capital internationalization

By globalization we understand a relatively recent process which consists in creating a *world market*[1]. This can be possible due to the leveling the consumers' needs and product standardization, as well as to an unbelievable development of communications and mass media. The companies and institutions preoccupied with the globalization phenomenon are characterized by an elastic, dynamic structure with high technological components regarding either the production or the distribution of different goods and services. Among other things they need to "frequently re-examine their strategic plans so that they will be faced with the possibility of being excluded from *the highly competitive market*[2].

These synthetic appreciations belonging to some famous foreign or Romanian authors, regarding the globalization have as a consequence a stronger emphasis laid on the possibility of carrying out this process, otherwise the companies are again in the spotlights. They will need to adapt themselves to the production models and barter models imposed by this already existing huge market. Both the literature in this field and the application of the international economic relations highlight the role of communication in intensifying this process. On the other hand, we consider that a

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[1] Postelnicu Gh., Postelnicu C., **Globalizarea economiei**, Ed. Economică, Bucureşti, 2000, p.68
[2] De Luca Gianni, ş.a., **Nuovo divizionario di economia**, Essestampa, Napoli, 1998, p.315

financial and international investment globalizations that have been dominating the proper goods exchange must be added.

While late international strategies were based on exports and placing the production on the home market, nowadays, the new strategies in the aging process of the globalization phenomenon, combine the whole variety of transfrontal activities: exports and supplies to/from outside, foreign investments and international alliances.

Therefore it must be outlined that the globalization does not refer only to the companies' activities and to the commercial flow they bring about. "To the same extent, it includes financial globalization which we cannot exclude from the list of the compulsions that brought about big structural adjustments in the world market"[3]. The main idea is that: globalization must be regarded as *a specific stage of capital internationalization* and of highlighting its practical application possibilities to an entire world scale, meaning wherever you may find commodities and outlets.

In fact, the globalization is considered to be the contingent result of two different moments, but closely interlinked: on the one hand we have in view the long period of capital build-up that began after the end WW1 and was interrupted, however, by devastating wars and crises like WW2; on the other hand we have in view the adoption of some liberalization measures of the international economic life or legislative privatization and synchronization, applied at the beginning of 1980s.

Understanding the globalizations as a process of *"deepening and tightening the bonds between the actors of the world economy"*[4], some analysts are trying to balance the two forces present on the huge stage of the world economy: for one thing the natural tendency to cooperate, and on the other hand the tough competition the economic protagonists went in for. Which of them is more powerful? It's difficult to answer this question because of both the indefinite and unsubstantial concepts that run in this field and, so far, the lack of certain scenario on which we can make a detailed description of this mechanism.

However, we cannot deny the fact that there have always been factors that have kept up the competition, sometimes with open conflicts.

The most important reason for the international economic cooperation persistence is, undoubtedly, the increase of the national economies dependence (commercial and investments). They have understood that "running alone" in today's world economy is too expensive. It is therefore confirmed an older thesis of the economic theory according to which "maximizing the benefits is possible when the nations specialize in the production of goods for which they have proper conditions and they are to purchase the ones that imply high internal production costs from the outside. This is what interdependence means and it is represented by economic cooperation.

Extending cooperation and strengthening economic relations between different countries does not mean eliminating competition. On the contrary, the globalization

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[3] Postelnicu Gh., Postelnicu C., **lucr. cit.**, p.69

[4] Larison Th., Skidmore D., **International Political Economy: The Struggle for Power and Wealth**, New York, 1997, p.161

process supplied with a strong and perfecting cooperation mechanism did not attenuate the laws of competition, it intensified them, taking up new forms. In spite of the fact that there are many factors favorable to cooperation, in the world economy there still exist enough forces, which undermine the basis of the global interdependence development. Some of these forces are traditional ones and they are under the pressure that sometimes exists between national autonomy and the economic interdependence. Others have been determined by the recent development tendencies, like the relative deterioration of the balance of powers between the countries and the companies or the changes that occurred in understanding trade. The fewer the cases in which politicians isolate their own country from the rest of the world economy, the fewer the situations in which governments enable trade and investments to develop without any rules or restrictions. As a consequence, interdependence brings about both costs and benefits. In managing the relation s between national economies and the rest of the world, political strategies are trying to balance the costs and the benefits, which are established by the process of interdependence.

In the minds of the specialists, the most important political cost of the interdependence is the "erosion" of the national autonomy, revealed by: political difficulties in taking some decisions in such circumstances in which it has to take into account the reactions of the others, or the permanent risk that certain investments and commercial trades will create advantageous conditions for the transfer of sophisticated military technologies in areas where they shouldn't be, due to the uncooperative behavior of some people. Moreover, we have no guarantees that two countries will be equally prosperous, although the trade should be favorable for both of them.

Reality shows the fact that it is possible for a nation to get benefit from the other by limiting trade and investments. We can therefore draw the first important conclusion: economic interdependence as a defining feature of the globalization, is sure to lead to the intensification of the struggle for getting national benefits simultaneously with the intensification of cooperation efforts.

In the second place, as the specialists remark, accelerating market internationalization and competition are the result of the cumulative interaction of a whole series of factors that have changed entirely the image and the structure of the world economy. Among these, the ones that played important parts are: the steps taken to open the frontiers for product circulation and the implantation of businesses abroad; communications which enabled images to travel quickly; turning out consumer goods which led to the internationalization of tastes; setting up international businesses, with the help of which a great part of the technological transfer has been done and foundations have been laid for the major direct investments flows; creating international distribution networks even in the service departments and winning over clients who are aware of the international quality standards and of the famous trade marks/ brands which carry general messages.

DEVELOPING ORGANIZATIONAL STRUCTURES FOR INTERNATIONAL MARKETING

IOAN CUCU*

Abstract: International marketing represents marketing activities performed across national boundaries. The level of involvement in international marketing can range from casual exporting to globalization of markets. Although most firms adjust their marketing mixes for differences in target markets, some firms are able to standardize their marketing efforts worldwide.

Key Words: marketing, boundaries, trading company, strategic alliances

International marketing represents marketing activities performed across national boundaries. The level of involvement in international marketing can range from casual exporting to globalization of markets. Although most firms adjust their marketing mixes for differences in target markets, some firms are able to standardize their marketing efforts worldwide. Traditional full-scaled international marketing involvement is based on products customized according to cultural, regional and national differences. Globalization, however, involves developing marketing strategies as if the entire world (or regions of it) were a single entity; a globalized firm markets standardized products in the same way everywhere.

The level of commitment to international marketing is a major variable in deciding what kind of involvement is appropriate. A firm's option range from occasional exporting to expanding overall operations (production and marketing) into other countries.

Analyses of international markets and possible marketing efforts can be based on many dimensions. Table no 1 lists the types of information that international marketers need.

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Table no 1

Information needed for international marketing analysis

PRELIMINARY SCREENING	ANALYSIS OF INDUSTRY MARKET POTENTIAL	ANALYSIS OF COMPANY SALES POTENTIAL
Demographic/Physical Environment Population size, growth, density Urban and rural distribution Climate and weather variations Shipping distance Product-significant demographics Physical distribution and communication network Natural resources **Political environment** System of government Political stability and continuity Ideological orientation Government involvement in business Government involvement in communications Attitudes toward foreign business (trade restrictions, tariffs, nontariff barriers, bilateral trade agreements) National economic and developmental priorities **Economic Environment** Overall level of development Economic growth: GNP, industrial sector Role of foreign trade in economy Currency, inflation rate, availability, controls, stability of exchange rate Balance of payments Per capita income and distribution Disposable income and expenditure patterns **Social/Cultural environment** Literacy rate, educational level Existence of middle class Similarities and differences in relation to home market Language and other cultural considerations	**Market Access** Limitation on trade: tariff levels, quotas Documentation and import regulations Local standards, practices and other nontariff barriers Patents and trademarks Preferential treaties Legal considerations: investment, taxation, repatriation, employment, code of laws **Product Potential** Costumer needs and desires Local production, import, consumption Exposure to and acceptance of product Availability of linking products Industry-specific key indicators of demand Attitudes toward products of foreign origin Competitive offerings Availability of intermediaries Regional and local transportation facility Availability of manpower Conditions for local manufacture	**Sales Volume Forecasting** Size and concentration of customer segments Projected consumption statistics Competitive pressures Expectations of local distributors/agents **Landed Cost** Costing method for exports Domestic distribution cost International freight insurance Cost of product modification **Cost of International Distribution** Tariffs and duties Value-added tax Local packaging and assembly Margins/commission allowed for the trade Local distribution and inventory costs Promotional expenditure **Other Determinants of Profitability** Going price levels Competitive strengths and weakness Credit practices Current and projected exchange rates

Marketers may have to adjust techniques of collecting primary data for foreign markets. Attitudes toward privacy, unwillingness to be interviewed, language differences and low literacy rates can be serious research obstacles. Primary research should uncover significant cultural characteristics before a product is launched so that the marketing strategy is appropriate for the target market. It may be necessary to

investigate basic patterns of social behavior, values and attitudes to plan a final marketing strategy. Overall, the cost of obtaining such information may be higher than the cost of domestic research; the reasons include the large number of foreign markets to be investigated, the distance between the marketer and the foreign market, unfamiliar cultural and marketing practices, language differences and the scarcity of unreliability of published statistics.

Exporting is the lowest level of commitment to international marketing and the most flexible approach. A firm may find an exporting intermediary that can perform most marketing functions associated with selling to other countries. This approach entails minimum effort and cost. Modifications in packaging, labeling, style, or color may be the major expenses in adapting a product. There is limited risk in using export agents and merchants because there is no direct investment in the foreign country.

Export agents bring together buyers and sellers form different countries; they collect a commission for arranging sales. Export houses and export merchants purchase products form different companies and then sell them to foreign countries. They are specialists at understanding customers' needs in foreign countries.

Foreign buyers from companies and governments provide a direct method of exporting and eliminate the need for an intermediary. Foreign buyers encourage international exchange by contacting domestic firms about their needs and the opportunities available in exporting. Domestic firms that want to export with a minimum of effort and investment seek out foreign importers and buyers.

When potential markets are found across national boundaries – and when production, technical assistance, or marketing know-how is required-*licensing* is an alternative to direct investment. The licensee (the owner of the foreign operation) pays commissions or royalties on sales or supplies used in manufacturing. An initial down payment or fee may be charged when the licensing agreement is signed. Exchanges of management techniques or technical assistance are primary reasons for licensing agreements.

Licensing is an attractive alternative to direct investment when political stability of a foreign country is in doubt or when resources are unavailable for direct investment. Licensing is especially advantageous for small manufacturers wanting to launch a well – known brand internationally. For example, Pierre Cardin has issued five hundred licenses and Yves St. Laurent two hundred to make their products.

In international marketing, a *joint venture* is a partnership between a domestic firm or government. Joint ventures are especially popular in industries that call for large investments, such as natural resources extraction or automobile manufacturing. Control of the joint venture can be split equally, or one party may control decision-making. Joint ventures are often a political necessity because of the nationalism and governmental restrictions on foreign ownership. They also provide legitimacy in the eyes of the host country's citizens. Local partners have firsthand knowledge of the economic and sociopolitical environment, access to distribution networks, or privileged access to local resources (raw material, labor management, contacts, and so on).

Moreover, entrepreneurs in many less-developed countries actively seek associations with a foreign partner as ready means of implementing their own corporate strategy.

Joint ventures are assuming greater global importance because of the cost advantages and the number of inexperienced firms entering foreign markets. They may be the result of a trade-off between a firm's desire for completely unambiguous control of an enterprise and its quest for additional resources. They may occur when internal development or acquisition is not feasible or unavailable or when the risks and constraints leave no other alternative. As project sizes increase in the face of global competition and firms attempt to spread the huge costs of technological innovation, there is increased impetus to form joint ventures. Several European truck makers are considering mergers and joint ventures with other European firms to consolidate their power after the unification of Europe in 1992 and the deregulation of the European trucking industry in 1993. Volve and Renault have developed a partnership, and Britain's Leyland and the Netherlands' DAF have already joined forces.

Increasingly, once a joint venture succeeds, nationalism spurs a trend toward expropriating or purchasing foreign shares of the enterprise. On the other hand, a joint venture may be the only available means for entering a foreign market. For example, American construction firms bidding in Saudi Arabia have found that joint ventures with Arab construction companies gain local support among the handful of people who make the contracting decisions.

Strategic alliances, the newest form of international business structure, are partnerships formed to create competitive advantage on worldwide basis. They are very similar to joint ventures. The number of strategic alliances is growing at an estimated rate of about 20 percent per year. In fact, in some industries, such as automobiles and computers, strategic alliances are becoming the predominate means of competing. International competition is so fierce and the costs on a global basis so high that few firms have individual resources to go it alone. Thus individual firms that lack all the internal resources essential for international success may seek to collaborate with other companies.

The partners forming international strategic alliances often retain their distinct identities, and each brings a distinctive competence to the union. However, the firms share common long-term goals. What distinguishes international strategic alliances from other business structure is that member firms in the alliance may have been traditional rivals competing for market share in the same product class. An example of such an alliance was the New United Manufacturing, Inc. (NUMMI), formed by Toyota and General Motors to make Chevrolet Novas and Toyota Tercels. This alliance united the quality engineering of Japanese cars to the marketing expertise and market access of General Motors.

A trading company provides a link between buyers and sellers in different countries. A trading company, as it name implies, is not involved in manufacturing or owning assets related to manufacturing. It buys in one country at the lowest price consistent with quality and sells to buyers in another country. An important function of

trading companies is taking title to products and undertaking all the activities necessary to move the products from the domestic country to a foreign country. For example, large grain-trading companies operating out of home offices in both United States and overseas control a major portion of the world's trade in basic food commodities. These trading companies sell agricultural commodities that are homogeneous and can be stored and moved rapidly in response to market conditions.

Trading companies reduces risks for companies interested in getting involved in international marketing. A trading company will assist producers with information about products that meet quality and price expectations in domestic or international markets. Additional services a trading company may provide include consulting, marketing research, advertising, insurance, product research and design, legal assistance, warehousing, and foreign exchange. A trading company acts like a wholesaler, taking much of the responsibility of finding markets while facilitating all marketing aspects of a transaction. Once a company makes a long-term commitment to marketing in a foreign nation that has promising political and economic environment *direct ownership* of a foreign subsidiary or division is a possibility. Although most discussions of foreign investment concern only manufacturing equipment or personnel, the expenses of developing a separate foreign distribution system can be tremendous. The opening the retail stores in Europe, Canada or Mexico can require a large financial investment in facilities, research and management.

The term *multinational enterprise* refers to firms that have operations or subsidiaries located in many countries. Often the parent firm is based in one country, and marketing activities in other countries. The firm's subsidiaries may be quite autonomous in order to respond to the needs of individual international markets. Firms such as General Motors, Du Pont, Citicorp, Microsoft are multinational companies with worldwide operations. Many of the firms like that could not operate at an acceptable profit without their foreign subsidiaries.

A wholly owned foreign subsidiary may be allowed to operate independently of the parent company so that its management can have more freedom to adjust to the local environment. Cooperative arrangements are developed to assist in marketing efforts, production and management. A wholly owned foreign subsidiary may export products to the home nation. Some American automobile manufacturers, for example, import cars built by their foreign subsidiaries. A foreign subsidiary offers important tax, tariff, and operating advantages. One of the great advantages is the cross-cultural approach. A subsidiary usually operates under foreign management, and so it can develop a local identity. The greater danger in such an arrangement comes from political uncertainty: a firm may lose its foreign investment.

Before international marketing could achieve its current level, enterprises with the necessary resources had to develop an interest in expanding their business beyond national boundaries. Once interested, marketers engage in international marketing activities at several levels of involvement. Regardless of the level of involvement, however, they must choose to customize their marketing strategies for different regions or to standardize their marketing strategies for the entire world.

USING EXPERT SYSTEMS IN INDUSTRIAL PRODUCTION MANAGEMENT

IOAN CONSTANTIN DIMA, CODRUȚA DURA*

Abstract: The expert system aiming the moulded pieces production management improving is designed to assist maintenance and operation personal in the process of diagnosis of complex defects which may appear during the technological process, but the system must also contribute to technical measurements adopted after these distortions have emerged.

Key words: mould pieces, moulding process, corring up, mould pieces refinning, burrs removing, sandblast cleaning, heat treatment of mould pieces, quality control and pieces defect removing.

Using expert systems requires certain costs although some of the stages (drawing-up the model, for instance) doesn't involve any expenses. The expert system cost is often caused by the logicial acquisition, material and methods procurement and so on.

The expert system costs foremoulding is usually made by drawing-up some budgets during the running through the project phase of the system. This represents, in fact, a pre-calculated cost which can be modified during the phase of expert system implementation; finally it can lead to the real cost of the expert system.

In fact, the total value of all operations involved by an expert system elaboration materializes usually in eights budgets as follows: *developing materials and logicials acquisition budget; preparing for development budget* made by: *instruments budget, work – group budget, communication and knowledge transfer budget; developing model budget; possible corrections of previous phases and new test budget (changing of teams, materials, logicials, new methodology); developing budget* which includes: *the expert debriefing cost, knowledgement structure cost, machine and testing cost; materials and logicials acquisition budget required by final users real exploitation of the expert system; application budget made-up by: users' training costs,*

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system reception and launching cost, system maintenance cost; system evaluation budget.

Cost legitimacy represents a ticklish problem. Forecasting costs is not an easy task and it's more difficult to anticipate revenues.

Taking into consideration the aspects presented before, it is possible to build-up an expert system adapted to metal moulding technological process management. The expert system aiming the moulded pieces production management improving is designed to assist maintenance and operation personal in the process of diagnosis of complex defects which may appear during the technological process, but the system must also contribute to technical measurements adopted after these distortions have emerged. The advantage that this system has, compared to a traditional informatics program is the possibility of using past events memory and also the experience accumulated by several experts which took piece in the process of the systems` knowledgement basis substantiation. Without being included in an expert system, such knowledgement cannot be transmitted to those who exploit the system. In order to be able to achieve this objective, it's important to know the moulding technology main characteristics, as a way of getting used to the process involved by the operations' succession which leads to mould finite pieces at low costs and minimum risk of distortions.

Thus, moulding means the technological procedure used in order to obtain pieces for mining equipments through the melt metal solidifying in a mould hollow. Comparative to some other technologies, moulding has the following advantages: the possibility of obtaining some pieces of complex configuration with forms near from finite form (weights of pieces can vary between several grams to hundred of tons); small quantity of supplement processing requiring low manual labour in cutting operations; the use of simple and cheep equipments flexible in producing different types of pieces; possibility of re-use material wastes resulted during the technological process through malting or partial recovery of wastes value; reduced unitary costs of moulded pieces comparative to those resulted from other proceedings (low price auxiliary materials can easily be procured) and so on.

In spite of this positive aspects, moulding can become unfavourable for some cases of irrational use (unique pieces or simple pieces which can be obtained by using some other methods). The main disadvantages of this technological proceeding are the following: a high probability of getting defect pieces; reduced probability of strength comparative to forged pieces; a large quantity of materials required by the technological process (getting 1 ton of moulding pieces requires about 1000 tons of materials). Nowadays, 50-70% approximately of the pieces used in machinery building are obtained through moulding process.

Mining equipment use, in a high proportion, pieces of different shapes and dimensions, moulded from steel, cast iron, metals and non-ferrous alloy. Some of examples are very relevant: bounding pieces for compressed air hoses (stiching hooks and terminal tubes, nuts with steel ailerons), bits for steel piercers, pieces for different types of pumps (sucking and pressing bodies, curls from cast iron and alloy steel, fixed

coils, front idlers, bearings and so on – casted from steel, mould iron or bronze), pieces of mining car (steel wheels, steel buffers, abutment rings from cast iron); different raw cast-used pieces such as: braking machines jaws, rings from manganic steel for Humboldt grinder, plates or bars for grinders, lagging for embankment tubes from hard iron or manganic steel, gear pinions from steel or cast iron alloyed and unalloyed with cast or processed tooth for conveyer gearing T.P-1, SKR-11, mine locomotive, drilling hoists and so on.

Every moulded piece has its own characteristics, but despite this, it is possible to draw a general chart which follows moulding process and is also followed by almost every product (figure no.1).

Oversights of one or several operations mentioned earlier represents extremely rare situations but the particular method adapted to each operation execution represents one of the mould procedure characteristics. Moulding process requires large quantities of moulding compounds which must fulfil specific properties (refractarity, perviuosity, mechanical strength, compressibility, plasticity); it has been proved that incorrect use of moulding compounds represents the main factor which leads to substantial rejects in moulding procedure. Moulding compounds is the material used for making the hollow of the mould in which liquid material is poured. The mixture contains foundry sands and certain quantities of material used for granules bounding named bonding agents (clay, betonite, vegetal oil, cement, sodium silicate and so on), water and, in some rare case, special additives.

Patterns are used in order to make the mould's hollows, and some special boxes are used for coring up. A pattern represents the model used for designing the liquid material moulding hollow and a box is useful for coring up which can create some hollows or gaps into cast piece's body. The material used for preparation of moulds vary; they can be made from wood, metals or synthetically materials (aluminium alloys, gray cast iron, bronze and copper, synthetically resin, mixture sand-cement and so on).

Preparation of moulds is an operation of impressing the cast model on moulding compounds. After this mixture have been extracted, melt metal is poured into the pattern. Moulding represents the main operation of the technological process of making moulded pieces and that's why it has a decisive impact on its quality parameters.

Preparation of mould is an operation which can be done manually (inframes, in ground or with samples) or mechanized (through slinging, through membrane pressing, through shaking or pressing, through blusting and so on).

Corre and mould drying represents the operation during these are heated in order to eliminate the water from moulding compounds and also to increase the bounding ability of binding agents. Drying leads to a substantial increasing of mechanical strength of moulding compounds (to 10 times in comparison with initial strength), but also to increasing permeability and limitation of the quantity of gases developed into the moulds during moulding process.

Corre and mould drying control can be done either with direct method (through measuring electric conductivity of mould compounds), or by indirect method (by monitoring temperature chart of burnt gases strong connected to drying process).

Mould assemblage for moulding consist from setting semi-shapes and corres in a whole. Corres′ support in the mould hollow can be done with marks or with wood support when marks are lacking or they are too long. Metals and alloys used for moulding are cast-iron (in machinery building, 70% from machines weight represents mould-iron made pieces), steel and non-ferrous alloys (copper, aluminium, magnesium).

Aggregates used for metal melting into foundries are chosen depending on the following factors: metal's nature, foundry's capacity, piece's size, product's quality and so on. The furnace is functioning as it follows: it must be red heated in order to start running; heating is stopped then; the joint from the chimney is removed and solid metal are introduced; heating is resumed after the joint is set again; the turning device is started up when mould process begins; evacuation hole is uncorked when the charge is ready and melt metal is evacuated into a moulding pot.

Moulding into shapes must be done after the mould have been assembled and alloys had been drawn up. The melt metal is taken from the mould pot and led into the mould hollow through the moulding line. Generally speaking, the pouring gate has the following components: the bucket, the downgate, the ingate, the slag distributor and collector, the chargers and the feeding head. In order to obtain pieces without any defects, the moulding line must assure uniform, quick and neck less filling up of mould's hollow with melt metal. This is pored from the pot into the bucket, than into the downgate and after that, through the ingate, the melt metal enters the distributor (the last one fulfil the slag collector role because the slag resulted is lighter than the melt metal, lifts up and can't penetrate into the chargers from the distributor's basis). The melt metals enters, through the chargers the mould's hollow and the feeding heads. The feeding head's role is to assure blister's shaping out of the pieces and constitutes, at the same time, air gates for gases and air evacuation.

Knock out of moulds represents an operation of drawing out the piece from foundry flask and removing a large part of moulding compounds from exterior and corre mixture from internal hollows of the pieces. Knock-out of moulds must be done after the metal have been solidified and cooled at a temperature level which eliminate to possibility of defects emerging. Mechanized knocking out uses for the piece's shaking out an installation named mechanical knocker, which has an vibrating grate mechanical or pneumatic commanded. In order to knock-out moulds, the foundry flask is set above the grate where, due to vibrations, moulding mixture is broken into pieces and falls down through the grate's meshes and pieces together with the foundry flask remain above.

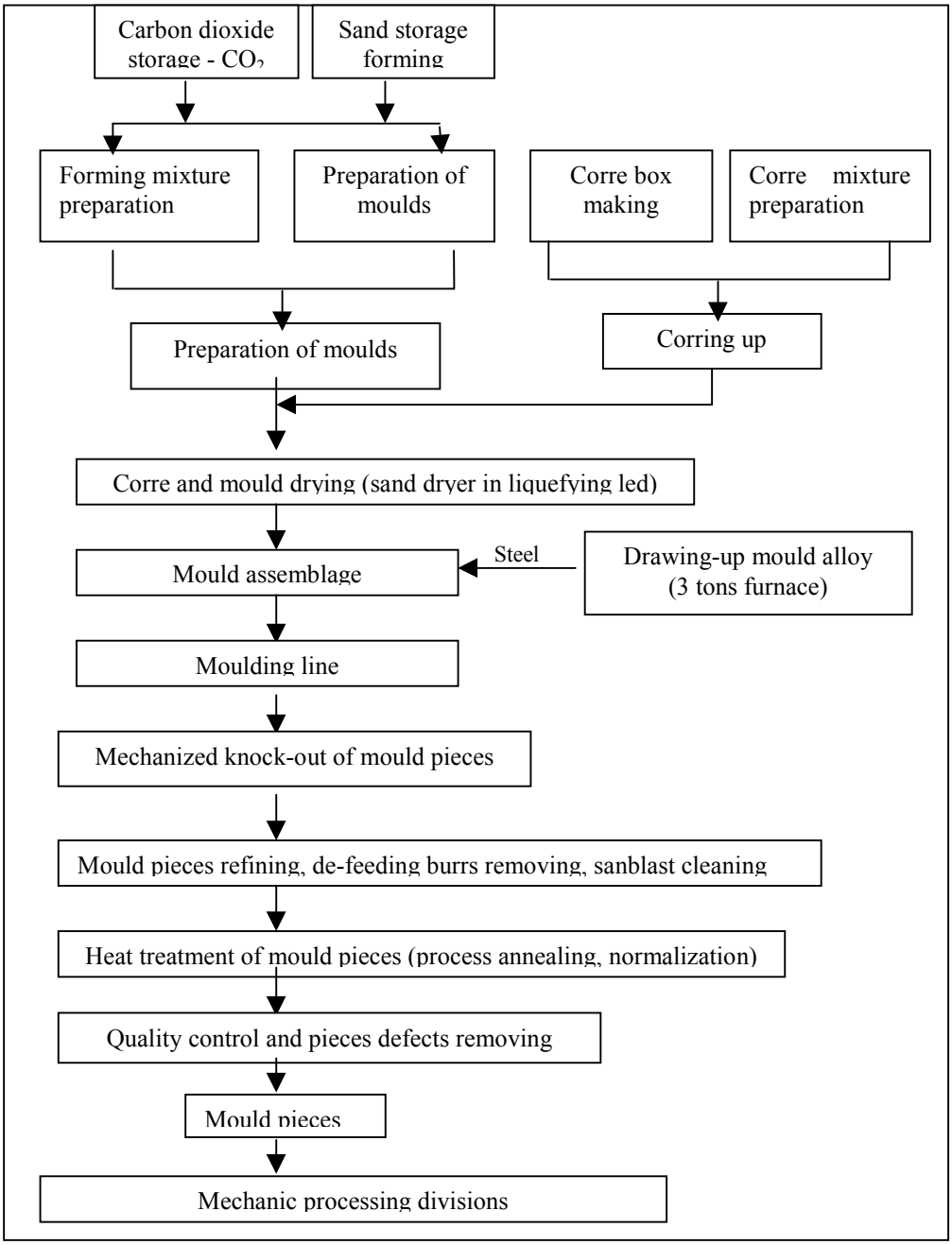

Fig. 1. Mould pieces technological process chart

Usually, cleaning requires several phases: summary cleaning for de-feeding, preliminary refining consisting of substantial removing of mould compounds from the

pieces; final refining which can be done after heat treating and consist of removing all the materials which can be found on piece's surface (remaining mould compounds or oxides resulted during the treatment termic). Mechanized final refining can be done with sand blaster which conduct an abrasive jet on pieces which go through this process. De-feeding is the operation of removing feeders and the pouring gate from the piece. Burrs removing represents ridges taking off (material surplus emerging to the saturation plane of mould) from the mould piece. Such operations are executed depending on the number and shape of the elements which must be removed, but especially depending on mould material nature. Between the most well-known de-feeding and burrs removing methods the following can be mentioned: breakage, flame cutting or cutting – up.

Heat treatment are used for mould pieces aiming the following goals: to eliminate mould internal tensions (especially for complicated pieces and for steel pieces), to easin metal cutting (due to the elimination of specific dendrite structure); to improve some mechanic properties when other heat treatment are not executed or when structures must be prepared for getting properties in subsequent heat treatment. Depending on the target, heat treatment applied in this phase can be: stress-relief (in order to eliminate mould tensions); soft annealing (used for decreasing the hardness of the pieces); homogenization annealing (targeting the homogenisation of materials from the chemical point of view, or, precisely, the removing of alloy elements segregations for large pieces); normalization annealing (used in order to improve strengths properties of the pieces).

The probability of defects emerging during the process of moulding is very much higher than those of other domains; for this reason the quality control must be intensively done. In foundries, quality technical control aims the following goals: to prevent certain defects, to discover the possible defects during the running of initial phases of technological process; to set remediation measurements (if this possibility does exist); to eliminate causes of defects in order to remove future possibilities of re-emerging. Taking all of these into account, quality control in foundries can be divided in two distinct categories: preliminary control for material used and operations run before starting the moulding process in order to avoid defects emerging possibilities such as: moulding compounds, metal smelting, model execution; mould and corre making; mould and corre drying; mould assemblage and so on and final control for mould pieces which must be done in two phases. First, the pieces are monitorized from knocking-out and going through all the other operations in order to track down possible defects and to adopt as quick as possible appropriate measurements (defect remediation or piece rejecting in order to avoid supplementary expenses during the next moulding phases). In the second phase, pieces are controlled after all the operations required for getting raw mould pieces had been finished in order to remove those mould pieces which are not adequate for other utilisations or mechanical processing.

The expert system drawn-up in order to monitorize the mould process and eliminate possible distortions is presented bellow.

```
/*RULES AND FACT BASIS*/
domains
        data_list=data_type*
        data_type=is(symbol,symbol);
                has(symbol,simbol);
                is_in(symbol,symbol);
                is_on(symbol,symbol);
                is_by(symbol,symbol);
                cost(symbol,symbol);
                needs(symbol,symbol);
predicates
        rule(integer,data_type,data_list,real)
        question(integer,data_type)
clauses
        rule(1,has(x,bad_form),
        [is_on(x,sand_deposit)],1).
        rule(2,has(x,good_form),
        [is_by(x,models)],1).
        rule(2,has(x,good_form),
        [is_in(x,kernel)],1).
        rule(3,is(x,unsatisfactory),
        [has(x,bad_form),
        has(x,reject)],1).
        rule(3,is(x,unsatisfactory),
        [has(x,bad?parameters)],1).
        rule(4,is(x,nice),
        [has(x,good_form),
        has(x,mechanical_debate)],1).
        rule(5,is(x,expensive),
        [cost(x,over_100)],1).
        rule(6,is(x,inexpensive),
        [cost(x,under_30)],1).
        rule(7,is(x,bad_piece),
        [is(x,unsatisfactory),
        needs(x,repair)],1).
        rule(8,is(x,good_piece),
        [is(x,inexpensive),
        has(x,processing)],1).
        rule(8,is(x,bad_piece),
        [is(x,nice),
        has(x,cleaning)],1).
        rule(9,is(x,good_piece),
        [is(x,good_parameters),
```

```
        has(x,heat_treatment)],1).
        rule(10,is(x,good_piece),
        [is(x,expensive),
        has(x,processing),
        has(x,good_parameters)],1).
        question(1,is_on(x,bad_piece)):-
        write("Is",x," a bed piece?").
        question(2,is_by(x,sand_deposit):-
        write("Is ",x," into the sand deposit?").
        question(3,is_in(x,mixture):-
        write("Is ",x," in mixture?").
        question(4,has(x,good_piece):-
        Write("Has ",x," good piece?").
        question(5,cost(x,over_100)):-
        Write("Does it cost ",x," over 100?").
        question(6,cost(x,under_30)):-
        Write("Does it cost ",x," under 30?").
        question(7,needs(x,repair)):-
        Write("Needs ",x," repairs?").
        question(8,has(x,debate)):-
        Write("Has ",x," mechanical debate?").
        question(9,has(x,heat_treatments)):-
        Write("Has ",x," heat treatments?").
        question(10,has(x,found_line)):-
        Write("Has ",x," found line?").
        question(11,has(x,good_processing)):-
        Write("Has ",x," good for processing?").

/* INFERENECE ENGINE AND USER INTERFACE*/
domains
        intl=integer*
        file=dest
include "motor.kwl"
database
        fact(data_type)
predicates
        proc_user(char)
        start_exp
        read_char(Char)
        interference(data_type,data_list,intl,real)
        process_rule(data_list,intl,integer)
        getresponse(symbol)
        validresponse(symbol,data_type,intl)
```

```
        get_first(data_list,data_type)
        delete(data_type,data_list,data_list)
        process(data_type)
        check_ans(symbol,symbol)
        add_fact(data_type)
        check_fact(intl,data_type)
        process_why(intl)
        display_rule(integer)
        clear_facts
        addl(integer,intl,intl)
        repeat
        convert(symbol,data_type)
clauses
        start_exp:-
          makewindow(1,7,7,"Expert system",1,1,20,20),
          repeat,
          write("i-init, a-add facts"), nl,
          write("q-quit, r-run"), nl,
          write("Enter your option: (i/a/q/r)"),
          read_char(char), proc_user(char).
          proc_user('q').
          proc_user('i'):-
            write("Clear all facts ?"),
            read_char(Resp), Resp='y',
            clear_facts,fail.
          proc_user('a'):-
            write("Enter a fact:"),
            readln(S),
            convert(S,T),
            add_fact(T), !,fail.
          proc_user('r'):-
            write("What's your query?"),
            readln(Query),
            convert(Query,Term),
            process(Term), !, fail.
clear_facts:- retractall(fact(_)).
add_fact(T):-not(fact(T)), asserta(fact(T)).
add_fact(_):-write("Fact already exists"), nl.
convert(S,T):-
        openwrite(dest,"convt.dat"),
        write(S), closefile(dest),
        openread(dest,"convt.dat"),
        readdevice(dest),
```

```
        closefile(dest), readdevice(keyboard).
process(Query):-
        interference(Query,[Query],[],Prob),
        write("Your question",Query,
        "has been proved with", Prob, "probability").
process(Query):-
        write("Your question", Query,
        "cannot be proved").
interference(Query,Cond,Rlst,P):-
        check_fact(Rlst,Query),
        delete(Query,Cond,NewCond),
        process_rule(NewCond,Rlst,P).
interference(Query,Cond,Rlst,P):-
        rule(Rno,Query,Cond1,Prob),
        get_first(Cond1,Q),
        addl(Rno,Rlst,Nrlst),
        interference(Q,Cond1,Nrlst,Prob),
        delete(Query,Cond,NewCond), P1=(P+Prob)/2,
        process_rule(NewCond,Rlst,P1).
process_rule([],_,_).
process_rule(Cond,Rlst,P):-
        get_first(Cond,Q),
        interference(Q,Cond,Rlst,P).
getresponse(R):-
        readln(Ask),
        check_ans(Ask,Rep), !,
        R=Rep.
getresponse(_):-
        write("Try another answer, please"),
        getresponse(R).
check_ans(yes,Y).
check_ans(y,Y).
check_ans(n,N).
check_ans(n,no).
check_ans(w,Why).
check_ans(W,Why).
check_fact(_,Fact):-
        fact(Fact),
        write("Using fact -",Fact), nl.
check_fact(Rlst,Fact):-
        question(_,Fact),
        getresponse(Response),
```

```
        validresponse(Response,Fact,Rlist).
validresponse(Y,_,_):-
add_fact(Fact).
validresponse(W,Fact,Rlst):-
        process_why(Rlst),!,
        check_fact(Rlist,Fact).
process_why([]).
process_why([Head|Tail]):- !,
        process_why(Tail),
        display_rule(Head).
display_rule(H):-
        rule(H,Prop,_,_),
        write("Procesing rule",H,":",Prop), nl.
addl(Mem,L,[Mem|L]).
get_first([H|_],H).
delete(_,[],[]).
delete(Head,[Head|Tail],Tail):- !.
delete(Token,[Head|Tail],[Head|Result]):- !,
        delete(Token,Tail,Result).
repeat.
repeat:-repeat.
```

MANAGEMENT DECISIONS IN AN UNCERTAIN ENVIRONMENT

IOAN CONSTANTIN DIMA, CLAUDIA ISAC*

Abstract: Uncertain regarding sales level and/or production factors costs has the following consequences on firm`s activity: standard costing becomes random and also a real annual budget; it forces to a more rigorous administration of general expenses; limits the elements which a department manager controls on.

Key words: a budgetary system, uncertain environment

Uncertain regarding sales level and/or production factors costs (raw materials, financial expenses) has the following consequences on firm`s activity: standard costing becomes random (fixed charge problem) and also a real annual budget; it forces to a more rigorous administration of general expenses; limits the elements which a department manager controls on. On psychological way these difficulties influence responsibilities assignment both in case of managers and subordinates.

Dealing with this situation implies some adjustment of the control system such as: system`s structure (a more frequent use of the simulation methods, outside oriented control boards or project budgets); standard costing; periodical updating of initial forecasts; using the sensitivity analysis.

The modification of budgetary system's structure refers to:

In classical concept. A budgetary system involves drawing up annual budgets, drown as synthesis documents (nominal account, treasury budget, forecast balance) based on well defined selling objectives and production conditions.

Such a practice doesn't fit to strong uncertain periods because it isn't possible selling objectives and real annual budgets establishing. These condition claim budgetary system restructuring in the following way: drawing up a firm budget starting from objectives establishing responsibilities to a swarthier period than a fear. Trimester or semester will be chosen regarding firm's security period. For the rest of the year, two or more valuation are elaborated, oriental to large objectives. In this purpose a fear assumptions are substantiated the activity and price level and on this base are

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determined the consequences on the nominal account, treasury, investments, employees number without a very detailed analysis . At the end of each trimester new objectives are established, for the same period, south new responsibilities implied. Budgetary estimation at the end of the period are adjusted according to combination of circumstances.

In other terms, budgetary system becomes more a general management instrument than an instrument of the responsibilities extended through the levels of the hierarchy.

Being less analytical, the system gains in cost and rapidity and the program-view develops to a procedure-view.

On the other hand, if related to operational responsibilities this isn't useful.

Less analytic, more rapid, untotal capitalized, budgetary system in uncertain period has to be more open to be more open to the environment. In this case, it will be enclosed with an external informational system which shows sector's key points and perspectives on short term. It's obvious that these information's nature, their frequency and presentation will depend upon activity sector.

Generally, a budget of this kind contains: firm's distributors stocks level; delivery orders level; competition's commitment level; monthly conjuncture index.

Another variant is the budget based on firm orders notebook. In this case, sell level isn't a forecast but a reality. The budget tries to transform the activity level consequences in supply, production, treasury, results terms and each now order or new information regarding production-delivery process involves a document updating. This system's purpose is to estimate rapidly the impact of dating. This system's purpose is to estimate rapidly the impact of activity level on firm's functioning and to act the convenient moment.

In a frequently changing environment. In this situation it's better to use more than usual the creativity. Progress actions care very important because applying them with good results will save the firm.

As these projects become a insignificant element in firm's activity it's very important their identification in order to control them. Progress budgets will be settled, which be created "on the size" (for the projects areas) and will not have permanent and rigid nature as the other budgets. Indeed, if last ones are draw up cyclical, on a coding procedure and a determined period (generally a year), projects budgets are drown up as necessary, with a variable period and cycle.

Complying with a changing situation, budgetary system's architecture can be modified as it follows: routine budgets, organized on services, containing all the and expenses beside the progress operation; project budgets, suited to progress actions and grouping their expenses.

The team entrusted with project will have well defined responsibilities and the routine activities will be better controlled.

Drawing up the budgets may contain a detachment the posts which consider their predictable degree and the action power the executives have. It care be distinguished: receipts, which in uncertain condition are at random and than a scenario

updating, with the new information; compulsory expenses from the former period related to general functioning: supplies, heating, water, electricity, rent, travels, missions, receptions, phone, stamps, banking services. Taxes, fixed staff expenses, investments; variable expenses depending on activity'' level as: materials, electricity, productive wages, delivery cost, selling personnel's commission; operational expenses related to strategy working out or adjusting (throwing now products on the market, applying a new production or distribution method) or activity level adjustment (additional adverting campaign); reserves for contingent expenses (risks repairing investments importance, technological process, products manufacturing, customers solvency).

Uncertain leads, also, to forecast receipt costs revaluation which modifies standard costing. In classical standard costing is annually at the same time with budgets drawing up, related to prices and activity level evolution in the next period. Generally, forecast is based on average value for the next period even though this isn't always precise (at the beginning of the period is higher and at the end is smaller).

This deficiency, minor in prices stability period, turns unreasonable in hyperinflation or in high fluctuation of commercial values.

Dealing with this, there are two methods:

The first one has main purpose annual production performance monitoring and involves standard costs updating along the budgetary year.

Let's consider a firm with a strong seasonal activity fluctuation, which makes a fresh computation of the production costs there times a year according to the following procedure: at the beginning of the year are successively drawn up an year budget under the assumption of an average prices rise and quadrimester budget on the same base as volume but estimated at future costs.

Noting : c1, c2 and c3 the forecast expenses for each quadrianster, estimated at average unit forecast costs for the year; c1, c2 and c3 the same expenses estimated as unit forecast costs for the first quadrimester; Q1, Q2, Q3 the products quantities for the same period, as forecast at the beginning of the year, then:

- average production cost based on the budget for the beginning of the year is:

$$c = \frac{c_1 + c_2 + c_3}{Q_1 + Q_2 + Q_3} \tag{1}$$

- average production cost on the first quadrimester budget is:

$$C_1 = \frac{C_1 + C_2 + C_3}{Q_1 + Q_2 + Q_3} \tag{2}$$

This cost will be an obligation for the operational executives in the first quadrimester production cost based on annual expenses and quantities justifies the seasonal activity fluctuation. Otherwise, the unit production cost would be much to

high during the inactivity period as a consequence , the average unit cost is updated as it follows:

$$C_2 = \frac{CR_1 + C`_2 + C`_3}{QR_1 + Q`_2 + Q`_3} \tag{3}$$

CR_1 – real expenses of the first quadrimester for producing the real quantities QR_1
$C_2^{'}$, $C_3^{'}$ – forecast expenses for the second and third quadrimester, estimated as unit forecast costs for the second quadrimester
$Q_2^{'}$, $Q_3^{'}$ – updated quatities

This new production cost $\overline{C_2}$ contains real information (from the first quadrimester), forecast quantities for the second and the quadrimester and unit forecast costs for the second quadrimester.

In the third quadrimester, the production cost $\overline{C_3}$ will be estimated in the same way:

$$C_3 = \frac{CR_1 + CR_2 + C``_3}{QR_1 + QR_2 + Q``_3} \tag{4}$$

According to this method: activity's assumption are updated at each quadrimester end; effective prices evolution is subsumed during C_1 to $\overline{C_3}$; passing from an entirely forecast production cost C_1 to a production cost $\overline{C_3}$ which contains real data from the past cvadrimesters . At the end of the year, the deviation between forecast and real I small because an important part was included by quadrimestrial updating and using standard costs and firm budgets is less significant, maintaining the anticipate level of performance.

This procedure is, still, less adapted to the knowledge in every moment of the actual production cost of the products estimating orders profitability.

To correct this deficiency another method can be used:

According to the second, standard costs aren't based on a forecast assumption but the last effective elements (production qudas, last invoiced prices) and their presentation will show this standard combination. Such a method allows: informing interested persons about daily production costs; showing the influence of the main fluctuating factors on the cost level.

This method can be used, also, at budgetary institutions. In this case, the initial annual budget will be estimated at the last know questation (prin, rate?) and drawing the firm budget up will start from the corespondent part from the annual budget addeal at the end of updating diviation budgets, all of them forming a moment value budget.

Using sensitivity analysis. In an uncertain future it's necessary to test performance variability to all changes in asseumptons vobich substantiate the forecast

and to all environment changes using the sensitivity analysis techniques which , through the scheme suggested by R Teller and inspired from D.B.Hertz model, authorizes a thoroughly decizion, being a relative simple decision.

R.Teller considers that forecast profit on a certain market is:

Forecast profit = Total forecast receipts – Total forecast cost

Where:

Total forecast receipts = Total sales on the market x Market share x product unit price in which:

Total forecast cost = Sales on the market x market share x (Productive mages on sell unit expenses + Other mages on sell unit + Fixed expenses on sell unit)

Based on subjective or dejective estimations on the events probabilities, a distribution of each of the six variables can be made, than the computer selects at random a value for each variable and calculates the proper profit.

Dealing uncertainty involves: a very strictly treasury management as the firm's suroiving depends on paying all the obligations; a higher attention to discretionary cossts using, for example, the general expenses value analysis or obligation card of F.Le M; a system's periodical audit in order to perfectly adapted the situation.

BUDGETARY CONTROL IN A "JUST IN TIME" ENVIRONMENT

IOAN CONSTANTIN DIMA, LILIANA IVĂNUŞ*

Abstract: Budgetary control in a "Just In Time" environment is based on a new industrial organization, with only two levels of authority: workshops or homogeneous work units and budgetary centers. Each budgetary center generates it's own costs and responsibilities and refers only to these. The system is oriented to the future and the performance to obtain is evaluated starting from an adjustment coefficient, which shows the improvement effort reported to initial budget .

Key words: budgetary control, budgetary center, homogeneous work units, adjustment coefficient, adjusted budget

This type of control matches especially for car building industry .

Systems characteristics. This control is based on a new industrial organization. Inside the plant, the chain of command is shorten and the new structure tries to rule better the physical flow (organization is more horizontal).

There are only two levels of authority: workshops or homogeneous work units (HWU), which apply the same techniques and carry on the same activity and performances; budgetary centers (or production areas), which contain many HWU and can be defined related to the following criterions: their regroup must allow physical flows monitoring and they must last a proper period and have a reasonable importance.

At the workshops level there isn't an effective costing and in order to achieve their goals, the HWU managers possess only physical indicators, gathered in a control panel, which are consolidated in budgetary centers and then at the plant's level (in this way budgetary control responds to operational reality) and evaluation (budgets drawing up, costing) starts from the budgetary centers .

Indeed, for system's authors, performance assessment has a meaning only for the entire process .

System's functioning is presented in fig. 1.

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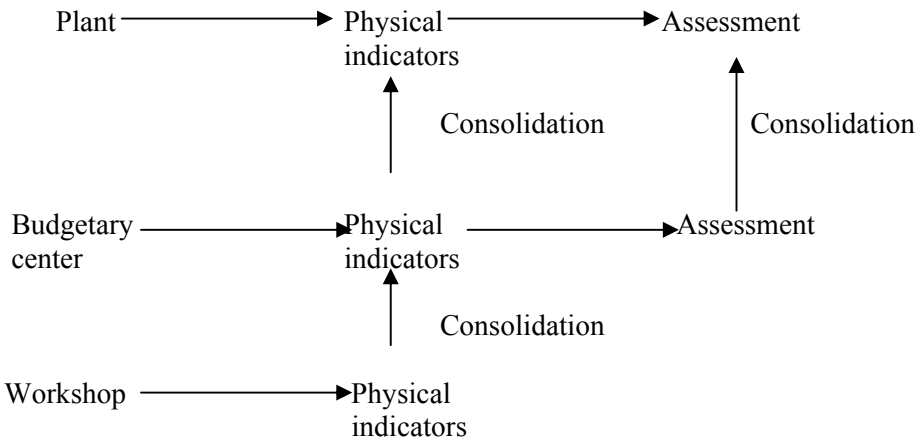

Figure no. 1. Physical indicators consolidation and assessment at each authority level

The control panel shows two categories of physical indicators: hard indicators, common to all the units, which allow production programs monitoring; light indicators, specific for each unit, created by a manager for it's own needs .

Each budgetary center generates it's own costs and responsibilities and refers only to these. It cannot be made responsible for costs allocated through a distribution key .

In order to maintain the continuous progress demanded by using Just in Time techniques, it must give up the separation between fixed and variable charges. All the charges have to connect directly to the indicators that must be reduced .

The system is deliberately oriented to future using a new forecast technique .

The performance to obtain is evaluated, in this case, starting from an adjustment coefficient as it follows:

- in case the activity matches the one in the initial budget:

$$\text{Coefficient} = \frac{\text{Initial budget} - \text{New forecast}}{\text{Initial budget}} \qquad (1)$$

This coefficient shows the improvement effort reported to initial budget. It allows a less subjective judgement upon the manager's performance in procedure control .

- in case the activity is superior to the one in the initial budget

The idea is that maintaining the charges at the lowest level, the performance obtained should be satisfied .

An adjusted budget is calculated to subsume activity's fluctuation, and the coefficient is:

$$\text{Coefficient} = \frac{\text{Adjusted budget} - \text{New forecast}}{\text{Adjusted budget} - \text{Initial budget}} \quad (2)$$

The improvement effort is reported to activity's deviation. A 40% coefficient means that, although the level of activity increases, 40% of costs remain steady .

- *in case the activity is inferior to the one in the initial budget*

It's acceptable a high level of budget's flexibility, and the coefficient is:

$$\text{Coefficient} = \frac{\text{Initial budget} - \text{New forecast}}{\text{Initial budget} - \text{Adjusted budget}} \quad (3)$$

A 40% coefficient means that 40% of the costs are variable .

Each month, in order to accomplish the goals, adjustment actions are anticipated and an adjusted budget is drawn up as a consequence of activity's fluctuations. Than, are calculated the deviations between the forecasted data and the adjustment coefficient is determined, which will represents a target to reach. The deviation analysis is oriented mainly to the future .

In order to strengthen the departments relationships (meaning firm's horizontability), operating plans and transversal control panel are applied, which cause an operational time decreasing, as the cycle supply-production-distribution matches the delivery terms established by the customers, and all the innovation actions concur effective to the reduction of the new products design and manufacturing period .

MANAGEMENT CONTROL FUNCTIONS

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Abstract: Management control makes up the interface between the superior managing board and the operating staff and it refers to long term and short-term activities. Strategic planning is a long-term operation.

Key words: *an informing procedure, a method of motivation*

Management control makes up the interface between the superior managing board and the operating staff and it refers to long term and short-term activities. Strategic planning is a long-term operation. Strategic planning control places above all the pertinence of the objectives, which the company has fixed for itself, being the attribute of the functional structure, of the general staff, to be more precise. The proper managing control is a short-term operation. This is a piloting techniques unit, which makes management control to fulfill the objectives defined beforehand. The budgetary control is one of the techniques of the management control, which provides, starting from a decentralization of responsibilities, control over the activities of the company expressed by monetary units within the accounting period (one year). It consists in a permanent comparison of the objectives and results which appear in the budget in order to determine the causes of deviations / errors, to inform different hierarchical departments, to adjust the necessary correcting procedures or to make the favorable deviations profitable, to value the activity of budget executives.

The management control is:

An informing procedure. Management control cannot be considered a piloting control of a business unless it has an information system useful to decision factors, and that enables a good communication within the company.

- power, language and management control. To impose a language means to have control over the person who uses it because a language already carries the image of the world that obviously implies those who speak it. Most of the companies use a formal language (their own topic, terms and symbols). These

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- expressions create common attitudes. Therefore the term must be understood in the broadest sense of the language system. Dressing habits, prohibiting or allowing people to thee and thou each other or to address to people by the first name, greeting and even intonation can vary from one company to another. These elements together with many others make up the culture of the company.

In conclusion, language, one of the most important elements in the culture of a company, constitutes a drive belt necessary for the functioning of the management control system which must be directed towards departments which decide on the information regarding the difficulties in the field and conversely, it must see to it that the instructions that need to be considered are conducted towards different operation departments.

- "managerial" language is very much used. General managers, measuring the opportunities, will establish a strategic plan for the development of the company, which maintains the identity an d the peculiarity in an environment considered to be turbulent, a plan which will then be separated into an operational plan and budgets negotiated with each member of the profitable department. The latter are responsible for the final programme to which a similar cost estimating system is associated. From one day to another they have to identify and quantify the deviations in relation to the objectives and to take the necessary improvement steps to regulate the activity carried on. The general manager is informed of the performances of different departments, materialized in a monthly report which, due to feed-back, allows only the significantly disturbing anomalies to reach the executive power. Decision factors must be able to reveal the abilities owing to an efficient motivation system and letting the effects of synergy to operate.

A method of motivation. Economic and social evolution has limited its power to money-driven motivation, i.e. the salary for a job (for the services provided). Only an unsatisfied necessity can be a stimulus and it needs manpower.

A.H. Maslow speaks about five categories of necessities: physiological needs (hunger, thirst, tiredness, sexual needs), security needs (peoples' safety and the safety of patrimony), the need to get into a membership (classmates, neighbors, friends), the need of respect (appreciate colleagues, superiors) and the need of accomplishment which are formed on the hierarchical system, a fact revealing that greater necessities are fully experienced by an individual only if insignificant necessities are met. An unsatisfied necessity is the one that explains peoples' behavior, based on the dynamic principle of human activities.

D.M. Gregor explains the fact that traditional businesses reject social necessities (of membership) and self-centered necessities (of respect and accomplishment) and as a consequence, they make use of only a small part of the human resources. This is what we call "theory X".

Opposed to this conception is "theory Y" based on the following suppositions: work can be a source of gratifications; the best reward for employees to cooperate is

answering their social and self-centered needs; the ordinary man can learn in favorable circumstances not only to accept but also to seek responsibilities; many people are capable of creative contribution in a business; seldom do we use all the intellectual resources of an ordinary man nowadays.

The works of the 2 American psychologists are the foundation of the management control in the modern sense of the term.

On the whole, management control can be defined as being a system of procedures, which guarantees that the activity of the executants is in accordance with the objectives and aims of the company. This is based on deciding upon the plans, which establish the overall objectives; on dividing the overall objectives into sub-objectives suitable for the executants' responsibilities; confronting the results with the objectives; the motivation of the executants, which makes them act according to the objectives.

Present methods of developing management control consist in determining the evolution of the motivation system based especially on "negative sanctions" to "positive sanctions".

Thus, two methods resulted:

- **management by objectives (MBO).** It lays its foundations on a certain idea about man and society (very close to the Protestant philosophy described by Max Webber as the foundation of capitalism). Through his work, man must contribute to the development of the society. Economic progress is the basis of peoples' happiness, its efficiency is directly linked to the laws of the market and those of the competition. It's good for the individual to do his best regarding this development even though it takes considerable sacrifices and puts him under pressure. It is in man's nature to surpass himself.

This method can work only in a certain context which reduces the superior decision departments, the only ones able to transpose into objectives and sub-objectives the results of the policy they wish to promote. The implementation of these objectives is placed in the hands of different managers (workers in activity control centers) who are free to choose their means with more or less constraints (complying with collective agreements, administrating centralized treasury at a group level, centralizing the investment budgets at the level of general management). Most of the "a priori" controls (numerous in traditional businesses) are suppressed in favour of "later" controls (objective-achievement comparison).

In practice, not everything is going according to plans, especially when the objectives assigned by the general manager to those in charge of different departments can be considered impossible to implement, fulfill, they are discouraging more than they are stimulating or rather inadaptable. In this case, the general manager, whose authority is imposed through competence and not because he owns the artificial capital or because he risks his capital, loses credit. The evaluation system can also be the object of the claims and can generate dissatisfaction based on a feeling of inequity. In the end the management by objectives can become an empty shell, which restrains the management of operational services.

- **multiple management**. This must be more than a simple negociation which consists in selling the executive's ideas to all those concerned and in making them understand that they need to put these ideas into practice in order to succeed in their object. Multiple management goes beyond the more or less elaborate procedures, which suggest that everyone is given the possibility to discuss the objectives they have been assigned to or to set up their own objectives before submitting them for the executives' approval. There is, though, a dose of hypocrisy in this kind of procedures, since the objectives of a certain level are strongly conditioned by the desire to secure higher objectives and leave the office workers with a limited possibility of taking initiative.

The real multiple management is the one, which tries to remove the contradictions between the company's objectives and those of its employees (professional objectives, ethic objectives). Trying to balance these two is difficult. It implies abandoning the simplified theory according to which people re ruled by the same motivations (promotions, salary raise). To the extent to which the infinite variety of individual motivations is foreseen, this leads to a much more personalized working relationship than the current theory. It's important that the staff should be known better in order to direct their activity (career) not only towards the progress of the staff but also towards their own aims.

This kind of management must not be mistaken for the financial incentive or for the form of management described above and supplemented with the employees' participation in the profits. Thos participation consists, in the first place, in establishing the objectives. The Board of directors becomes collegiate in different proportions, having in view the fact that all the office workers, including budget executives take part in the planning process.

This idyllic point of view must be tempered. When defining the objectives, this cannot take place in a conflicting climate. A „transaction" management can clarify minor conflicts. Otherwise, an authoritative decision of the Board of directors must be taken in order to settle it, and all the illusions will be shattered. On the other hand, encouraging initiative and judging only by looking at the results can generate a simple position approach phenomenon.

Each manager has the feeling of having created or improved his position, of being entitled to his position (job) of dominating his employees, clients and mastering his techniques. A new ordinary rule is now being introduced to us which can be put this way: as long as a department (an activity) achieves satisfactory results, the executive of this department has the right to keep his position and to control his employees, clients and techniques (the theory can vary, of course, depending on the speciality of the department taken into consideration). It's clear that this position approach is a strong motivator. The manager knows that if his effort leads to efficient achievements, he will be entitled to keep them under his control.

Method of sanctioning. If management control, in its managerial sense, grants the setting up of a motivation system by reorganizing the business (dividing it into executive departments, reducing the overall objectives to the goals of the participating

departments) it also enables the setting up of a penalization system due to the accounting instruments on which is based.

The managerial language often borrows the pilot's image and the vocabulary of the competitioners. Furthermore the first auditing is the self-auditing of the executive who supervises ceaselessly the performance indicators and takes the necessary steps in order to reduce the deviations. Obviously, he then limits his own liberty of action by accepting these indicators and avoiding unfavorable deviations, which may cause sanctions.

The second auditing is that of the hierarchy, people in higher positions who are kept informed regarding the errors, which must analyze the important ones (management by exception – signaling system) and ask different executive workers to explain and justify them. All these will be explained using exogenous factors like price variation, changing social tasks, advancing costs of public services or of certain raw material, decreasing purchasing power. If he lacks explanations of this kind, the general manager will form an unfavorable idea of the quality of the executives' control that will eventually suffer the consequences. The sentence tends to be more severe especially because the control department executive has contributed to the defining of the objectives. Therefore we can slide slowly from an obligation of means to an obligation of result. The executive power is at the same time to reserved if it doesn't interfere with the present auditing, and too accessible if it's ready to interfere in cases of difficulty in a department.

In the case of a large group of companies, which have many subsidiaries, sanctioning the poor results of one of them might mean that it will have to be "reorganized" or shut down. The holding which is a substitute for the general management of the group, gives advices regarding portfolio management and not company management.

Recently, a "*0-base budgeting*" has been elaborated and implemented for the first time by Texas Instruments, and its characteristics are: the identification of the decision units (i.e. organizing the company into departments making use of the management by objectives); the elaboration of a decision modulus (explaining the production function and the objective function, therefore allowing to make decisions by standardizing the statements regarding the aims and the constraints, and that means making the circulation of written information more difficult to the detriment of oral information and interpersonal relations. The more accurate it turns out, the harder the administrative work is.); the classification of the decision modulus according to priority (it consents to keeping only the "top of the basket", the contents of which can change from one year to another, because at the bottom lie the programmes we must register for reasons beyond economic judgment or because the response time of the structure shouldn't be underestimated); the building of a capital starting from reserved modulus (the "0-base budgeting" is opposed to the classic budget procedure which consists in redirecting the budget of different control departments from one year to another, making a few detail adjustments). It increases tension, regularly bringing into

discussion the existence of the departments, which have to justify not only the increase of their budget but also that of the entire budget.

In theory the "0-base budgeting" means "all or nothing". Its sanction is the clearance of a department or an activity, while not observing the standards is sanctioned with dismissal. If the strategic planning is based on quantitative methods only through the modification of the economic studies involved, management auditing fully depends on the quality and pertinence of the established estimating instruments, which make up the nervous system of management auditing because it is used to inform different decision departments and also to motivate "the actors" and eventually, to cause and to explain the sanctions.

At the same time, management auditing is limited and sometimes it's not enough to analyze a company only to get control over its activity. In order to point out the limits of the management control, the activity of the company can be laid out using a concentric circle chart, a fact that proves the diversity of the problems of a management auditing.

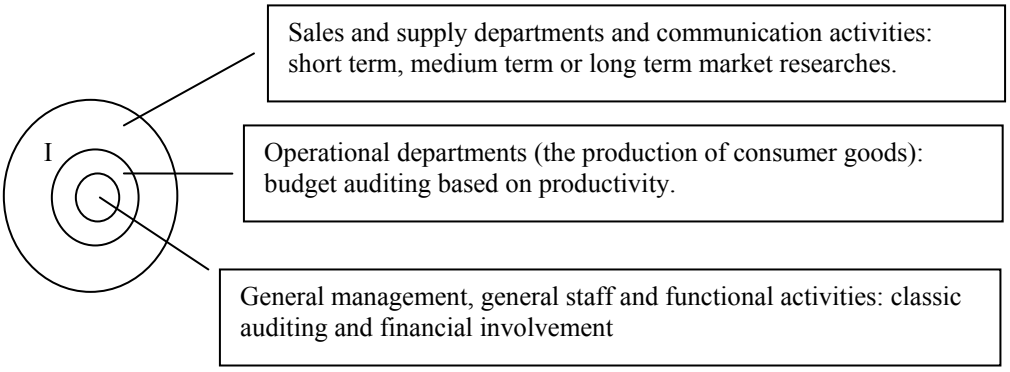

Fig. 1 Concentric circle lay-out of a business

Depending on their importance, the problems specific to area I, II and III are not identical. Big modern companies develop the third area to the detriment of the outlying areas, especially the second one. This is a "tertiarization" and an ascending evolution towards higher technologies, which are the foundation of any changes. Directing activities are difficult to compare and have long term effects, way beyond their management-auditing horizon. Keeping this department under observation requires new techniques. The development of new communication activities as continuers of traditional commercial activities can also be noticed in the outlying areas of the business. The implementation of these communication operations is a real immaterial investment with positive results, which are sometimes far off and thus, are missed by the measuring range. As management auditing reaches its limits, one can notice that the effect of keeping it under observation take other shapes, more complete ones (financial or socio-organizational ones).

The gigantism of certain businesses and extending their operation world-wide operations involves, more than ever, the fact that information system must reduce the complexity of the reality, measuring the performances using synthetic financial indicators.

Within these indicators the investment efficiency holds a privileged position, and it is defined as being the result-investment ratio. Resources are allocated primarily for activities, which provide the highest investment efficiency.

Starting from this indicator, a chart can be drawn up just like the one made by Du Pont Power Company. (fig 2)

Management auditing has certain limits. In order to exceed them it's very important to use the financial indicators which can be supervised through more subtle, more "humane" methods, forming the object of a business project in which implicitly or informally, they become an alternative to the activity of the managing mechanism.

The business project is an explicit socio-organizational commitment, which mainly refers to:

- *The reason of its existence.* Management auditing techniques permit the control of simple departments in charge of clients prospecting and production activities, but they can also fail as long as we come across more complex activities, which require behavior ethic, a value system accepted by all the employees in the company.

The project is also a clarifying force necessary especially in big companies. Here, the difficulty lies in the fear that general managements might have their own preferences. Anyway, the project encourages employees to take part in the life of the company, to enter into partnerships, which means using the possessive in the "home" language (our company, our department, our factories, our products, our client, with us).

- *The characteristics of a business project*. In order to be stimulating, it must be in harmony with the history and the culture of the company when facing the risk of not being understood or credible. Furthermore, it must bring together the following qualities: simplicity, ambition, and not to be kept to executive authorities and having a certain continuity. A business project aims durable horizon.
- *The contents of a business project*. Any project usually consists of at least three parts: the task mission, the principles or the values and the general objectives. By the task we mean the total of products and services a company ca offer to the society in order to prove its existence. This total is not reduced to rates of turnover. The principles or values refer to the means the company might use or forbid, on the other hand. Here, the ethic dimension of the project proves its entire importance. The general objectives give operational nature to the tasks, simply following the established principles and values.
- *The method of elaborating the project.* Managers must be aware of the fact that in troubled periods the homogeneity of the departments is more important than a system inflation whose "birth-rate" risks exceeding the rate of operation.

- This is then followed by a confirmation, meditation and diagnostic stage which will end up with a drafting of a project. The latter will then be improved through an informing-performing repetitive process put into practice by the staff before it makes the object of the final drafting.

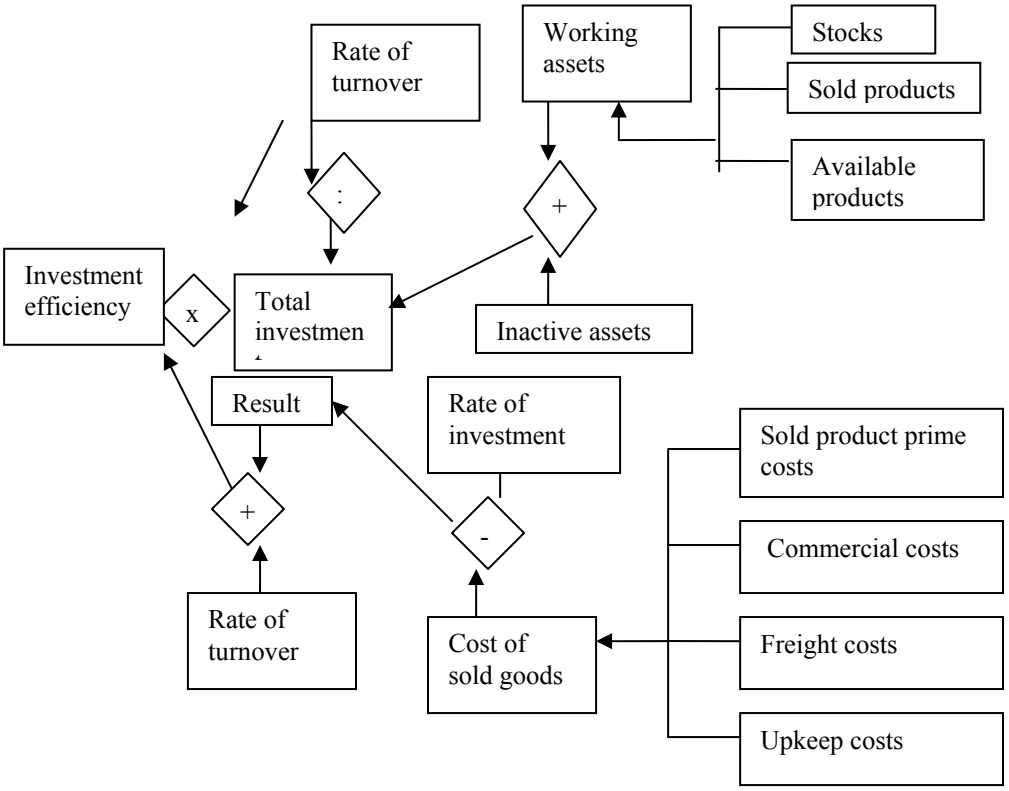

Fig. 2. Du Pont Power Company chart

- *Method of applying the project.* It's obvious that the most delicate part is to rally round the project. Everyone must interiorize the principles they put forward and this is possible only when focusing or discussing/brainstorming longer than it has been estimated. Generally, the project is the object of a rich booklet given out to the entire personnel, job applicants, the most loyal partners, to one or many bankers, clients or important suppliers.

Staff members need a certain autonomy to express their creativity and flexibility in the relations with a bigger company. All these qualities do not meet the formal classic auditings. They point out the "clanic" control or the control made by a group. The American sociologist W. Onchi speaks about 3 types of controls: market controls, bureaucratic control, clanic control. Each belongs to a type of organization, which

forbids any interchangeability between the types of control, situation in which they become totally inoperative and incongruous.

Clanic control is a special method adjusted to the businesses whose outputs cannot be measured, and the production function is "pliant" or less known. The clan is identified through the principles interiorized by its members in order to supply their needs of membership, respect and accomplishment according to Maslow. Within the group brotherly relations can be bound, which generate long-term commitments and make up a source of pride. The system of pairs (couples, spouses, equals) and colleagues provides an equilibrium between the long term aims of the members and of the entire clan. The control carried out is therefore "personalized" and it involves a great staff stability, unlike the control departments, which function in "bureaucratic" organizations. Clanic control can also be found in scientific environments (among doctors, researchers in all fields). Clanic control shows M.C. Gregor's "Z theory" in opposition to "the X theory" (people are definitely lazy, irresponsible human beings who must be supervised all the time) and "the Y theory" (people are basically hardworking and responsible and ask for nothing else but to be guided and stimulated).

The importance of some special investments (research, commercial activity) brought forth the business culture as a means of controlling behavior, being a substitute for the difficult activity control. We are only talking about a new concept, *the house spirit* as it was called at the end of the 19th century and the beginning of the 20th century. Today, the company rules not only over professional life but also over pleasures (free time) and family life. The business becomes everything and that reduces the conflicts between its aims and the personal aims of its members. Behaviors contrary to the public perception regarding the objective of the company are considered antisocial, marginalized. This threat is enough in order to guide the employees' behaviors.

AN INTERFACE DISPATCHER SYSTEM FOR THE MANUFACTURING RESOURCE PLANNING STRUCTURE

IOAN CONSTANTIN DIMA, STOICA NAPĂU ALINA*

Abstract: The function of an interface dispatcher system is an interface between the driving and the driven systems, subsequently is a sender for one and a receiver for the other.

Key words: interface dispatcher system, technical reasons

1. Introduction

The function of an interface dispatcher system – as an informational expression – is an interface between the driving and the driven systems, subsequently is a sender for one and a receiver for the other. We consider the interface system in a technique of manufacturing resource planning: first, sending information needed to the manufacturing system (working fronts) and second, to the management system to control the whole process – see Figure 1.

2. The interface dispatcher system for the manufacturing resource planning structure

As we illustrate in the Figure 2 and Figure 3, the interface system create the connection for informational down- and up-stream flow which is in charge for functioning the entire manufacturing resource planning system.

The interface system acquire information concerning manufacturing process (parameters, constrains etc), convey the information to driving system, and also convey the down-stream patch for driven system. Primarily, the connections between driving and driven systems authorize the information distribution by using inner management of the interface dispatcher system.

Selecting technical reasons (as quantity and quality aspects) used in the interface dispatcher system ought to be regard as:

- company structure and production capacity;
- working fronts layout;

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- general level of management;
- informational channels saturation rank;
- multiple on-line connections of the dispatcher with different member in the system.

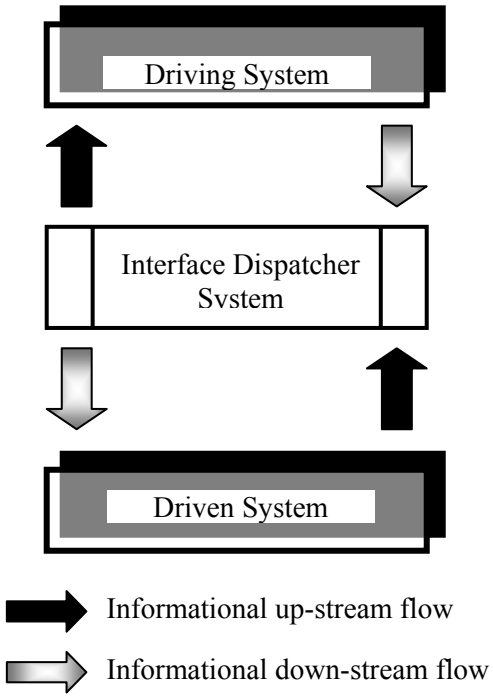

Figure 1

The entire activity can by carry out if there is accurate and high-quality dedicated equipment, therefore interface dispatcher system is able to supervise whole manufacturing process, starting from raw materials to delivering the finished product to the customers.

Since the manufacturing process is affected by various disturbing factors which can modify the scheme behavior, a carry out system must instantly monitor and control the production process. Controlling activity can by achieve using a mathematical model to match up. The interface system can interact occasionally (wend the decisions are taken after recording an error) or continually (wend the decisions are taken immediately recording an error to remove the consequences).

A controlling system and a controlled object are linked with information parameters as we explain in Figure 4.

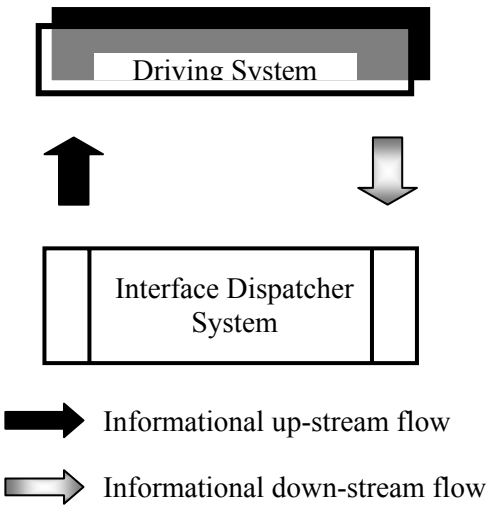

Figure 2

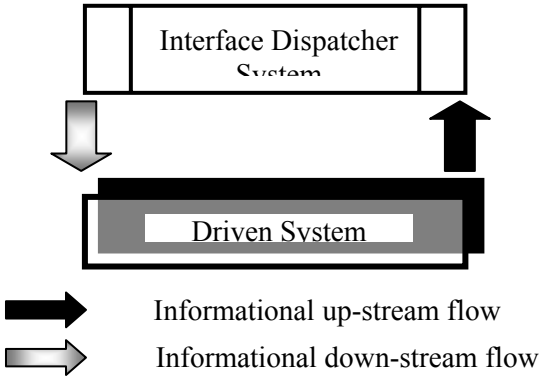

Figure 3

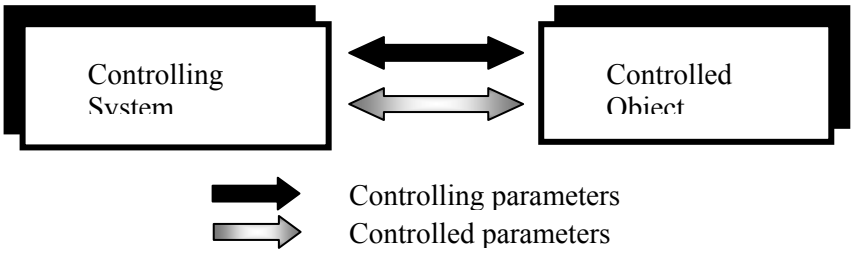

Figure 4

Several controlling parameters are akin to amount of coal production and amount of labour, data compared with the model to match up. If there are unmatched values, for the reason of disturbances in the system, the errors will be removed.

Several controlled parameters are denoting the level of operational parameters concerning production rate.

To control effectively the production process, the driving systems convey the decisions by the way of interface dispatcher system to the driven system, accordingly to control whole structure.

In addition, the driving system acquire feedback from interface dispatcher system about disturbances in the production process (delay in material resource planning, conflicts etc) to take action against those unfavorable factors and to remove the source of errors.

In this framework, using an appropriate methodology, decisions are released in different variety and the interface dispatcher system select a most advantageous solution, later optimized by the driving system.

Putting into practice an interface dispatcher system is an enhanced key for all technical issues if the system can continuously control the production process, free of disturbance factors.

The rate of employment for an interface dispatcher system can be decide using a set of values, finally is a loss calculus. The value of those loses can be determining using *the rate of whole loses* K_p, as in (1): total

$$K_p = \frac{P_{ml}}{P_l} \times 100 \tag{1}$$

were:

K_p – loses rate;

P_{ml} – lowest amount of monthly loses in the production process, for the reason of disturbance factors controlled by the interface dispatcher system;

P_l – lowest amount of monthly loses in the production process, for the reason of disturbance factors.

The preeminent situation occur when loses rate is the smallest. The ideal case is when K_p=1, that means all disturbance factors can be controlled by the interface dispatcher system.

$$P_{ml} = \sum_{p=1}^{m} W_{pl} \times R_{fp\min} \tag{2}$$

$$P_l = \sum_{p=1}^{m} W_{pl} \times R_{fp} \tag{3}$$

$$K_p = \frac{\sum_{p=1}^{m} W_{pl} \times R_{fp\,\min}}{\sum_{p=1}^{m} W_{pl} \times R_{fp}} \tag{4}$$

were:
W_{pl} – planned value of labor productivity;
$R_{fp\ min}$ – lowest amount of labor productivity rate for the reason of disturbance factors "fp", the process been controlled by the dispatcher;
R_{fp} – amount of labor productivity rate for the reason of disturbance factors "fp".

To compute this rate is required do estimate the amount of loses in terms of labor productivity rate for the reason of all sort of disturbance factors, recorded for every crew, hence:
(i) daily labor productivity rate diminution for the crew "j", noted "r_{jfp}":

$$r_{jfp} = 1 - \frac{W_{zoj}}{W_{zpj}} \tag{5}$$

were:
W_{zoj} – daily labor productivity rate recorded for crew "j", for the reason of disturbance factors "fp";
W_{zoj} – daily labor productivity rate planned for crew "j", for the reason of disturbance factors "fp".

(ii) daily labor productivity rate for the crew "j" linked with timer disturbance factors "fp" noted "K_{wzj}":

$$K_{wzj} = 1 - \frac{t_{fpj}}{r_{zlj}} \times r_{jfp} \tag{6}$$

were:
t_{fpj} – amount of working time without disturbance factors "fp" for the mining crew "j";
r_{zlj} – amount of planned working time;
j – 1, 2, 3, …, n – mining crew index;
fp – f_1, f_2, f_3, …, f_n – disturbance factors;
p – 1, 2, 3, …, n – disturbance factors index.

(iii) daily labor productivity rate diminution for the reason of all disturbance factors "fp" in one month/quarter/etc for the crew "j", noted "R_{jfp}":

$$R_{jfp} = 1 - \frac{T_{zlj} \times \sum_{k=1}^{n} r_{jfpk}}{T_{tlj}} \tag{7}$$

were:

T_{zlj} – a fraction of month wend disturbance factors "fp" not interfere for mining crew "j" [days];

T_{tlj} – amount of monthly working time for mining crew "j" [days];

r_{jfpk} – amount of daily loses recorded by crew "j", as an effect of disturbance factors "fp" in the day "k", measured in time units;

k – 1, 2, 3, …, n – number of days wend disturbance factors "fp" take action.

(iv) daily labor productivity rate diminution for the reason of all disturbance factors "fp" for all the crews "j", noted "R_{fpt}":

$$R_{fpt} = \frac{\sum_{j=1}^{n} R_{jfp}}{j} \quad (8)$$

To estimate the value for P_{ml} and P_l in accordance with R_{fp} (R_{fp} must be minimum) we can use nomogram charts for every variation of "t_{fp}", K_p, r_{jfpk} calculated from 10 to 10 percent. Creation the charts is based on recording the parameters and the timing method.

3. Conclusions

As a consequence of an interface dispatcher system in production management efficiency is increasing while "P_{ml}" drop and it can reach the optimum while "P_{ml}" goes to zero. This can be achieved only if all disturbance factors are removed immediately they occur in the manufacturing process (T_{fp} = min) and the consequences of disturbance factors are wiped out (r_{jfpk} = min).

Minimizing loses in the manufacturing process it can be done if we can have from start on a list of priorities of issues in the interface dispatcher system, we can compute a time limit for sampling the parameters, and we can have a tooling system for dropping or wiped out the disturbance factors from system.

Respecting those measures leads into fine working interface dispatcher system, decreasing the labour expenses. The most important economic effect consequential to interface dispatcher system function is decreasing the labour expenses as a result of increased labour productivity, in other words decreasing remuneration expenses consequently a decreased number of employees needed to do the same amount of work, simultaneously with dropping the conventional-constant expenses, therefore we obtain a supplementary production quantity additional to planned production size with the same number of employees, in the identical period of time.

THE ECONOMIC - MATHEMATICAL EVALUATION OF THE SYSTEM "STOPING WORK WITH COMPLEX MECHANISATION" IN PIT COAL MINES

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Abstract: The resulted relation of the cost of the coal ton allows an interpretation of the decision variables, which influence the cost per ton at stoping work field level, for given deposit conditions and work technology that correspond values of the constants A_1 till A_4 and B_1 till B_4

Key words: cost of the coal, expenses, indicators

Introduction:

The resulted relation of the cost of the coal ton allows an interpretation of the decision variables, which influence the cost per ton at stoping work field level, for given deposit conditions and work technology that correspond values of the constants A_1 till A_4 and B_1 till B_4.

The relation also contains as variables:
L – the length of the working face [m];
n_c – the number of slices (cycles) exploited in a day.

From the interpretation of the cost relation result next:
There are constant expenses per coal ton, as following:

- the amortizement of the equipment with value depending of the length of the face;
- the expenses with the materials and the replacements parts depends on the length of the faces B_3 and B_4;

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- expenses with electrical power consumed during the working of the stoping works;

There are expenses reverse proportionally with the length of the face, as following:

- the increase of the face length lead to a diminution of the amortizement of the equipment's with value independent of the length of the face (A_3A_2);
- the increase of the face length lead to a diminution of the expenses with materials and replacement parts independents of the length of the face B_3 and B_2;
- the increase of the face length lead to a diminution of the expenses with the live work (salaries). B_5. There are expenses reverse proportionally both with the length of the face and the number of slices (cycles) exploited in a day, namely:
- expenses with outputs and costs of the enterprise in fixed amount (B_6).

In the expression of the unit cost of coal mining in stoping work (C), the n_c variable can be considered at its maxim value (corresponding of the daily maximum production).

Description:

The working of the system "stoping work with complex mechanisation" is analysed on the basis of a decision criterion. In general, the decision criterion is an ensemble of consequences that the decision-maker, when compare the variants to choose the best, takes into account simultaneous and correlated. Mathematically, results that a decision criterion is a subset of the result indicators, which are takes into account at the variants comparing, plus the rules that allow us to take into account simultaneous and correlated this consequences.

Of mathematical viewpoint, the result indicators are some functional, depending on the set of uncontrollable variables (of the stimulants) and on the set of controllable variables (of the reactions).

$I = f(S,R)$

In the case of the issue of optimisation of the stoping work technological variants, these technological variants, once generated, we can evaluate these. The variant evaluation will be made in accordance with the type of the functions that define some result indicator.

With a view to solve the issue, we propose as result indicator the cost of the coal ton on stoping work with complex mechanisation.

So, we need to establish a function of the coal ton cost, with variables the graph knots through which pass the way for the μ_i variant and the lengths of the working face L:

$$C = F(\mu_i, L) \quad (1)$$

$$c = F(\mu_i, L) \quad (2)$$

μ_i - the way with the (i) index from the graph of generating the variants;

L – the length of the working face [m]

$$c = \frac{C}{A} \text{ [lei/t]} \tag{3}$$

C - the total cost in stoping work in 24 hours;
c – the cost per coal ton in stoping work;
A – the coal production in stoping work in 24 hours, take as maximum value;

$$A = L * m * B * \gamma * n_c \text{ [t/day]} \tag{4}$$

L – the length of the working face [m].
m – the thickness of the coal bed [m];
B – the width of the slice [m/cycle];
γ - the volume weight for coal [t/m^3];
n_c – the maximum number of cycles (cute slices) in 24 hours [cycles nr./day].

The cost per coal ton (c) must be decomposed in some partial functions of cost, based on some reasons:

- the partial functions of cost must be additives (to can be added);
- the partial and additive functions must be established through simple judgements and on the base of available dates.

These reasons lead to the next trial to divide in partial functions, that is partial functions that will have the same cause which have generated expense and the same economic nature.

The decomposition in partial functions has as base the criterion of the differences of nature for the cost, as:

- the cost of capital (the part for investments);
- the cost of exploitation (with its three components: materials, labour, energy.

Both the cost of capital and the cost of exploitation are generated of:

- the shearer (the combine);
- the conveyor;
- the support (the timbering).

To establish the costs of capital (for the initial investment) in the stoping work with complex mechanisation, we can distinguish 3 groups of equipments in the stoping work:

- group I – inintegrated equipments (sharer, special timbering from intersections, high – lift pump, pre-loader of the conveyor on the preparatory driving;
- group II – equipment's with a concentrated subassembly, independent of L (driving and stretching stations of the face conveyor) – and a subassembly

- developed on the length of the stoping work, which value depends on the L (spouts and chains of the conveyor);
- group III – equipments that cost of investments is for element and their number in the face is function of some density (powered support stations).

So, the costs in stoping work during 24 hours (day) can be calculated with the relation:

$$C = C_c + C_0 \quad \text{[lei/day], where:} \tag{5}$$

C_C - the cost of capital;
C_0- the cost of operating (exploitation);

and $c = \frac{C}{A}$ [lei/t], represent the cost of the ton in the stoping work.

$$c = c_c + c_0 \text{ [lei/t]} \tag{6}$$

The cost of capital c_c [lei/t] can be calculate with the relation:

$$c_c = D * \frac{1}{L_{ca} * L * m * \gamma} \text{[lei/t]} \tag{7}$$

where:
L_{ca}- the length of the stoping work field [m] in the sense of the face feed;
L – the length of the face of workings [m];
D – the yearly depreciation.

The cost of the capital, afferent to its depreciation, are something similar to the amortizement, but with the condition of calculate this value of the depreciation (amortizement) with one only method – the method of the sinking fund.

Any other method of calculation for the amortizement as depreciation: linear, gradually (progressive), regressive, these distort the value of the yearly recovering and don't lead to an adequate rate of recovering (the really rate of recovering of the project). The method of the sinking fund is the only that suppose that any amount recovered as amortizement is invested and produce a recovering of a certain rate.

$$D = (I - I^{'}) * (A/V, r\%, n) = (I - I') * \frac{r}{(1+r)^n - 1} \tag{8}$$

Calculate with the sinking factor method, the yearly depreciation is an annuity that show how much must be deposit yearly in the sinking fund, such as through the deposited amounts and the capitalised recoverings, at a r rate, for these deposed amounts, to arrive at the amount that must be recovered (I-I'),

$$f_{sf} = (A/V, r\%.n) = \frac{r}{(1+r)^n - 1} \text{ (sinking found)} \quad (9)$$

I – the value of the capital that enter in function the stoping work with complex mechanisation

This has the meaning of value of replacements of the fixed means, which is equal with the buying value – if the equipment is new or equal with the sale value on a free market – if the equipment is partly used.

I' – the value which the equipment's go out in the moment of the ending of a working field.
$I-I'=V_u$ - represent the lost value through wear during a working field exploitation.

The I and I' values can be established through different relations, depending on the gender (the group) of equipment.

- For group I of equipments:

$I=I_1$ [lei/working field]
$I'=I'_1$ [lei/working field]
and the capital cost will be determined with the relation:

$$c_{c1} = (I_1 - I_1^{'}) * f_{sf} * \frac{1}{L_{ca} * L * m * \gamma} [\text{lei/t}] \quad (10)$$

$$c_{c1} = A_1 * \frac{1}{L} [\text{lei/t}] \quad (11)$$

where:

$$A_1 = (I_1 - I_1^{'}) * f_{sf} * \frac{1}{L_{ca} * m * \gamma} \quad (12)$$

- For the group II of equipments:

$I=a + b*L$ [lei/working field]
$I' = a' + b'*L$ [lei/working field], where:
a, a' - the first component of the investment I (respectively I') – constant in comparison with L;
b, b' - the second component of the investment I (respectively I') – variable and proportionally with L.
and the capital cost will be established with the relation:

$$c_{c2} = [(a + b * L) - (a' + b' * L)] * f_{sf} * \frac{1}{L_{ca} * L * m * \gamma} [\text{lei/t}] \quad (13)$$

$$c_{c2} = (a - a') * f_{sf} * \frac{1}{L_{ca} * L * m * \gamma} + (b - b') * f_{sf} * \frac{1}{L_{ca} * m * \gamma} \quad (14)$$

$$c_{c2} = A_2 * \frac{1}{L} + A_3 \text{ [lei/t]} \quad (15)$$

$$A_2 = (a - a') * f_{sf} * \frac{1}{L_{ca} * m * \gamma} \quad (16)$$

$$A_3 = (b - b') * f_{sf} * \frac{1}{L_{ca} * m * \gamma} \quad (17)$$

- For the group III of equipments:

$$I = d*L*K*K_r \text{ [lei/working field]} \quad (18)$$

$$I' = d*L*K'*K_r \text{ [lei/working field]} \quad (19)$$

where:
K (respective K') – represent the investment value I (I') on piece (on piece of investment) [lei/piece]
d – the density of the equipment (of the investment) [piece/m]
K_r – reserve coefficient, in accordance with N.D.P.M. [K_r=1.05]
And the cost of the capital will be determinate with the relation:

$$c_{c3} = (d * L * K * K_r - d * L * K' * K_r) * f_{sf} * \frac{1}{L_{ca} * L * m\gamma} \quad (20)$$

$$c_{c3} = (K - K') * d * K_r * f_{sf} * \frac{1}{L_{ca} * m * \gamma} \quad (21)$$

$$c_{c3} = A_4 \text{ [lei/t]} \quad (22)$$

$$A_4 = \frac{(K - K') * d * K_r}{L_{ca} * m * \gamma} * f_{sf} \quad (23)$$

The costs of operation (exploitation) (C_o) can be divided, in concordance with their nature, in three components:

- costs with materials and spare parts (C_m);
- costs with the energy (C_e);
- costs with the manufacturing: salaries plus additions plus benefits (outputs) (C_s).

Both for costs with materials and spare parts (C_m) and costs wit the manufacturing (C_s), can be applied similar judgements with those which were developed at the capital costs, concerning the dependence of these costs (C_m and C_s) of the length of the face (L)

For the materials of I gender:

The cost with materials (C_{m1})can be established with the relation:

$$C_{m1} = \sum q_{1i} * n * K_{1i} \text{ [lei/day]}, \quad (24)$$

where:
q_{1i} - represent the materials of (i) gender consumption on the exploited worked slice (cycle) [piece/cycle];
n_c - the maximum number of cycles exploited in a day [nr. of cycles/day]
K_{1i} - the price of supply for materials of i gender [lei/piece].

The unitary (integrated) cost with materials (..) can be established with the relation:

$$c_{m1} = \frac{C_{m1}}{A} [\text{lei/t}] \tag{25}$$

where:

$$c_{m1} = \frac{n_c * \sum q_{1i} * K_{1i}}{L * m * B * \gamma * n_c} [\text{lei/t}] \tag{26}$$

$$c_{m1} = B_1 * \frac{1}{L} [\text{lei/t}] \tag{27}$$

where:

$$B_1 = \frac{\sum q_{1i} * K_{1i}}{m * B * \gamma} \tag{28}$$

For the materials of II gender:

The cost with materials (C_{m2}) can be established with the relation:

$$C_{m2} = \sum q_{2i} * n_c * K_{2i} + L * \sum q'_{2i} * n_c * K'_{2i} \text{ [lei/day]} \tag{29}$$

where:
q_{2i} – represent the materials of (i) gender consumption on the exploited worked slice (cycle) [piece/cycle];
K_{2i} - the price of supply for materials of i gender [lei/piece].
q'_{2i} – represent the materials of (i) gender consumption on meter of the exploited worked slice (cycle) [piece/m · cycle];
K'_{2i} - the price of supply for materials of i gender [lei/piece].

The unitary (integrated) cost with materials (c_{m2}) can be established with the relation:

$$c_{m2} = \frac{C_{m2}}{A} [\text{lei/t}] \tag{30}$$

where:

$$c_{m2} = \frac{\sum q_{2i} * n_c * K_{2i} + \sum q'_{2i} * n_c * K'_{2i}}{L * m * B * \gamma * n_c} [lei/t] \tag{31}$$

$$c_{m2} = \frac{n_c * \sum q_{2i} * K_{2i}}{L * m * B * \gamma * n_c} + \frac{L * n_c * \sum q'_{2i} * K'_{2i}}{l * m * B * \gamma * n_c} \quad (32)$$

$$c_{m2} = B_2 * \frac{1}{L} + B_3 [\text{lei/t}] \quad (33)$$

$$B_2 = \frac{\sum q_{2i} * K_{2i}}{m * B * \gamma} \quad (34)$$

$$B_3 = \frac{\sum q'_{2i} * K'_{2i}}{m * B * \gamma} \quad (35)$$

For the materials of III gender:

The cost with materials (C_{m3}) can be established with the relation:

$$C_{m3} = L * \sum q_{3i} * n_c * K_{3i} \text{ [lei/day]} \quad (36)$$

where:

q_{3i} – represent the materials of (i) gender consumption on meter of the exploited worked slice and on the cycle (on the worked slice) [piece/m · cycle];

K_{3i} - the price of supply for materials of i gender [lei/piece].

The unitary (integrated) cost with materials (c_{m3}) can be established with the relation:

$$c_{m3} = \frac{C_{m3}}{A} [\text{lei/t}] \quad (37)$$

where:

$$c_{m3} = \frac{L * n_c * \sum q_{3i} * K_{3i}}{L * m * B * \gamma * n_c} [\text{lei/t}] \quad (38)$$

$$c_{m3} = B_4 \quad (39)$$

where:

$$B_4 = \frac{\sum q_{3i} * K_{3i}}{m * B * \gamma} \quad (40)$$

To settle the costs with the materials (C_m) is necessary to made a special analyse for establish the normalised consumptions of materials at the level of the simple process in the working face, for a cycle. This can be made on the existing standards basis.

The costs with manufacturing: salaries plus additions plus benefits (outputs) (C_s) – can be established with the relation:

$$C_s = M * R_t * n_c * K_{rd} * K_s + C_{sp} \quad \text{[lei/day]} \quad (41)$$

M - represent the normalised consumption of work for a cycle of working face [nr. posts/cycle]
R_t – the tariff salary of the normalised formation (team) [lei/post]

$$R_t = \frac{\sum n_p * R_p}{\sum n_p} [\text{lei/post}] \tag{42}$$

R_t - can be calculated as a weighted average, because the workers in the formation (team) are of different categories;
n_p - the number of the posts of a certain category
K_p - the salary per post for each category
K_{rd} - reducing or increasing coefficients of the normalised consumption
K_s – proportionality coefficient for all the benefits (outputs) granted percentage at the tariff salary
C_{sp} - benefits (outputs) and costs of the enterprise in fixed amounts.

The unitary (integrated) cost with manufacturing can be established with the relation:

$$c_s = \frac{C_s}{A} [lei/t] \tag{43}$$

$$c_s = \frac{M * R_t * n_c * K_{rd} * K_s + C_{sp}}{L * m * B * \gamma * n_c} [lei/t] \tag{44}$$

$$c_s = \frac{M * R_t * n_c * K_{rd} * K_s}{L * m * B * \gamma * n_c} + \frac{C_{sp}}{L * m * B * \gamma * n_c} [lei/t] \tag{45}$$

$$c_s = B_5 * \frac{1}{L} + B_6 * \frac{1}{L * n_c} [lei/t] \tag{46}$$

where:

$$B_5 = \frac{M * R_t * K_{rd} * K_s}{m * B * \gamma} \tag{47}$$

$$B_6 = \frac{C_{sp}}{m * B * \gamma} \tag{48}$$

The costs with electrical power (C_e) – can be established knowing the electrical power consumption. This can be established multiplying the engines power and the period of functioning.

The period of functioning of the equipment, during one day (t_f) can be established as:

$$t_f = \frac{n_c * L}{60 * v} \quad \text{[hours/day]} \tag{49}$$

where:
n_c – maximum number of cycles (runs);
v – the progress speed for the cutting machine;
L – the length of a cycle (of the working front) [m].

The costs with the electric power can be established with the relation:

$$C_e = N * \frac{n_c * L}{60 * v} * \beta \quad \text{[lei/day]} \tag{50}$$

where:
N – the power of the action engines [kW];
β - the tariff to be paid of the electric energy (power) [lei/kWh]

The unitary (integrated) costs with the energy (c_e) will be established with the relation:

$$c_e = \frac{C_e}{A}[lei/t] \tag{51}$$

where:

$$c_e = \frac{N * \frac{n_c * L}{60 * v} * \beta}{L * m * B * \gamma * n_c}[lei/t] \tag{52}$$

$$c_e = \frac{N * \frac{1}{60 * v} * \beta}{m * B * \gamma}[lei/t] \tag{53}$$

$$c_e = B_7[lei/t] \tag{54}$$

where:

$$B_7 = \frac{N * \frac{1}{60 * v} * \beta}{m * B * \gamma} \tag{55}$$

Finally, the cost of the coal tone will have the following expression:

$$c = c_c + c_o \tag{56}$$

$$c_c = A_1 * \frac{1}{L} + \left(A_2 * \frac{1}{L} + A_3 \right) + A_4[lei/t] \tag{57}$$

$$c_o = B_1 * \frac{1}{L} + \left(B_2 * \frac{1}{L} + B_3 \right) + B_4 + \left(B_5 * \frac{1}{L} + B_6 \frac{1}{L *_{nc}} \right) + B_7 [lei / t] \tag{58}$$

with the notations:

$$A_1 = (I - I') * f_{sf} * \frac{1}{L_{ca} * m * \gamma} \tag{59}$$

$$A_2 = (a - a') * f_{sf} * \frac{1}{L_{ca} * m * \gamma} \tag{60}$$

$$A_3 = (b - b') * f_{sf} * \frac{1}{L_{ca} * m * \gamma} \tag{61}$$

$$A_4 = \frac{(K - K') * d * K_r}{L_{ca} * m * \gamma} * f_{sf} \tag{62}$$

$$B_1 = \frac{\sum q_{1i} * K_{1i}}{m * B * \gamma} \tag{63}$$

$$B_2 = \frac{\sum q_{2i} * K_{2i}}{m * B * \gamma} \tag{64}$$

$$B_3 = \frac{\sum q'_{2i} * K'_{2i}}{m * B * \gamma} \tag{65}$$

$$B_4 = \frac{\sum q_{3i} * K_{3i}}{m * B * \gamma} \tag{66}$$

$$B_5 = \frac{M * R_t * K_{rd} * K_s}{m * B * \gamma} \tag{67}$$

$$B_6 = \frac{C_{sp}}{m * B * \gamma} \tag{68}$$

$$c = (A_3 + A_4 + B_3 + B_4 + B_7) + \frac{1}{L}(A_1 + A_2 + B_1 + B_2 + B_5) + \frac{1}{L * n_c} * B_6 [lei / t]$$

$$c = a_0 + \frac{1}{L} a_1 + \frac{1}{L} a_2 [lei / t] \tag{70}$$

$$a_0 = A_3 + A_4 + B_3 + B_4 + B_7 \tag{71}$$

$$a_1 = A_1 + A_2 + B_1 + B_2 + B_5 \tag{72}$$

$$a_2 = B_6 \tag{73}$$

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THE ROLE OF THE NATIONAL BANK OF ROMANIA IN SUPPORTING THE PAYMENT SYSTEM AND PROTACTION AGAINST THE SYSTEMIC RISK

IMOLA DRIGĂ[*]

Abstract: As the centre of the clearing and payment system, the National Bank of Romania should interfere into the banking system in order to reduce the possibility that an unexpected failure of a financial institution in fulfilling its payment obligations turns into a major financial crisis leading to the collapse of the entire payment system.

Taking into account the fact that the clearing and payment system is the main channel in spreading systemic crisis due to commercial banks failure, the National Bank of Romania has an important role in maintaining a sound payment system and providing suitable protection against systemic risk.

Key Words: payment and clearing system, systemic risk, banking incapacity, payment incident, persons with risk, The Centre for Payment Incidents

As a central bank, the National Bank of Romania focuses on the control of the money supply and interest rate, being also responsible for the conduct of the exchange rate policy. At the same time, it is the sole banking supervisory authority in the country empowered by law to act as lender of last resort for the commercial banks. In order to ensure the safety and soundness of the banking system, the National Bank of Romania has adopted strict licensing requirements and prudential rules.

A top priority of the central bank is the improvement of the payment and clearing system aming at reducing the costs of financial transactions and improving the development of the financial system. As a result, a new multilateral clearing system was established om 3rd of April 1995 under the aegis of the National Bank of Romania.

Clearing is actually the presentation of a negotiable instrument through banking procedures for the ultimate purpose of payment by the drawee bank through the clearing house. Consequantly, one of the major aspects of the daily work in commercial banks and their branches is providing payment services to their customers.

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In this regard, the National Bank of Romania shows a great concern in supervising banks' financial capacity to face a financial crises if it occurs.

As the centre of the clearing and payment system, the National Bank of Romania should interfere into the banking system in order to reduce the possibility that an unexpected failure of a financial institution in fulfilling its payment obligations turns into a major financial crisis leading to the collapse of the entire payment system.

Taking into account the fact that the clearing and payment system is the main channel in spreading systemic crisis due to commercial banks failure, the National Bank of Romania has an important role in maintaining a sound payment system and providing suitable protection against systemic risk.

Considered as a fumdamental element in providing continuity and efficiency for real economic activity and financial markets, the management of settlement risk represents an esential part of bank management.

During 1st of January 1990 and 3rd of April 1995, there was not practicly opperating a real payment system in Romania, this system being similar to payment system belonging to centralized economies. Therefore, as a result of the approaches developed by the National Bank of Romania over the years, on 3rd of April 1995 a payment ststem with a pyramidic arhitecture was established. This structure enabled the development of exchange relations into a market economy and created a favotable climate for the National Bank of Romania in providing its functions.

By intorducing specific instruments to market economies (bill of exchange, promissory note, cheque) the payment system in Romania was modernized. Following this step, the National Bank of Romania estabilshed the Inter-Bank Clearing House which enables funds trensfer and transaction settlements among banks connected to the system.

Beside faster an effective transmission services, the new clearing and payment system involves a certain risk arising from fund transfer. In order to eliminate this type of risk on 3rd of February 1997 there was organized at the National Bank of Romania a Centre for Payment Incidents that perates, at the moment, on the basis of a new Regulation of the NBR no.1/2001 regarding organizing and operating of the Centre for Payment Incidents at the NBR, published into the National Gazette of Romania no.120/2001.

The Centre for Payment Incidents is an intermediary centre which manage the information specific to payment incidents generated by drawing from accounts beyond the available amount (overdraft drawing) or by payment incident caused by an account holder with a cheque, bill of exchange or promissory note. The data base managed by the CPI is structured into two main files, namely: The National File of Payment Incidents, The National File of Persons with Risk.

In case a personal or business customer cause a major payment incident by using illegally a cheque that person is declared in "banking incapacity", his name being entered into The National File of Persons with Risk. "Banking incapacity" means the condition established by a commercial bank to an account holder through which it is forbidden to him the issuing of cheques for a period of one year.

The access of personal or business customers to information entered into the data base of the CPI is possible through commercial banks.

It is to be mentioned that in accordance with information registered at the CPI, one can say that both the numer of payment incidents and their value have increased segnificantly in the last few years, as illustrated in table no.1,2 and figure no.1, 2 and 3.

Table no.1.

The numer of payment incidents and their value during 1997-2002

Year	Cheque		Bill of exchange		Promissory note	
	Number	Rejected amount (mil. lei)	Number	Rejected amount (mil. lei)	Number	Rejected amount (mil. lei)
1997	3.692	108.792	46	11.333	1.140	277.585
1998	7.523	487.196	103	3.898	11.163	967.414
1999	14.606	1.226.005	120	6.575	43.282	2.759.663
2000	17.602	1.597.403	12	346	61.299	3.945.115
2001	22.175	2.553.289	16	3.190	76.975	4.882.007
2002*	21.625	3.364.244	12	4.478	83.269	6.295.241

* Until 30th of November

Source: The Economic Tribune no.5/2003

Table no.2.

The number of persons with risk during 1997-2002

Year	Account holders			
	Number of business customers	from which declared in banking incapacity	Number of personal customers	from which declared in banking incapacity
1997	2.464	1.713	18	1
1998	5.532	2.783	15	1
1999	11.854	4.630	26	3
2000	13.535	4.802	57	0
2001	13.919	5.092	60	5
2002*	13.593	4.498	105	25

* Until 30th of November

Source: The Economic Tribune no.5/2003

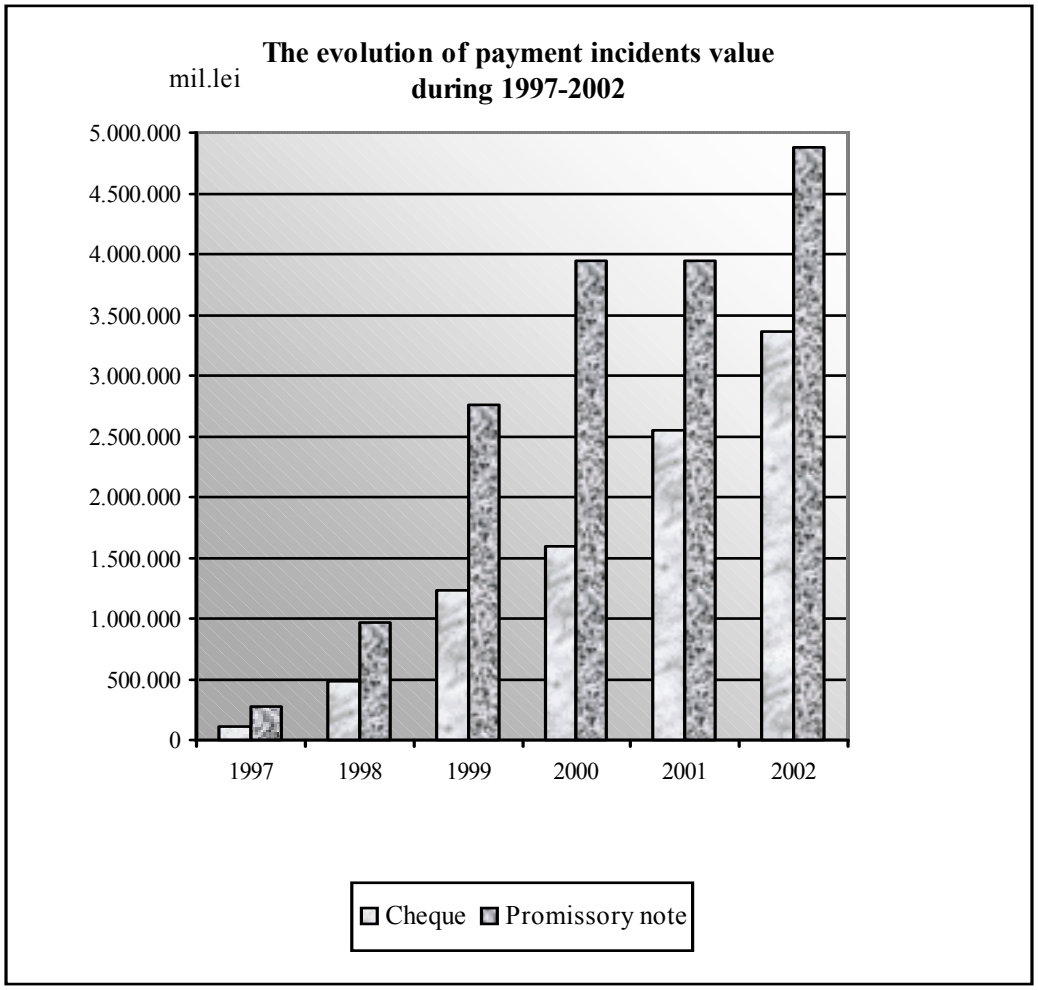

Figure no.1.

The National Bank of Romania considers that an accurate report given in time can stop delinquency in the payment system. Consequently the NBR recomands to personal or business customers to consult through commercial banks the data base managed by the Cenre for Payment Incidents. In this way the business environment can be easily cleaned from persons who violate the law and harm their business partners.

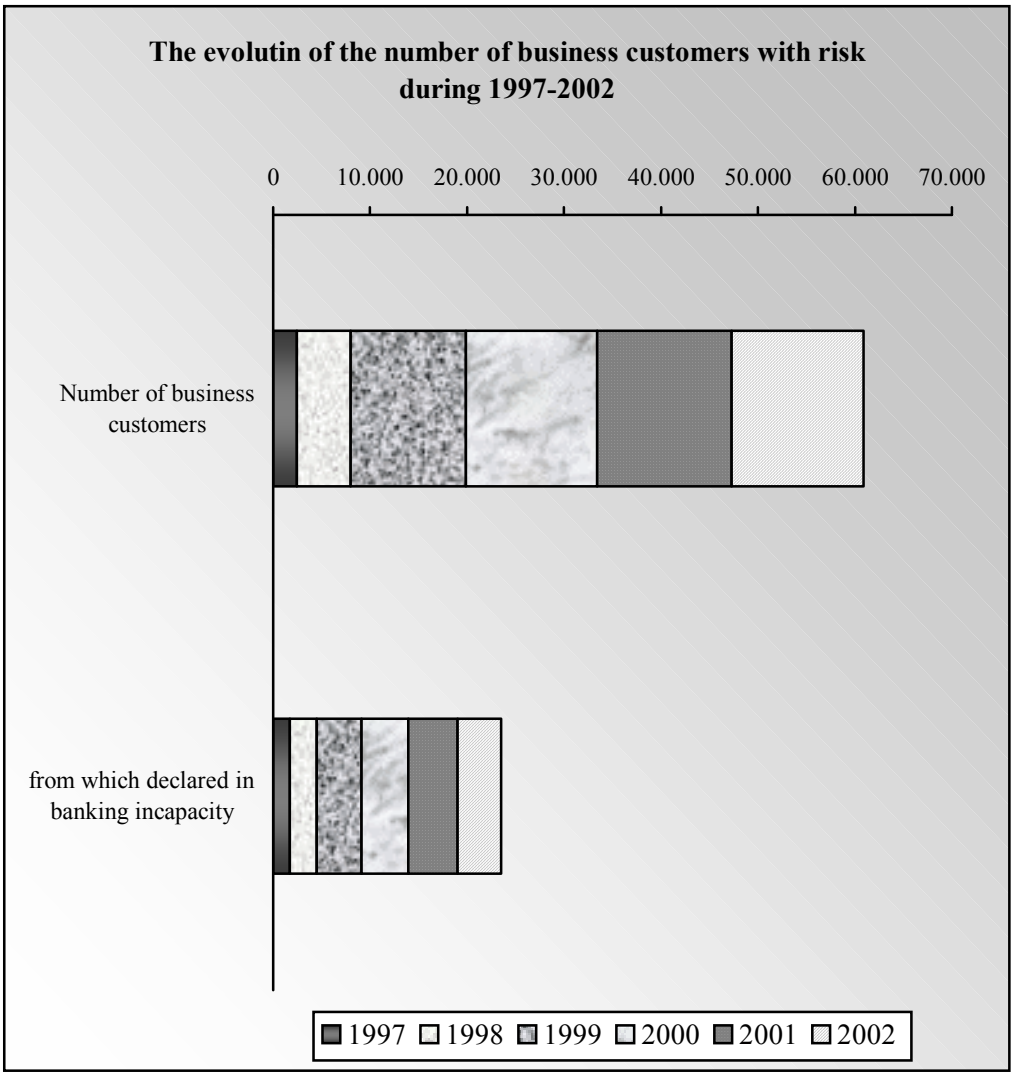
The evolutin of the number of business customers with risk during 1997-2002
0
10.000
20.000
30.000
40.000
50.000
60.000
70.000
Number of business customers
from which declared in banking incapacity
1997
1998
1999
2000
2001
2002

Figure no.2.

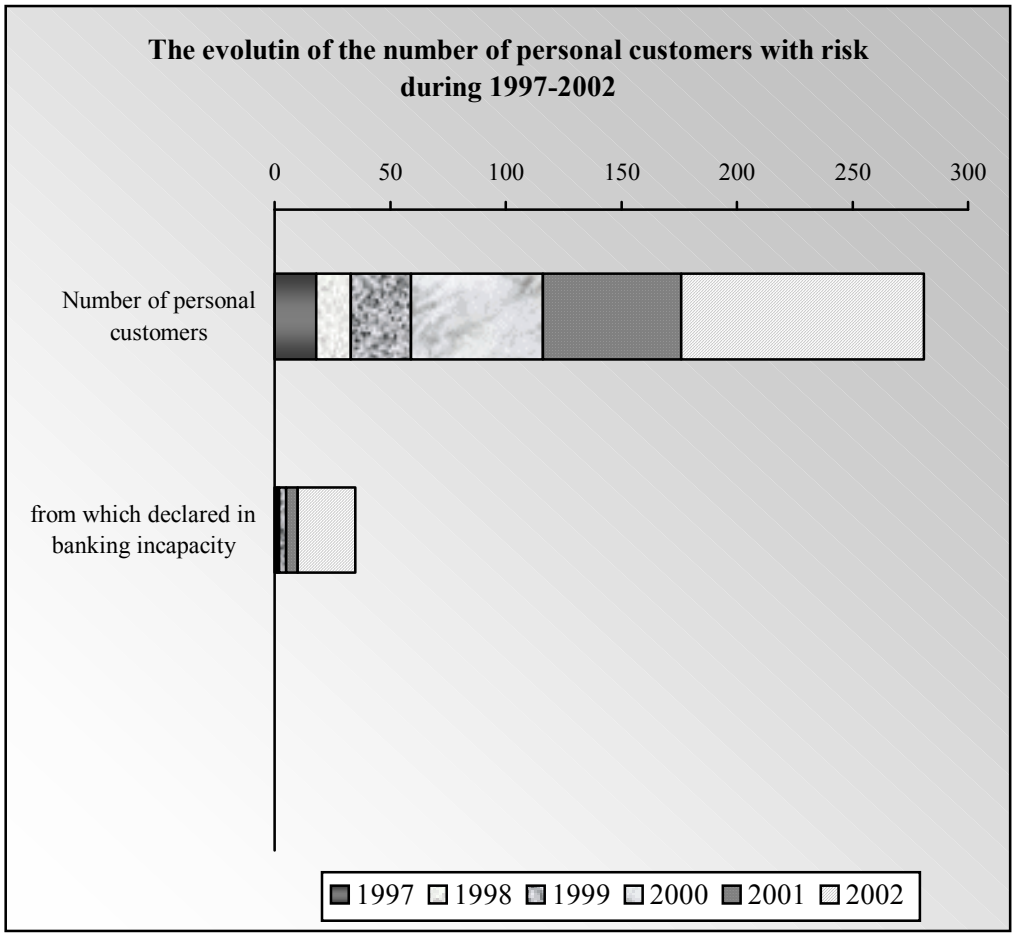

Figure no.3.

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METHODS OF EVALUATING PERFORMANCE IN CONTROLLING MARKETING ACTIVITIES

CODRUTA DURA*

Abstract: There are specific methods for assessing and improving the effectiveness of a marketing strategy. A marketer should state in the marketing plan what a marketing strategy is supposed to accomplish. These statements should set forth performance standards, which usually are stated in terms of profits, sales, or costs.

Key words: marketing control process, sales analysis,

The planning and organizing functions provide purpose, direction and structure for marketing activities. However, until marketing managers implement the marketing plan, exchanges cannot occur. In fact, organizers of marketing activities can become overly concerned with planning strategy while neglecting implementation. Thus, *marketing control process* consist of establishing performance standards, evaluating actual performance by comparing it with established standards, and reducing the differences between desired and actual performance.

There are specific methods for assessing and improving the effectiveness of a marketing strategy. A marketer should state in the marketing plan what a marketing strategy is supposed to accomplish. These statements should set forth performance standards, which usually are stated in terms of profits, sales, or costs. Actual performance must be measured in similar terms so that comparisons are possible. Control of marketing strategy can be achieved through sales and cost analyses, two general ways of evaluating the actual performance of marketing strategies.

Sales analysis uses sales figures to evaluate a firm's current performance. It is probably the most common method of evaluation because sales data partially reflect the target market's reactions to a marketing mix and often are readily available, at least in aggregate form. Marketers use current sales data to monitor the impact of current marketing efforts.

Although sales may be measured in several ways, the basic unit of measurement is the sales transaction. A sales transaction results in a customer order for

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a specified quantity of an organization's product sold under specified terms by a particular salesperson or sales group on a certain date. Many organizations record these bits of information about their transactions. With such a record, a company can analyze sales in terms of Euro volume or market share.

Firms frequently use Euro volume sales analysis because the Euro is a common denominator of sales, costs and profits. However, price increases and decreases affect total sales figures. For example, if a company increased its prices by 10 percent this year and its sales volume is 10 percent greater than last year, it has not experienced any increase in unit sales. A marketing manager who uses Euro volume analysis should factor out the effects of price changes.

A firm's market share is the firm's sales of a product stated as a percentage of industry sales of that product. For example, Coca-Cola at one time sold 40 percent of all the cola sold annually in the country and thus had a market share of 40 percent. Market share analysis lets a company compare its marketing strategy with competitor's strategy. The primary reason for using marketing share analysis is to estimate whether sales changes have resulted from the firm's marketing strategy or from uncontrollable environmental forces. When a company's sales volume declines but its share of the market stays the same, the marketer can assume that industry sales declined (because of some uncontrollable factors) and that this decline was reflected in the firm's sales. However, if a company experiences a decline in both sales and market share, it should consider the possibility that its marketing strategy is not effective.

Even though market share analysis can be helpful in evaluating the performance of a marketing strategy, the user must interpret results cautiously. When attributing a sales decline to uncontrollable factors, a marketer must keep in mind that such factors do not affect all firms in the industry equally. Not all firms in an industry have the same objectives, and some changes objectives from one year to the next. Changes in the objectives of one company can affect the market shares of one or all companies in that industry. For example, if a competitor significantly increases promotional efforts or drastically reduces prices to increase market share, then a company could lose market share despite a well-designed marketing strategy. Within an industry, the entrance of new firms or the demise of established ones also affects a specific firm's market share, and market share analysts should attempt to account for these effects.

Whether is based on sales volume or market share, sales analysis can be performed on aggregate sales figures or on disaggregated data. Aggregate sales analysis provides an overview of current sales. Although helpful, aggregate sales analysis is often insufficient because it does not bring to light sales variations within the aggregate. It is uncommon for a marketer to find that a large proportion of aggregate sales comes from a small number of products, geographic areas, or customers. (This is sometimes called the "iceberg principle" because only a small part of an iceberg is visible above the water). To find such disparities, total sales figures usually are broken down by geographic unit, salesperson, product, customer type, or a combination of these categories.

In sales analysis by geographic unit, sales data can be classified by city, country, state or other geographic designation for which a marketer collects sales information. Actual sales in a geographic unit can be compared with sales in a similar geographic unit, with last year's sales, or with an estimated market potential area. For example, if a firm finds that 19 percent of its sales are coming from area that represents only 7 percent of the potential sales for the product, then it can be assumed that the marketing strategy is successful in that geographic unit.

Because of the cost associated with hiring and maintaining a sales force, businesses commonly analyze sales by salesperson to determine the contribution each salesperson makes. Performance standards for each salesperson are often set in terms of sales quotas for a given time period. Evaluation of actual performance is accomplished by comparing a salesperson's current sales to a pre-established quota ore some other standard, such as the previous period's sales. If actual sales meet or exceed the standard and the sales representative has not incurred costs above those budgeted, that person's efforts are acceptable.

Sales analysis is often performed according to product group or specific product item. Marketers break down their aggregate sales figures by product to determine the proportion that each contributed to total sales. A firm usually sets a sales volume objective – and sometimes a market share objective – for each product item or product group, and sales analysis by product is the only way to measure such objectives. A marketer can compare the breakdown of current sales by product with those of previous years. In addition, within industries for each sales data by product are available, a firm's sales by product type can be compared with industry averages. To gain an accurate picture of where sales of specific products are occurring, marketers sometimes combine sales analysis by product with sales analysis by geographic area or salesperson.

Analyses based on customers are usually broken down by types of customers. Customers can be classified by the way they use a fir's products, their distribution level (producer, wholesaler, retailer), their size, the size of orders, or other characteristics. Sales analysis by customer type lets a firm ascertain whether its marketing resources are allocated in a way that achieves the greatest productivity. For example, sales analysis by type of customer may reveal that 60 percent of the sales force is serving a group that makes only 15 percent of total sales.

A considerable amount of information is needed for sales analyses, especially if disaggregated analyses are desired. The marketer must develop an operational system for collecting sales information; obviously, the effectiveness of the system for collecting sales information largely determines a company's ability to develop useful sales analyses.

Although sales analysis is critical for evaluating the effectiveness of a marketing strategy, it gives only part of the picture. A marketing strategy that successfully generates sales may also be extremely costly. To get a complete picture, a firm must know the marketing costs associated with using a given strategy to achieve a certain sales level. Marketing cost analysis breaks down and classifies costs to

determine which are associated with specific marketing activities. By comparing costs of previous marketing activities with results generated, a marketer can better allocate the firm's marketing resources in the future. Marketing cost analysis lets a company evaluate the effectiveness of an ongoing or recent marketing strategy by comparing sales achieved and costs incurred. By pinpointing exactly where a company is experiencing high costs, this form of analysis can help isolate profitable or unprofitable customer segments, products or geographic areas.

For example, the market share of Komatsu Ltd., a Japanese construction equipment manufacturer, was declining in the United States as a result of increasing prices because of the high yen value. Komatsu thus developed an equal joint venture with Dresser Industries, making it the second largest company in this industry. The joint venture with Dresser allowed Komatsu to shift a large amount of its final assembly to the United States, to Dresser plants that had been running at 50 percent capacity. By using Dresser's unused capacity and existing U.S. plants, Komatsu avoided the start-up costs of new construction and gained an immediate manufacturing presence in the United States. This cost-control tactic should enable Komatsu to use price more effectively as a marketing variable to compete with number one Cartepillar Tractor C.

In some organizations, personnel in other functional areas – such as production or accounting – see marketers primarily concerned with generating sales, regardless of the costs incurred. By conducting cost analyses, marketers can undercut this criticism and put themselves in a better position to demonstrate how marketing activities contribute to generating profits. Even through hiring a spokesperson is costly, sales goals cannot be reached without large expenditures for promotion. Cost analysis should show if promotion costs are effective in increasing sales.

The task of determination marketing costs is often complex and difficult. Simply ascertaining the costs associated with marketing a product is rarely adequate. Marketers must usually determine the marketing costs of serving specific geographic areas, market segments, or even specific costumers.

A first step in determining the costs is to examine accounting records. Most accounting systems classify costs into natural accounts – such as rent, salaries, office supplies and utilities – which are based on how the money was actually spent. Unfortunately, many natural accounts do not help explain what marketing functions were performed through the expenditure of those funds. It does little good, for example, to know that 70.000 Euro is spent for rent each year. The analyst has no way of knowing whether the money is spent for rental of production, storage, or sales facilities. Therefore, marketing cost analysis usually requires that some of the costs in natural accounts be reclassified into marketing function accounts, which indicate the function performed through the expenditure of funds. Common marketing function accounts are transportation, storage, order processing, selling, advertising, sales promotion, marketing research, and customer credit.

Natural accounts can be reclassified into marketing function accounts as shown in the simplified example in Table no. 1. Note that a few natural accounts, such as

advertising, can be reclassified easily into functional accounts because they do not have to be split across several accounts. For most of the natural accounts, however, marketers must develop criteria for assigning them to the various functional accounts.

For example, the number of square feet of floor space used was the criterion for dividing the rental costs in table no.1 into functional accounts. In some instances, a specific marketing cost is incurred to perform several functions. A packaging cost, for example, could be considered a production function, a distribution function, a promotional function, or all three. The marketing cost analysis must reclassify costs across multiple functions.

Three broad categories are used in marketing cost analysis: direct costs, traceable common costs and nontraceable common costs. Direct costs are directly attributable to performance of marketing functions. For example, sales force salaries might be allocated to the cost of selling a specific product item, selling in a specific geographic area, or selling to a particular costumer. Traceable common costs can be allocated indirectly, using one or several criteria, to the functions that they support. For example, if the firm spends 85000 Euro annually to rent space for production, storage, and selling, the rental costs of storage could be determined on the basis of cost per square foot used for storage. Nontraceable common costs cannot be assigned according to any logical criteria and thus are assignable only on an arbitrary basis. Interest, taxes and the salaries of top management are nontraceable common costs.

The manner of dealing with these three categories of costs depends on whether the analyst uses a full cost or a direct cost approach. When a full cost approach is used, cost analysis includes direct costs, traceable common costs and nontraceable common costs. Proponents of this approach claim that if an accurate profit picture is desired, all costs must be included in the analysis. However, opponents, point out that full costing does not yield actual costs because nontraceable common costs are determined by arbitrary criteria. With different criteria, the full-costing approach yields different results. A cost-conscious operating unit can be discouraged if numerous are assigned to it arbitrary. To eliminate such problems, the direct cost approach, which includes direct costs and traceable common costs but not nontraceable common costs, is used. Opponents say that this approach is not accurate because it omits one cost categories.

Marketers can use several methods to analyze costs. The methods vary in their precision. Marketers can sometimes determine marketing costs by performing an analysis of natural accounts. The precision of this method depends on how detailed the firm's accounts are. For example, if accounting records contain separate accounts for production wages, sales – force wages, and executive salaries, the analysis can be more precise than if all wages and salaries are lumped into a single account. An analysis of natural accounts is more meaningful, and thus more useful, when current cost data can be compared with those of previous periods or with average cost figures for the entire industry. Cost analysis of natural accounts frequently treats costs as percentages of sales. The periodic use of cost-to-sales ratios lets a marketer ascertain cost fluctuations quickly.

As indicated earlier, the analysis of natural accounts may not shed much light to the cost of marketing activities. In such cases, natural accounts must be reclassified into marketing function accounts for analysis. Whether certain natural accounts are reclassified into functional accounts and what criteria are used to reclassify them will depend to some degree on whether the analyst is using direct costing or full costing. After natural accounts have been reclassified into functional accounts, the cost of each function is determined by summing the costs in each functional account. Once the costs of these marketing functions have been determined, the analyst is ready to compare the resulting figures with budgeted costs, sales analysis data, cost data from earlier operating periods, or perhaps average industry cost figures, if these are available.

Table no. 1: Reclassification of natural accounts into functional accounts

PROFIT AND LOSS STATEMENT	**FUNCTIONAL ACCOUNTS**					
Sales Cost of goods sold Gross profit Expenses (natural accounts)	**ADVERTISING**	**PERSONAL SELLING**	**TRANSPORTATION**	**STORAGE**	**MARKETING RESEARCH**	**NON-MARKETING**
Rent						
Salaries						
Supplies						
Advertising						
Freight						
Taxes						
Insurance						
Interest						
Bad debts						
Total						
Net profit						

Although marketers ordinarily get a more detailed picture of marketing costs by analyzing functional accounts than by analyzing natural accounts, some firms need an even more precise cost analysis. The need is especially great if the firms sell several types of products, sell in multiple geographic areas, or sell to a wide variety of

costumers. Activities vary in marketing different products in specific geographic locations to certain customer groups. Therefore the costs of these activities also vary. By analyzing the functional costs of specific product groups, geographic areas, or customer groups, a marketer can find out which of these marketing entities are the most cost effective to serve. In table no. 2, the functional costs derived in table 1 are allocated to specific product categories.

Table no. 2: Functional accounts divided into product group costs

FUNCTIONAL ACCOUNTS	**PRODUCT GROUPS**		
	A	**B**	**C**
Advertising			
Personal selling			
Transportation			
Storage			
Marketing research			
Total			

A similar type of analysis could be performed for geographic areas or for specific customer groups. The criteria used to allocate the functional accounts must be developed so as to yield results that are as accurate as possible. Use of faulty criteria is likely to yield inaccurate cost estimates that in turn lead to less effective control of marketing strategies. Marketers determine the marketing costs for various product categories, geographic areas, or customer groups and then compare them to sales. This analysis lets them evaluate the effectiveness of the firm's marketing strategy or strategies.

THE DIFFERENCES' INFLUENCE OF CURRENCY RATE OF EXCHANGE ON THE MULTI NATIONAL COMPANIES' RESULTS

ALINA FLEŞER*

Abstract: The performance criteria imposed by the advanced countries follow selecting projects and increase of long term benefits of foreign investments. Sometimes governments offer facilities along with some performance criteria: the minimal volume of the investment, the export of a part of the production, the transfer of a certain technology or investment into a certain sector, creating a number of work places, thus underlining the benefits that mixed and multinational companies bring to local economy by fulfilling these criteria.

The present work wants to put into evidence one of the problems that mixed and multinational companies deal with, companies that have import activities, companies that use Euro/ Usd as their cash flow. I must remind here the losses caused by the exchange differences and their impact over the financial and exploitation results, respectively over the profit of the company.

Key words: currency rate of exchange, inflation, investment

The multinational companies hardly appeared in the last century, changing in this way the international economic system, in exclusivity relied on the financial and commercial flows, added to these the international production of goods and services and starting to lead the operations from abroad, like an integral part of their activities.

Starting from the premise of avoiding the importations or exploiting the competitive advantages from a certain country, it has arrived to operations that combine the production, the exchanges and the financing. All of these amplified had overtaken more domains and more factors of productions andit drew them into a global competition.

The production internationalized and the increasing of the multi national companies' number was determined by many factors like: the information and the transportation technologies impact, the producing of new technologies and a large

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financial instruments' availability, the continue liberalization of the international trade and of the investments flows.

The multinational companies' activities create specific priorities for the governamental actions and the relations between the states depend in a large measure on the interdependence context between the multi national companies. In the competition context between the countries and between the multinational companies for having a good place in the world wide market, this interdependence is more evidently: the companies need more and more governments' support on the national and international market, and in the same time the states became more depended by the limited resources controlled by the national and multi national companies. In this way, the multinational companies decrease the states' power of control on the economic event.

The multinational companies strive to concentrate to the countries that have better perspectives and with a lot of natural resources, big internal markets, qualified work force and relative cheap and an economic favorable frame. Through an each other stimulation process, multinational companies are attracted by these perspectives and they influence the countries' development capacity. The interdependence and the integrity are supposed to continue interactions between the government and companies.

The multinational companies' activities are complexes and their impact on the national companies of the host countries is larger then the statistic evidences show. Their effects are: new work places are created, the horizontal industry is incentive; the resources are allocated more efficiently; the economic stimuli are transmissible.

The foreign investments flows in East and Central Europe were burdened by a lot of objective and subjective factors, like: the economy's general situation with the production in decrease, the big inflation, the weak network of the infrastructure and the financial services, the in stabilization of the economic and politic situations, the unclear regime in property rights, the foreign investments' competition and the slower privatization rhythm in these countries comparative with the development countries.

The multinational companies take the decision to invest abroad, in accordance with a lot of factors: the existence of the own or load resources' availability, underlined by the specific economic conditions from the initially country, the external market's dimension in growing, the economic cycles, the conglomerate merger of the foreign companies, the economic politics' measures.

The multinational companies' activities create specific priorities for the government actions and the relation ships between the states depend more and more on the interdependence context between the multi national companies. If the governments have more power on the goods flow and they control the inputs and the outputs in and from the territory that they have authority, the world wide market of goods control is difficult to establish.

More evidently, the idea of foreign investments is nearly to the idea of globalization. What do the globalization and the investors bring to the economic system? In Romania, they bring supplementary options for selection, progress, quality, money and diversity. In all of these were winners and losers. The large part of the

active Romanian population has at one moment the possibility to win money from this controversial process: the employees of big concerns, the larger or smaller business from this type of activity, the big companies' selling agents. The investors were the losers almost all the time.

To near these theoretical aspects by the economic reality, we analyzed the case of a Finnish-Italian multinational company; belong to Kemira Finnish group, an important producer by catalysts, supplier for: Daimler-Crysler, Opel, General Motors, Iveco, Fiat, Daewoo, etc.

In Romania, this company begins its activity in summer 2000. At that moment and now too, on the Romanian market doesn't exist to an engines' antipollution components producer. An explanation is that the motor industry from Romania is low represented; the producers import the antipollution components.

The little commercial addition and the produces' quality are for the client a good business and a partner to collaborate with. This company's problems were large, from the difficult process of homologation to the contracts' negotiations and signatures and to the macroeconomic problems: inflation, the missing of a completely legislative framework, etc.

The inflation consequences were felt by the company; these affected the principal profitability indicators, which generate signs of worry. The fact that the company use for the catalyst production raw materials from import, made that any significant grow of Euro to generate financial losses. While the importers lose an important amount of money, the exporters jubilate and in stead of looking for solutions for performance products or to conquer external markets to sell their products, they are watching the foreign currency market because they are waiting the signs of lei's depreciation that gives them a little competitively through price, not through quality.

The production equipments and motors' import, the industrial hall's building, the providing for a stock of semi finished products, have generate a lot of expenses that bring enough important losses from operation activities.

If the prevision for 2000th year for the company were loss, the 2001st year was to maintain at the breakeven point. If at the end of 2001, the operation profit was one thousand million lei, the financial loss generated by the currency rate of exchange was 500 million lei, so the net profit/gains were 200 million lei.

The 2002nd brings inflation's decreasing from 47% in 2000 and 31% in 2001, at 22%, but this decreasing doesn't solve the company's problem from the beginning. So, at a rate of turnover by 60miliard lei, the financial loss was 2, 4 thousand million lei. We observe that 4,1% from rate of turnover is a financial loss, that is strictly from the negative currency rate of exchange, the company has a zero debt rate.

For understanding the financial flows, it has to be explicated the operation activities' mechanisms. The company import raw materials, materials and semi finished materials from the extern supplier. All of these go into the production process and have results the products (catalysts euro II and euro III) and these are delivered to the clients: S.C. AUTOMOBILE DAEWOO S.A., and occasionally to DACIA RENAULT, ARO CAMPULUNG S.A.

We will take into discussion the commercial relation ship with the Korean producer from Craiova. The company signed a frame contract with the client for 6 years, in this are described the payment conditions, trimester negotiations for establishing the products' prices and the dead line was 10 days from the delivery.

Coming back to the financial flows, we see that at the import moment by raw materials and semi finished materials, we have a specific currency rate of exchange for euro. The external supplier's payment is made in maximum 30 days from the invoice issuance. During this time the currency rate of exchange for euro increased to 1000 lei/euro (in 2000 year). If the company was fixed for operation money, it would allow paying the invoice at the entry inwards; an insignificant loss exists too, it is the difference between the euro currency rate of exchange at the entry inwards, it is the Romanian National Bank's rate, and the bank auction's rate for buying euro for paying the invoice.

Going furtherer with the financial flow, we arrive at the moment of the product's getting and delivering to the client. The invoicing is done in the settled conditions through a negotiation accord between two partners and it is established in euro price per product, in lei payable, counted at the currency rate of exchange from the last month. It already exist a loss, between the invoicing moments at the currency rate of exchange from that month, regularly bigger. The moment of receiving the invoice from the client is already away (we can talk about 20 days), so we have a significant difference between the invoicing currency rate of exchange and the receiving currency rate of exchange. We will receive lei, which we buy foreign currency; in accountancy we have a negative currency rate of exchange.

There are others ways of avoidance the financial loss, more or less efficiently. A capital's infusion in the group, it would be a solution, but the loan is in euro and at the repaying date, it would register the financial loss from all the year that means to add the losses from all the year from each import-pay operation. At the financial loss from the currency rate of exchange, in this case, we add the bank's cost.

Another point is the measure of the commercial addition, to bear the financial loss from a benefit generated by a larger margin, but it generates profit tax and a significant increasing of the product's price it have to be negotiated with the partner.

We can have into account a credit line for paying immediately the external suppliers, but the commissions and the interests are sensible less then the loss generated by the currency rate of exchange.

The clear conclusion is to drain the disequilibria's inflation and it decreases the other effects from this.

The macroeconomic results, in Romania, are considerate being a disappointment, it doesn't have a healthy economic increasing, a decreasing really unemployment or a decreasing inflation; all these because of the less progress of companies' reorganization, privatization and institutional construction. These are considerate premises for concentrating the attention on the efficient mechanisms and monetary politics and currency rate of exchange.

The Romanian National Bank hasn't applied a consistent monetary politics that decreases the inflation, the quasi-fiscal operations constitutes an activity's habit of the Romanian National Bank, during the years after the revolution. This has financed directly the public deficit, in contradiction with the purpose of prices stability and it has effectuated frequent and large interventions on the foreign currency market.

The national currency flows in the presence of the principal currencies on a free market where the Romanian National Bank intercedes; this bank transactions' measures and frequencies, on the foreign currency market, are larger then what happens on a mature market economy, where the central bank intercedes only in exceptional cases and it tries to influence the currency rate of exchange through the monetary politics, specially influencing the short term interest rate.

Is a question, what to do for improving the monetary politics for decreasing the inflation?

A flexible rate of exchange would avoid the disequilibria and it could ensure the necessary flexibility for adjustment in the negative shocks cases. Much as is the central bank's objective (a less inflation or a stabile rate of exchange), a successful ant inflation politic asks today a back monetary politic up. But, a monetary politic too hard can have the results, the interest rate's increasing and an excessive national currency's appreciation that could have implication on the exports competitively, on the companies' reorganization and their increasing productivity.

Collateral with ant inflation politic, Romania would have to adoptable a slow increasing rate of exchange, it would establish a concordantly rate of exchange, avoiding in this way the spectacular flows.

The inflation decreasing in our country is not easy to put into practice, but it is possible to carry it out.

During the years after the revolution, Romania hasn't realized to get from exports all the necessary foreign currency needed for vital imports and for other imports necessary for our market. Because of this an adverse commercial balance is imminent. The negative balance of import-export rapports is reflected on the monetary market, where the national currency lost important points in the front of the dollar and euro.

The causes are in the real economy and if the companies' reorganization had delayed, the exports couldn't be reorganized. So, we exported less paid products (the iron, the steel, the wood, the plastic material and the willow) so the export receiving was less, much as these exports conscription a lot of imports for those the country expenses an important amount of foreign currency.

The national currency's accelerate depreciation is a normal consequence in these conditions. The decreasing inflation closed a certain social categories by the real flow of the professional preparation and performance, it stimulated the work process and the economic recession was stopped, having in this way an economic increasing by 1.8%. The desiderata of having a stabile currency with a larger purchasing power, it will be achievable when the got income is in concordance with the work efficient in a competition system of free markets.

THE IMPLICATIONS OF THE SERVICES CHARACTERISTICS ON THE MARKETING ACTIVITY

MONICA PAULA FLITĂR*

Abstract: This paper tries to reveal the importance of marketing in the service economy, to identify the characteristics of services and their impact (influences) on the marketers' activity. Services tend to be different from goods in several ways. First, they are largely intangible. Services generally are produced and marketed simultaneously, making the two processes inseparable. Customers tend to be heavily involved in the production and marketing of services. The quality of services tends to vary more than the quality of goods. Services are perishable; that is, if a service is not used when it is offered, than it cannot be used at all. Distribution chanells for services differ more widely than they do for goods. Finally, the relationship between buyer and seller of a service is usually thought of in terms of a client relationship – one that is personalized and ongoing.

Key words: intangibility, inseparability, involvement of the customer, variability of quality, client relationship, perishability.

In recent decades, the high developed economies have been referred to as „service economies". That is because the production and marketing of services has taken on an increasingly larger role relative to that of tangible goods.

The growth of the service sector has several causes. One is that people are most apt to buy services when they can afford more than such basic needs as food, clothing and shelter. Thus, as national economies develop, services tend to play a larger role. In the business sector, changes has led to increased demand for services. The increased complexity of modern business also generated a need for various services.

The size and growth of the service sector make the marketing of services particularly important. However, until relatively recently, few service providers have fully applied marketing principles to their operations. There are at least five reasons for this slowness in adopting marketing principles:

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- *limited view of marketing* – many services businesses held onto a sales orientation for years after goods producers were embracing the marketing concept.
- *limited competition* – many services businesses, including banking, railroads and public utilities, have been regulated or have for other reasons faced relatively little competition. They have therefore had little incentive to broaden their view of marketing.
- *lack of creative management* – critics have acused the managers in many service industries of failure to act creatively.
- *no obsolescence* – many services are less subject to obsolescence than are goods. This reduces the urgency to make changes.
- *lack of inovation in the distribution of services* – marketers of services have identified a few ways to distribute them. The assumption has been that the nature of services requires that its producer deliver it directly to buyers in a limitted area. It has discouraged marketers of services from thinking creatively about chanells distribution.

In spite of all these sources of resistance to change more and more service organizations are using marketing principles and tactics.

The marketing of services in many ways resembles marketing of tangible products (goods). That is because goods and services aren't dramatically different from a marketing point of view. They both are offerings designed to meet a customer need in exchange of payment. They both must be offered in a convenient location at a price the customer considers reasonable. The marketer uses various kinds of communications to inform the target market about either a type of product and to stimulate a purchase. Finally, many products have both tangible and intangible components, so it is hard to conceive of pure goods or pure services.

Thus, whether selling goods or services, the marketer needs to gather and interpret information about what the potential buyers want and need. Then, the marketer creates a marketing mix designed to meet the needs of the mass market or one or more target markets.

Marriott Corporation learned from research that its customers first want a fast check-in; cleanliness; a friendly staff; a fast, high quality breakfast; and value for their money. In response to the first need, Marriott introduced an express check-in program called „first 10". Customers who make reservations in advance are greeted when they arrive and escorted to their room.

The nature of services creates special challenges for marketers. Therefore, marketers of services need to be aware of the characteristics typical of service and the nature of buying decision for services.

Several characteristics distinguish services from goods. Services are distinguished by their intangibility, inseparability of production and marketing, involvement of the customer, variability of quality, perishability, use of highly differentiated marketing systems and use of a client relationship. These characteristics influence the decisions involved in developing a marketing mix.

1) Intangibility. In terms of how tangible they are, products span a range of possibilities which extends from entirely tangible to entirely intangible. This range that measured whether products are tangible or intangible is called the *goods-services continuum.* Most produscts contain some of both characteristics.

With developments in information technology, many organizations that traditionally offered tangible producrs are finding it logical and profitable to add information to their product mix. Their innovations may be either enhancements of the organization's original products or entirely new products.

The products considered services are the ones that are mostly or entirely tangible. For instance, airline transportation is a service based on something intangible: moving peple from one destination to another in an airplane. Modern air transportation may also include other services for business travellers: for example, hookups for laptop computer that allow the passenger to play computer games, look up stock market quotes and make hotel reservation.

The intangibility of services poses some special problems for the marketer. When potential buyers cannot see, touch, smell, or taste the service before buying it, they have a harder time evaluating it and appreciating its benefits. They must rely on promises and their expectations to decide whether it wil buy the service. This means that having a good reputation is especially important for a service provider. Marketers can address this difficulty by finding tangible ways to represent service feature and benefits.

2) Inseparability. Primarily because services are intangible, they may pe produced and marketed simultaneously. For instance, a consumer, thinking of having cosmetic surgery, meets with the sugeon for a consultation. A business owner who wants a loan, goes to the bank and discusses his needs with a loan officer. This link between production and marketing means that marketing issues play a part in decisions as to where and how services will be produced.

From the standpoint of quality, buyers of a service are not only evaluating what was produced, but also how it was produced. Thus, the quality of a hotel visit depends not only on whether the mattress was comfortable and the room quiet, but also on how polite and helpful hotel employees were toward the guests. Once again, this means that marketing should play a role in setting production standards.

Inseparability may mean that customers not only want a particular type of service, they want it to be provided by a particular person or group of persons. This principle applies to professionals such as doctors, lawyers, financial advisers, entertainers, clothing designers, craftspeople and chefs. The risk of having the service equated with its provider is that if the customer is disappointed with the service, he or she is likely to have a bad opinion of the provider and to avoid seeking out any more services from that organization. On the positive side, the service provider who makes customers happy, will generate a loyal clientele.

3) Involvement of the customer. One implicaton of inseparability is that customers are involved to a relatively great degree in the production and marketing of many kinds of services. And if an organization wants to buy the services of an

advertising agency, it will have to assign employees to work with the agency, conveying what the organization's product and target market are, reviewing the agency's ideas, and making final selections.

Of course, not every service requires the same degree of involvement. Likewise, an organization may not become very involved in the activities of its law firm when its legal matters are routine.

4) Variability of quality. Because services are produced and consumed at the same time, the quality can vary more than is likely with goods. Most organizations that produce goods have procedures to prevent, identify, and correct defects. If those procedures are working at all, the customer is not likely to see any gross errors because the company won't offer defective products for sale. The company may even have a goal of zero defects.

To evaluate whether a service is of high quality, customers look for the following characteristics: reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding, tangibles.

But the more intangible a product, the harder it is to put such controls in place. If the product is investment advice, for example, the customer depends on the adviser to be thinking clearly and knowledgeably at the time he or she is giving the advice. But, because the adviser is only human, he or she is likely to have some bad days.

This characteristic of quality proves the importance of ensuring that people who deliver services are well qualified and highly motivated to satisfy their customers. Total quality management with its emphasis on continually emproving processes, can help.some organizations that are trying to eliminate errors from service delivery by mapping the customers's and service provider's activities throughout a service operation.

The obvious conlusion is that attention to quality is crucial to service marketing, the providers of services can benefit from a focus on quality.

5) Perishability. Srvices are also perishable which means that if a service is not used when offered, it cannot be used at all. In contrast, goods are less perishable.

Because most services are perishable, it is especially important to plan for fluctuations in demand. For most services, demand shifts according to season, day of the week, or time of day. For example, the demand for attending a play is strongest in the evening. The demand for a tax preparation services is strongest between mid-February and mid-April.

6) Highly differentiated distribution chanells. Established distribution chanells are in place for handling many kinds of tangible goods. For example, makers of food products.typically sell to certain categories of wholesalers, which sell to supermarkets and other stores where consumers expect to find food.

In contrast, the marketing systems for services differ more widely. For example, savings and loan institutions try to reach customers with convenient branches and hours for delivering their most standardized products. Airlines must offer their services through established airports, and they focus on communications, appealing to travel agencies and the flyers themselves.

7) Client relationship. In many cases, marketers of services view the buyers as clients, rather than customers. In other words, the buyer seees the seller as someone the buyer can lean on for advice and help. This relationship is especially likely when the provider of the service is a professional, such as a doctor, lawyer, or financial advisor. The client relationship tends to be personalized and ongoing.

As a result, the success of a service organization depends in part on its employees' ability to develop client relationships as well as provide the basic service (such as diagnosing an illness or recognising a good investment). So, service marketers depend on their ability to retain, not just attract customers.

Marketing efforts designed to create and maintain loyalty among existing customers are called as *relationship marketing*. Relationship marketing focuses on such concerns as preparing to correct mistakes, building trust and demonstrating commitment to the customers.

Organizations that keep track of their customers' purchases know that relationship marketing makes good economic sense. Again, the costs of an error in service are greater than they might seem on the surface.

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CHANGES IN THE AMORTIZATION POLICY OF UKRAINE

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Abstract: The main questions of the amortization policy of Ukraine and leading foreign countries are examined. Some reasons, which can cause a choice of specific method of capital allowances on the fixed assets by enterprise, are analyzed. The compact analysis of changes in the legislation of Ukraine, concerning groups of a fixed assets and capital allowances, is carried out. Offers on improvement of an amortization policy are presented.

Key words: amortization policy, expenses, amortization legislation

There had been two kinds of amortization in practice of Ukrainian enterprises: on full restoration and major repairs. During last decades, the amortization policy was changed several times. Therefore, since 1975 for stimulation of the updating, the norms of amortization on renovation have been increased, and norms on major repairs have been reduced. As a whole for machines and the equipment they made 8,2 % and 5,1 %, accordingly; for working machines and the equipment - 9,6 % and 5,7 %; for electric motors up to 100 kilowatt - 9,5 % and 3,1 %; over 100 kilowatt - 5,6 % and 2,8 %. At the same time, in practice depreciation allowance were made even beyond service life. In the normative document, entered from 1992, only amortization on renovation was provided, and it should be made for an active part only during service life. Therefore, obviously, norms of amortization have been reduced substantially. It was established on a level of 5 % - for metal-cutting machine tools with manual control; 6,7 % - for machine tools with numerical control; 6,6 % - for electric motors with height of an axis of rotation 63 - 450 mm; 5,6 % - for electric motors with height of an axis of rotation more than 450 mm. It was also provided accelerated amortization with increasing of amortization norms no more than twice. Such norms showed the better correlation with the existing age structure of basic assets, but did not promote acceleration of their updating.

Expenses on all kinds of repair of basic assets were provided to be included in structure of expenses on manufacturing and realization of production. The enterprises

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could choose variants of reference of these expenses for the cost price on their own. 1. By actual size of expenses after the completion of repair. 2. By means of creation of repair fund. 3. Reference of real expenses for charges of the future periods with subsequent their monthly write-off.

The choice of variants depends on methods of work. The first variant is used, as a rule, at execution of repair of the basic production assets by economic way. The second one - at a contract way of repair. The repair fund is forming for uniform inclusion of repairs expenses into the cost price. It is created from the expenses of deductions, transferred monthly on the cost price of production according to norms, confirmed by the enterprise in percentage of balance cost of basic assets. The third variant made good use at major repairs of funds, rented by the tenant on conditions of the current rent.

It was a first step on a way to consolidation of Ukrainian and foreign amortization legislation, because deductions on major repairs are not applied in the leading countries. Besides, such expenses were provided only during service life of the equipment and norms of amortization have been reduced considerably. There was also introduced the opportunity of carrying out the accelerated amortization, with increasing of norms no more, than twice. Charges on all kinds of repairs were included in structure of expenses on manufacturing and realization of production with an independent choice of methods of their reference on the cost price.

The second important milestone in process of improvement of the amortization legislation implemented by the decision of the Cabinet of Ukraine №1075 from September, 6, 1996 «Regulations about the order of definition of amortization and reference of depreciation allowances on production costs (trading costs)». The regulations brought a number of fundamental changes in the amortization policy of the Ukrainian enterprises. 1. The concept of amortization of intangible assets entered for the first time, as it is provided in the majority of the leading countries. 2. Capital assets, liable to depreciation, have been divided into three groups: 1) buildings, constructions, their structural components and transfer devices; 2) vehicles, office equipment, electromechanical devices and tools information systems; 3) other funds that were not included in groups 1 and 2. 3. Norms of amortization for these groups made accordingly 5, 25 and 15 percent. Thus, a plenty of norms of amortization for various groups and kinds of basic assets have been abolished. Since this moment, only part of actual expenses on carrying out of all kinds of repair, modernization, reconstruction and technical reequipment, lesser than 5 percent of cumulative balance cost of basic assets on the beginning of one fiscal year, could concern on charges of manufacture. All charges exceeding these size, concerned on increasing of balance cost of basic assets, and amortization on corresponding norms at them was calculated.

At last, the third significant change of the amortization legislation has taken place recently, with publication of next changes and additions to the law of Ukraine «About the taxation of the profit of the enterprises» from May, 22, 1997. These changes, that came into operation since January, 1, 2003, concern, in particular, clause 8 "Amortization" of the law.

First, and the most important change - there are four groups of amortization now, instead of three, as it were earlier. The group 4 «Computers, other machines for automatic information processing, software, devices of reading and printing information, connected to them, other information systems, phones (including mobile), microphones and portable radio transmitters, which price exceeds cost of the goods (items) of little value», is actually formed by allocation of corresponding positions from group 2 in old classification.

After increase in number of groups, norms of amortization have also changed. Now they make 8 % a year for the first group (which structure has not changed), 40 % a year - for the second group, 24 % - for the third group; 60 % - for the fourth group and it is the second major change of the amortization policy. Apparently, norms of amortization are increased again, and rather appreciably. Obviously, such decision is called to speed up updating basic assets and, first of all, updating of technological park of the equipment at the enterprises, because majority of manufactures still use both physically, and morally out-of-date Soviet equipment. Such equipment is rather power-consuming and raw material intensive, that essentially reduces potential of the Ukrainian enterprises and competitiveness of their production both on domestic, and on the foreign markets.

The item of the law, according to which it was allowed to apply the accelerated amortization to the third group of the basic assets according to norms 15, 30, 20, 15, 10, 5, 5 percent a year for seven years in the tax account, is excluded. This change is more likely negative, because such method of amortization allowed in some cases to increase depreciation allowance appreciably (depreciation charges are not subject of withdrawal to the budget and cannot form base for charge of any taxes, duties and compulsory payments) in the first years of operation of the new equipment, that belong to third group of basic assets. It enabled to lower tax burden. Now such opportunity is absent.

As if in contrast to the previous change, in a new edition of the law there is also rather significant concession to the enterprises and the organizations: now it is possible to include any expenses on improvement of depreciable assets in structure of total costs in the sum which is not exceeding 10 % of cumulative balance cost of all groups of capital assets (instead of 5 %, as it were during the period from 1996 to 2002). It will allow to many enterprises to lower essentially volume of the profit tax that, undoubtedly, will positively influence on results of their activity. This change is especially topical in light of mentioned significant deterioration of basic assets on the majority of the domestic enterprises.

One more positive change concerns liquidation of objects of capital assets. Now at liquidation of separate object of the first group of amortization under the decision of the owner at presence of corresponding documents on its disassembly, destruction or transformation by any other ways, owing to what the given object further cannot be used directly, its balance cost can be transferred on a structure of total charges. Previous to the change, balance cost of such objects was compensated at the expense of internal funds of the owner.

Now there is subitem, more precisely describing operations of the tenant with objects of basic assets, received by him under the contract of operative leasing, added to the law. Necessity for such addition has ripened a long time ago, because leasing is enough popular, favourable and perspective form of financing of basic assets today. Investors also actively apply it as the form of transfer the equipment, vehicles and so on, on the enterprises. The new item of the law will help bookkeepers and managers to carry out leasing operations.

Last significant addition to clause 8 of the law «About the taxation of the profit of enterprises» consists in addition of item «Accounting of operations with the ground and its capital improvement» to it. This item also meets the requirements of time, and gives answers to a significant part of the questions concerning purchase, sale, tenancy and other operations connected to the ground. At last, the item precisely defines the status of the ground as object of the property. The charges connected to purchase of the ground are not ranked as total costs of the enterprise or the organization; the ground is not included into one of four groups of basic assets, and accordingly depreciation allowance are not provided for it. Only cost of capital improvement of the ground is object of amortization.

The next positive shifts in the amortization legislation of Ukraine is available, however, a number of lacks remains. For example, despite of some improvement of classification of groups of basic assets, it would be desirable to receive more detailed group of objects, which it is necessary to carry to specific group of amortization, because at times it is complicated to define, what norm of amortization to apply to concrete object of basic assets. In particular, still there are some ambiguities with amortization of intangible assets. For example, the software of personal computers now precisely concerns to fourth group of capital assets. However, such clearness are absent in the law concerning patents licenses and so on. More precise description of rules of the accelerated amortization is also required. Now in the law there is no even a mention of an opportunity of its realization, although in fact it is one of factors of turnover acceleration of basic assets. Besides, it is necessary to simplify classification of depreciable assets and non-depreciable assets, because available edition frequently causes the certain difficulties in recognition.

In the leading foreign countries two concepts connected to transferring of cost of actives in connection with their deterioration are used: amortization and depreciation. The term "amortization" concerns to intangible assets (patents, licenses, "goodwill"). At that, the rectilinear method of write-off is applied. For tangible assets, except of the ground, the concept "depreciation" is applied. Cost of the ground is not subject to write-off.

There are several methods for depreciation. The simplest method is method of rectilinear write-off, according to which the same sum of deterioration is annually totalled. At use of a method of units of manufacture write-off is carried out proportionally to volume of production produced for the considered period. A method of the sum of numbers, a method of the double reduction of the rest or the double reduction of balance, and the method, named "system of accelerated restoration of

cost" are the methods of accelerated depreciation. Methods of accelerated depreciation are directed on faster transfer of cost of basic assets on discharged production with the purpose of the prompt funds updating and, finally, on improvement of quality and competitiveness of production. Write-off of cost of basic assets on account of deterioration reduces size of the profit, and, as the result, the size of the profit tax. Therefore firms use methods of accelerated depreciation in tax declarations, and rectilinear - in the financial accounts. Thus, as a rule, it is necessary to use the chosen method of deterioration up to full transfer of cost of assets. Henceforth, to simplicity instead of the term "depreciation" we shall apply the term "amortization".

Last decades the amortization policy in the leading countries repeatedly changed in a direction of simplification of the accelerated assets updating. In the USA in 1942 the normative document on amortization was introduced, that provided for obsolescence. Since 1954 it is permitted to industrial firms to apply the accelerated methods of amortization, allowing writing off up to 75 % of industrial assets cost during first half of their service life of. Since 1962 service life of components of basic assets were reduced on 30 - 40 %. According to the new rules, accepted in 1971, firms received the right to choose independently term of service life of machines in limits of ±20 % from normative size for the given group of the equipment, and also the option of a method of write-off of cost of funds. In the sixties and the seventies, as a result of change of an amortization policy in a manufacturing industry of the USA, amortization service life of the equipment has decreased more than twice. In 1981 there was a further reduction in amortization service life: for the equipment - from 8,6 years to 5 years, for industrial buildings - from 23,8 years to 15 years, at the same time, for the equipment in the USA are established by the Congress such norms of depreciation allowance: for the first year - 20 %;for the second year - 32 %;for the third year - 24 %;for the fourth year - 16 %;for the fifth year - 8 %. Firms have got about 5 billions dollars for the first year and 32 billions dollars - for the next five years thanks to this fact. The same perfection of the amortization policy was carried out in other developed countries. For example, in the Great Britain from the fifties to the seventies 47 % of balance cost of the equipment were written off for first five years, and in the eighties - already 92 %. One more important feature of amortization policy of the developed countries is using of regenerative cost of the equipment in process of calculation of depreciation allowance. The carried out changes of amortization policy allow to foreign firms to receive significant additional means and to successfully update production assets. Weight of amortization in total investments of the developed foreign countries has increased and to average from 41 % to 74 %. Share of amortization in GNP also grew. In the USA in the fifties, the seventies and the eighties it made up accordingly 9 %, 10 % and 12,5 %.

As pointed out above, a number of changes in amortization policy of the developed foreign countries have found reflection in domestic practice. At the same time some aspects demand the further perfection. For example, depreciation allowance on basic assets are defined with taking into consideration indexation according to change of an official index of inflation. At the same time dynamics of this index can

considerably differ from change of the prices on the equivalent equipment that is important for such charge of amortization, which objectively would correspond to going processes. In this connection, indexation of cost of the major kinds of the equipment should be counted more precisely depending on the price for this equipment. On the import machines, which influence on the technological process essentially, and such machines, which cannot be replaced in case of need by domestic, it is more correctly to count an index according to rate of exchange. Despite of danger of increase of the cost price of production in conditions of low solvent demand, in the proved cases at calculation of amortization it is necessary to use regenerative cost of the equipment in view of deterioration. Besides it is necessary to take into consideration modes and conditions of operation. It is known that service life of the same machines in heavy operating conditions is much lower, than in normal. Therefore it is necessary to give to the enterprises the right for varying the amortization service life independently.

Finally it is possible to draw a conclusion that perfection of the Ukrainian amortization legislation proceeds, and there are valid hopes for fast correction of the majority of lacks, and its final approach to the world standards.

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CAPITAL INVESTMENTS - THE DECISION PROCESS

MIRELA ILOIU *

Abstract: In this paper are summarized the four main stages in the capital investments process: identification, development, selection and control. The literature on capital budgeting processes shows that it is a complex, lengthy process of a series of stages through time, in which the earlier activities and choices are crucial. The traditional financial emphasis on the investments selection as the main element is misplaced and the whole capital investment activity is viewed within a wider political context and all activities within the process are interrelated and influenced by structural context, including the formal organization, control procedures, information systems and performance.

Keywords: capital investments, identification, development, selection and control, budgeting, risk analysis

One way of viewing capital budgeting is to see it as a process with a number of Distinct stages. According to this view, decision-making is an incremental activity, involving many people throughout the organization hierarchy, over an extended period of time. While senior management may retain final approval, actual decision are effectively taken much earlier at a lower level, by a process that is still not entirely clear.

Within a capital budgeting context, various authors have attempted to describe this process. We will employ the four-stage process suggested by Mintzberg, applied to capital budgeting. These are:

- Identification of investment opportunities
- Development of an initial idea into a firm proposal
- Selection of projects.
- Control of projects, including post audits.
- STAGE ONE : Identification

Economic theory views investment as the interaction of the supply of capital and the flow of investment opportunities. The most important role which top management can play in the capital investment process is to cultivate a corporate

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culture which encourages managers to search for, identify and sponsor investments ideas.

Any manager who has experienced the hurt and frustrations of having an investment proposal dismissed or an accepted proposal fail is likely to develop an in-built resistance to creating further proposals unless the organization culture and rewards are conducive to such activity. There is some evidence that firms employing long-term incentive plans encourage the initiation and implementation of capital investment projects.

For the identification phase of non-routine, strategic capital budgeting decisions to be productive, managers need to conduct environmental scanning, gathering information which is largely externally oriented, much if which is non-financial and ex ante.

STAGE TWO: Development

The second stage in the capital investment decision-making process is the screening of all investment ideas and development of those showing sufficient promise. This is sometimes termed the preliminary project review.

It is neither feasible nor desirable to conduct a full-scale evaluation of each investment idea. The screening process is an important means of filtering out projects not thought worthy of further investigations. Ideas may not fit with strategic thinking, or fall outside business units designated for growth or maintenance.

The investment process usually forms part of a wider strategic process. Capital projects are not normally viewed in isolation, but within the context of the business, its goals and strategic direction. In a recent UK study of strategic investment decision, Marsh et al. found that explicit strategic planning, even at a a divisional level, seemed to have only limited impact on the generation and approval of investment projects.

STAGE THREE: Selection

The selection phase involves evaluation of the project and the decision outcome (accept, reject, request further information). Project evaluation involves the assembly of information in terms of cash flows and the application of specified investment criteria. Each firm must decide whether to apply rigorous, sophisticated evaluation models or simpler models which are easier to grasp yet capture many of the important element in the decision.

The capital budgeting literature distinguishes between “naïve” or simple and sophisticated methods of investment analysis. Simple methods include payback period and accounting rate of return techniques, while “sophisticated” techniques include most, if not all, of the other methods. While sophisticated methods have clearly increased in popularity over the years, the observed increase has not come at the expense of simpler methods. The payback method continues to gain support and is now almost universally employed, approximately one half of the sample using it on every occasion.

Prior studies have also shown it to be highly popular for smaller firms. The obvious conclusion to be drawn is that managers prefer to employ a combination of appraisal methods, sophisticated and naïve.

Risk analysis

An assessment of the risks involved in making investment decisions is a crucial element of the evaluation process. Although the techniques employed in analysis risk in capital projects vary considerably across firms, all techniques have witnessed considerable increases in usage, The most popular approach involves testing the sensitivity of critical investment inputs and underlying economic assumptions. The high usage of sensitivity analysis and specifying investment outcomes based on best and worst case scenarios suggest a strong movement towards applying multipoint estimates.

A strong movement towards the application of probability analysis is also witnessed, most notably by the larger firms surveyed.

The decision outcome is rarely based wholly on the computed signal derived from financial analysis. Considerable judgement is applied in assessing the reliability of data underlying the appraisal, fit with corporate strategy, and track record of the project sponsor. The selection phase is essentially a political process. Projects put forward at lower levels in the organization need the "impetus" of sponsorship by a higher level manager with a good track record to secure a rapid and safe passage to final approval level. In many organizations relatively few projects are rejected at the final approval stage since to do so would indicate a lack of confidence in the decision-making, judgement of those involved at earlier stages.

STAGE FOUR: Control

The capital budgeting literature frequently assumes that control occurs after the selection phase. In fact, for most projects, relatively little real project control is possible then, the process being more that of monitoring implementation and performance through post-audit and other procedures. These controls do, however, provide useful feedback on how well the capital budgeting process is operating, for example, the realism of assumptions.

The capital budgeting control process may be divided into pre-decision and post-decision controls.

Pre-decision controls are mechanisms designed to influence managerial behaviour. Examples of such controls include the selection and training of subordinates to possess goals and risk attitudes consistent with senior management, setting authorization levels and procedures to be followed and influencing the proposals submitted by setting goals, hurdle rates, cash limits and identifying strategic areas for growth.

Post-decision controls are introduced to help managers implement the project o schedule ant to achieve the planned levels of performance. The most notable increase is the requirement to conduct post completion audits. Such audits seek to compare the actual performance of a project after, say, a year's operation with the forecast made at the time of approval.

Pike and Neale identify a number of problems with post-auditing which may explain the initial reluctance within firms to introduce such a practice:

- biased selection - by definition, only accepted projects can be post-audited, and among these only underperforming ones are singled out by many firms for detailed examination;
- the disentanglement problem – it may be difficult to separate out the relevant costs and benefits specific to a new project from other company activities, especially where facilities are shared and the new project requires an increase in shared overheads;
- prohibitive cost – to introduce post-audits may involve interference with present management information system in order to generate flows of suitable data; since post-auditing every project may be very resource-intensive, firms tend to be selective in their post-audits;
- projects may be unique – if there is no prospect of repeating a project in the future, there may seem little point in post-auditing, since the lessons learned may not be applicable to any future activity;
- lack of co-operation – if the post audit is conducted in too inquisitorial a fashion, project sponsors are likely to offer grudging co-operation to the review team and be reluctant to accept and act upon their findings;
- environmental changes – some projects can be devastated by largely unpredictable swings in market conditions; this can make the post-audit a complex affair as the review team is obliged to adjust analysts' forecasts to allow for the "moving of the goal-posts" ;
- encourages risk aversion – if analysts' predictive and analytical abilities are to be thoroughly scrutinized, then they may be inclined to advance only 'safe' projects where little can go wrong and where there is less chance of being 'caught out' by events.

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CONSIDERATIONS OF POKA-YOKE DEVICE IN TOTAL QUALITY MANAGEMENT

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Abstract: Poka-Yoke is the Japanese term for mistake-proofing. Developed by Dr. Shigeo Shingo, Poka-Yoke employs devices on the process operations to prevent the special causes that result in defects, or to inexpensively inspect each item that is produced to determine whether it is acceptable or defective.

Key Words: quality management, control method, warning method, contact method, fixed value method, motion step method

Shigeo Shingo introduced the concept of poka-yoke when he was an industrial engineer at Toyota Motor Corporation. Poka-Yoke is the Japanese term for mistake-proofing. Developed by Dr. Shigeo Shingo, Poka-Yoke employs devices on the process operations to prevent the special causes that result in defects, or to inexpensively inspect each item that is produced to determine whether it is acceptable or defective. The Poka-Yoke concept is central to Shingo's Zero Quality Control (ZQC), where defects are eliminated at source as opposed to being identified further downstream in the production process.

The initial term was baka-yoke, which means 'fool-proofing'. A worker at Arakawa Body Company refused to use baka-yoke mechanisms in her work area, because of the term's dishonorable and offensive connotation. Hence, the term was changed to poka-yoke, which means 'mistake-proofing'. The term "poka-yoke" comes from the Japanese words "poka" (inadvertent mistake) and "yoke" (prevent). So many times, errors are made because the choice between the right and wrong way are so similar. Parts or procedures have such symmetry that they can be installed/performed backwards and not know it. How do you devise things so they can only be done the right way? Make it a forced-function. Mechanically design it so there is only one way to choose: the right way. That way you are not relying on the variability of human

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judgment. The Toyota Production system employed this concept and reduced previous errors that plagued them to zero.

Poka-yokes are mechanisms used to mistake-proof an entire process. Ideally, poka-yokes ensure that proper conditions exist before actually executing a process step, preventing defects from occurring in the first place. Where this is not possible, poka-yokes perform a detective function, eliminating defects in the process as early as possible.

Many people think of poka-yokes as limit switches, optical inspection systems, guide pins, or automatic shutoffs that should be implemented by the engineering department. This is a very narrow view of poka-yoke. These mechanisms can be electrical, mechanical, procedural, visual, human, or any other form that prevents incorrect execution of a process step. Poka-yokes can also be implemented in areas other than production such as sales, order entry, purchasing, or product development where the cost of mistakes is much higher than on the shop floor. The reality is that defect prevention, or defect detection and removal, has widespread applications in most organizations.

The Center for Excellence in Operations (CEO) has developed a poka-yoke framework to help its clients understand, the various classifications and applications of mistake-proofing mechanisms. Given below is a brief overview of the framework:
Prevention-based mechanisms sense an abnormality that is about to happen, and then signal the occurrence or halt processing, depending on the severity, frequency or downstream consequences. There are two approaches for prevention-based poka-yokes:

- Control Method: This method senses a problem and stops a line or process, so that corrective action can take place immediately, thus avoiding serial defect generation. An example of this is an assembly operation wherein, if one of the components is found to be missing before the actual assembly step takes place, and then the process shuts down automatically. Another example is an incomplete sales order, which cannot be released for production until a true manufacturable configuration is defined.
- Warning Method: This method signals the occurrence of a deviation or trend of deviations through an escalating series of buzzers, lights or other warning devices. However, unlike the control method, the warning method does not shut down the process on every occurrence. This method is used when a bandwidth of acceptance exists, for a process. An example of this is pressurizing a vessel or a filling operation, in which the results need not be, exactly the same. Although the process continues to run, the poka-yoke signals the operator to remove a defect from the line, or make necessary adjustments to keep the process within control.

Effective poka-yoke devices make before-the-fact inspection more effective by reducing the time and cost of inspection to near zero. Because inspections entail minimal cost, every item may be inspected. Provided that work-in-process inventories are low, quality feedback used to improve the process can be provided very rapidly.

In many situations, it is not possible or economically feasible to prevent defects, particularly where the capital cost of the poka-yoke mechanism, far exceeds the cost of prevention. For these situations, defects are detected early in the process, preventing them from flowing to downstream processes and multiplying the cost of non-conformance. The three categories of detection-based poka-yokes are as follows:

- Contact Method: This method detects any deviation in shape, dimensional characteristics or other specific defects, through mechanisms that are kept in direct contact with the part. A subset of this category is the non-contact method, which performs the same function through devices such as photoelectric cells. An example of this might include a chute that detects and removes upside-down or reversed parts, or an in-line gauge that removes dimensional defects and reroutes them to a defect lockbox.
- Fixed Value Method: This method is used in operations, in which a set of steps is sequentially performed. The fixed value method employs automatic counters or optical devices and controls the number of moves, rate and length of movement as well as other critical operating parameters. In this case, mechanisms are usually built into progressive stamping, welding, Systems Manufacturing Technology (SMT), and automatic insertion equipment. Sometimes this is referred to as odd part out method, in which parts left over after assembly signal a defect. Fixed value also includes critical condition detection (pressure, temperature, current, etc.) through electronic monitoring devices.
- Motion Step Method: This method ensures that a process or operator does not mistakenly perform a step that is not part of the normal process. An example of this is color coding of electronic components on drawings and totes to prevent using mixed or incorrect parts. Another example is a visual to assist customer service representatives, in providing the right literature sets for various products.

The best poka-yoke in the world is a robust design. Many of the needs for poka-yokes are attributable to poor designs and/or unrepeatable processes. The second-best poka-yoke in the world is education and awareness. The automotive industry is a leader in this area, with the use of its Advanced Product Quality Planning (APQP) guidelines and supplier development programmes. Companies such as Motorola, Allied Signal and General Electric are leaders in this area, because they invested in their Six Sigma Black Belt programmes, and have taken them upstream into the new product development process.

The poka-yoke philosophy requires a strong foundation in total quality management. First, organizations must learn to be customer focused. Second, organizations must promote quality ownership at the source, and they need to ensure proper investment in their people, which enables them to be truly empowered. Third, a clear distinction needs to be made between good versus bad quality. Fourth, organizations must embrace the PSP philosophy: Pre-, Self-, and Post-Inspection at the source. Last, poka-yokes require real-time feedback and corrective action. These are the building blocks of an effective poka-yoke effort.

Mistakes happen in organizations for many reasons, but almost all of them can be prevented, if people make the effort to identify when problems happen, define root causes, and then take the proper corrective actions. The objective is to prevent, or at least, detect and weed out defects, as early as possible in the process. The use of simple poka-yoke mechanisms and other safeguards can also prevent mistakes from becoming catastrophic events.

Some examples of using poka-yoke devices are: to make sure an assembler uses three screws by packaging the screws in groups of three. That package is a poka-yoke device; at General Motors, a simple electrical check is made to verify that nuts are properly welded to a sheet metal panel; an airplane pilot may use a simple checklist to make sure everything is ready before flying his airplane.

Such simple methods or devices anticipate potential sources of worker error. In such cases, they are often an effective alternative to demands for greater worker diligence and exhortations to "be more careful".

A viewpoint of preventing mistakes before they occur is the best way to reduce failures and waste, resulting in lowered costs. This philosophy holds not only on the production line, but also in the office and for the work that managers do.

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HANDLING RISKS – RISK MANAGEMENT PROCESS

LILIANA IVĂNUŞ*

Abstract: Risk management is a is a complex and multifaceted process which varies from one organization to another consisting of well defined steps which, when taken in sequence, support better decision making by contributing to a greater insight into risks and their impact. It should be viewed as an ongoing process which needs continual oversight, planning and modification as needs evolve .

Key words: risk**,** risk management, risk avoidance, risk assumption, risk handling

In the past, risk management might mean nothing more than buying insurance. In today's competitive environment, organizations need to re-think and re-position their approach to risk management systems. There are several factors pushing them to change. Government regulations have become more extensive and tougher. Insurance coverage is not as easy to get and the premium is getting more expensive. Expectations of customers and general public are up to higher standards. Globalization of corporations increases the awareness of risk management. More importantly, other firm's disasters really scare the top management. These factors inspire risk management to grow in importance to the point where it has become a strategic issue. In the competitive business world, all organizations are concerned with their unique position and organizational effectiveness .

It is time for every organization to review its risk management position and to adopt an appropriate risk management system .

One of the reasons why risk management has received so much ongoing attention is that financial disasters seem to occur on a regular basis to remind us of the perils of "not getting it right" .

It is the responsibility of corporate management to ensure that an effective risk management program is in place. This responsibility includes :

a) defining the organization's risk appetite in terms of loss tolerance, risk-to-capital leverage and target and debt rating;

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b) ensuring that the organization has the required risk management skills and risk absorption capability (human and financial resources) to support its business strategy;

c) establishing the organizational structure and defining the roles and responsibilities for risk management, including the role of a chief risk officer;

d) implementing an integrated risk measurement and management framework for credit, market and operational risk;

e) establishing risk assessment and audit processes, as well as benchmarking company practices to industry best practices;

f) shaping the organization's risk culture by "setting the tone from the top" not only through words but actions and reinforcing that commitment through incentives;

g) providing the appropriate opportunities for organizational learning, including lessons learned from previous problems and ongoing training and development .

Enterprise risk management is a work in process. While it is emerging at the best practice model for measuring and managing all types of risk across an organization, there is much work to be done. Key challenges for companies adopting this model include :

- defining the role of the chief risk officer;
- establishing an enterprise risk management framework;
- developing risk technologies, including Internet or Intranet applications;
- implementing operational risk management;
- determining the role of new risk transfer products .

There are five components of risk which provide a broader definition that goes beyond market risk and credit risk (ie, financial risk) to include operational risk, business risk and organizational risk. Market risk includes client investments and our own balance sheet and proprietary trading. Credit risk includes counterparty, settlement and lending exposures to the default of critical business partners and vendors. Operational risk involves mainly back-office operations such as transactions processing, fund pricing, cash and securities movement and systems. Business risk includes front-office issues such as strategy, client management, product development and pricing and distribution. Finally, organizational risk involves the company's reputation, people and skills, as well as incentives and other aspects of the control environment .

Risk management is a process consisting of well defined steps which, when taken in sequence, support better decision making by contributing to a greater insight into risks and their impact. It is as much about identifying opportunities as it is about avoiding losses. By adopting effective risk management techniques you can help to improve safety, quality and business performance in the company .

There are many benefits in implementing risk management procedures. Some of these include:

- more effective strategic planning;
- better cost control;

- enhancing shareholder value by minimizing losses and maximizing opportunities;
- increased knowledge and understanding of exposure to risk;
- a systematic, well-informed and thorough method of decision making;
- increased preparedness for outside review;
- minimized disruptions;
- better utilization of resources;
- strengthening culture for continued improvement .

Risk management commences with setting the context of the risk. This facilitates identifying the sources of risks indicators and in turn the particular risks that have a likelihood of occurrence .

A risk can have one or more consequences or impacts, which have some measurable costs to the organization. It is here that the important distinction between a risk and consequences is made. The risk is in essence a description of an event that has not occurred but has some likelihood of occurrence. The consequence is a measure of the cost after the risk event is triggered .

In some cases a risk in one context may be a consequence in another context. Hence risk and consequence are sometimes interchangeable. This is no set rule other than the distinction that is qualified above. This makes it easier to define the control mechanisms, which after all, is one of the key outcomes in this exercise .

Once the risk event occurs, the likelihood is 100%, the question now remains as to what level of impact will occur. Arising from the risk and its consequences are two means to contain the losses : preventative controls that reduce the likelihood of the risk and corrective controls that mitigate the full impact of the consequences .

While individual initiative is critical, it is corporate culture which facilitates the risk management process. Corporate culture defines what behavior the members of organization will condone and what behavior they will shun. Corporate culture plays a critical role in risk management because it defines the risks which an individual must personally take if they are going to help managing organizational risks .

In order to manage risks, organizations need to be able to measure those risks prospectively. They need to know, based on their positions today, how much risk they are actually taking. This is a difficult question to answer .

A clear distinction should be made between risk management and risk taking. Risk management oversees and ensures the integrity of the process with which risks are taken. To maintain objectivity, risk management cannot be a part of the risk taking process. Individuals who manage risk need to be completely independent from individuals who are responsible for taking risk .

Enterprise risk management is a complex and multifaceted process which varies from one organization to another. It should be viewed as an ongoing process which needs continual oversight, planning and modification as needs evolve .

Risk management options are usually cited as risk handling options subdivided as it follows :

- *avoidance*, which means using an alternative approach that does not have the risk. This mode is not always an option. There are programs that deliberately involve high risks in the expectation of high gains. However, this is the most effective risk management technique if it can be applied;

- *control*, which involves the development of a risk reduction plan and then tracking to the plan. The key aspect is the planning by experienced persons. The plan itself may involve parallel development programs;

- *assumption*, that is simply accepting the risk and proceeding. There appears to be a tendency within organizations to gradually let the assumption of a risk take on the aura of a controlled risk;

- *risk transfer*, which is an attempt to pass the risk to another program element. Typically, used in a context of a government agency passing the risk to a contractor. There are some discussions that this mode trades government risk for profit to the contractor. This belief is apparently founded on elementary economic theory and the mistaken belief that an executive in a procuring agency has avoided risks by passing the buck;

- *knowledge and research*, mode which is cited as not being true risk handling, but rather a technique for strengthening other techniques. From a program management perspective this approach can best be viewed as an adaptation of the approach used by graduate students for their theses : intensive study associated with specialized testing. In effect, the student develops intellectual ownership of his problem in all of the aspects : theoretical, empirical and practical .

Once the risks have been evaluated in terms of likelihood of occurrence and consequences and when options for risk management have been reviewed, it is then meaningful to rank the risks for the program manager to assign priorities. The task of prioritizing the risks is performed at the senior staff level to assure that all political, business and programmatic factors are weighted in the priority assessment .

Management must exercise its judgement to prioritize resources for risk management purposes. The ranked risks are reviewed in terms of combined likelihood and consequences and in terms of program level concerns with missions, functions, business objectives and political aspects .

Risk management provides a greater opportunity to enable relatively high-risk acquisition approaches to be successful. The ultimate success of a project within the ever-tightening triple constrains of time, cost and scope depends heavily on how the project deals with the ever-present risks .

Risk management is concerned with future events, whose exact outcome is unknown and with how to deal with these uncertainties in advance. In general, outcomes are categorized as ranging from favorable to unfavorable and risk management is the art and science of planning, assessing (identifying and analyzing), handling and monitoring actions leading to future events to ensure favorable outcomes. Thus, a good risk management process is proactive in nature and is fundamentally different from crisis management (or problem solving), which is reactive .

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GLOBALIZATION AND THE EVOLUTION OF THE NATION-STATE

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Abstract: This paper analyses the effects of globalization within and beyond nation-state. The globalization of the economy has had considerable impact upon nation-states. Such a world economy destabilizes the nation-state, which in its modernist form had responsibility for the well being of its national economy. The globalization of the economy has witnessed an uncoupling of highly mobile capital from bounded and territorialized space of the nation as a site of policy production. This uncoupling has brought about structural changes in the modes of governance within the nation.

Key Words: globalization; nation-state; regional entities; free circulation; multicoated cobweb relationships; postnational politics

For international organizations in particular, globalization has become a key concept with which to interpret the enormous economic, political and cultural changes that characterize human society at the beginning of the 21st century.

Globalization creates pressures upon the nation-state from above and below. Globalization not only pulls upwards, it pushes downwards, creating new pressures for local autonomy. Such destabilization and reconstitution of the nation-state from both above and below affects policy-making processes and the available policy options for governments.

Structurally, a number of interrelated developments from above, the consequence of globalization affect the policy salience of the nation-state. These include:

- the enhanced globalization of the economy;
- the related extra-territorial character of global capital;
- the apparent global dominance of neo-liberal ideologies.

In combination, such developments have weakened the policy options of nation-states. But they have also created some post-national political structures, as well as reconstituting international organizations already in place. The emergence of the

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supranational political unit of the European Union, new regional trade zones as the Asia-Pacific Economic Cooperation forum (APEC) and the North American Free Trade Agreement (NAFTA) are good examples of this dynamic. The European Union is the most advanced of the supranational political units with member nations delegating some of their legislative authority to this unit beyond the nation. It also laid down clearly defined criteria for economic policy for member state in relation to the single monetary union.

New regional entities such as NAFTA and APEC, while at present functioning largely as economic and trading arrangements, also place policy limitations in these matters upon their members. Such limitations are most obvious when related to trade liberalization and to the removal of tariff protection to ease the move towards more permeable national boundaries and a borderless global economy. The rise of such an economy in turn limits the policy salience of the nation-state and its room to maneuver independently.

One of the factors in the destabilization of the nation-state is the growth of so-called "region states". Region states cut across the sovereignty of nation states. They work almost as separate economic units. As economically integrated regional entities, their primary linkages tend to be with the global economy and not with their "host" nations. Almost cut off from their host nations, they provide a number of world economic centers. Mega-cities are spreading within developing countries, for example Shanghai and Beijing in China, while "third world" populations are emerging in "first world" nations. Such trends illustrate the growth in inequality within nations as well as between nations.

The recognition of the global nature of contemporary political problems and political processes has brought forth a proliferation of international Non-governmental Organization such as Greenpeace or Amnesty International. These sit alongside the substantial number of already existing Intergovernmental Organization, such as the World Trade Organization and the World Bank. Together they - Non-governmental Organization and Intergovernmental Organization – constitute a complex and ungovernable web of relationships that extend beyond the nation-state.

In addition to such relationships existing above and beyond the nation state, there has been fragmentation within, as well as the break-up of, some larger political units, for example: Yugoslavia, the Soviet Union and Czechoslovakia. Small states have also emerged-states, which often seek to reassert the unity of ethnicity and territoriality, a unity, which has also been torn asunder by the flows of globalization. Bauman argues that these small states are a concomitant of globalization:" the rush to carve out new and even weaker and less resourceful 'politically independent' territorial entities does not go against the grain of the globalizing economic tendencies; political fragmentation is not a 'spoke in the wheel' of the emergent 'world society', bonded by the free circulation of information. On the contrary – there seems to be an intimate

kinship, mutual conditioning and reciprocal reinforcement between the 'globalization' of all aspects of the economy and the renewed emphasis on the 'territorial principle'"[1].

We have entered a stage of postnational politics, or at least we are seeing the inchoate beginnings of the dissociation of politics from the territorial space of the nation. Migration and taken together have sewn the seeds of postnational politics, so this line of argument suggests. In this setting the concept of media serves as shorthand for various advances in technologies (and forms of transportation) which compress time and space and act as constraints upon communications. There is a greater interconnectedness across the globe of economics, culture and politics. Global pressures to produce fragmentation and difference within nations catalyze the micro-histories, economies and cultures of the local. Thus the impacts of the global upon the local are differentiated within nations, as is the case with the clear spatial location of poverty and the related rise of backlash politics of various kinds.

In many other respects, even including the economic, it is a "radically incomplete" project. It is in such conditions that a rift develops within nations between the globalised and globalizing elites, and those who have been adversely affected by globalization through unemployment, job insecurity and growing inequality. Martin and Schumann refer to the emerging 20/80 society clearly divided between globally connected elite (20%) and a subordinated layer (80%), whose connections the global economy are only through consumption behavior and the media[2]. This polarization within societies poses a considerable challenge to the policy solutions available to the nation-state and speaks to a divide between elites and others. Today, the metropolitan elites of the mega-cities of the world often have more in common with similar elites in other such cities than with the immobile mass within their own nations – the 'victims' of globalization, or of the global dominance of neo-liberal economic ideology.

We recognize the emergence of postnational politics and we think that the emergent postnational order proves not to be a system of homogeneous units (as with the current system of nation-states) but a system based on relations and networks between heterogeneous units (some social movements, some interest groups, some professional bodies, some non-governmental organizations, and some judicial bodies). The concurrent workings of those units with the politics of the nation state contribute to the latter's reconstitution and on a global scale give rise to the era of apparent ungovernability.

The changed geo-politics of the Cold War world has also contributed its part to this situation. Bauman suggested that it has been created a world, which does not look like a totality anymore, rather the world looks "like a field of scattered and disparate forces, congealing in places difficult to predict and gathering momentum which no one

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[2] Martin, H., Schumann, H. **– Capcana globalizării: atac la democraţie şi bunăstare,** Ed. Economică, Bucureşti, 1999, p. 32

really knows how to arrest"[3]. No one appears to be in control. These forces can be juxtaposed with the central pervading belief of modernity that the nation-state could control and manage the affairs, economic, political and cultural, within its boundaries.

In contrast, the modernist construction of the nation-state rested upon an assumption of national sovereignty relating to the military, economy, culture and politics. As this, and subsequent, sections seek to demonstrate that the nation-state no longer has autonomous sovereignty over these matters, particularly the economy.

We can say that the processes of globalization are helping to create a world of 'nested locales' in which households, neighborhoods, cities, provinces, nations and regions sit inside the wider global relationships like Russian Babushka dolls. The destabilizing effects upon the nation-state flow from the fact that relationships between these nested locales are two-way, both top-down and bottom-up, and consequently reconstitute the political domain and thus the policy capacities of the nation-state.

These relationships highlight the more polycentric nature of politics today. The global politics could be described as a multicoated cobweb of relationships as opposed to simply politics between nations. This cobweb embraces two-way interactive relationships between government and international governmental and non-governmental organizations, as well as between bodies such as these economic units (both local and global) and political and pressure groups of civil society both within and outside the nation. The result is an extended policy community in any policy domain, which includes issues networks, together with dual local and global pressures, which work to reconstitute the nation-state.

Even though globalization has destabilized the nation-state, with politics now operating within and across nations, supranationally and intranationally, the sustained significance of the reconstituted apparatus of state in politics and policy production should be taken into account. Perhaps the greatest destabilizing influence on the sovereignty of the nation state is the global economy.

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THEORETICAL CONSIDERATIONS ABOUT THE DEFINITION AND THE STRUCTURE OF COSTS

EMILIA MIHĂILĂ*

Abstract: The economists are, usually, using the concept of *opportunity cost*, which means the cost used to measure the value of all the things at which must be renounced in order to obtain something else. The measure of the opportunity cost can be identical, but not always, with the money expenses through which the accountant is measuring the cost.

Key words: opportunity cost, explicit cost, accountant cost, salaries expenses, extraordinary expenses

The cost is, generally, a measure of something at which must be renounced to obtain something else, either by buying, exchange or production. The economists are, usually, using the concept of *opportunity cost*, which means the cost used to measure the value of all the things at which must be renounced in order to obtain something else. The measure of the opportunity cost can be identical, but not always, with the money expenses thru which the accountant is measuring the cost.

The producer's choice and the assumption of the entrepreneur's responsibility to sustain the goods offer are based on economical data, on accountant's data and on evaluations about the produced quantities and about their costs. That's why all the big economists have given a special attention to cost, being preoccupied especially to elucidate its economical content.

The classic Adam Smith, for example, is identifying the cost with the natural (real) price of the good. The real price of each good, what really costs the person which has the need to purchase it, is the equivalent of the care and the demands which he needed to purchase it. More exactly, this price consists in the whole sum of the rent, the salary and the profit which must be paid for this merchandise to go on the market.

David Ricardo has taken the basic idea of A. Smith, only Ricardo looked at the problem especially in dynamic, considering that the good's price is accorded by the rising or the decreasing of the production cost; while the socialist economical school affirms that the production cost consists only from a part of the good's value. K. Marx

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sustained that the production cost is that part of the value which costs the entrepreneur and which is measured thru the constant capital expense and thru the capital.

The French economist J.B. Say proved that at the basis of the cost are the expenses occasioned by combining, substituting and use of the production factors, the cost being a reward of the production factors services. Charles Gide sustains that the cost price represents a consume of factors, consisting in all the payments made by the entrepreneurs to acquire the production factors; while Paul Heyene considers the cost a value of the sacrificed chances, concept thru which he is binding the demand law from the principles that rule the offer.

In the present exist, are circulated and are confronted nearly all the points of view formulated in the different historical periods, respectively in the thinking systems. It seems that thru the multiple existing points of view, there is a bigger audience for the following concept:

"The production cost consists in the totality of the expenses made or/and which are going to be made, all in financial terms, by an enterprise for the production and the selling of corporal and non-corporal goods. So it's about evaluating all the involved efforts by the determined economical process."

From this brief characterization of the cost we can mention at least the following aspects:

- the cost is reflecting the unity between the content of the factor's consume and it's financial expression; without such a unity we cannot talk about cost;
- the cost is the indicator which brings to the same point of view all the factor consumes, thru this the efforts made for producing and selling the goods become measurable and comparable;
- the cost includes all the expenses made by the enterprise to sustain the offer;
- the cost is found in the good's selling price, being a component part of the good; that part that expresses the consumed factors rewards, and the chances sacrificed by the dealer;

The micro-economical analyses are based also on taking into account of the differences between the explicit cost, the implicit cost and the accountant cost.

The explicit cost consists in those necessary expenses made with the acquisition of the production factors from outside the enterprise and which the enterprise is making for every production cycle.

The implicit cost represents those inerrant expenses of the production, which don't ask for payments to other parts, they are made thru the own resources of the concerned unit.

The production cost – as an evaluation – gathers the explicit cost and the implicit cost.

The accountant cost contains the explicit cost and the amortization, this one being part of the implicit cost.

Being a factorial, a resultant and an efficiency indicator, the cost is an extremely useful instrument in taking decisions meant to assure the enhanced level of the production. The knowledge of cost allows the entrepreneur to establish the use of

the production factors in such a way, to obtain a better rent ability, in rapport with its competitors.

The evidence of costs, at the level of contemporaneous requests and their analysis with good results for the interested economical producers, can't be made in the general and global mode. There are necessary specific approaches, on cost categories. The economical science already has a classification of costs, as follows:

a) By their nature, size and variety, the expenses are particularized according the specific of the three main sectors of the national economy: the economical sector, the social-cultural sector and the banking sector.

So, *in the sector of the economical agents* are more obvious the supplying, production, opening, administration, etc. expenses, but also, in a smaller measure, the social-cultural expenses and the financial expenses. In the *sector of public institutions*, the main role is taken by the social-cultural expenses, concerning: education, health, culture, administration, defense. For the *banking sector* there are specific the financial expenses, which assure the normal going of the money circuit, of the credit and payments.

b) By their nature, the expenses of an enterprise are ranked as: exploitation expenses, financial expenses and extraordinary expenses.

The exploitation expenses are that consumes and money payments which are determined by the operations which are made by the object of activity of the enterprise. Example: the value of the primary materials consume, auxiliary materials, fuels, the degradation of the inventory, suitable salaries for the enterprise's staff, enterprise's contribution for social insurance, etc.; they are all included in costs and are their essential part.

The *financial expenses* are those patrimonial diminutions which have at their basis money transactions made by the enterprise. Some of these expenses have their origin in collateral exploitation activities (for example: loses from cringes linked to participations, the counter value of the given placement titles, etc.) and are not included in costs. Others are linked to theirs production and distribution activity (example: unfavorable exchange differences at cringes and obligations in specifications, and at money availabilities in specifications resulted from the exploitation activity, the rates owned at the loaned production capital, the counter value of the discounts given to clients and debtors appeared from the exploitation activity) and are included, without doubt, in costs.

The *extraordinary expenses* are formed in essence from money payments and from patrimonial diminutions of immobilizations, which intervened following some extraordinary operations (example: expenses for calamities and other events).

c) By the homogeneity of their contents, expenses concerning production are classified in simple expenses and complex expenses.

The *simple expenses* are those expenses which have a homogeneous content, being formed on a single type of consumed parts or made payments. From this category take part, by example: the raw materials consume, the auxiliary materials consume, the fuel consume, the degradation of the inventory objects, amortization of

the fixed goods, suitable salaries for the enterprise's staff, enterprise's contribution at social insurance and protection, the rate at the loaned capital, provisions for risks and expenses. These expenses can't be divided in other constitutive elements; they also have the name of *mono-elementary expenses*.

The *complex expenses* are the expenses formed by some mono-elementary expenses. In this category are included for example: movement expenses, detachment, transfer, non-stocked materials expenses, other exploitation expenses which can be found grouped in this way, in general accountancy and in calculations. Other complex expenses, such as: technical revisions expenses, all kind of reparations and machines maintenance, tools and other fixed devices, expenses for work protection in sections and with general character, etc. are found only in cost calculation.

d) By their importance in the production process, the expenses contained in costs are classified in basic expenses and overheads.

The *basic expenses* are the ones occasioned by the technological operations for products fabrication or work manufacture; they are also called *technological expenses*. In this group are included: the value of the raw materials consume, of technological fuel, of electrical energy, water, steams and other technological utilities. As basic expenses can be considered also the machines and production tools amortization and even their other functioning expenses, given the fact that, in the actual stage, modern industrial production can't be conceived in the absence of such a production process factor.

The *overheads*, sometimes called supplementary expenses, contain those value expenses which are determined by the organization, the administration and the production leading. From this category take part: section's general expenses and factory general administration expenses. From behavior reasons, interpretation and analysis, it is necessary that in the product's cost structure the basic expenses to show as a distinctive position, different from the overheads.

e) By the repartition mode in the product's cost, works and services, the production expenses are classified in direct and indirect expenses.

In the group of *direct expenses* are included those expenses which can be calculated over a certain carrier and for whom exist the possibility to be reflected as distinct positions in its cost structure. Considering that the direct expenses can be attributed to different products, works and services which have been occasioned from the making moment, they are also called individual or specific expenses. Example: raw materials consume, auxiliary materials consume, water, steams and other direct technological utilities, direct salaries, etc. So they have a good determined destination.

Indirect expenses include those expenses which can't be identified and distributed directly on each separate product. Usually, these expenses aren't linked directly to the product's fabrication, they concern the entire production of a section or enterprise, from which cause they are also called commune expenses. Considering the sectors where is identified and the nature of the activities occasioned by them, the indirect production expenses are grouped in calculation, like this: expenses for the

maintenance and functioning of the device, section's general expenses and general administration expenses.

The classification of the production expenses in direct and indirect makes the premise of their delimitation and distribution on expenses sectors and on activities genres; it stays also at the basis of the determination of the product's unit cost, in the case of the methods "integral" or "absorbent". The calculation of the costs in absorbent cost is widely spread in the actual stage; many enterprises from Romania are using this type of calculation.

f) By their economical contents, the production expenses are divided in material expenses and salaries expenses.

The *material expenses* are composed from: raw materials and production materials; energy and water from outside for production; the amortization of the corporal and non-corporal immobilizations, works and services executed by others for production, other material expenses, such as: expenses concerning inventory objects, other material expenses.

The *salaries expenses* are composed from: staff's salaries, insurances and social protection, other salaries expenses, such as: expenses with the collaborators, expenses for travels, detachments, transfers, others salaries expenses.

This classification of expenses allows knowing the role which the two categories of expenses have in the production process.

g) By the rapport of their value and the production's physical volume at which is referred, there are: variable expenses and fixed expenses.

In the category of *variable expenses* there are those expenses which are modifying their value in considerable way with the modification of the production's physical volume. They include, for example: raw materials consume, basic materials, electrical energy, water, steams, etc. for technological needs, basic salaries of the direct productive workers, C.A.S.'s and other social duty's.

Mathematically, the variable expenses (Chv) are a function (f) of the production volume (Q), expressed by the following relations:

$$Ch_v = f(Q) \quad \text{– for total variable expenses} \qquad (1)$$

$$Ch_v = \frac{f(Q)}{Q} \quad \text{– for unitary variable expenses} \qquad (2)$$

For the numerical expression of the expenses behavior facing the modification of the production volume which caused them, is used the expenses variability index.

In the case of a random production expense, the variability index is calculated using one of the following formulas:

$$lv = \frac{\frac{Ch_1 \cdot 100}{Ch_0} - 100}{\frac{Q_1 \cdot 100}{Q_0} - 100} \quad (3)$$

or

$$lv = \frac{\frac{Ch_1 - Ch_0}{Ch_0} - 100}{\frac{Q_1 - Q_0}{Q_0} - 100} \quad (4)$$

where: Ch_1 = the absolute sum of a random production expense, in the current period of time;

Ch_2 = the absolute sum of a random production expense, in the precedent period of time;

Q_1 = the physical volume of the production in the current period of time;

Q_2 = the physical volume of the production in the precedent period of time;

Analyzing the variable expenses from the variability index point of view, we can distinguish: variable proportional expenses, progressive variable expenses, digressive variable expenses, regressive variable expenses and flexible variable expenses, in this way:

- The *variable proportional expenses* represent the value of those consumes for production and selling which are modified directly proportional with the production's physical volume. If we double the production's volume, the proportional expenses are also doubling, the same way as the dropping of the production volume at half leads to the reduction of such expenses at half the old sum. Example: the value of the raw materials and semi-fabricated consume, the value of the production wrappings consume, etc.

- The *variable progressive expenses* are the money expression of those productive consumes, whose growth rhythm is superior to the growth rhythm of the physical volume of the production that occasioned it. The progressive expenses must be searched first in the basic expenses, but also other production expenses can grow progressively in certain periods.

- The *digressive variable expenses* are those who rise with the rising of the production's volume, but in a smaller proportion than it. The digressive expenses present the tendency of inertia, reacting at bigger modifications of the production's volume, and not at each production unit, like the proportional variable expenses are evolving. Such a behavior have, for example, the auxiliary materials consumes, the salaries of the auxiliary workers, the contributions to the social insurances due to these salaries, etc.

- The *regressive variable expenses* include those expenses which are decreasing very much in a period of time, in the hypothesis that the fabrication process once started is behaving normally, and the physical volume of the obtained production is increasing. These expenses are met in the case of high furnaces and of the Siemens-Martin ovens, where the consume of technological fuel is very high for the elaborated piece, immediately after starting the aggregates which were in "cold revision" and is decreasing a lot in the case of the pieces elaborated afterwards, when the aggregates are already warmed;

- The *flexible variable expenses* are evolving non-regularly in rapport to the production's physical volume. Their character is changing alternatively; so, after a stage when is behaving proportionally with the production's physic volume, in the next stage is evolving progressively, and so on. These kinds of expenses are met in thermo-electrical station and electrical-heating stations.

The *fixed expenses*, also known as *conventional – constant expenses*, are those expenses which absolute amount remains relatively unchanged, or is modifying in the case of the increasing or decreasing of the production's volume, but in insignificant proportions. In this group are included, for example: expenses with the amortization of the fixed devices or the rents paid for them, the salaries of the leading staff, technical

and economion: Chf = f (T), where T is a totality of factors.

perly fixed expenses and relatively fixed expenses, as follows:

Properly fixed expenses are those expenses which have a constant size, no matter if, in a given production capacity, the production's volume is decreasing or is increasing. In this category are included first the amortizations, the overheads in functioning state, the building taxes, etc.

Relatively fixed expenses are formed from those production expenses which show a bigger sensitivity for the modification of the production's physical volume, espectively in rapport with the measure in which is used the end *erprise's production ca*pacity. In this category are included: the salaries of the leading staff, of the technical, economical and administrative staff, and the staff which is managing the sections end the enterprise, the rate of social insurances owed to these salaries, expenses with the *environment protection, et*c.

By their destination, the production expenses are grouped on calculation articles. The classification of the expenses included in costs after their destination is showing how economically are used the enterprise's tools and is ensuring the calculation of the cost per product unit thru a relatively simple methodology.

For the general use, the nomenclature of the calculation articles can have in a minimal form the following positions: raw materials and direct materials; recoverable residual products are deducted; direct salaries; the contribution regarding social insurances and social protection referring to the direct salaries; the expenses needed for maintenance and equipment use; section's general expenses; general administration expenses; opening expenses.

The production expenses on articles of calculation summed including till the general expenses of the section are forming the production cost, or, better said, the

- Adding to the production cost the general administration expenses and the opening expenses distributed on national level we have the complete cost or the commercial cost.
- With these categories of costs is operated in the case of each product unit, work, service, etc., and also in the case of the entire production of the enterprise.
- It's also needed to notice that the mentioned categories of costs are the same valid in ante-calculation as in post-calculation*; so it's spok*en about lanned cost, *effective pr*oduction cost an*d complete cost* for *a product unit, or for the entir*e produc*tion (figure 1)*.

At the entire enterprise's production *level, the sum of* the *expenses determined* on calculation articles must be equal with the sum of the expenses established on the primary elements; the ponder of the calculation articles in the structure of the production cost is completely different than the ponder of the expenses elements.

Function of the making moment, tied with the moment of their exigiblity, are found: current expenses, anticipated expenses and preliminary expenses.

<table>
<tr><td>Costs</td><td colspan="3">Prices</td></tr>
<tr><td>a) Raw materials and direct materials</td><td colspan="3" rowspan="6"></td></tr>
<tr><td>b) Recoverable materials (are subtracted)</td></tr>
<tr><td>c) Direct salaries</td></tr>
<tr><td>d) Contributions to insurances and social protection</td></tr>
<tr><td>e) Expenses for equipment maintenance and functioning</td></tr>
<tr><td>f) Section's general expenses</td></tr>
<tr><td></td><td>i) Production cost (a+b+c+d+e+f)</td><td colspan="2"></td></tr>
<tr><td>g) General administration expenses</td><td colspan="3" rowspan="2"></td></tr>
<tr><td>h) Opening expenses</td></tr>
<tr><td rowspan="4"></td><td>II. Complete commercial cost (i+g+ h)</td><td colspan="2"></td></tr>
<tr><td></td><td>i) The profit</td><td></td></tr>
<tr><td></td><td></td><td>A. The selling price *(delivery) (II+i)</td></tr>
<tr><td></td><td>j) Addition – commercial deduction</td><td></td></tr>
<tr><td colspan="2"></td><td>B. Unit's price</td></tr>
</table>

Fig. 1

The current expenses are made and are exigible in the current administration period, meaning that they are made and are included in costs, are deducted on the budgetary incomings or on the financial-banking results, after case, during the same administration periods.

The anticipated expenses are made during the current administration period and are included in *costs or are deducted on the budgetary incomings, respectively on the financial-banking results during the future administration periods.*

*The preliminary expenses are co*ncerning the economical activity, the social-cultural or banking activity from the current administration period, but they will be made in the future administration periods.

By their importance in the decisional process, the production expenses are *divided in accounting co*sts, marginally costs, incremented costs, relevant costs, opportunity costs, discretionary costs, technical costs, globed costs and irreversible costs.

The accounting costs represent the recorded expenses, with *historical value in s*pere concerning the economical activity, the social-cultural or banking activity from the current administration period, but they will be made in the future administration periods.

h) *By their importance in the decisional process, the production expenses are divided in accounting costs, marginally costs, incremented costs, relevant costs, opportunity costs, discretionary costs, technical costs, globed costs and irreversible costs.*

The *accounting costs* represent the recorded expenses, with historical value in specific documents and are referring in different evidence forms at raw materials, materials, salaries, rents, taxes, interests, etc.

The *marginally costs* are referring to the changing which is produced in the total cost the realization of a supplementary production unit. They are significant especially for taking decisions concerning the resources allocation and the price calculation, when is supplemented the production volume with a unit. In this purpose, the management thru costs recommends the approach of the marginal analysis as an efficacious instrument in the determination of the optimal activity level.

The *incremented costs* represent a larger concept than the marginal cost, because is referring to any change in the activity's total cost. A decision of introducing, for example, of a new fixed device can produce marginal production costs, but also other costs. Thru its effects, the decision can generate an increase or a decrease of the total cost.

For example, a decision concerning the distribution of the product on a new market segment will affect the total fixed costs because of the commercial expenses, the publicity expenses, the transport expenses, etc. The increase in fixed costs represents an incremented cost; the increase in the salaries of the staff who's selling the product represents, also, an incremented cost.

The *relevant costs* are the costs affected by taking a decision, because the managers need to use in the decisional process those costs which are relevant for the

choosing of option or a decisional option. For example, if a manager is in the situation of deciding about the acquisition of a device between two constructive options, for taking the decision the value of the payments is irrelevant because the production is the same, but the exploitation costs represent an irrelevant article.

The *opportunity cost* is the cost which is measuring the expense which would be made with another product or service, in terms of alternative, when limited resources are available. The opportunity cost is named also the giving-up price, because is referring to the sacrifice of doing something else. The evaluation of the opportunity cost is contributing to fundament the orientation decisions of the manager of an enterprise to another one or another one from the possible placement options of the available capital. If there isn't an alternative of using the respective resource, then the opportunity cost is zero. In practice the calculation of this type of cost its difficult, because it can't be took from the accountancy evidences.

The *discretionary costs* are costs which have their level determined by the decisions of the managers concerning publicity, promoting the selling, research expenses, fees, expenses with social character. Their control is focused on efficacy, on the realization of the objectives fixed in advance. Even in situations of over passing such an expense, on fees for example, the effects can be found in the amplitude of the leading's activity quality.

The *technical costs* are those whose level is, essentially, determined by the production and which includes, evidently, the materials consume and work. The size of these costs depends on the quantity of goods or services necessary for obtaining the product unit, depends on the good's or considered service price and on the number of produced units.

The *globed costs* represent the cost of the resources already acquisitioned, whose total was created by a decision taken in the past and which can't be changed by a future decision. There costs are irrelevant for a decision process, but this doesn't mean that all the irrelevant costs are globed costs.

The *irreversible costs* are the costs whose level was fixed thru an anterior decision. They are corresponding to the cost created by the availability of the production capacity. It's about amortizations, charges, taxes, etc. These costs are susceptible of being reduced in a short period of time. Their control needs particular techniques, which put in connection the reached level and the investments decisions.

An important aspect of the ensemble evolution of costs is represented by the *costs reminiscence*.

Thru the *costs reminiscence* is understood the phenomenon which states that at a decreasing evolution of the production's volume the costs always remain behind in their depreciation, evolving on another way than the one followed in the stage of the production's increase. The costs reminiscence is linked to the decreased evolution of the production's volume, after the modification of the utilization level of the production's capacity.

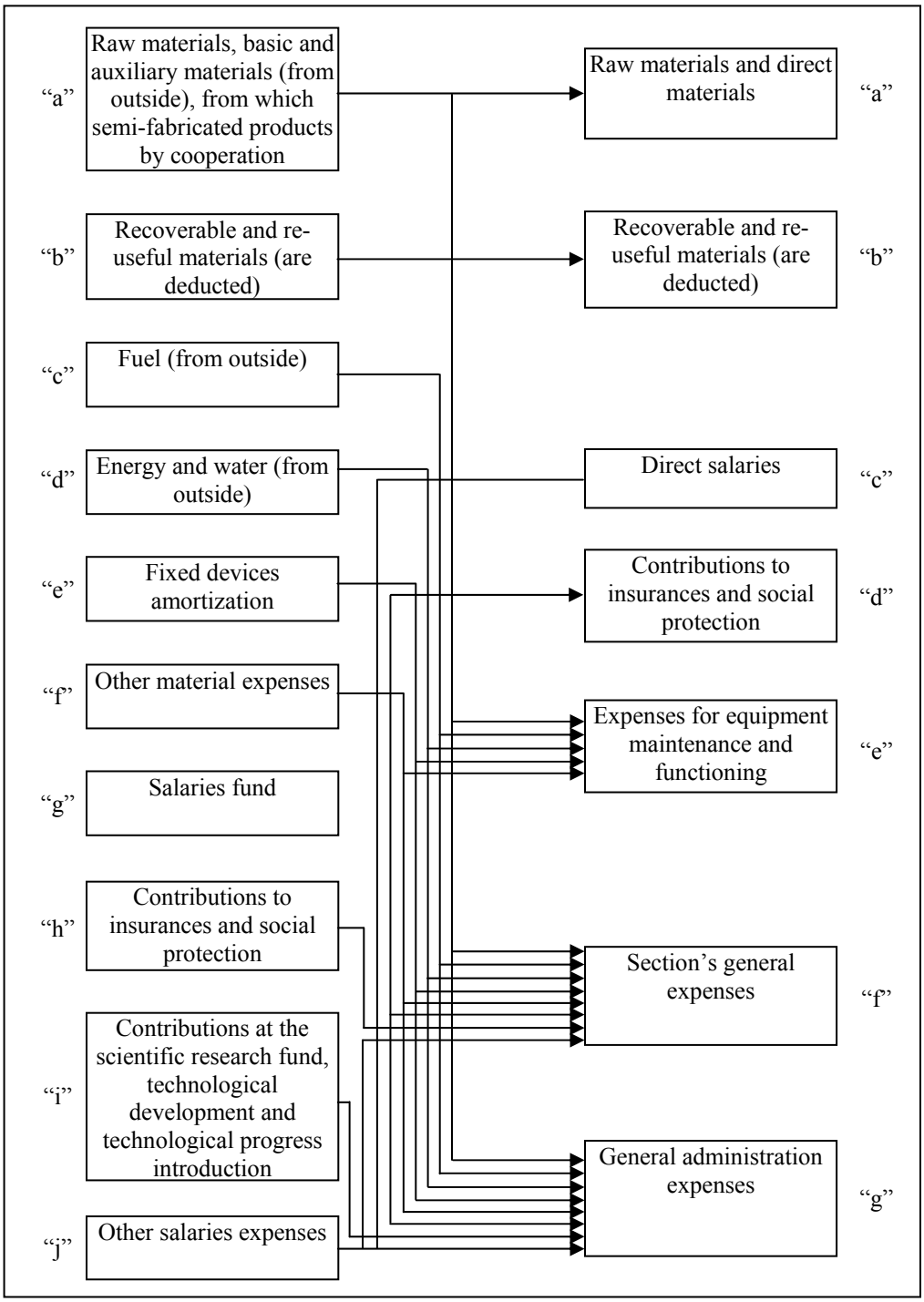
"a"
Raw materials, basic and auxiliary materials (from outside), from which semi-fabricated products by cooperation
"b"
Recoverable and re-useful materials (are deducted)
"c"
Fuel (from outside)
"d"
Energy and water (from outside)
"e"
Fixed devices amortization
"f"
Other material expenses
"g"
Salaries fund
"h"
Contributions to insurances and social protection
"i"
Contributions at the scientific research fund, technological development and technological progress introduction
"j"
Other salaries expenses
Raw materials and direct materials
"a"
Recoverable and re-useful materials (are deducted)
"b"
Direct salaries
"c"
Contributions to insurances and social protection
"d"
Expenses for equipment maintenance and functioning
"e"
Section's general expenses
"f"
General administration expenses
"g"

Fig. 2

So, the amount of the fixed expenses linked by a certain capacity remains unchanged if the occupation level of the capacity and respectively the production's volume is decreasing; in the same time, the rate of these expenses on the production unit is increasing.

The digressive expenses, which are usually associated to the workers behavior, are also manifesting the reminiscence phenomenon, because these forces constitute a component element of the production capacity, and the expenses provoked by them are behaving, until a certain point, similar to the fixed ones.

In the case of the proportional expenses usually the reminiscence phenomenon cannot be demonstrated.

The causes of the costs reminiscence must be also searched in the social-political components of the stage, in the current legislation, in organization measures, in the behavior routine concerning the intervention more or less prompt of the leaders to eliminate certain unwanted states from production.

The costs, being one of leading criteria of the production capacity, their reminiscence phenomenon must be taken into consideration with the occasion of the decision's fundament concerning the increasing of the capacities and the creation of new ones.

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ABOUT SOME MODELS OF MARKET EQUILIBRIUM

ILIE MITRAN*

Abstract: This paper makes an original approach to some of the features characterizing the market equilibrium modeling. Basically, some well known results of the Cobweb and Laffer are being generalized.

Key words: market equilibrium, equilibrium price, supply – demand functions

1. ABOUT SOME CONSIDERATIONS ON SUPPLY – DEMAND FUNCTIONS AND ON EQUILIBRIUM PRICE

An important feature of behaviour models with regard to the producer and supplier would be the fact the prices are supposed to be prior known.

Specific for these kinds of models is the requirement of determining the price for the moment or the different moments in time when the equality between demand and supply is being possible.

If we note the market price with, then the demand and supply functions (after a current variable p) we commonly note them with C, and O respectively and with respect with the following conditions:

$C, O : [0, \infty) \to R$, differentiable functions

$C'(p) < 0, O'(p) > 0, \forall p \geq 0$

The equilibrium price is commonly noted with p^* and actually is the solution of the following equation:

$$C(p) = O(p) \tag{1.1}$$

Observation 1.1.

It is obvious that as a result of the condition 2) that the demand function is a monotonous decreasing function, while the supply function is a monotonous increasing

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one. The equilibrium price practically corresponds to the intersection of the two curves graphs (fig. 1.1).

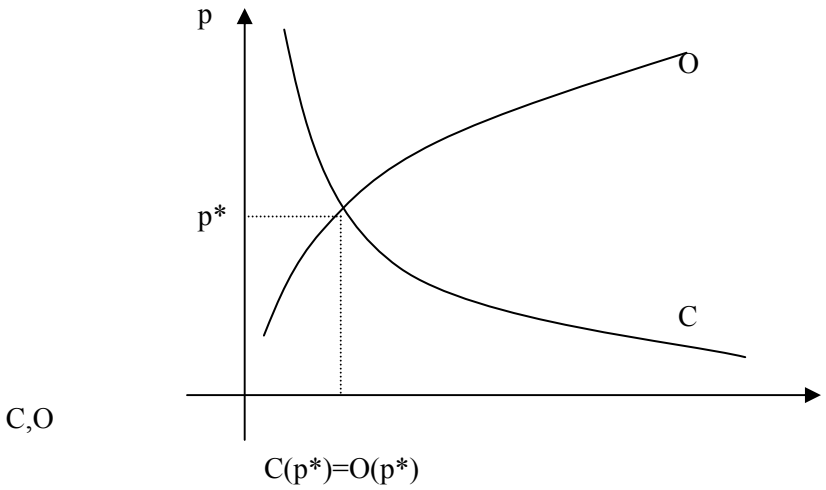

Fig. 1.1

The effective establishing of the equilibrium price p^* generally is a difficult problem and the analytic expressions of the C and O functions are supposed to be known.

Certainly, for the situation when the equation C (p) = O (p) is an I, II or II grade algebraic equation, or if it is a biquadrate equation, the p^* solution can be precisely determined. For other situations, different from this, p^* can only be approximately determined.

Beside the normal techniques of approximate solving, we can determine p^* through a linearization of the equation (1.1) (by developing in a Taylor or Mc-Laurin series both the demand function and the supply function).

For instance, developing the two members of the equation (1) in a Mc/Laurin series we are led to the following equation:

$$C(0) + pC'(0) = O(0) + pO'(0) \tag{1.2}$$

from where it immediately results the searched p^* solution:

$$p^* = -\frac{O(0) - C(0)}{O'(0) - C'(0)} \tag{1.3}$$

as well as the equilibrium volume of the transactions:

$$C(p^*) = O(p^*) = \frac{C'(0)O(0) - C(0)O'(0)}{C'(0) - O'(0)}$$

If we develop the two members of the equation (1.1) in a Taylor series for a settled point p, the following equation results:

$$C(\overline{p}) + (p - \overline{p})C'(\overline{p}) = O(\overline{p}) + (p - \overline{p})O'(\overline{p})$$

from where it immediately results

$$p^* = -\frac{O(\overline{p}) - C(\overline{p})}{O'(\overline{p}) - C'(\overline{p})} + \overline{p} \tag{1.4}$$

Observation. 1.2

If the demand and supply functions are higher derivative, the Mc –Laurin series and respectively the Taylor series development can also extent to more terms and we will be led to solving some algebraic equations of higher degree.

Observation 1.3.

For the particular situation when

$$C(p) = -ap + b, O(p) = cp - d, a > 0, c > 0,$$

the following equation will give us the equilibrium price we are looking for

$$p^* = \frac{b + d}{a + c} \tag{1.5}$$

while the supply and demand function will look like below:

$$C(p^*) = O(p^*) = \frac{bc - ad}{a + c} \tag{1.6}$$

which graphically will be represented as follows:

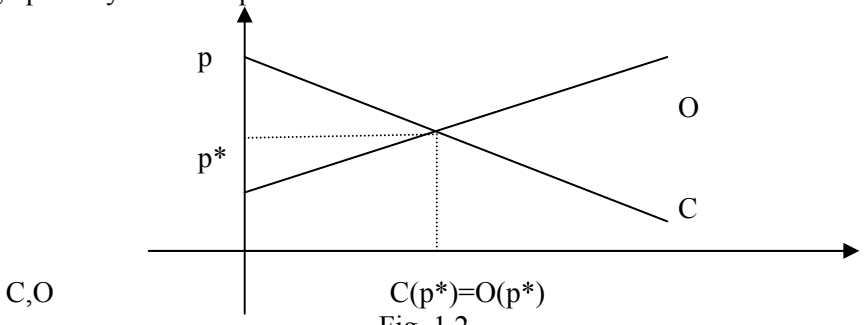

Fig. 1.2

2. The COBWEB MODEL (THE SPIDER -NET MODEL)

2.1 Defining the problem and establishing the price dynamics equation

This model is known under the name of "the spider-net model" due to the graphs generated by the supply and demand functions.

There are certain situations in which demand is influenced by a set price fixed at that very moment, while the supply is influenced by the market price used till a previous moment.

For farming products, for instance, there is a period of time between the moment when the intention of supply is expressed up to the moment the supply becomes available (about a half a year).

As a result of this we'll note the prices up to the t moment (the moment when a certain demand is formulated with p_t and with p_{t-1} for the t-1 moment (a previous moment).

The equilibrium condition appears then as follows:

$$C(p_t) = O(p_{t-1}) \tag{2.1}$$

And will lead to a recursion relation between p_t and p_{t-1} (also named "recursion equation of prices").

The recursion equation of prices can be easily determined through linearizing the two terms of the equation (2.1) (by developing in a Mc-Laurin series and a Taylor series respectively and retaining only the first two terms of the developing).

Thus, if we develop the two terms of the equation (2.1) through by a Mc-Laurin series we then obtain:

$$C(0) + p_t C'(0) = O(0) + p_{t-1} O'(0),$$

from where results

$$p_t = \frac{O'(0)}{C'(0)} p_{t-1} + O(0) - C(0) \tag{2.2}$$

If we note

$$A = \frac{O'(0)}{C'(0)}, B = O(0) - C(0)$$

$X_t = p_t - p^*$ (meaning that x_t measures the deviation from the certain p_t price used at moment t and the equilibrium price p^* given by (1.3)), then the recursion relation (2.2) turns to:

$$p_t = Ap_{t-1} + B \tag{2.3}$$

from where, after an immediate calculation will result:

$$p_t = A^t(p_0 - p^*) + p^* \tag{2.4}$$

The equality (2.4) actually reflects the price dynamics (a reason for it is called the "equation for price dynamics").

2.2. Economic interpretation

For the equilibrium situation $p_t = p_{t-1} = p^*$, from (2.3.) will result the following:

$$x_t + p^* = A(x_{t-1} + p^*) + B,$$

from where, after an immediate calculation we obtain:

$$x_t = Ax_{t-1} \tag{2.5}$$

Thus $A = \frac{x_t}{x_{t-1}}$ so that the $A = \frac{O'(0)}{C'(0)}$ value, represents the coefficient of dynamic deviation towards the equilibrium price.

On the grounds of this economic interpretation of the value A, from the equality (2.5) we can reach to the following conclusions:

1). the dynamics coefficient is subzero (meaning A<1). In that case $\lim_t p_t = p^*$, so we are having an equilibrium situation (Fig. 2.1)

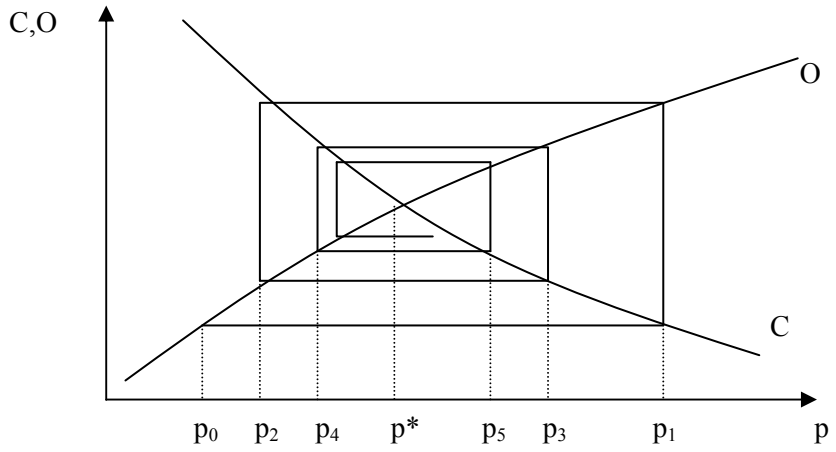

Fig. 2.1.

2) the dynamics coefficient is over zero (meaning A>0). In that situation the $p_{(t)_t}$ series is divergent so that we deal with a situation of hyperinflation and of lack of balance (Figure 2.2)

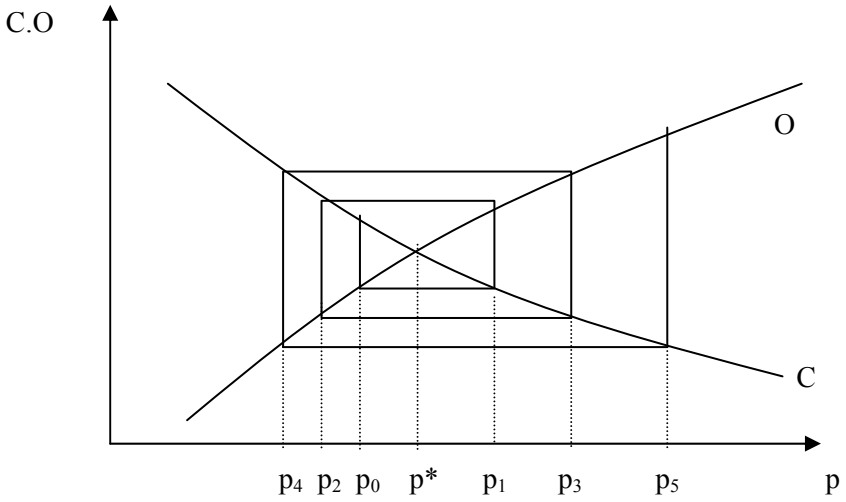

Fig. 2.2.

The dynamic coefficient is A = 1. In that case $\lim_t p_t = p_0$ and we practically have the situation of a two alternate value evolution for the same equilibrium, that's is p_0 and p_1 (fig. 2.3).

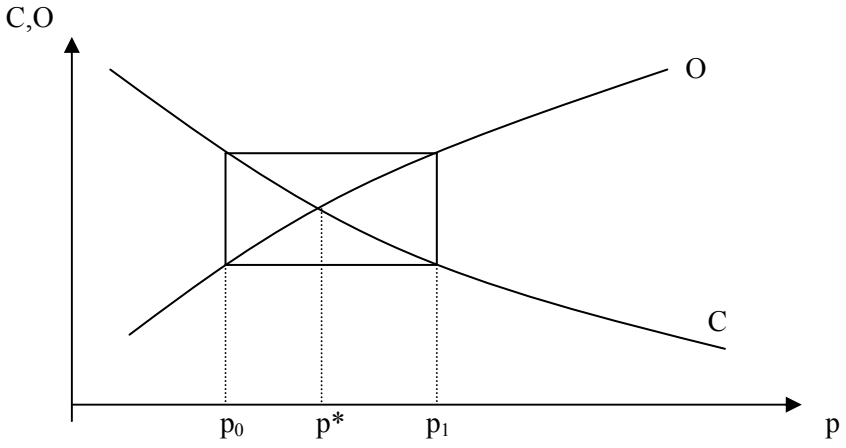

Fig. 2.3

Figures no 2.1, 2.2. and 2.3 actually illustrate the dynamics coefficient influence.

3. THE LAFFER MODEL

3.1. Theoretical considerations

If we are taking into consideration government taxes (considering the state intervention on market) this is a specific model.

Producers perceive the taxes as like supplementary costs and therefore a tendency of decreasing costs through high prices.

On the other side, increasing prices leads to a decrease in demand and consequently there is possible that the tax recovering does not fully occur. Thus a transfer on consumer's behalf.

Under these conditions, the equilibrium price p^* is normally calculated as a solution of the equation $O(p) = C(p)$.

For the situation of tax occurrence the selling price goes high and therefore a change of the equilibrium price appears. In other words the equilibrium price p_1^* respects the condition $p_1^* > p^*$ and thus $O(p_1^*) = C(p_1^*) < O(p^*) = C(p^*)$ (Fig. 3.1.)

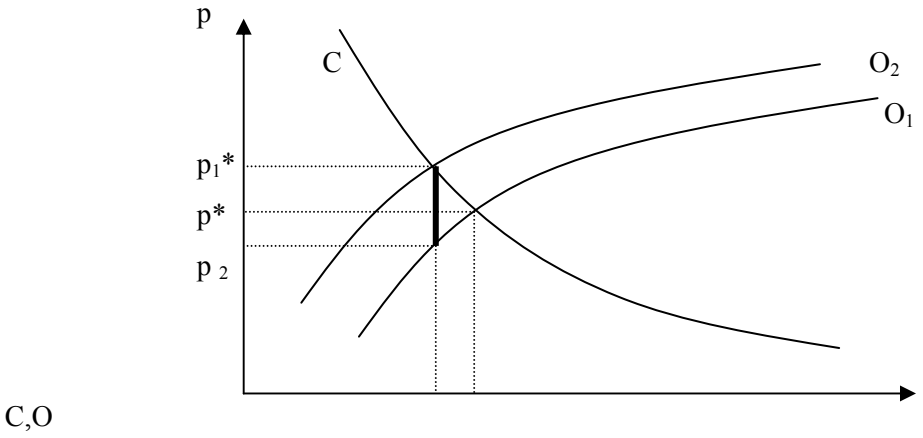

Fig. 3.1

In other words the following elements are to be analyzed:

- demand has decreased due to the higher price that buyer has to pay;
- supply doesn't increase due to the fact that the price difference does not correspond to the supplier but to the state budget.

If it weren't for taxes then the price corresponding to this supply would be p_2.

The difference $T = p_1^* - p_2$ actually stands for the tax corresponding to a physical measurement unit of supply.

It has to be underlined that, in the conditions of taxes we could talk about supplier prices:

1) the selling price p_c which the buyer has to pay;
2) the inventory price p_g that is the supplier price that stand for analyzing the efficiency of his activity.
   In other words p_g represents what's left of the selling price after tax payment.
   Evidently the following equality is possible:

$$p_c = p_g + T \tag{3.1.}$$

3.2. Solving the model, economic interpretations

The equilibrium mode, under tax conditions, is based on the supply – demand equality, demand being in correspondence with the p_c price, and supply being in correspondence with the p_g price:

$$C(p_c) = O(p_g) \tag{3.2}$$

meaning

$$C(p_c) = O(p_c - T) \tag{3.3}.$$

By developing in a Mc - Laurin series both the member of the equation no (3.3) and retaining from this developing only the first two members (actually by linearizing the first two member of (3.3) we obtain:

$$p_c^* = -\frac{C(0) - O(0)}{C'(0) - O'(0)} - T\frac{O'(0)}{C'(0) - O'(0)} \tag{3.4}$$

$$p_g^* = p_c^{\ *} = -\frac{C(0) - O(0)}{C'(0) - O'(0)} - T\frac{C(0)}{C'(0) - O'(0)} \tag{3.5}.$$

Because the equilibrium price p^* if there is a lack of taxes is given by the following equation:

$$p^* = -\frac{C(0) - O(0)}{C'(0) - O'(0)},$$

from (3.4) and from (3.5) immediately result the following inequalities:

$$p_c^* > p^*, \qquad p_g^* < p^* \tag{3.6}$$

Also:

$$C(p^*) = O(p^*) < C(p_c^{-*}) = O(p_g^*)$$

Observation 3.1.

For the situation in which supply and demand functions are linear functions, thus:

$$C(p) = - ap + b,\ O(p) = cp - d,\ a,c > 0,$$

after an immediate calculation the following equations will result:

$$p_c^* = \frac{b+d}{a+c} + \frac{c}{a+c}T > p^*$$

$$p_g^* = \frac{b+d}{a+c} - \frac{a}{a+c}T < p^*$$

$$C(p_c^*) = O(p_g^*) = \frac{bc-ad}{a+c} - \frac{ac}{a+c}T < C(p^*) = O(p^*) = \frac{bc-ad}{a+c}$$

We note with I_B the budget's tax collecting function and it analytically expresses as follows:

$$I_B(T) = TC(p_c^*) \tag{3.7}$$

Because

$$C(p_c^*) = C(0) + p_c^* C'(0) =$$

$$= C(0) - C'(0)\left(\frac{C(0)-O(0)}{C'(0)-O(0)} + T\frac{O'(0)}{C'(0)-O(0)}\right)$$

We can reach to the following equation

$$I_B(T) = T\left[C(0) - C'(0)\frac{C(0)-O(0)}{C'(0)-O'(0)}\right] - T^2\frac{C'(0)O'(0)}{C'(0)-O'(0)}$$

By noting:

$$A = C(0) - C'(0)\frac{C(0)-O(0)}{C'(0)-O'(0)}, \qquad B = -\frac{C'(0)O'(0)}{C'(0)-O'(0)}$$

Will result

$$I_B(T) = AT + BT^2 \tag{3.8}.$$

The T^* value which maximizes the budget's tax collecting is a solution of the following equation:

$$I_B^{'}(T) = 0 \tag{3.9}$$

And considering the (3.8) will result, $T^* = -\frac{A}{2B}$, where from, after an immediate calculation we obtain:

$$T^* = \frac{C'(0)O(0) - C(0)O'(0)}{2C'(0)O'(0)} \tag{3.10}$$

Observation 3.2.

For the situations $C(p) = -ap + b, O(p) = cp - d$, the equality no (3.10) will turn into

$$T^* = \frac{bc - ad}{2ac} \tag{3.11}$$

Finding the value T^* will allow to determinate the equilibrium amount of transactions under tax conditions:

$$C(p_c^*) = C(0) + p_c^* C'(0),$$

which, after making the calculations, will lead to

$$C(p_c^*) = \frac{1}{2}\left(\frac{C'(0)O(0) - C(0)O'}{C'(0) - O'(0)}\right)$$

Because

$$C(p^*) = \frac{C'(0)O(0) - C(0)O'(0)}{C'(0) - O'(0)} \tag{3.12}$$

As a result of (3.12) and (3.12) immediately results the following equality:

$$C(p_c^*) = \frac{1}{2}C(p^*) \tag{3.14}$$

It is evident that the maximum of tax collecting is as follows:

$$I_B(T^*) = AT^* + B(T^*)^2 \qquad (3.15)$$

Considering that $A = \frac{C'(0)O(0) - C(0)O'(0)}{C'(0) - O'(0)}$, $B = -\frac{C'(0)O'(0)}{C'(0) - O'(0)}$, after making the necessary calculations will result the following expression:

$$I_{BC}(T^*) = -\frac{A^2}{4B} = \frac{\left[C'(0)O(0) - C(0)O'(0)\right]}{4C'(0)\left[C'(0) - O'(0)\right]} \qquad (3.16)$$

It is obvious that for a particular situation for which C(p) = -ap + b, O(p) = cp – d, the equality (3.16) turns into:

$$I_B(T^*) = \frac{(ad - bc)^2}{4ac(a + c)} \qquad (3.17)$$

As a conclusion we can make the assertion that all coefficients, both those specific to the market and those belonging to the state budget, explicitly depend on supply and demand functions.

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SOME ASPECTS OF COSTING METHODOLOGY IN CONCEPT OF FEDERAL ACCOUNTING STANDARDS ADVISORY BOARD

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Abstract: Costs of resources consumed by responsibility segments should be accumulated by type of resource. Outputs produced by responsibility segments should be accumulated and, if practicable, measured in units. The full costs of resources that directly or indirectly contribute to the production of outputs should be assigned to outputs through costing methodologies or cost finding techniques that are most appropriate to the segment's operating environment and should be followed consistently. The cost assignments should be performed by the following methods listed in the order of preference: (a) directly tracing costs wherever feasible and economically practicable, (b) assigning costs on a cause-and-effect basis, or (c) allocating costs on a reasonable and consistent basis.

Key words: cost accumulation, cost assign, costs support, depreciation, rent, maintenance, record-keeping, cost-benefit

This paper addresses two aspects of costing: cost accumulation and cost assignment. Each of them is explained and discussed below.

Cost accumulation is the process of collecting cost data in an organized way. The standard requires that costs be accumulated by responsibility segments. The accumulation is for costs incurred within each responsibility segment, and does not involve the assignment or allocation of costs incurred by other supporting segments, which will be discussed in the latter part of this section.

"Responsibility segments," it was explained that: "A responsibility segment is a component of a reporting entity, that is responsible for carrying out a mission, conducting a major line of activity, or producing one or a group of related products or services." The accumulation of costs by responsibility segments does not mean that each responsibility segment must have its own accounting system. The reporting entity may have a centralized accounting system, but the system should be capable of identifying costs with responsibility segments.

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The accumulated costs can be classified by type of resource, such as costs of employees, materials, capital, utilities, rent, etc. When appropriate and cost effective, information on quantitative units related to various cost categories should be maintained. For example, staff-days may be reported for staff salaries and benefits, and gallons of gasoline consumed for gasoline costs. The quantitative units are useful for cost assignments, and are indispensable for measuring efficiency in using resources.

The term "cost assignment" refers to the process that identifies accumulated costs with reporting periods and cost objects. The assignment of costs to time periods is to recognize costs either as expenses or assets for each reporting period. It is governed by accounting standards on recognition of assets and expenses, and will not be addressed in this document. This section addresses cost assignment to cost objects. The word "assignment" used in this paper includes various methods of attributing costs, such as direct tracing, cause-and-effect basis, and cost allocations.

The term "cost object" refers to an activity or item whose cost is to be measured. In a broad sense, a cost object can be an organizational division, program, activity, task, product, service, or customer. However, the purpose of cost accounting by a responsibility segment is to measure the costs of its outputs. Thus, the final cost objects of a responsibility segment are its outputs: the services or products that the segment produces and delivers, the missions or tasks that the segment performs, or the customers or markets that the responsibility segment serves. There may be intermediate cost objects that are used in the course of the cost assignment process.

Some responsibility segments of an entity may provide supporting services or deliver intermediate products to other segments within the same entity. The costs of the supporting services and intermediate products should be assigned to the segments that receive the services and products. This is referred to as the intra-entity cost assignments. Also, in accordance with the inter-entity cost standard discussed in the preceding section, an entity should recognize inter-entity costs for goods and services received from other federal entities. The inter-entity costs should also be assigned to the responsibility segments that use the inter-entity services and products.

Thus, with respect to each responsibility segment, the costs that are to be assigned to outputs include: (a) direct and indirect costs incurred within the responsibility segment, (b) costs of other responsibility segments that are assigned to the segment, and (c) inter-entity costs recognized by the receiving entity and assigned to the segment. If a responsibility segment produces one kind of output only, costs of resources used to produce the output are assigned to the output.

This standard is intended to establish a principle, rather than a methodology, for cost assignment. Also cost assignments may be performed in cost findings and studies or may be performed within a system on a regular basis. In principle, costs should be assigned to outputs in one of the methods listed below in the order of preference:

- directly tracing costs wherever economically feasible;
- assigning costs on a cause-and-effect basis; and
- allocating costs on a reasonable and consistent basis.

These principles apply to all levels of cost assignments including: assigning inter-entity costs to segments, assigning the costs of support services and intermediate products among segments of an entity (the intra-entity cost assignments), and assigning direct and indirect costs to outputs.

Direct tracing applies to resources that are directly used in the production of an output. Examples of such resources include materials that are used in the production, employees who directly worked on the output, facilities and equipment used exclusively in the production of the output, and goods or services received from other entities that are directly used in the production of the output.

The method of direct cost tracing usually relies on the observation, counting, and/or recording of the consumption of resource units, such as staff hours or days that are spent on a project or assignment, or gallons of fuel consumed in a transport mission. Direct tracing also applies to specific resources that are dedicated to particular outputs.

Direct cost tracing often minimizes distortion and ensures accuracy in cost assignments. However, it can be a relatively costly process. It should be applied only to items that account for a substantial portion of the cost of an output and only when it is economically feasible. For example, it is usually unnecessary to trace the cost of office supplies (pens, papers, computer disks, etc.) to various activities or outputs. The cost of so doing usually outweighs the benefit of the increased accuracy in assigning the resources.

For the costs that are not directly traced to outputs, it is preferable that they be assigned to them on a cause-and-effect basis. As mentioned earlier, the ultimate cost objects of a responsibility segment are its outputs. For costs that are not traced to the ultimate objects (outputs), intermediate objects can be established as links between resource costs and outputs. The links reflect a cause-and-effect relationship between resource costs and outputs. Costs that have a similar cause-and-effect relationship to outputs can be grouped into cost pools. (This similar relationship is referred to in some literature as the "cost pool homogeneity concept.")

Activities or work elements that contribute to or support the production of outputs are commonly used as intermediate objects. This is based on the premise that on one hand, outputs require the performance of certain activities, and on the other hand the activities cause costs. Thus, an activity is considered a linkage between the cause and the effect. In its policy statement, the Cost Accounting Standards Board expressed a similar view: "The preferred presentation of the relationship between the pooled cost and the benefiting cost objectives is a measure of the activity (input) of the function or functions represented by the pool of cost. This relationship can be measured in circumstances where there is direct and definitive relationship between the function or functions and the benefiting cost objectives."

For example, a computer technology department provides technical support to other departments of an organization. The costs of the department may be assigned to other departments on a cause-and-effect basis through two steps. In the first step, the costs are assigned to the activities of the department, such as hardware installation and

maintenance, software design and installation, or programming adjustments. In the second step, the costs of these activities are further assigned to other departments based on their consumption of the technical services.

Sometimes, an intermediate product, rather than an activity, can be used as a link between the costs and outputs. For example, a hospital laboratory's costs can first be assigned to various medical tests it runs. The costs of the tests can then be assigned to the operating units of the hospital that ordered the tests.

Sometimes, it might not be economically feasible to directly trace or assign costs on a cause-and-effect basis. These may include general management and support costs, depreciation, rent, maintenance, security, and utilities associated with facilities that are commonly used by various segments.

These supporting costs can be allocated to segments and outputs on a prorated basis. The cost allocations may involve two steps. The first step allocates the costs of support services to segments, and the second step allocates those costs to the outputs of each segment. The cost allocations are usually based on a relevant common denominator such as the number of employees, square footage of office space, or the amount of direct costs incurred in segments.

For cost allocation purposes, indirect costs may be grouped into pools, and each pool is subject to one allocation base. Costs grouped into one pool should have similar characteristics. The allocation base should be used consistently to allow cost comparison from one period to another.

Cost allocation is a relatively simple method of assigning indirect costs to cost objects. Users of the cost information should be aware that distortions in product costing often result from arbitrary cost allocations. In most cases, there is little correlation between an indirect cost and the allocation base, and the allocation is arbitrary. To assist cost analyses and cost findings, cost accounting should segregate costs that are traced or assigned to outputs from costs that are allocated to outputs.

Facility and personnel resources may be shared by two or more activities either at the same time or in different times during a fiscal year. For example, a military aircraft maintained for war readiness may be used in peacetime to transport cargo. As another example, a plant may be used to process two or more products.

The cost assignment principles discussed in this section should apply to assigning costs to activities or outputs that share the use of resources. Costs that can be traced to each of the activities (or outputs) should be assigned to them directly. These include direct operating costs of each of the activities. For the military aircraft used in peacetime to transport cargo, for example, the costs of fuel and supplies, additional personnel who worked on the cargo, and other costs incidental to the transportation should be directly assigned to the transportation services.

To determine the full cost of each of the activities or outputs that share resources, indirect common costs should be assigned to those activities. The term "common costs" refers to the costs of maintaining and operating facilities and other resources that cannot be directly traced to any one of the activities or outputs that share

the resources. Common costs should be assigned to activities either on a cause-and-effect basis, if feasible, or through reasonable allocations.

Sometimes management may find it useful to designate primary and secondary activities that share resources. Primary activity is the primary purpose or mission for which the resources are made available. Secondary activities are those activities that are performed only if they will not interfere with the primary activity. Management can then determine two types of costs:

- the costs that are necessary for the primary activity and are unavoidable even without the secondary activities;
- the costs that are caused by the secondary activities and are incremental to the costs of the primary activity.

This type of cost information can be produced through cost findings, and may help management in making resource allocation and capacity utilization decisions.

Throughout the discussions of this paper, it is stated that a cost accumulation and assignment method would be used when it is economically feasible. A method is economically feasible if the benefits resulting from implementing the method outweigh its costs. It is not advantageous to use a costing method if it requires a large amount of resources and yet produces information of little value to users.

As a general rule, directly tracing costs and assigning costs on a cause-and-effect basis are more expensive than cost allocations, because they require detailed analyses and for costs and activities. However, they are preferable because they produce more reliable cost information than cost allocations.

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MODERN LABOR MARKET OF THE CIS COUNTRIES AND TENDENCIES OF ITS DEVELOPMENT

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Abstract: The labor market is the major component of the program of transition to market economy. That is why issues of development and implementing of the mechanism of effective formation of labor market have special value.

Key words: labor market, macro factors, latent labor market, open labor market

The labor market is the major component of the program of transition to market economy. That is why issues of development and implementing of the mechanism of effective formation of labor market have special value. According to V.V.Tomilova and L.N.Semerkova's definition [3], the labor market represents system of social and economic relations between free owners of a labor who need to be hired and owners of capital who form demand on labor, concerning distribution, redistribution, hiring of labor and it`s inclusion in the production process. Thus, the labor market covers mainly system of relations in distribution and exchange process in reproduction of labor.

The labor market under transition has specific features. It has been formed under unprecedented conditions- after the long historical period when a market mechanism of economy regulation was substitute by command economy where factors of production (capital and labor) were not goods. The practice of employment is adequate to above mentioned system can not be cancelled at once and adapted to requirements of a market mechanism of regulation production proportions. There is no way to substitute this system with one of the attractive western models, which are logical consequence of long evolution of system of a market economy.

There are number of macro factors which influence the formation of a labor market in the CIS countries[2,3]:

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- forming of market system through processes of privatization, development of new forms and spheres of private business;
- expansion of structural reorganization (conversion of a military production, change in structure of an economy in connection with integration of Russia into the international market, changes of technologies);
- current economic policy oriented to liberalization of economy, financial stabilization, overcoming of budget deficit, stabilization of the exchange rate of national currency, etc. Development of these processes is accompanied by crisis of a financial system, a rigid credit policy, inflation, decreasing in living standards and production.

In addition to analyzed macro factors which form new conditions of social and economic development of the CIS countries, there is another group of factors which influence labor reproduction and labor market. They are[1-3]:

- the socio-economic factors which create bases of level of income and quality of life of the population, degree of it's social security under market transition, formation of educational potential;
- social - demographic factors: the level of urbanization, sex and age structure of the population, the modes of its reproduction which define the correlation between supply and demand of a labor market;
- technical and economic, the organizational - economic forces which characterize degree of development of flexible forms of the organization of production manufacture, employment, a labor market;
- organizational - political: for example, the federal structure of Russia which forms specific relations in reproduction of a labor (its preparation, distribution, redistribution) and employment between administrative-territorial units;
- cultural, national - ethnic, which cause distinctions in a level of mobility of the population and acceptable forms of employment.

Such a specific set of interrelated factors and the conditions forms a labor market in the CIS countries at the present stage, defines the distinctive features and tendencies of labor market development.

At the same time, each of the post Soviet republics has specific features of development which to some extend impose and on labor market. Lets analyze the peculiarities of modern labor market [3]:

1. The modern labor market in the CIS countries is heterogeneous. It represents the multilayered structure, formed by two interconnected spheres, which have different functions, in the ways and forms of accumulation of labor reserves, the organization and regulation, means of influence on a production efficiency and situation of workers. According to those features the labor market CIS can be subdivided into "open" and "latent".

The open labor market itself has two parts: officially organized and informal.

The open labor market covers all able-bodied population actually looking for work and requiring for vocational guidance, preparation and retraining, all vacancies and posts, and also jobs reserved for students in state and private sectors.

The official part of the open market includes a labor and the vacancies registered in federal service of employment, and student's places in system of vocational training. The informal part of the open market accumulates that part of demand for work, educational places, which are not provided by services of employment agencies and system of vocational educational. In this case jobs are found through direct contacts with employers and also through services of a various kinds of intermediaries, which are carrying out the selection of suitable work, training, development of new skills and preparation for new required jobs.

The latent labor market is formed by the employees who have their jobs, but with high probability will lose their jobs in the nearest perspective on provisions or the contract.

2. The labor market is influenced by the territorial factor. Ukraine, Russia and other CIS countries in many initial parameters of market economy essentially differs from industrially advanced western countries which experience in the field of regulation of processes of employment and a labor market is accepted as a basis for economic policy, a labor market model and principles of reorganization of employment system. Russia has huge territory which is very different in terms of natural conditions and considerably less developed compare to advanced countries. It has out of dated systems of transportation, communication and information which does not meet the requirements of a civilized market economy, laws of business and requires radical change on a new technical basis and large-scale of financial investments.

3. The market price of labor does not correspond to its cost. The labor market is formed under conditions when the major elements of its self-adjustment - the price of a labor, a level of consumption per capita - are not harmonized with cost of a labor, that initially distorts such important components of a labor market as demand and supply. Activization of an economic reform in NIS countries, accompanying with change of level and mechanism of financing of labor reproduction. Transition to market system of prices, growth of inflation, etc. have led to further separation of the price of a labor and separation from its cost. It is necessary to emphasize especially, that decrease of a standard of life has increased the need for jobs. As a result "pressure" of labor potential on a labor market last years tended to grow.

4. Practically there is no institute of social partnership. The labor market in the countries CIS still functions in conditions of independence from institute of social partnership, which only arises and covers not all levels. It extremely complicates the development of a policy of solidarity and the consent in such issues as pricing, wages, incomes, tax system from point of view of different players at labor market. It also essentially reduces a role of this tool of regulation in formation of a market mechanism of distribution and the redistribution of a labor.

5. The labor market is poor organized. There is no adequate infrastructure of labor market, which should:

- prepare employer and employee for an establishment of contact, to provide support in their interaction with the purpose of the maximum possible reduction of gap between a supply and demand of labor;

- carry out preventive work against "overheating" of a free labor market;
- coordinate activity of government bodies, systems of employment, education and social security, non-governmental organizations and associations of employers.

There is no well organized information on labor demand, which is necessary for the organization of employment within the framework of an official labor market.

6. There are number of negative tendencies in formation of labor resources. There are such tendencies as essential reduction of a natural increase of the population caused by decrease of birth rate and growth of death rate; unfavorable dynamics sex and age structures of the population; increase in demographic and economic loading at an able-bodied part of the population; irrational flows of migration an d placement of the population on territory of Russia; a low level of social development and a standard of living standard. Nevertheless we can observe noticeable improvement in qualitative characteristics of labor during last years; the share of advanced steps of educational has grown.

The transformation of economic system and such a modern processes in sphere of employment (growth of unemployment, dismissing, increase of mobility, disappearance of old professions and creation of new once, powerful multidimensional segmentation of a labor market, increase of scales of the latent and potential labor) require new approaches and mechanism on solving problems of employment.

The development of market relations in sphere of employment faces with distorted perceptions of market economy, out-of-date motivational stereotypes in sphere of work and crisis of economy. Nevertheless the reform of system of employment in Russia, Ukraine, Byelorussia is taken place: the Russian labor market model is formed, based on historic-social conditions of development of the country and its regions, and also all attributes of mixed economy (which also is in a stage of forming). Significant feature of the Russian labor market is its regional dominant because of formation of a market mechanism of functioning of economy, including a labor market, was decentralized and took place at the regional level. The major role is played by regional employment agencies. There is a process of territorial segmentation of a labor market with specific characteristics. Decentralization of a labor market strengthens value of regional sphere of employment as basic component of reproduction of the regional economic complex perceiving on of function of regulation. Accordingly to those changes the system of regulation of a labor market is formed and should strengthening first of all at a regional level.

Realization of the synthesized market model requires among priorities the creation of its infrastructure adequate to developed market relations. The infrastructure may be defined as a set of establishments and institutes of assistance of employment (including the governmental and private structures, non governmental organizations and human resource departments of enterprises) which exist in unity with the normative-legal environment of their activity which are called to provide as result the most effective way of efficiency interrelation of supply and demand of labor, realization of the right on work and social security. Creation of an infrastructure of a

labor market - a necessary condition of formation of new culture of the labor relations adequate to market system of an economy.

Characteristic in situation in labor market in Russia requires the analysis of such a separate components like supply and demand. As for demand at labor market(it is true for supply as well) ,it is necessary to note one feature: the labor demand passes from a condition of "stability", which was typical for Soviet economy in 80s, passes to the stage of "uncertainty", which means, to be more exact a relative reduction. It's shown by data about numbers of existing vacancies the biggest part of which (about 90 % of vacancies) connected directly to physical work.

Naturally, the development of new market structures brings a relative increase in demand for employees in such spheres as crediting, insurance, tax inspections, notarial and legal services. It is necessary to emphasize, that new employees for those segments are found mostly without involvement of employment agencies, that's why it's difficult to estimate exact number of vacancies. Another tendency is the decrease in number of employees in field of research"; there is obvious decrease in demand for "female employees". Unemployment rate in this category reaches 70 %. As for labor supply we can observe the growth, confirmed by data on unemployment in employment agencies. There is a precise tendency in growth of number of the registered unemployed that shows increase in supply on this market. People wish to work and offer the work to a society.

So the described situation of the Russian labor market shows that this market is at the initial stage of forming and cannot be determined as flexible, and furthermore civilized and regulated market. There is no yet well-developed infrastructure of this market; as for employment agencies they are mostly busy with collecting data on existing vacancies (though in a number of cities, in particular in Saint Petersburg, in a number of cities of Ukraine are carried out so-called "fairs" of workplaces for youth).

This experience should be generalized) registration of unemployed, delivery of allowances etc., registration of the free population, delivery of unemployment benefits, etc. It is important to note, that the information received by employment agencies is not always complete because it comes mostly from the side of state-owned enterprises. Private companies as rule solve the issues of hiring employees (especially those who are involved in highly intellectual work), by their own means. Development of a situation on a labor market shows, that the centers of employment and employment agencies should deal not only with above mentioned problems but also in the development of strategy and tactics in the field of employment, forecasting of employment in different professional fields, regulation of processes of preparation and retraining of employees, etc.

Formation of the organized labor market should be bases on four degrees of freedom which are reflected in the following principles of effective existence and functioning of a labor market [3]:

- firstly, conditions for a voluntary choice between employment and unemployment in a social production, a free choice of a profession, a type of activity (except those that can damage health and safety of other citizens) with consideration of both

- individual interests, and public needs. In other words - *freedom of the offer of a labor*;
- secondly, freedom of hiring and dismissal by all employers (on behalf of the state-owned enterprises and establishments, private companies, etc.) with obligatory following of norms of the labor legislation, protection of interests of citizens and the plan of guarantees of employment, working conditions, payments. In other words - *freedom of a labor demand;*
- thirdly, *free movement of wages* and other legal types of income at observance of the guaranteed minimum established by the law. Regulation of income should take place only through the tax system based on the progressive scale;
- fourthly, *free migration of a labor* within and outside the country which requires canceling of so called registration.

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REGIONAL DEVELOPMENT OF WEST REGION

GABRIEL POPEANGĂ, GABRIELA SLUSARIUC*

Abstract: The long crisis situation passed by Romania, and implicitly by the West Region, asks for immediate economic reestablishment and social protection measures, linked to the environment maintenance and ecological ones. In this way, the general objective of the economic development strategy was defined as: "The increase of the quality of life through the socio-economic development of the region and the improvement of the environment".

Key words: Regional Development, West Region, touristic potential, development strategy, economic crisis, foreign investments.

After 1989 events, in Romania, the transition to the market economy has started, way which is not at all easy to be realized, and is sprinkled by a lot of obstacles of economic, social and not last political nature.

Starting with 1991, when the General agreement between the European Commission and Romania was signed, our country showed openly and firmly its option to adhere to the structures of the European Union. In order to achieve this desideratum, the implementation of a reform at the global level which proved to be a high economic and social costs generating set was needed.

During the actual period, Romania is passing a prolonged economic crisis, due to the weak economic performances of the states owned sector, which is still of a majority, the lack of a favorable environment for the development of the private sector and a geo-political situation in the Eastern Europe.

According to the provisions of the Law no. 151/1998, there have been established eight Development Regions, through voluntary association of neighbouting judets. In each of these region, there have been set up a Regional Development Board, as a deliberative body, and a Regional Development Agency, as executive body.

This region is:

1. North-East Development Region
2. South-East Development Region

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3. South Development Region
4. South-West Development Region
5. West Development Region
6. North-West Development Region
7. Centre Development Region
8. Bucharest-Ilfov Development Region

At central level there have been created a National Regional Development Board , as deliberative body, and a National Agency for Regional Development, with executive task. This institutional frameworks in line with the objectives of the Government Programmed for Economic and social development and with EU rules and regulations regarding Structural Funds and social and economic cohesion policy.

The West Region, as a part of Romania, is facing a series of problems, from which the following can be mentioned: the high rate of unemployment in the mining and mono industrial areas, the restructuring of the heavy and extractive industry, the old public utilities, the underdevelopment of the rural space, the lack of performance in the agriculture, the emigration of the high qualified population, etc.

But compared to the other regions of the country, the West Region has a series of advantaged and opportunities, such as: the varied industry, the qualified work force, the touristy and agricultural high potential, the expanded transport and telecommunication networks, the penetration of the foreign investments, the existence of a traditional high education. This fact has allowed the elaboration of a development strategy having as purpose the utilization of the strengths of the region in order to use all the identified opportunities.

The west Region has as components the Arad, Caras-Severin, Hunedoara and Timis Counties, representing in total 32.034 square km, which means 13,44% from the total area of Romania Country.

Table no.1

No. crt.	Indicators	M.U.	Year	West Region	Romania
1	Population	Thou.pers.	1999	2,051.6	22,488.6
2	Total area	kmp	1999	32,034	238,391
3	Population density	Inhab./kmp	1999	64	94.3
4	Rural density	%	1999	37.7	45.1
5	GDPper capita	$/inhab	1997	4,556	3,964
6	Employment structure	%	1997	100	100
	-agriculture	%	1997	32.1	37.5
	-industry	%	1997	31.3	32.0
	-services	%	1997	36.6	30.5
7	Unemployment rate	%	1999	12.1	11.3
8	Foreign investment	$/inhab	1997	147.6	111.4

The total population is 2,05 millions persons, representing 9,26% from the total population of Romania. The population employed at the regional level represents 881,4 thousands persons, which means 43% of the total population of the region.

Table no.2

The average number of employees for the region

- Thousand persons -

	Arad	Caras Severin	Hunedoara	Timis	Total
Total employees	151	92	174	190	607
Out of which workers	97	62	132	126	417

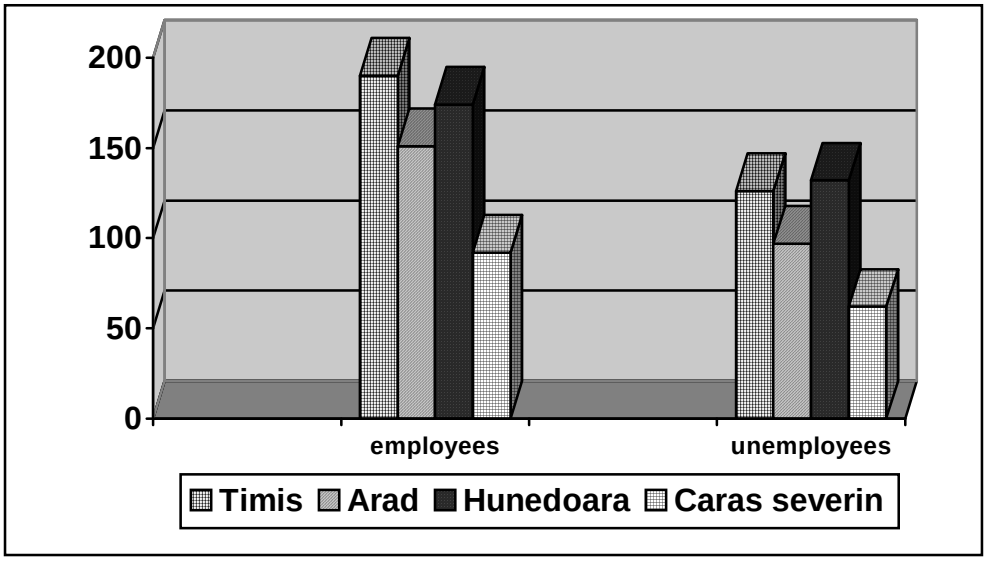
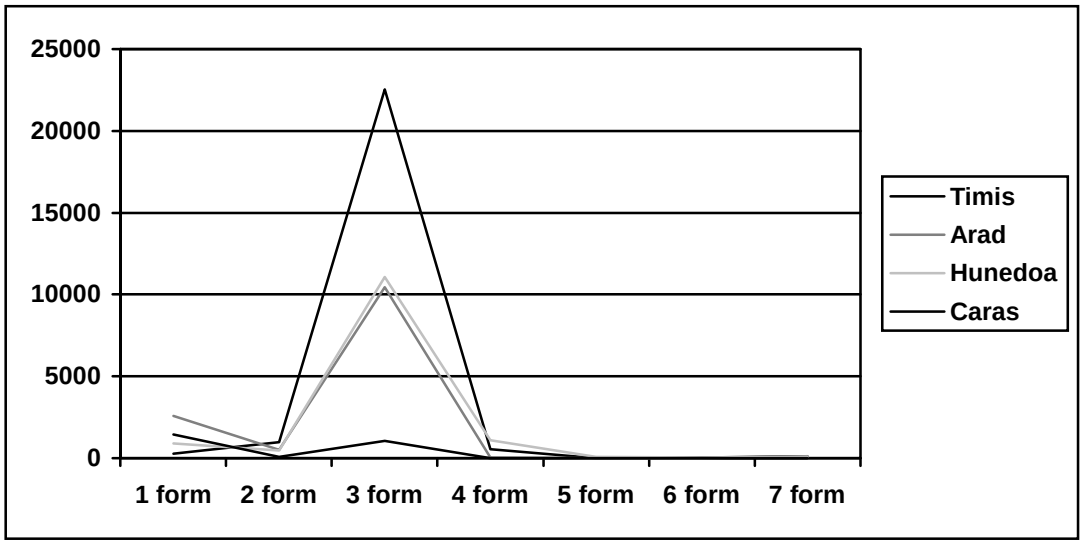


Table no.3

Registered Companies in the Region in 2000 year

County	Timis	Arad	Hunedoara	Caras -Severin
Total	24503	13727	13701	2614
1.Individual	281	2585	882	1439
2.Joint stock	991	525	461	90
3.Limited liabilities	22521	10458	11059	1044
4.Company on collective name	546	36	1104	1
5.Simple limited partnership	15	4	93	-
6.Autonomous administration	27	18	27	1
7.Cooperatives	122	129	76	9



The telecommunications services ere very well distributed on the region territory. But there are also, especially in Hunedoara and Caras-Severin counties some special areas, where the telephone network is not able to serve the whole area..

Table no.4

Telephony Activities in 1997

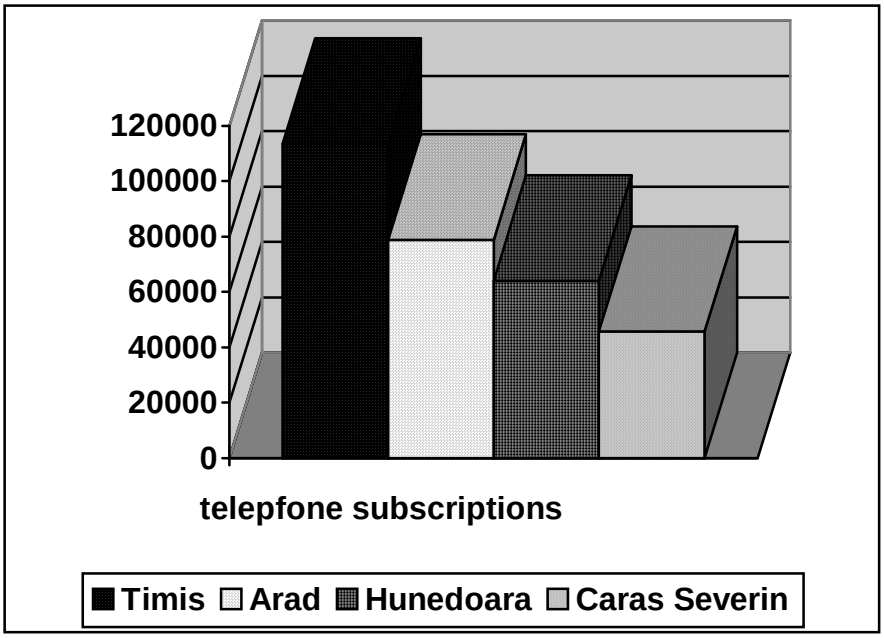
	TIMIS		ARAD		HUNEDOARA		CARAS SEVERIN		TOTAL
	No.	%	No.	%	No.	%	No.	%	
Telephone subscriptions	113520	37,57	78861	26,10	64100	21,21	45664	15,11	302145

The long crisis situation passed by Romania, and implicitly by the West Region, asks for immediate economic reestablishment and social protection measures, linked to the environment maintenance and ecological ones. In this way, the general objective of the economic development strategy was defined as: ”The increase of the quality of life through the socio-economic development of the region and the improvement of the environment”.

In order to attain this general objective, the following strategic objectives were established, as priorities of the regional development strategy:

- The development of the private sector (production, trade and services activities);
- The use of the touristic potential of region;
- The creation of a favorable environment for the rural space development;
- The increase of the efficiency of the utilization of human resources;

- The improvement of the infrastructure to support the economic and social development.



The private sector has to become the engine of the economic development of the region, and from the reason, a special attention has to be paid to it within the economic development strategy. Also, the private sector is wished to become an alternative to create jobs. In this way, the restructuring of the heavy and extractive Industries will not represent any more a threat from the point of view of the unemployment. Within this strategic objective, a special attention has to be paid to the small and medium sized companies and private investment attraction in the region.

As it was concluded from the regional profile and the swot analysis, the region has a high and varied touristic potential. The pre-requisites of the economic activity development are existing. Within the established strategy, a series of practical measures to use this potential in order to modernize the needed infrastructure, the improvement of the quality of the offered services and the development and promotion of all types of tourism are established. For the future it is desired that the tourism to increase its contribution to the BIP of the Region

The rural area of the region is mostly less developed and it has to face different economic and social problems. The development strategy of the region recommend the implementation of the investments in order to increase the quality of the life in the rural environment the development of the economic activities based on the local traditions, as an alternative for the agricultural activities. In parallel, the improvement

of the economic value of the agricultural potential of the region is followed, in order to use at a superior level the agricultural potential of the region.

The human resources are one of the strengths of the Region. Having an University traditional Center in Timisoara and other universities in all Counties , a secondary education well developed, the Region benefits by a qualified and high qualified human potential, able to adjust itself in a very short period of time, to the new requirement of the market. So, the development strategy recommends measures to use better the work force by creating new jobs and the intensification of the training activities, re-qualification and reorientation of the work force.

Last but not least, a special attention has to be paid to the actions for the environment quality improvement. It is intended to diminish the pollution of the affected areas, to prevent and stop the environment degradation, to educate the population on the environment protection.

By harmonizing and the implementation of the actions established by the five strategically objectives, a favorable environment for the economic development on a competitive market will be realized, the social prices of the reform will become lower, and the life level and quality will increase.

FINANCING WORKING CAPITAL

VASILE POPEANGĂ, MIRELA POPESCU*

Abstract: The paper presents some particularities regarding the following aspects: what is working capital; shows alternative net working capital financing strategies, ranging from the most to least risky; also some sources of short-term finance.

Key words: working capital – net current assets, cash operating cycle, risk, working capital investment.

Invested capital includes fixed and current assets. It is the latter less suppliers and other short-term credit, which is referred to as net current assets or working capital.

The terms fixed and current assets are used to differentiate between those resources that will not completely revert to cash within a year and those that will. The planning and control of current assets warrant the same skill and care as on fixed assets, the objectives of current asset management being:

- to minimize the time between the initial input of materials and other resources into the operating process and the eventual payment by customers for goods or services supplied; this is known as the cash operating cycle, and success in this aim will reduce investment in stocks, debtors and liquid assets to a minimum;
- to finance those assets as efficiently as possible, with the overall objective of optimizing the return on total capital employed.

Most firms with bank current accounts maintain cash balances sufficient to meet their daily needs and for emergencies. Any money held in access of these needs is wasted as it could be better invested elsewhere to earn higher interest. Anyone who finances needs by running an ever – increasing overdraft which is not backed by easily realizable assets runs the risk of bankruptcy. Somewhere between these extremes, a balance between risk and return must be struck.

Investment plans of a business need finance to cover:

- a permanent and growing layer of fixed and net current assets;

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- fluctuating current asset requirements arising mainly from seasonal and customer demand factors.

The business must decide upon an acceptable ratio of debt to equity capital (or gearing); the debt proportion being financed by a judicious mixture of long-, medium-,and short-term instruments with the object of minimizing the cost of capital, at an acceptable level of risk.

The alternative net working capital financing strategies are presented, ranging from the most (4) to the least (1) risky. It is assumed:

- that fixed assets are largely financed by long- or medium-term capital;
- that the servicing of borrowed capital in the form of interest and capital repayments is met out of current net earnings, or alternatively, in the case of capital repayment, out of a renegotiated loan;
- higher cost of long- against short-term capital;
- risk of being shut in by a high interest rate, if interest rates fall;
- the need to pay interest in the troughs between fluctuations when the capital is not required – lessened to some extent by short-term investment interest on the surplus.

The four alternative net working capital financing strategies are:

Strategy 1 – uses long-term finance only, fully covering the risk of running out of cash due to fluctuating cash flows. The safety built into the permanence of this arrangement, however has its cost.

Strategy 2 – leaves some fluctuating needs to be covered by short-term finance. It is more risky, therefore, than 1 strategy, because liquidity problems could arise if repayment of short-term capital was due at a time when alternative financing might be difficult to arrange. In addition, short-term interest rates are more volatile than long-term, which makes cash flows less certain.

Strategy 3 – covers all cyclical fluctuations by cheaper short-term borrowing, at the same time providing flexibility to repay the finance when it is not required. This is a lower cost arrangement than either 1 strategy or 2 strategy, but with a higher level of the risks specified in 2 strategy.

Strategy 4 – permits short-term financing of a layer of permanent net current assets. This is an extremely risky policy, especially if the assets financed are not easily realizable. This policy presents the greatest risk of insolvency.

The main sources of short-term finance include: trade credit, bank overdrafts, bank loans, bill of exchange, factoring debts and invoice discounting, taxation and dividends unpaid.

Trade credit. Most suppliers would cease trading credit if they did not grant customers time to pay. Trade credit are a spontaneous and constant source of finance, therefore, upon which all business, but especially small ones, depends for many short-term needs.

Bank overdrafts. This is a much-used facility for businesses to draw cheques up to an agreed credit limit and is largely arranged to cover seasonal cash shortages, and as bridging finance for purchase of property and machinery. Subject to the credit

standing of customers, overdrafts are generally renewable and are used as permanent finance by some businesses.

The advantages of an overdraft are:

- it is the cheapest from of short-term finance;
- it is easily and quickly negotiated and easily renewed;
- it offers the flexibility of sums being repayable or drawn without notice.

When considering an application for an overdraft, a bank will require information on current and past trading and financial performance of the applicant together with cash and sales forecasts. The current and acid test ratios will be of particular interest to the bank.

Bank loans. Short-term loans negotiated with banks and other financial institutions differ from overdrafts as they are arranged for a specific amount, for a specific period and are subject to specific repayment terms. The only flexibility may be in the interest rate, which may be fixed or variable. Security is normally required for a loan and assessment of the applicant's credit status is more exacting than for an overdraft.

Bill financing. This is similar to a postdated cheques in that person signing (accepting) it agrees to pay it later. When used in connection with purchase and sale of goods they are known as trade bill and provide a facility for a vendor to receive immediate payment for goods sold and for the purchaser time to sell the goods before the acceptance is due for payment.

A bank bill is used to provide short- term finance for any purpose. It is drawn by a person requiring the finance, accepted by a bank or an acceptance house (which charges an acceptance fee) and discounted by the drawer at a bank or discount house. The main advantages of bill finance are that it is as cheap as, if not cheaper than overdrafts and extends the volume of short-term finance available.

Factoring involves the sale of book debts to a factoring company on a continuing basis, the factor administering the sales ledger of the client and providing credit control and an optional insurance against non-payment of debts. The cost of factoring includes: a factoring fee based upon the work involved in servicing the client's sales ledger; a financing charge; collection charges such as legal fees incurred in collecting older debts.

It is thus more expensive than bank borrowing, but provides additional management services that more than compensate for the difference in cost, especially in the case of growing small and medium size companies who lack credit control expertise. The mechanics of factoring are that the client sends his invoice to the factor at, say, weekly interval, from which the factoring fee is deducted and the balance placed to the client's account. The factor sends the invoice to the client's customer, requiring payment to be made to the factor.

The main advantages of factoring are:

- capital is released immediately from accounts receivable, thus providing additional finance for business expansion and lessening the risk of overtrading;

- cash flows are more predictable and credit insurance lowers the cost of bad debts;
- savings in accounts receivable, administration and credit control;
- the provision of an expert, specialized credit control service;
- better terms can be negotiated with suppliers and cash discounts on supplies taken advantage of.

Invoice discounting is a means of raising cash by selling book debts to an invoice discounting company. The client company continues to administer its own sales ledger in the normal way but, in addition, sends the discounting company copies of the invoices agreed under the arrangement. The costs of invoice discounting include a financing charge and a service charge of each invoiced amount.

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THE BUDGET OF THE EUROPEAN UNION

VASILE POPEANGĂ, MIRELA POPESCU*

Abstract: The budget of European Union is the act which each year authorizes the funding of all Community activities and operations. It allocates resources in a manner which reflects current priorities and policies. The paper presents mainly the following aspects: how is the European Union budget draw up, what is the budget used for and how is the budget spent and monitored.

Key words: annual budget, resources, priorities, policies, structural funds, European Union, Community programmes.

The budget of European Union is the act which each year authorizes the funding of all Community activities and operations. It allocates resources in a manner which reflects current priorities and policies.

Since 1988, the European Union annual budget has been draw up in conformity with a medium-term financial framework (financial perspective) laying down annual expenditure limits. In 1999 taking into account the future priorities of the European Union was adopted a financial perspective covering a period of seven years up to 2006.

This financial framework was adopted jointly by the European Parliament and the Council of the European Union and facilitates the annual adoption of the budget by fixing budgetary guidelines for several years.

The procedure for drawing up the budget are stipulated in the Treaty establishing the European Commission. The European Commission prepares a preliminary draft budget on the basis of the Union' s estimated needs and political priorities for the coming year. This is presented to the Council, which amends and then adopts it and it becomes a "draft budget". It is then forwarded to the European Parliament which amends itself the draft budget.

After two readings by each institution, the European Parliament adopts the final budget and its President signs it.

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In practice the procedure is expanded upon in various interinstitutional arrangements between Parliament, the Council and the Commission. These are designated to improve cooperation concerning the annual budget between the institutions.

The European Union is financed mainly by resources made available to it by the Member States, to which it is legally entitled and which are known as its "own resources". The level of own resources is fixed in a Council decision adopted unanimously and ratified by the national parliaments. Over the period 2000 – 2006, own resources may not exceed 1,27% of the European Union's gross national product. Total budget revenue is determined each year as a function of the total expenditure decided by the budgetary authority, in strict conformity with the principle of balance.

The most representative types of own resources are: agricultural levies on imports of agricultural products from non-member countries; customs duties resulting from application of the Common Customs Tariff to trade with non-members countries; "VAT resource"-comprises a contribution from the member states corresponding to the hypothetical product of VAT; resources based on each Member State' s Gross National Product. There are other categories of revenue less important (tax paid by European civil servants, etc).

The European Union' s budget is divided among six major categories: agriculture (almost 44% of the general budget), cohesion policy and the Structural Funds (more than 35% from the budget), internal policies (research, education, transport, etc – 6.5% from the budget), external action (5% of the general budget) , preparations for enlargement, and administration.

The common agricultural policy is historically the most resource-consuming of Community policies. European Union provides a large proportion of the funding for European agriculture.

The proportion of the budget allocated to agriculture is justified by the objectives of the common agricultural policy, which are to increase agriculture' s competitiveness, guarantee the agricultural population a fair standard of living, stabilize the markets, provide security of supply and ensure reasonable prices for consumers.

The economic and social cohesion of the European Union has become a major objective in the building of Europe. The aim is to reduce inequalities in wealth distribution across the regions, improve the employment situation, foster the harmonious development of the various regions of Europe and protect and improve the environment, so that all European citizens can benefit from the large Community market and economic and monetary union.

The main objectives of the economic and social cohesion policy are:

- to promote the development of the poorest regions and support the modernization of their economic structures (these are the regions whose gross domestic product is less than 75% of the Community average and the regions with an extremely low population density);

- to support the economic and social conversion of areas in difficulty (industrial regions undergoing substantial and problematical socioeconomic changes, declining rural areas, urban areas in crisis and regions affected by the restructuring of the industry);

- to support the adaptation and modernisation of education, training and employment policies and systems. The aim is to help the unemployed, young people, the excluded and, more generally, all European Union workers and citizens to find employment, adapt to ongoing economic change, and obtain lifelong access to education and vocational training.

Other internal Community policies provide support for completion of the internal market. Research and technological development is one of the keys to Europe's future. It has adopted a multiannual framework research programme which priority support projects which bring together research centers, companies and universities from different Member States. The Union' s framework programme embraces specific programmes relating mainly to information and communication technologies, biotechnology, energy, the environment and health.

After research, the second largest amount of funding is allocated to the trans-European transport, energy and telecommunications networks and the main objective is to encourage the establishing of a coherent global network; these can make a greater contribution to the competitiveness of the economy, improvement of the employment situation and Europe's economic and social cohesion.

Other examples of the internal policies include: various measures in the fields of education, vocational training and youth, in particular to promote student mobility; the environment; audiovisual media and culture.

European Union external policy refers at action by the Community institutions for the non-member countries of the world: provision of the humanitarian and food aid, to promote Middle East peace process; to assist developing countries in Latin America and Asia (this aid covers a wide range of fields, including health and education); to support democracy and human rights; to protect tropical forests and the environment: for cooperation with industrialized non-member countries and on activities in association with international organizations.

One of the major issues in the building of Europe is the enlargement of the Union. In agriculture, the main aims of the Sapard programme are to modernize holdings in the central and east European countries, to improve product quality and safety, to promote respect for the environment and to diversify economic activities in rural areas. Through the ISPA structural instrument, the Union is helping those countries to establish transport and environmental structures that are compatible with those of Europe. The Phare programme is funding the modernization and adaptation to Community standards of economies and administrations.

The Parliament and Council decide the budget and the European Commission implements their decisions. In practice, the Commission needs support from the Member States for the management of the policies.

In the case of the Structural Funds, the European institutions decide on the amounts to be paid out and the conditions to be imposed. The Member State authorities select the projects to be financed and are responsible for management. The European Commission in partnership with the Member States ensures that projects are properly completed and funding spent as planned.

The European Commission is responsible for the direct implementation, through its own departments, of part of the Community budget, mainly in the fields of internal policies (research, education, training) and external actions.

These direct management tasks are a recent development, which constitutes a challenge to the Union's administration. Staff and administrative resources regularly have to be increased and management methods modernized constantly. Staff and administrative resources are being used increasingly to design and manage budgetary measures. The institutions also use external staff for specific management tasks, which can last from a few months to several years and mainly cover external action.

Implementation of the Community budget, regardless of how it is done, must comply with one essential concern: the constant search for efficiency. The European institutions are not content merely to grant support to certain types of project. They must also ensure that the money has been spent properly and the objectives achieved.

Assessment of the Community programmes is based on two principles:

- before proposing expenditure a careful check is carried out to determine whether the proposal is realistic and whether the activities and resources envisaged will allow the objectives to be achieved;
- once the programme has been completed, the results must be analysed in order to ensure that the objectives has been achieved at minimum cost.

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PLANNING THE AUDIT WITH COMPUTER RELATED CONTROLS

MIRELA POPESCU, MONEA ALIN*

Abstract: Planning is key to a quality audit, with the computer-related portion a significant part of the overall process. To be effective, the internal auditor and financial auditor should work together and coordinate information during this effort. Planning allows the auditor and senior members of the audit team to determine effective and efficient methods for obtaining evidential matter needed to assess an entity's computer-related controls. The nature, extent, and timing of planning vary according to the entity's size and complexity and the auditor's knowledge of the entity's operations.

Key words: planning, audit, software, audit risk, databases, internal auditors

Although concentrated at the beginning of an audit, planning is an iterative process performed throughout the audit. This is because the results of preliminary assessments provide the basis for determining the extent and type of subsequent testing. If auditors obtain evidence that specific control procedures are ineffective, they may find it necessary to reevaluate their earlier conclusions and other planning decisions made based on those conclusions.

During the planning phase, the auditor gains an understanding of the entity's operations and identifies the computer-related operations that are significant to the audit, assesses inherent risk and control risk, makes a preliminary assessment on whether general controls are likely to be effective, and identifies the general controls that will be tested.

The evaluation of computer-related controls should be planned in conjunction with other aspects of the audit. The auditor should first develop and document a high-level understanding of the entity or program operations being reviewed and how the entity/program is supported by automated systems. This should include obtaining an overview of each computer application significant to the financial statements. Documentation of this understanding generally should include:

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- the significance and nature of the programs and functions supported by automated systems;
- the types of computer processing performed (stand alone, distributed, or networked);
- the specific hardware and software comprising the computer configuration, including : the type, number, and location of primary central processing units and peripherals, the role of microcomputers, and how such units are interconnected;
- the nature of software utilities used at computer processing locations that provide the ability to add, alter, or delete information stored in data files, databases, and program libraries;
- the nature of software used to restrict access to programs and data at computer processing locations;
- significant computerized communications networks, interfaces to other computer systems, and the ability to upload and/or download information;
- significant changes since any prior audits/reviews;
- the general types and extent of significant purchased software used;
- the general types and extent of significant software developed in-house;
- show (interactive or noninteractive) and where data are entered and reported;
- the approximate number of transactions processed by each significant system;
- the organization and staffing at the entity's data processing and software development sites, including recent key staff and organizational changes;
- the entity's reliance on service bureaus or other agencies for computer processing support; and results of past internal and external reviews, including those conducted by inspector general staff and consultants specializing in security matters.

After gaining an understanding of the entity's operations, the auditor assesses the inherent and control risks that are considered when determining audit risk, which is the risk that the auditor may unknowingly fail to appropriately modify an opinion on financial statements that are materially misstated. Audit risk, as it relates to information systems, can be thought of in terms of the following three component risks:

- Inherent risk is the susceptibility of information resources or resources controlled by the information system to material theft, destruction, disclosure, unauthorized modification, or other impairment, assuming that there are no related internal controls.

- Control risk is the risk that a material misstatement in the entity's data will not be prevented or detected and corrected on a timely basis by the entity's internal control structure.

- Detection risk is the risk that the auditor will not detect a material misstatement in the financial statements.

On the basis of the level of audit risk and an assessment of the entity's inherent and control risks, the auditor determines the nature, timing, and extent of substantive

audit procedures necessary to achieve the resultant detection risk. For example, in response to a high level of inherent and control risks, the auditor should perform additional audit procedures or more extensive substantive tests.

The auditor should first identify conditions that significantly increase inherent and control risks and then conclude whether they preclude the effectiveness of specific control techniques in significant applications. The auditor identifies specific inherent risks and control structure weaknesses based on information obtained in the planning phase, primarily from understanding the entity's operations. These factors are general in nature and require the auditor's judgment in determining: the extent of procedures to identify the risks and weaknesses and the impact of such risks and weaknesses on the entity's operations and reports. Because this risk assessment requires the exercise of significant audit judgment, it should be performed by experienced audit team personnel.

For each inherent risk or control structure weakness identified, the auditor should document the nature and extent of the risk or weakness; the condition(s) that gave rise to that risk or weakness; and the specific information or operations affected (if not pervasive). The auditor should also document other considerations that may mitigate the effects of identified risks and weaknesses.

The primary inherent risk factors that the auditor should consider are the nature of the entity's programs and accounts and any prior history of significant problems. For example, accounts involving subjective management judgments, such as loss allowances, are usually of higher risk than those involving objective determinations.

Computerized operations can introduce additional inherent risk factors not present in a manual system. The auditor should first consider each of the following factors and then assess the overall impact of computer processing on inherent risk. The impact of these factors typically will be pervasive in nature.

Uniform processing of transactions: Because computers process groups of identical transactions consistently, any misstatements arising from erroneous computer programming will occur consistently in similar transactions. However, the possibility of random processing errors is reduced substantially in computer-based accounting systems.

Automatic processing: The computer system may automatically initiate transactions or perform processing functions. Evidence of these processing steps (and any related controls) may or may not be visible.

Increased potential for undetected misstatements: Computers use and store information in electronic form and require less human involvement in processing than manual systems. This increases the potential for individuals to gain unauthorized access to sensitive information and to alter data without visible evidence. Due to the electronic form, changes to computer programs and data are not readily detectible. Also, users may be less likely to challenge the reliability of computer output than manual reports.

Existence, completeness, and volume of the audit trail: The audit trail is the evidence that demonstrates how a specific transaction was initiated, processed, and

summarized. For example, the audit trail for a purchase could include a purchase order, a receiving report; an invoice; an entry in an invoice register (purchases summarized by day, month, and/or account); and general ledger postings from the invoice register. Some computer systems are designed to maintain the audit trail for only a short period, only in an electronic format, or only in summary form. Also, the information generated may be too voluminous to analyze effectively. For example, one transaction may result from the automatic summarization of information from hundreds of locations. Without the use of audit or retrieval software, tracing transactions through the processing may be extremely difficult.

Nature of the hardware and software used: The nature of the hardware and software can affect inherent risk, as illustrated below.

• The type of computer processing (on-line, batch oriented, or distributed) presents different levels of inherent risk. For example, the inherent risk of unauthorized transactions and data entry errors may be greater for on-line processing than for batch-oriented processing.

• Peripheral access devices or system interfaces can increase inherent risk. For example, dial-up access to a system increases the system's accessibility to additional persons and therefore increases the risk of unauthorized access to computer resources.

• Distributed networks enable multiple computer processing units to communicate with each other, increasing the risk of unauthorized access to computer resources and possible data alteration. On the other hand, distributed networks may decrease the risk of data inconsistencies at multiple processing units through the sharing of a common database.

• Applications software developed in-house may have higher inherent risk than vendor-supplied software that has been thoroughly tested and is in general commercial use. On the other hand, vendor-supplied software new to commercial use may not have been thoroughly tested or undergone client processing to a degree that would encounter existing flaws.

Unusual or nonroutine transactions: As with manual systems, unusual or nonroutine transactions increase inherent risk. Programs developed to process such transactions may not be subject to the same procedures as programs developed to process routine transactions. For example, the entity may use a utility program to extract specified information in support of a nonroutine management decision.

In August 1992, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) identified the following five interrelated components of internal control. These were adopted under Statement on Auditing Standards (SAS) No. 78.

1) The *control environment sets* the tone of an organization, influencing the control consciousness of its people. It is the foundation for all other components of internal control, providing discipline and structure. Control environment factors include the integrity, ethical values, and competence of the entity's people; management's philosophy and operating style; and the way management assigns authority and organizes and develops its people.

2) Risk assessment is the identification and analysis of relevant risks to the achievement of the entity's objectives, forming a basis for determining how the risks should be managed.

3) Control activities are the policies and procedures that help ensure that management directives are carried out. They include a range of activities including approvals, verifications, reconciliations, reviews of operating performance, and segregation of duties.

4) *Information and communication* involves identifying, capturing, and communicating pertinent information to individuals in a form and time frame that enables them to carry out their responsibilities. This includes the information systems, methods, and records established to record, process, summarize, and report entity transactions.

5) Monitoring refers to the ongoing activities that assess internal control performance over time and ensure that identified deficiencies are reported to senior management.

For financial statement audits, these elements will be assessed as they affect the effectiveness of an entity's overall internal control, including computer-related controls. When assessing the control environment, the auditor should also consider factors that are unique to computer-related operations. For example, the auditor should consider management's attitudes and awareness with respect to computerized operations. Management's interest in and awareness of computer functions and controls is important in establishing an organizationwide control consciousness. Management may demonstrate such interest and awareness by:

- considering the risks and benefits of computer applications;
- communicating policies regarding computer functions and responsibilities;
- overseeing policies and procedures for developing, modifying, maintaining, and using computers and for controlling access to programs and files;
- considering the inherent and control risks related to computers and electronic data;
- responding to previous recommendations or concerns;
- quickly and effectively planning for, and responding to, computerized processing crises; and
- depending on but checking computer-generated information for key operating decisions.

As part of assessing control risk, the auditor should make a preliminary assessment on whether computer-related controls are likely to be effective. This assessment is based primarily on discussions with personnel throughout the entity, including program managers, system administrators, information resource managers, and systems security managers; on observations of computer-related operations; and on cursory reviews of written policies and procedures.

During this phase, the auditor generally limits his or her understanding of controls to general controls at the overall entity level. However, obtaining this understanding usually requires visits to selected installations and discussions regarding major applications.

Based on the assessments of inherent and control risks, including the preliminary evaluation of computer-based controls, the auditor should identify the general control techniques that appear most likely to be effective and that therefore should be tested to determine if they are in fact operating effectively. By relying on these preliminary assessments to plan audit tests, the auditor can avoid expending resources on testing controls that clearly are not effective.

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CONSIDERATIONS ON THE FINANCIAL PLANNING

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Abstract: The paper examine how business finance needs may be assessed, then matched with sources of finance and how a decision on the optimum mix of own and borrowed funds might be made. Are presented the main influences on the types and sources of finance chosen.

Key words: financing, sources of finance, own funds, borrowed funds, loan finance, financial institutions, long-term finance, medium-term finance.

1. THE NEED FOR FINANCE

The main influences on the types and sources of finance are:
- the types of organisation requiring the finance;
- the purpose for which the finance is required;
- for how long the finance is required;
- how much finance is required.

Business organisations are various in their sizes and in their activities, but there is some relationship between size and the type of activity carried on. The type of business provides opportunities for growth and for that purpose all the organisations are able to access a wide range of sources of finance.

The need for finance in business arises mainly because cash receipts lag behind cash payments.

For example, an organisation of electronics business have needed finance when it first started its activity, mainly for fixed assets (including premises, plant, machinery, tools and presses, vehicle, patent fees) and for working capital (to pay wages, purchase materials for stock and production, rent of premises if not owned, production and marketing expenses and services). An additional cash buffer might also be required to cover any temporary shortage of funds.

After their initial acquisition these assets have to be continually replaced out of earnings to maintain operations at the same level. They therefore represent a permanent

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financial requirement. After the successful establishment of a business, expansion should follow, either by way of expanding sales of existing products, by venturing into new ones or both. More fixed and working capital will be needed, and inevitably the growth point will be reached when the amount required exceeds the existing resources.

In summary, a business has to finance:

- a layer of permanent fixed and working assets;
- fluctuating temporary cash requirements.

Permanent assets should be provided out of long-term or medium-term sources of finance to ensure continuing use of these assets. Fluctuating requirements can be met out of short-term sources to reduce the costs of borrowing and provide flexibility in financing arrangements.

The financial manager must ensure that finance is available when required. This involves short and long-term cash forecasting, completed by reference to the overall investment, production and marketing plans of the business.

At the business start-up stage, a careful assessment is made of the initial cost of fixed assets and stocks and the further amount to cover operating costs before receipts from the first sales start to follow in. A short-term forecast would help to assess the initial requirement for finance.

Long-term cash forecast are normally prepared as part of the long-term corporate planning process. Scheduled investment in growth, whether by expanding production and marketing facilities or by acquiring other business, has to be synchronised with the availability of finance. The forecast will not contain all the detail of receipts and payments included in the short-term forecast, and will probably be prepared in yearly periods rather than in months. The sources and application of funds statement produced annually by many companies is perhaps the best format to use, but prepared as a planning statement rather than an historic report. It will specify:

- the funds expected to be generated internally from profitable operations;
- funds to be derived from other sources;
- the planned deployment of funds;
- the resultant net increase or decrease in liquidity during the period covered.

2. TYPES AND SOURCES OF FINANCE

Increasing demand for finance has caused the evolution of an efficient capital market in which different types of finance are available from many sources.

Business are basically financed from two sources: *use of owner's fund*s – such funds are normally permanently invested in the business, only to be repaid if business operations case; *use of other people's funds* – to be repaid as agreed, unless they are government grants.

Own funds are gleaned from:

- the past and continuing savings of the original proprietor;
- profits earned in the business and retained for reinvestment;

- the savings of people who become part-owners of the business, through partnership or shareholdings;
- making more efficient use of the capital already invested in the business.

Other people's funds come from:
- loan providers;
- suppliers' credit;
- instalment credit, hire purchase and leasing arrangements;
- grants and allowances from central and local government.

Short-term Borrowing (up to three years)

Bank loans – are usually for fixed amounts, for specified periods, at fixed rates of interest, although interest governed by changing market rates can be negotiated. Banks normally insist that repayment is secured by the pledging of particular assets – called a fixed charge.

Bank overdrafts – are easily arranged and more flexible than loans because, whilst a top limit of borrowing is specified, the amount of finance required at any particular time may vary, together with interest rates charged, and therefore the average cost of borrowing ought to be lower.

Factoring and invoice discounting – usually involve the selling of debts to a finance house, which advances about 80% of the debts sold. Capital is thus released to be used on other projects. Factoring also includes a sales ledger management service for customers, with or without the advance of finance. The interest rate charged is above the bank's lending rate and if sales ledger management is included, there is an additional charge for that.

Bills of exchange – are equivalent to postdated cheques. A buyer of goods accepts an undertaking to pay the bill in, say, three months time by signing (accepting) it. The supplier is then able to obtain immediate payment by discounting (selling) the bill to a bank and therefore got early access to much-needed finance. The discount taken by the bank recompenses them for having to wait for payment from the buyer.

Medium-term Borrowing (from four to ten years)

Term loans – are principally made by banks to growing companies. They normally cover projects or assets with lives matching those of the loans. Interest may be at a fixed or a variable rate and repayment of the capital can be delayed in the earlier years of the loan if desired. The banks normally insist that term loans be secured on tangible assets, but unsecured loans may be negotiated at higher interest rates.

Long-term Borrowing (over ten years)

Term loans – similar to medium-term loans, but for longer periods and at higher interest rates. Usually secured on fixed assets.

Mortgage loans – are normally made by insurance companies and pension funds for periods of more than twenty years at fixed rates of interest. They are mainly secured by deposit of the title deeds of the property mortgaged. The main recipients are large companies to finance long-term assets, but smaller companies are increasingly being accommodated by mortgage loans from other institutions.

Debentures and loan stocks – are transferable securities, normally secured on specific assets or by a "floating charge" on all the assets of the business giving the holder priority in repayment of the debt over the claims of other creditors. The interest rate is fixed and the securities are repayable on or between certain dates. Unsecured debentures may also be issued, but at higher interest rates.

Convertible loan stock – has the added feature of giving the holders the option to convert their loan securities into shares on or between specified dates at predetermined prices.

Sale and leaseback – is a method of realising 100% of the value of property by selling it mainly to insurance companies and pension funds, but retaining use of it by leasing it back for a long period.

Trade Credit on Goods and Services

Trade credit is a universal means of financing, especially important to smaller companies which lack access to many sources. Taking extended credit without agreement of the supplier is often resorted to these days, but might result in loss of the suppliers' goodwill. Where cash discount is offered for prompt payment, delaying payment may secure more finance, but can be very expensive in loss of discounts. Some suppliers will allow arrangements for customers to pay them by instalments.

Hire Purchase and Leasing

Hire purchase is a method of financing now much used by businesses. The agreement prescribes a deposit payment, the repayment being by instalments over a period of usually less than five years, and a final payment whereupon the goods become the possession of the hirer. Tax advantages include capital cost allowance to be set off against profit and interest charged can be debited against profit of the hirer.

Leasing is similar to hire purchase, save that the lessee never owns the asset. The lease ensures continuous use of the asset. Tax capital allowances are passed back to the lessee in lower interest charges and the lease payments are wholly chargeable as an expense against the profit of the lessee. Leasing is often referred to as "off-balance-sheet" financing, because neither the asset nor the lease liability appear on the lessee's balance sheet, although this only applies to operating leases.

3. MAIN SUPPLIERS OF FINANCE

The main suppliers of finance are: commercial banks, discount houses, factoring and invoice discounting companies, leasing companies, insurance companies and pension funds, investment trust companies, other financial institutions.

The savings of individuals and businesses supply finance to meet the demands of other individuals, businesses and government who currently have insufficient money for their requirements. These savings are channelled through various institutions.

The commercial banks – these are the suppliers of finance known to most people. Traditionally taking short-term deposits from their customers and lending by way of short-term loans and overdrafts. About an either of their total funds is kept in

cash or relatively liquid form to meet the demands of depositors, leaving a substantial balance to invest in loans.

Discount houses – their traditional function is to provide short-term finance by discounting bills of exchange, but they have extended their investing activity to include government Treasury Bills, local authority bonds and certificates of deposit. The latter are negotiable certificates issued by a bank to large depositors of money for fixed periods at fixed rates of interest.

Factoring and invoice discounting companies – many are subsidiaries of the commercial banks. They provide short-term finance by purchasing business debts. Factoring companies also offer debtors' ledger management services for an additional charge.

Leasing companies – they specialise in lease finance.

Insurance companies and pension funds – both types of institution invest in long-term assets because their liabilities to policy holders and pensioners respectively are essentially long-term too. As there is a continuous stream of premium and pension contribution cash, immediate liabilities for insurance claims or pensions are met out current income, the surplus being available for longer-term investment. Both have to plan investments whit an eye of stability of income and capital, so loans, mortgages, property, sale and lease back, government and local authority stocks are preferred. In recent years, inflation forced them to invest in the shares of limited companies to maintain the capital value of their funds.

Investment trust companies – these are limited companies specialising in the shares and loan stocks of other companies. Their obtain capital by issuing their shares, which are treated on the Stock Exchange, and by borrowing.

4. THE FINANCING DECISION

Businesses requiring finance should ensure first that they are making the most efficient use of resources. Capital overinvested in land or machinery or stocks and debtors should be released for more profitable investments. The most available source of finance is of course profit, which provides the largest part of business capital. But, the advantages of borrowing should be explored.

Apart from fluctuating profit, the main risks attending borrowing are:

- the obligation to repay or renew the loan – the long-term risk;
- the commitment to pay interest on the loan – the short-term risk.

Firms will consequently take on an amount of borrowing that will not evidence too high a reliance on repayable funds and whose interest charges can be adequately covered by expected future cash flows.

The financing decision is greatly influenced at least four other factors. These are: cost, flexibility, accessibility and control.

No universal model may be applied to all financing problems. Businesses differ in size and activity and a particular choice of finance at one time may not be appropriate at another.

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REFLECTING THE CREDITS GRANTED TO THE NONFINANCIAL CLIENTELE IN BANK ACCOUNTING

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Abstract: The accounts plan of the banking companies contains the accounts for reflecting the credits assigned to the nonfinancial clientele divided on types of credits according as their destination and their purpose. The synthetic accounts of first grade are non-operationally and they are developed into operational synthetic accounts of second and third grade in order to be reflected each type of credit and of their interests. There are also foreseen some accounts of incomes from the interests and some accounts of expenses or of incomes for reflecting the provisions of the credit risk or of the interest risk.

Key words: credits, non-fiscal clientele, bounty indicators, provisions, interest, debts.

Credits are the bank's claims over the clientele; these claims are the result of satisfying the need of individuals or enterprises for financing.

The word **credit** has its origin in the latin word "credere" which means giving credit to someone. The credit activity implies believing that in the future all the terms of the credit contract will be respected as they have been settled by mutual agreement.

The borrower trusts that the amount of money obtained will be used so efficiently as to provide the possibility of reimbursing the sum and also paying the interest; and the lender trusts that he will recover the amount of money granted in the time limit established and also gain a profit.

In the modern economies, the credit occupies a very important part: facilitating the exchanges, stimulating the production, supporting the economic development and influencing the monetary creation.

Crediting is the fundamental activity in a bank which may provide considerable profit if practiced properly, otherwise it can bring great loss. The beneficiary of the credits can be any customer of the bank, private or legal person, as well as other banking institutions.

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In the economy's crediting process, the banks must select the types of business and promote the efficient ones, insisting on encouraging the customers interested in credits thus helping to develop a profitable business.

Therefore the banks must evaluate: the risks of granting a business credit, the motivation for the credit and the refund possibilities resulted from the progress of the financed business.

Analysis of the credit refund possibilities contains two aspects:

- analysis of the firm's history which points out the strenghts and weaknesses in its financial evolution, and also the efficient use of the resources in comparison with other firms having the same opportunities and risks;
- analysis of the firm's future which includes the financing period, emphasizing the actual possibilities of reimbursing the credit, payment of the corresponding interests and commissions.

The banks indicate a significant dependence upon the bounty indicator and the solicitant's warranties in the decision of granting the credit, though the management quality, the firm's efficiency and the security of the business must be considered the decisive elements for the decision of granting the credit.

As part of the balance sheet analysis, according to the rules established by the Ministry of Finance, the banks must estimate the following indicators:

- immediate liquidity;
- patrimonial solvency;
- profitability;
- degree of indebtedness;
- degree of expenses coverage.

Each calculated indicator is assigned a certain score depending on its registered value, and their sum will determine a final score based on which the credits will be classified in:

- standard credits 41-50 points
- credits under observation 26-40 points
- substandard credits 11-25 points
- doubtful credits 1-10 points
- loss 0 points

This manner of interpreting the indicators is used to classify the credits; and for the credits included in the portofolio the classification criteria takes into consideration the financial performances as well as debt service, meaning the ability of the debtor to respect the time limit for the payment delay estimated in days.

This method brings up some deficiencies, like the following:

- it doesn't consider the market value of firm's assets and liabilities, their book value usually differing from the market value;
- it allows separate interpretation of the indicators depending on the score, without taking into consideration their interrelations and mutual influences, but also the influence of other factors over these elements.

The decision of granting or not the credit is based on the bounty indicators which can often lead to the situation when a well managed firm is given a low score, and thus it will not be financed. So evaluating the performances of a firm based only on the balance sheet is not always completely edifying.

Thus it's important that the analysis of the productive performances are made in comparison with other firms of similar activities, and the efficiency with which they use the available resources. Identifying the competitive firms is quite difficult and needs many calculations and data interpretation which the Romanian banks don't usually dispose of.

The banking societies have the obligation to take measures for controlling the credit risk, at the same time protecting the banking assets and the safety of the bank's financial condition.

To this purpose, the Romanian National Bank has issued specific mandatory provisions for credit institutions that can be applied to Banking Societies and Savings and Loan Associations. These are: the Romanian National Bank regulations no. 5/ 2002 with regard to classification of credits and placements, as well as the constitution, regularization and utilization of the special provisions regarding the credit risk; and Methodological Standards no.12/2002 for applying the law, and then modified and completed through regulations no.7/3.12.2002.

These normative deeds establish the classification of the credits, while the credit activity is in effect, using simultaneously two criteria: the debt service and initiation of the judicial procedure. The constitution of specific provisions for credit risk is referring to their formation, which can be done by adding to the expenses the sum that reflects the need of specific provisions for the credit risk.

The following coefficients will be used:

Classification category	Coefficient
Standard	0
Under observation	0,05
Substandard	0,2
Doubtful	0,5
Loss	1

To regularize the provisions means to modify their existent level in order to establish the equality between what already exists and what is needed; this will be done by adding them to the expenses, or by reassuming as income the sum representing the difference between the existing level and the necessary level in the balance.

Using the special provisions for credit risk refers to their annulment, in case they are formed by reassuming as income the sum representing the existent level of the provisions for credits, which will be taken off the balance sheet.

The banks will form or regularize monthly the specific provisions for credit risk corresponding to the credits and placements from the balance pointed out at the end of the month, which will be done by adding them to the expenses, or by reassuming them as monthly income, and then mentioned in the rapport regardless of the financial result obtained the bank.

The accounting for the credits granted to the nonfinancial clientele, depending on the purpose, destination of the credits and the granting period, will be carried out with the help of the accounts from group 20 called "Credits granted to the clientele".

These first degree synthetic accounts are not operational and they are detailed in second or third degree synthetic accounts with the purpose of reflecting the credits considering the destination or the purpose they were granted for: treasury credits, export credits, equipment credits, loan on real property, other credits granted to the clientele.

Also for each type of credit there is an attached claims account for reflecting the corresponding interests rates.

Economic operations and their reflection in accounting

First example:

The operational unit of a bank grants a credit for stock financing to a customer – company, for a one year term in the amount of 300.000.000 lei with an interest rate of 30%, planned to be reimbursed in equal monthly instalments.

- granting the credit:

20216 "Credits for stock financing" = 2511 " Current accounts" 300.000.000 lei

- registering the calculated interests but not yet due for the first month:

2027 "Attached claims" = 70213 "Interests from treasury credits" 7.500.000 lei

- cashing by the bank from the client's account the monthly payment and the interest for the first month:

2511 "Current accounts" = %
20216 "Credits for stock financing" 2.000.000 lei
2027 "Attached claims" 7.500.000 lei

Second example:

Granting a credit by a bank's operational unit for building a residence with the purpose of being rented, in the amount of 360.000.000 lei with an interest rate of 35%; reimbursing will be done by equal monthly instalments. The reimbursement has been carried out in due date for the first three months, and for the fourth month because of the 25 days delay of payment and also the financial performances, the client has been classified as "under observation", thus leaving the category "bad debts".

- granting the credit:

2051 "Credits- investors" = 2511 "Current accounts" 360.000.000 lei

- registering the interests calculated but not yet due for the second month:

2057 “Attached claims” = 70216 “Interests for the loans on real property” 9.625.000 lei

- cashing the monthly payment and the interest for the second month:

2511 “Current accounts” = %
2057 “Attached claims” 9.625.000 lei
2051 “Credits- investors” 30.000.000 lei

- assuming as debt the unrefunded credit for the fourth month:

2811 “Overdue claims” = 2051 “Credits- investors” 270.000.000 lei

- the constitution of the specific provisions for credit risk:

6621 “Expenses regarding the special provisions for credit risk” = 2911 “Special provisions for credit risk” 13.500.000 lei

- the annulment of the specific provisions for credit risk after the reimbursement of the overdue credit:

2911 “Special provisions for credit risk” = 7611 “Income regarding the special provisions for credit risk” 13.500.000 lei

Third example:

The branch of a bank grants a loan for equipment acquisitionin the amount of 900.000.000 lei with an annual interest rate of 30%, and reimbursement will be done equal monthly instalments. Reimbursement has been carried out accordingly in the first year. Because of the 70 days payment delay and the present financial performances, the credit has been classified as “doubtful”. After a delay of 90 days, legal proceedings were initiated, credit already being in the “loss” category.

- granting the credit:

2041 “Credits for equipment” = 2511 “Current accounts” 900.000.000 lei

- registering the interests calculated but not yet due for the first month:

2047 “Attached claims” = 70215 “Interests regrading credits for equipment” 22.500.000 lei

- cashing the monthly payment and the interest for the first month:

2511 “Current accounts” = %
2041 “Credits for equipment” 25.000.000 lei
2047 “Attached claims” 22.000 lei

- assuming as debt the unrefunded credit and the corresponding interest:

2811 “Overdue claims” = 2041 “Credits for equipment” 600.000.000 lei
2812 “Overdue interests” = 2047 “ Attached claims”

- the constitution of the specific provisions for credit risk:

6621 "Expenses regarding the special provisions for credit risk" = 2911 "Special provisions for credit risk" 300.000.000 lei

- subscribing the credit as "doubtful" together with the corresponding interest, for which the legal proceedings have already begun:

2821 "Doubtful claims" = 2811 "Overdue claims" 6.000.000 lei
2811 "Doubtful interests" = 2812 "Overdue interests" 24.931.500 lei

- the constitution of the specific provisions for credit risk of 100%, due to the classification of the credit in the category "loss", and also specific provisions for credit risk regarding the interest:

6621 "Expenses regarding the specific provisions for credit risk" = 2911 "Specific provisions for credit risk" 2.300.000 lei
6622 "Expenses regarding the specific provisions for credit risk for the interest" = 2912 "Specific provisions for credit risk" 50.000.000 lei

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ON THE VALUATION OF COAL PROPERTY

AURELIAN SIMIONESCU, FLORIAN BUŞE, PETRU HODOR, SORIN MANGU *

Abstract: In the feasibility studies, which were made in Romania for all mine properties at mining field level, when investment statement year by year was made, we had to approach the problem of assessing certain values Duchene refers to as "Depenses anterieurs capitalises" and Raymond refers to "Approximate value of mineral property". The application of the assessment principle for the mining patrimony as a whole, or for part of it, and of the patrimonial model as it was recommended by Raffegeau has proved unacceptable. The most important part of mining patrimonies which represent sunk costs, in case of cessation of mining activity, possibly has only a potential utility value by flux as a whole, and function of the remaining ore reserves. In the paper we demonstrate that such a value can be established by treating the problem of continuing (possibly with rehabilitation) the mining activity or closing the mine as a "replacement problem", and applying to this effect, in an adapted form, the theory of assets replacement.

Keywords: going mine/crisis situation/replacement

1. Introduction

The authors of this paper have been directly involved in the action undertaken since 1990 on the Romanian government's initiative to assess the state of the country's mining industry with a view to radically restructuring it. For almost a quarter century the applied strategy was meant to supply the Romanian economy with mineral raw materials, to the highest possible level, by exploiting the country's mineral resources, regardless of costs. As a result, in 1990, the existence of five industrial centres was warranted only by their mining, power generating and metallurgical activities. The huge capital investments for open-pits, mines, electrical power plants, railway transport systems, metallurgical works and, last but not least, for mining towns, together with the technological flowsheets formed on the basis of the above mentioned strategy delineate the picture, which governmental teams were to diagnose in order to draw up a new

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strategy. Thus, we had to consider ourselves the task of valuating mining properties and of feasibility studies of mining projects.

2. Premises of approaching the problem

The valuation of a mining property is a complex problem even we take only into consideration the combination of premises, concerning several important questions which can be posed: valuation, namely for what? for whom ? when ? and where ?

Therefore, in order to facilitate the understanding of certain ideas we advance in the paper, we specifically consider the following situation:

- the valuation is done to answer the question: will the going mine continue its operation or will it be closed ?
- the valuation is done from the standpoint of the National Government, representative of public ownership over land, reserves and capital and responsible for the decision whether to continue with the activity or close a mine and also responsible for control over unemployment;
- the valuation is being done in a period when Romania undergoes a severe crisis;
- the valuation is done for collieries located in a geographical area where the livelihood of over 150,000 inhabitants depends a hundred percentage on coal mining.

We also specify, that we take into account the case of a mine in operation, considering two situations: "the normal valuation situation" and "the special valuation situation".

The normal valuation situation, assumes that the mining property which is appraised is able to reward all the production factors, that is to finally ensure a return at the imposed level to the unrecouped investment plus the capital that will be invested, therefore it presents attractiveness for the private capital.

In the normal situation, the concept of present value of a mining property is applicable, that is: the present value of a mining property is a sum of money, in the currency on the nation day, that future earnings from the property are worth [4]. This sum differs from the total anticipated earnings by the amount of interest that the unrecouped investments could be expected to earn during the period of recoupment.

The special valuation situation assumes the mining property is unable to provide capital reward at the required level, therefore it is not attractive for the private investor. This means that a going mine is appraised in the hypothesis of approaching it as a "public project" supported by direct payment for capital requirement from the national budget and/or by subsidizing for operating the mine. In the special situation, the government is faced with a "replacement problem" [1].

The decision takes into consideration two alternatives either to finance rehabilitation and/or to subsidize the operation at a going mine, or to decide mine closure and fund utilization for supporting "a replacement venture project".

In order to point out the differences between valuation in the normal situation and in the special situation, we are going to give the synthesis of establishing the present value in the normal situation for a going mine, so that, in relation to it, we should comment on the features of the special situation.

When we considered mining property valuation in Romania in the transition period to be a special problem, we set forth from some ideas of the famous British economist J.M.Keynes, who thought out his great economic work in the period of 1929-1933.

Declaring himself in favour of state intervention in economy in order to mitigate the main shortcomings of the economy the society, represented by its incapacity to ensure the full employment of labour and the equitable allotment of wealth and incomes, the British economist helps us to direct our attention to the same criteria and solutions in a crisis period, no less severe for Central and Eastern European countries: the employment of labour, and the limited state intervention in economy. We need not resort to the erratic solution suggested by Keynes, namely, to bury the banknotes in the abandoned collieries and to fill them up with the town waste, leaving it to private initiative to dig out the banknotes so as to do away with unemployment. We can adopt a more reasonable line and go on winning the coal left and not readily abandon these mines to bury banknotes in them afterwards.

These ideas were a challenge for us to attempt to find out to what limits the State should intervene for continuing mining projects financing and for subsidizing the operation of going mines. We were certain that such economic limits exist and we should approach the problem of establishing them.

3. Normal situation - The case of a going mine

For a normal situation in the conditions of a free market economy, the value of a going mine is presented briefly as follows.

Assume that X Coal Mine was appraised several years after it started operation and during that time 14 additional years of coal reserves had been found. The company has also been able to maintain its profit margin, although a careful analysis of physical assets indicated that a buyer would have to invest $ 2,150,000 in new capital in order to correct the conditions resulting from the fact that some of development workings have not been driven and maintenance has been deferred. At the same time, at reserves depletion a salvage residue recoverable of $700,000 would result. Engineers estimated, the value of coal reserves, the future operation costs and total future earnings as shown in table 1.

An examination has found that X Coal Mine has nonoperating income of $9,000 annually, which can still be obtained for another 10 years, that is a total of $90,000. The figures in the company's balance sheet have been analyzed to determine the amount of current assets that can be recovered and the necessary working capital to keep the business going since the buyer must pay the seller for net current assets. Table 2 shows the company's balance sheet and the estimated value of liquid assets.

What does the value obtained mean? The purchaser could invest $41,121,233, plus new capital required or a total of $43,271,233. He could expect to earn 10% on his investment and also to recover that investment by the end of the operation.

It is to be noticed that the value of the mining property differs very much both in comparison with the accounting value in the balance sheet and with the net recoverable current assets. Its value is determined by the future earnings flows.

Table no.1

Estimation of Future Earnings X Coal Mine
(Cost as per Annual Report)

Coal Recoverable Reserves, tons		14,000,000
Estimated Recoverable per ton	$ 41	
Total Value of Coal Reserves		$ 574,000,000
Cost as per Annual Report		
Development	$ 0.90	
Mining	16.80	
Milling	4.76	
Overhead	0.90	
Depreciation and Depletion	6.48	
Total Cost of Production	$ 29.84	
Selling and Administrative	1.17	
Total Operating Cost	$ 31.01	
Provision for Taxes on Income	5.49	
Estimated Cost of Operation and Taxes per Ton	$ 36.50	-
Estimated Total Cost of Sales (14,000,000x$ 36.50)		$ 511,000,000
Estimated Future Earnings per ton	$ 4.50	
Estimated Future Earnings (14,000,000 x $ 4.50)		$ 63,000,000

Table no.2

Value of Current Assets as per Balance Sheet x Coal Mine, Annual Report

	As per Balance Sheet	Estimated Recoverable Value
Assets		
Cash on hand, in banks	$ 2,430,000	$ 2,430,000
Salable Products on hand and in transit	5,860,000	5,860,000
Accounts Receivable from Sale of Product	486,000	400,000
Inventory Supplies	3,060,000	2,450,000
Prepaid Expenses	225,000	225,000
Fixed Assets less Depreciation	30,245,000	Considered in Salvage figure
Total Assets	42,306,000	11,365,000
Liabilities		
Current Liabilities	1,485,000	$ 1,484,000
Reserves	4,500,000	-
Capital stock	36,321,000	
Total	42,306,000	$ 1,484,000
Total Net Recoverable Current Assets		$ 9,881,000

The valuator can now assemble all the basic elements as shown in table 3.

Table no.3

Summary Fair Value X Coal Mine as Going Operation

Present Value Future Earnings - (14,000,000 tons x $ 4.50 = $ 63,000,000 total profit discounted at 10% over 14 years) (x 7.3667/14)	$ 33,150,600
Add Salvage at end of operation -($ 700,000 Discounted at 10% after 14 years)(x 0.2633)	184,332
Add Net Current Assets (from table 2)	988,100
TOTAL	$ 43,215,932
Add Present Value of income from nonoperating assets $ (90,000 discounted at 10% over 10 years) (x 6.1446/10)	55,301
Total Present Value Future Income Subtract New Capital Requirements for deferred development and maintenance (Rehabilitation)	$ 43,271,233 2,150,000
Fair Value as Going Concern	$ 41,121,233

4. Special situation

In the case of public ownership over land, coal reserves, and over the coal company patrimony, the problem of the mining property value cannot be approached as in the previous case as a normal situation, that is value for a private investor, In this special situation, the coal property represents value for the governmental agency which administers the application of a public and obviously for the public owner.

The valuation is no longer done only to establish the attractiveness for the private capital of continuing the mining of coal reserves but it is done for the public owner in view of the decision to go on sustaining the operation of a public project or of taking a reverse decision.

It must be understood that for this special case the relevant costs and the interests are different and the situation is not a normal one, but a crisis situation when maintaining control on unemployment is a government's responsibility, Leaving off supporting the mining of a colliery's reserves means not only, a cost borne by the public authority because of the number of the unemployed, as a direct consequence of ceasing mining activity, but also other costs if the decrease in mining output means decisions for coal replacement solutions at the customers (electric energy, thermal energy, coke). It seems that in the crisis situation characterizing the transition economy in Romania, the closure of a colliery, coal being still in demand, would be the last thing the public authorities should resort to, if they wanted to keep unemployment under control. Certainly there is a limit to the extent such public projects can be supported and it must be known.

In order to establish such a limit, the concepts of sunk costs, contribution margins, and operation losses should be used E adequately. For the public authority, which has to decide whether to keep the mine going or to close it, the problem has the features of a replacement problem and consequently the elements of the assets replacement theory can facilitate our understanding and solving it.

The value of the coal property for the public owner can be determined noting the essential differences as compared to the situation considered normal for the private investor. The first difference lies in the non-existence of future estimated earnings at

the imposed level or in the existence of operating losses, that is the total value of coal reserves is lower than the estimated total cost of sales. Obviously, such a property will have no value for the private investor because it won't be able reward the factor capital. This does not mean automatically that the mining property has not any value for the public owner, either, and that the mining activity should be stopped.

4.1. Positive Contribution Margin

It is to be noticed that depreciation and depletion are non-cash expenses and represent provisions for rewarding the capital factors. In case mining ceases most of the unrecovered value of the fixed assets is irrelevant sunk cost of the fixed assets. The head frame, buildings, and much of the equipment of a typical mine are worth little or nothing after the mine is abandoned. They may not even be worth tearing down to salvage the material for scrap. These assets are almost 90% of all the mine assets in the district we are referring to in the paper.

As regards the depreciation and depletion expenses, we can resort to the concept used in the theory of replacing assets as "the most favorable situation for the old assets" (the mine in operation). This means not to assign any left value to the fixed assets to which the depreciation and the return rate should be applied.

Depreciation and depletion as per Annual Report is not a relevant cost and thus it must be reconsidered in the sense of taking into consideration only the future real payments for replacing depreciable assets. The depreciation estimated cost, after a careful appraisal of the physical assets that a buyer should have to replace is, for example, only $ 2.10 and not $6.48.

Thus, in the case of lower prices or of higher costs (as real payments) can exist a positive contribution margin. For example, for the price of $ 29 per ton and a real total cost of production of $25.46 (29.84 - 6,48 + 2.10), the contribution margin would be $3,54 per ton. Under these conditions the mine should continue its activity even if operation losses are recorded. The contribution margin will contribute to cover selling and administrative expenses of $ 1.17 per ton and will ensure a positive net cash flow of $ 2.37 per ton.

4.2. A New Criterion for Appraising Mining Property –Public Ownership

From the viewpoint of public interest, the criterion that can be applied in the appraisal of going mines or of partially 10 developed mines is the increase of national income or of added net value. The gross added value represents the difference between gross annual income from product sale and the cost of materials and services purchased from suppliers. Deducting depreciation from the gross added value the net added value can be obtained. To be more exact, the net added value consists of two essential elements: (a) labour costs and (b) the net income.

A valuation analysis for the special situation, as it has n described above, cannot be confined to the net incomes, which under certain situations can be even negative. The justification is that from the viewpoint of public interest, labour costs are incomes (a part of the national income). An increase of labour costs means that the number of employed people and/or the income per employed person go up. An increase of the wages and salaries bulk results in an increase of the population's

purchasing power, one of the main preconditions for the real consumption increase of goods and services.

The limit we mentioned above, which we have to bear in mind in appraising the alternative of continuing with the operation of a going mine is called by us contribution to remunerating production factors and we can determined it by subtracting from the gross added value the costs of net wages and salaries paid. If this difference is positive there is a margin which will contribute to the partial reward of the other two production factors, capital and land. In "the most favorable situation", going mine is not assigned any value for the previously vested capital which represents sunk cost.

The interests of the state, which administers the public domain and the right of ownership over land, reserves and the already invested capital in the mines in operation and partially developed mine projects are reflected in the criterion of national income or net added value increases.

Dealing with the value issue of a going mine by the assets replacement theory assumes assimilating the going mine to the old assets and the project of replacing it by the new assets. In the replacement theory the two assets have the same function and, therefore, at equal earnings they are compared according to the costs. If eventually, they differ from each other in annual incomes, an extra income of the new assets is assimilated to a saving of annual costs.

A replacement venture project of a mine that will be closed can be imagined as part of a program for restructuring the economic activity of the geographical zone where the mine is operating. This way, the replacement project acquires a concrete character with identifiable and quantifiable incomes and costs. Such a project has to ensure, by assimilation, the same economic function as the mine operation for the geographical zone, and implicitly, for the national economic system but with better results.

The thing the going mine assures for the area is essentially the bulk of effective wages and salaries that ensure the livelihood of the mine employees and of those that depend, in their turn, on these wages and salaries (the families plus a part the producers of goods and services bought with these employees incomes).

For the economy on the whole, the mine ensures the 12 consumption of goods and services for its suppliers and provides its customers with coal, in its turn. To simplify, we limit the mine function only to that of ensuring the remuneration of the labour factor.

Therefore we can expect the replacement venture project, first of all, to maintain the bulk of salaries paid by the mine and provided it can contribute to rewarding other production factors (capital, land, state) it will be implemented and the nine will be closed. For simplifying the problem, we have not taken into consideration either the effects of breaking the suppliers-mine-customer chain and those of the new emerging chain: suppliers-replacement project-customers. Nevertheless, one thing is certain. The replacement project can have other pliers and other customers. The suppliers' inputs of the new project will have a lower value. Otherwise, it could mean

an irrational combination of production factors in the condition imposed of maintaining the labour factor value constant.

As a result of the simplification and assumptions made, have come to an essential element of the replacement problem-equal annual incomes which reduces itself to maintaining the bulk of the wages and salaries paid in the case of the new venture project at the level of those paid by the mine which was to close its activity.

The relevant costs for comparing the two alternatives are:

For keeping the mine in operation:

1. An investment for mine rehabilitation-development work deferred maintenance and other keeping-in operation requirements (notation I_0).

2. Effective annual payments for material, energy and suppliers' services. Any payments such as taxes and charges with cost character at firm level are incomes for the State and are not included in costs (notation C_1^0).

3. Effective annual payments for labour which constitute individual incomes for consumption (notation C_2^0).

4. The annual cost of depreciation associated with the investment I_1 calculated according to the "sinking fond" method.

We mention that we have not included in the costs either provisions for depreciation and depletion or the opportunity cost (for minimum profit expected for the capital previously invested). This is in keeping with concept "the most advantageous competition situation for the old assets in relation to the new assets".

For the replacement venture project:

1. An investment for project development (notation I_1)

2. Annual effective payments as in the case of the old assets but at the value appropriate to the replacement venture project (notation C_1^1).

3. Effective annual payments of labour (notation C_2^1).

4. Annual depreciation cost associated to investment I_1, calculated according to the "sinking fund" method.

5. Opportunity cost of using capital (required minimum return).

In order to continue the reasoning we allow for one more simplification. We do not take into consideration the time factor therefore we can draw a comparison between the two alternatives using the Annual Value Method in the AC variant [4].

The synthesis of annual costs for the two alternatives is given in table 4.

According to a previous hypothesis $C_2^\circ = C_2^1$ representing incomes. Therefore, they are not included in relevant cost situation.

Where: V - value of old asset unknown (value of going mine);

r% - reinvestment rate of capital;

n - the remaining life of the existing asset (time of the coal reserves to be mined);

$$(A/F,r\%,n) = \frac{r}{(1+r)^r - 1}$$ sinking fond factor

If proper cost data are available a value of the old assets (going mine) can be obtained by applying replacement theory. The economic value of a going mine is the maximum amount on which depreciation and interest can be charged while permitting

it to compete on an even basis with the most efficient replacement project. Such a comparison may be illustrated as follows:

Table no.4

	Going Mine	Replacement project
Depreciation for:		
Value of going mine	V(A/F,r%,n)	
New Investment	I_0(A/F,r,n)	I_1(A/F,r%,n)
Minimum return for:		
Value of going mine	V(r%)	
New Investment	I_0(r%)	I_1(r%)
Annual disbursements	C_1^0	C_1^1
Total Annual Costs	V[(A/F,r%,n)+(r%)]+ I_0[(A/F,r%,n)+(r%)]+ C_1^0	I_1[(A/F,r%,n)+(r %)]+C_1^1

A going mine could last for 10 more years and have annual disbursements (noted C_1^2) of \$155,000 and require an investment I_0 of % 1,700,000. A potential replacement project would require an investment of \$ 5,000,000 and have annual disbursements (noted C_1^1) of \$ 120,000 over a 10 year life. If either alternative is expected to have zero salvage value at the end of 10 years and capital should earn 5%, the present value of the going mine at which it is equally as economical as the replacement project results from table 5.

Table no.5

	Going Mine	Replacement Project
Depreciation for:		
Value of Going Mine V(A/F, 5%, 10)	0.0795 V	
New Investment 1,700,000 (A/F, 5%, 10)	135,158	
Replacement Project 5,000,000 (A/F, 5%, 10)		397,523
Minimum return of:		
Value of Going Mine V(5%)	0.05 V	
New Investment 1,700,000 (5%)	85,000	
Replacement Project 5,000,000 (5%)		250,000
Annual disbursements (C_1^0 ,C_1^1)	155,000	120,000
Total annual costs	0.1295V+37 5,158	767,523

Equating the total annual costs and solving, V = \$ 3,029,846. This is a good measure of the present economic value the going mine if the replacement project is the best alternative available.

In the above mentioned case it was assumed that the going mine and replacement project had the same life and the annual costs would remain at a constant level all over this period. A more common situation is that when out-of-pockets costs are not taut throughout the years. In this case, the number of years, if they exist, when

the going mine should be maintained in operation is determined by the moment its annual cost, without any charge for depreciation and interest, exceeds the annual cost of replacement project.

Assuming that, in comparison with the previous data, the out-of-pocket costs annual differ from one year to another and the investment in the replacement project is $ 2,000,000, the going mine value is determined from the data in table 6. It is obvious that the mine should not be maintained in operation but another 4 years and its economic values at the beginning of first year will be $ 649,206.

5. Conclusions

The paper tries to demonstrate how academic reasonings regarding costs and earnings and how elements of the replacement can contribute to defining more adequately the issue of mining property evaluation.

As many others matters affecting mining in a decision to postpone abandonment of a mine by means of subsidies or special salvage measures, a great deal depends upon local conditions at a given mine and at the specified time. Experience at other mines or during previous crisis is not likely to contribute much to the right decision to take under current circumstances.

Private enterprises cannot be expected to keep a mine open when are losing money so The Government has to take steps to postpone abandonment of such mines.

Valuation in the mineral industry differs from those of other enterprises because mines have a definite life and always yield a replacement problem.

Table no.6

Year	Going Mine	Replacement Project			Difference	Present Worth of Difference at 5%
		Disburse-ments	Depreciation and interest	Total costs		
1	155,000	120,000	300,000	420,000	265,000	253,381
2	190,000	121,000	285,000	406,500	216,500	196,372
3	240,000	123,000	270,750	393,750	153,750	132,815
4	300,000	125,000	257,215	382,215	87,215	67,638
5	375,000	127,000	244,351	371,351	negative	-
						$ 649,206

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THE EFFECTS PRODUCED BY THE SUDTH-EST COUNTRIES INTEGRATION UPON UE

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Abstract: Since the creation of the European Union its purpose has been to unite the European continent into one cohesive organization. In order for this goal to be fully realized all European nations must be included under this conglomeration of states The benefits of enlarging the Union to include these countries are political, economic, and cultural:

Key words: European Union, integration, negotiations, new members

Since the creation of the European Union its purpose has been to unite the European continent into one cohesive organization. In order for this goal to be fully realized all European nations must be included under this conglomeration of states. Unfortunately the process is not quite so simple. It takes years of careful evaluation of numerous factors most importantly including economic status, respect for international law and basic human rights, and military status amongst other numerous yet equally important facts. Before a state can be admitted it must first be determined that by admitting the state that it will have a generally good affect on the community as a whole and not simply benefit any single nation. Political orientation also plays a large role in deciding whether or not to accept a nation, since the organization was partially founded on the idea of "self determination". After taking into consideration all these facts it is easy to see why it takes so long to approve a state for membership within the EU. Any hastily made decisions could quite easily have long lasting socio-economic impacts on other members of the union and make them weary to admit new members.

The European Union has been enlarging ever since it was created at the beginning of the 1950's. The founding members called upon the people of Europe" who share their ideas to join their efforts". Since then, it has grown from the initial six members to nine, ten, twelve and then to the current fifteen through a series of enlargements.

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The process is still continuing. The EU is now negotiating with twelve more candidates for membership, and preparing for negotiations with Turkey, as soon as the country fulfils the political accession criteria, including respect for human rights.

This latest enlargement is a consequence of the very nature of the EU. The success of the EU and the values it is based on has attracted successive waves of new members, from countries with a wide variety of economic and political backgrounds. Their integration into the EU has each time deepened the quality of the EU, for existing member states and new member states. Each successive enlargement has brought benefits to Europe's citizens, new opportunities for European businesses and wider acceptance of European norms in fields ranging from consumer and environmental protection to political rights and social provision. The organic growth has enriched Europe as a whole.

Enlargement is one of the most important opportunities for the European Union as it begins the 21st Century. Its historic task is to further the integration of the continent by peaceful means, extending a zone of stability and prosperity to new members. In June 1993, at its Summit in Copenhagen, the European declared "the associated countries of Central and Eastern Europe that so desire shall become members of the Union". In December 1997, at Luxembourg the European Council launched the process that will make enlargement possible. This process presently embraces thirteen countries: Romania, Bulgaria, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, the Slovak Republic, Slovenia and Turkey. Accession negotiations are underway with the first twelve, and in June 2001 at Göteborg the European Council affirmed that the objective is to complete them by the end of 2002 with these countries that are ready to join, so that they can take part as members in the European Parliament's elections of 2004.

The EU has a long history of successful enlargements. In 1957 six founding members signed the Treaty of Rome: Belgium, France, Germany, Italy, Luxembourg and the Netherlands. Four enlargements have followed:1973: Denmark, Ireland and the United Kingdom, 1981: Greece, 1986: Portugal and Spain, 1995: Austria, Finland and Sweden.

The benefits of enlargement are both political and economic, and can be summarized as follows:

- The extension of the zone of peace, stability and prosperity in Europe will enhance the security of all its peoples.
- The addition of more than 100 million people, in rapidly growing economies, to the EU's market of 370 million will boost economic growth and create jobs in both old and new member states.
- There will be a better quality of life for citizens throughout Europe as the new members adopt the EU policies for protection of the environment and the fight against crime, drugs and illegal immigration.
- Enlargement will strengthen the Union's role in world affairs – in foreign and security policy, trade policy, and the other fields of global governance.

The Accession process from negotiations to ratification

On the basis of the recommendations of the European Commission in December 1997, the Luxembourg European Council decided to launch an "overall enlargement process" for all countries wishing to join the EU. It encompasses:
The European Conference, which brings together the countries aspiring to join the EU. The Conference is a multilateral forum for discussing issues of common interest, such as foreign and security policy, justice and home affairs, regional co-operation and economic matters. This conference met for the first time in London on 12 March 1998. In December 1999, the Helsinki European Council announced a review of the future of the European Council, so as to take account of the evolving situation. The Nice European Council in December 2000 concluded that the Balkan countries covered by the stabilization and association process and the EFTA countries be invited to attend as prospective members.

The accession process which was launched in Brussels on 30 March 1998 and encompasses all ten Central and Eastern European countries, Cyprus, Malta and Turkey. It is an evolving and inclusive process in the sense that all these countries are destined to join the EU on the basis of the same criteria.

The CEE countries' trade is already very much directed towards the EU. Imports of industrial products from the CEECs to the EU have been liberalized since the start of 1997. The end of 2001 concluded liberalization of exports of industrial products from the EU to the applicant countries. The overall trade implications will be much more pronounced in the applicant countries because CEE exports represent just under one per cent of the GDP of the current EU, whereas exports to the EU represent 15 per cent of the CEECs' GDP.

Growth in CEE trade may continue to be rapid on account of economic growth and differences in growth rates, even if EU membership itself does not produce any further significant boost to growth.

The free trade provisions do not cover agricultural products, which are important to the CEECs. The concessions made by the EU under the Europe Agreements to agricultural products are negligible. The applicant countries give considerably less support to their agricultural sectors than in the EU, both in terms of boarder protection and domestic subsidies. Under the Europe Agreements, certain agricultural products from the EU are given preferential treatment in the applicant countries and most quantity restrictions have also been abolished. Thus the EU's agricultural trade surplus with the CEECs is largely attributable to asymmetrical trade liberalization. EU membership will alter this situation to the benefit of the new Member States unless the change is hampered by long transition periods.

Apart from some sensitive sectors, EU enlargement ought not to cause major changes to trade flows. On the other hand it is generally assumed that membership will have a major influence on investments even though most of the CEECs have a relatively open investment climate already. The biggest change with full membership is likely to be the reduction in investment-related risks and greater stability and credibility. Legislative harmonization and a reduction in institutional uncertainty may

have a significant effect on investment growth both in the short and long term. In practice this means that investments will partly be redirected from the old to the new Member States. The experience of Spain's accession to the EEC supports the view that membership will lead to a spike in investment flows.

So far foreign direct investment has been concentrated only on the most successful CEECs. Those countries, which have been most proficient in implementing reforms, which have gone furthest in privatization and have succeeded in combating inflation, have also succeeded in attracting foreign investment. Privatization has already advanced very far, especially in Hungary and Poland and in recent years also in the Baltic States. This means that most of the companies that attract foreign investors have already been sold through privatization programs. Therefore the most advanced applicant countries are increasingly dependent not on companies being purchased but on true direct investments – new investments. Any reduction in direct investments would slow the catch-up process with the EU. Direct investments have also been the most important means of funding current account deficits.

Effects of full membership

The enlargement implies two kinds of changes for the economic environment of the new entrant economies. New members are affected by changes in traditional trade policy as well as institutional factors that will follow from the adoption of common market rules and institutions. In the sense of traditional trade policy, enlargement is a formation of a custom union. This implies removal of all bilateral border measures between the EU and CEECs and adoption of common trade policy measures against third parties. Since tariffs in industrial trade are removed when the enlargement is planned to take place, the most important aspect in the bilateral trade relations are the removal of trade barriers in agricultural and food production and the introduction of Common Agricultural Policy (CAP) to new entrant economies. The customs union implies also harmonization of new entrants tariffs against third parties to those applied in EU.

Trade policy is only one aspect of the integration. EU is a single common market area with harmonized commercial legislation and industrial standards. Unified regulations covercommon competition and state-aids policy as well as administrative procedures to implement these regulations. The internal trade is also free of border formalities. Despite the duty free character of trade in manufactures, this trade is subject to rules of origin regulations that impedes completely unparalleled access to EU's internal markets. The membership in Union removes these frictions in trade. Balwin et al. (1997) has emphasized the importance of these aspects for the improved business confidence in new member countries. Harmonized market rules constrains the opportunity of new entrants to conduct arbitrary commercial and industrial policy. In addition to the goodwill effects regional integration reduces transaction costs of bilateral trade with new partners in common market area. If membership takes place without transition periods and without changes in the current EU policies, it will mean an immediate transition to the free movement of labor, significant income transfers to agriculture within Common Agricultural Policies and subsidized investments in

infrastructure through the structural funds. The new members will also be involved in the EU's decision-making. Because agriculture and structural funds are overwhelmingly most important categories in budgetary terms, they will also be of major importance for new members states.

The Structural Funds are transfers to poorer member states and regions in the EU. Funds are targeted to increase 'social cohesion', that is generally taken to mean convergence of per capita incomes. EU's structural policy has strong regional emphasis but there are also nonregional objectives. From Single European Act onward the Structural funds have been allocated within operational periods. In period 1994-1999 regional policies were addressed under four objectives and non-regional cohesion policies under three objectives. These polices were financed from four different funds. In Agenda 2000 the number of objectives was diminished into three:
Objective 1: Regions that are lagging behind,
Objective 2: Economic and social conversion of areas facing structural difficulties,
Objective 3: Adaptation and modernization of policies and systems of education training and employment.

In addition to these, there is a special Cohesion Fund for less developed member states to support the development to meet the criteria of monetary union. There's also a separate Community initiative program to support transnational, cross-boarder and inter-regional actions. The first two objectives are regional and the third one uses horizontal measures that are not region specific, but are however directed towards regions with high unemployment. Only regions that are not qualified for support on the basis of objectives 1 and 2 are eligible for support on the basis of objective three. Previously the subsidies under objective one were based solely on the level of regional GDP per capita. Regions were GDP per capita were less than 75 per cent of EU average, measured by PPP-standards, were obliged to this support. Unemployment has been added to as supplementary criteria to allocate the funds. According to Wiese et al (1999) estimates two thirds of the expenditures of this objective goes to Greece, Portugal and Spain. The expenses under objective one covers 60 per cent of all structural subsidies. Germany, France and UK, but also Spain, are main recipients of objective 2 and 3 funds.

Convergence and migration

The main economic effects of EU enlargement have to do with movements in the factors of production and convergence of economies. Experience from previous enlargements, when countries poorer than the average acceded (Ireland, Greece, Spain, Portugal), shows that membership leads to growth in foreign trade and investments and to accelerated technical progress in the new member states (Baldwin et al, 1997). Closer participation in the international division of labor raises the economic welfare of nations participating in integration. Free movement of the factors of production and freedom of trade lead to gradual convergence. Integration does not only bolster trade but also creates incentives for increased investment in low-income countries and for labor to move to high-income countries.

The result of these changes is economic convergence. This will mean that income and production differentials between the countries of an enlarged EU will narrow, and especially in the new Member States structural change in the economy will accelerate. The greatest benefit from membership accrues to low-income applicant countries. Although the old Member States have to foot the bill for income transfers to the new Member States, they are also likely to benefit in this process; trade increases, the division of labor intensifies, and markets expand. It is also likely that in the old high-income Member States low-wage sectors will be exposed to greater competition and wage differences will grow as a result of movements in the factors of production. For the old Member States, however, the changes will be slight. Experience from earlier enlargements of the EU show that the adjustment processes have not been easy to new member countries. In most cases unemployment has increased significantly in the candidate countries. Unemployment has usually started to rise at the same time when the countries have applied for the EU membership (and started to reform their economies in order to adapt them to membership). The period of increased unemployment has lasted for several years. That happened in Ireland in the 1970s, in Spain (and to lesser extent in Greece and Portugal) in the 1980s and in Finland and Sweden in the 1990s.

The population of the current EU is around 375 million and the labour force 175 million. The total population of the candidate countries is around 104 million and the labour force of 53 million (including Bulgaria and Romania). There are currently around 12 million foreigners living in the EU, with around 5.3 million foreign employees in the workforce (EUROSTAT, 2000). Of this population, around 800,000 persons are from the present candidate countries. Of these, around 300,000 are legally employed in the EU area. According to the Commission's (2001) report, total annual immigration to the EU area in recent years has been around 800,000 and there have been around 300,000 asylum-seekers. Boeri and Brücker (2000) have estimated that at the first years, following the enlargement, the total migration from the new to old member countries can be around 350 thousand peoples per year. This figure will decline within 10 years to less than half of this and become negligible in twenty years. Compared to the current population flow from non-EU countries, the immigration caused by EU enlargement cannot be considered dramatic. The total flows would be small. However, if the migration concentrates to only few regions, it will have larger local effects.

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