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Business Value Management Problems

PROFIT EARNING MECHANISM

The process of business cost management is multifaceted. It comprises the entire procedure of decision making relating both to the real and unreal capital together with management of its components. Most papers on cost management deal primarily with the external aspect of the production process. It leaves an impression that the business cost grow infinitely in an unlimited manner. It is different in reality.

Profit plays a sizeable role in assessment of cost management depending on how much revenues exceed the cost of earning them within a certain period and on how taxation changes. The problem is to what extent the profit of the business earnings relates to implementation of its primary financial objective and to what extent it relates to maximization of the cost of the owner's property, if the profit includes full gain and cost of running the business.

Let us consider the internal profit earning mechanism that is a core of every cost assessment method, or the aggregative business assets (property) that are involved in the production process:

− Land. The land cost can change in response to changes in the environmental "landscape", availability of roads and accesses, distance to administrative centers, markets, etc.

− Liabilities. The fixed assets that the business has on its landed property can grow additionally within this landed property, yet it needs time and considerable money (investment) providing that the the demand for business product grows.Therefore, cost management requires an effective use of available production facilities. It was latter characterized by the criterion of "end products per square meter of production area" with a given production process and specialization. This indicator has limitations.

− The effective share of the fixed assets is commonly a technological component characterized by the equipment load factor and the capacity load factor. The economic part is determined by the yield of capital investments and by the amount of how much one ruble of the used fixed assets earns. The task of cost management is to determine the minimal production capacity in case the demand goes up. The excessive fixed assets should not encumber production:

they should be sold, leased or preserved until the situation becomes favorable. The criteria of capacity load and yield of capital investments have stiff limits. The practice of calculation of capacities needs restoring.
- Labor: workers, engineers and managers; the efficiency of workers involved in processing operations is a factor of skills and smartness. As a rule, each person own individual characteristics making production less certain and being one of the main causes of man-provoked disasters. Earlier, the labor efficiency was rated by the output quota margin factor that changed from 1 to 2 and more. For example, the adaptation factor was used in machine building. Cost management should be based on the labor efficiency and contain a plan of bonuses "for output".

The required labor force is based on the current production process, working hours (shifts) and maintenance norms. The auxiliary force is determined in aggregative calculations in proportion to the main labor force and depends on the availability of auxiliary and servicing units (divisions).

The work load should be determined in the production process and operations should be combined, to follow the suit of Japanese businesses.

The management force can also be subject of aggregative calculation [Филиппов, 2006]. The management force and payroll are determined as a function of the main labor:

$$Sp = 2 * N * n_0 \qquad\qquad (1)$$

and auxiliary labor:

$$Sa = 2 * N * d * n_0 \qquad\qquad (2)$$

With two shifts the total labor is:

$$S = 2 * N * (1 + d) * n_0 \qquad\qquad (3)$$

and the mean of salary of one manager a year is:

$$Ze = W1e * 12 * (1 + N_D) \qquad\qquad (4)$$

So, the total cost of the management staff is:

$$Zm = Sp * Ze \qquad\qquad (5)$$

where: Sm - the number of managers;

W1e - the mean base monthly salary of one manager;

n_0 - the number of machine tools in operation;

d - the proportion of the auxiliary labor to the main labor,

N - the average equipment maintenance norm,

N_D - additional deductions into the payroll (social, medical insurance, etc.).

The production which includes: material to production, technologies and machinery will be analysed.

The workload should be determined in the production process and operations should be combined, to follow the suit of Japanese businesses.

The management labor can also be determinted by the aggregative calculation.

The coefficient of utilization of materials should be considered specifically in order to save resources (raw material, money means, in the final account), in other words to save waste, like chippings rejected primarily (by machine builders). Hence, any feasible waste-free production process should be identified. The less available and more expensive a resource (material, fuel, energy) the more the process needs improving (on the one hand) and cheaper resources should be sought for (on the other hand) that would not impair the end quality (strength, reliability, durability, etc.).

The guest for new forms of energy saving, resources saving and technologies are in Republic of Belarus.

The problem of technology is often decisive to find out what effective alternative of production is needed. Yet, the major restriction is what production process (rotor line, semiautomatic, fully computerized, flow or variable flow, multipurpose lines) suits the minimal feasible output. Each process has a designed efficiency: if the output is low, it means idle time of the equipment (the capital investment yields less, the resources are used wastefully, etc.); if the output is large it means extra, often wasteful shifts or paid overtime are needed. It all affects the end quality. It is advisable to schedule in advance the time of introduction of a new process (equipment) suiting the demand. As a rule, the type of the equipment characterizes the state-of-the-art. No superfluous equipment should be installed but some insignificant standby margin to satisfy demand variations. To reduce the cost of prolonged storage of standby capacities (equipment, floor space), they should be preserved separately from the production line or leased.

Now let us consider the production cost structure from the viewpoint of resource saving. The commercial product cost (the production cost of commodities for market or contract deliveries) is conventionally split into the conditionally variable cost (variable proportionally to the output) and conditionally constant cost (independent of the output).

The conditionally variable cost share comprises basically the following:

- ZM — expenses of material — it is need to increase the coefficient (ratio) of use the material (for example, in machine-building substitution of casting to powdery metallurgy or replacement by more cheap material) for reduce non-effective expenditure.
- Ze — expenses of energy to technological aims – economy of resources is contained in use of more economical drive (diesel engine instead of petrol), more cheap energy (gas instead of electricity or coal) and energysaving technologies.
- ZP — income of workers (productive) —economy is contained in pay"for labour productivity". Work payment must be earning.

The conditionally constant cost relating to operation and maintenance. These cost items are primarily expenses, such as the cost of repairs, maintenance, and operation of the main production assets. They are divided into the expenses of maintenance and operation of machinery and equipment, shop and general works expenses. These items of expenses have a similar structure. We will consider them without breaking up.

- ZME — expenses of managers and engineers. Extra subdivision is not allowed as it would duplicate the work of another subdivision in process of insuring to auxiliary operation. Quality's criterions will anable to compare productivity of one worker with last period in this enterprises or similary (for example, mechanical bakery).
- ZA — another group of expenses is connected with amortization (depreciation), repairs and exploitation of plant, machinery, building and other fixed assets. Expenses of heating, lighting, and ventilating are also including in this group. It is necessary to expel or lay up extra plant, productive area (or lease) for reduction of expenses.
- ZT — last group of expenses is connected with trained personnel, expenses of business trips, representation, advertising expenses, rationalization and invention and provision of Health and Safety environment. Economy of expenses must be founded on effectiveness of education, advertisement, contract, absence of trauma.

All listed economic means are effective providing only that the output (the product) meets demand. One of the main tasks is to maintain the level of the demand and promote it, if possible [Уотермен, 1988; Фостер, 1987]. Another essential task is the sustainable adaptability of the business to market changes, versatility by restructuring, monitoring sings of possible changes [Ансофф, 1989]. Restructuring on specialization, unification and concentration should accompany the company while merging and integrating businesses (companies).

It is advisable to investigate periodically (the time of regularity depends on what branch the business is active in and the dynamics of updating the output) the demand, the product parameters required by potential consumers, to predict

trends of changes and quality values of these parameters for the near and remote future. As a result, research and development of goods (products) with required parameters should be implemented.

Market relations compel «to monitor the pulse of the market mechanism 25 hours a day». If it is ignored, a prosperous business soon becomes uncompetitive and goes broke.

Total production expenses (Z_t) is calculated by the formula:

$$Z_t = (Z_{Mt} + Z_{Et} + Z_{Pt}) * Q_t + Z_{MEt} + Z_{At} + Z_{Tt} \qquad (6)$$

Profit (Pr_t) is calculated:

$$Pr_t = p_t * Q_t - Z_t, \qquad (7)$$

where: p_t – price of piece,
Q_t –volume of products.

Hence, the profit is determined by the price of goods ((the external (exogenic) factor poorly controllable by the business management)) and the cost of production of a unit of output ((mostly it is internal (endogenic) that can be controlled and adjusted within a certain range)).

When the output equals sales, the following formula is applicable to determine the profit during an accounting period:

$$Pr_t = (p - Z_{Mt} - Z_{Et} - Z_{Pt}) * Q_t - Z_{MEt} - Z_{At} - Z_{Tt} \qquad (8)$$

Net profit (Pr_{Nt}) = profit less tax (G) and allocations to social and medical necessities, to pensions fund etc.:

$$Pr_{Nt} = Pr_t * (1 - G_t) \qquad (9)$$

Operating income with consideration of depreciation changes (A_{mt}) is calculated by:

$$D_t = Pr_t * (1 - G_t) + A_{mt}. \qquad (10)$$

The value analysis (VA) is greatly helpful for saving expenses (cost) and improving quality. It implies the following:
− Application of systems approach to identification of extra expenses of existing and projected articles (consumption of labor, materials, energy, etc.).

- Systematic use of engineering ingenuity in new cheaper technological solutions (the algorithm of solution of invention problems, the brainstorm method).
- Clear-cut execution of the value analysis and implementation of proposed changes.
  The value analysis embraces the following stages:
- Determination and identification of functions (purposes) of each part, each component of an article if it is feasible to combines functions in one part.
- Cost estimate of each function performed by the part: consumption of materials (excessive strength margin or two much waste produced by the current production process), energy, capital means, etc.
- Assignment of «superfluous» functions or functions which are too costly to implement.
- Withdrawal of components with unnecessary functions and selection of the most rational technological solution for elements (parts) with excessively costly design. Implementation (adoption) of the results of studies by the value analysis method.

THE ASSESSMENT METHODS BASED ON CAPITAL FLOW

Capital flow is the basic indicator for managerial decision making. The assessment methods based on the capital flow are the simplest and most popular once. Yet, their use is limited due to the lack of data about value added during a certain period without comparing directly the two cost values.

Still, the capital flow models (CFM) are the most convenient tools for estimating the cost of a business. These models can be used in cost control in the following cases:

1) Calculation of the alternative capital market value in the initial time period (prior to adoption of added value calculation mechanisms) because this value serves a starting point in all added value models (AVM) discussed below. The calculation of the invested capital market value is needed both at the level of the entire business and its individual branches.

2) Calculation of the cost effect of separate managerial solutions (merger and absorption deals, investment projects with unstable cash flow, etc.) because they are more flexible and so they suit best the economic realities of the AVM. Many elements of the CFM (calculation of cash flow, discount rates) are used in the added value models AVM.

Modern assessment methods based on the profit approach use the stock market data as initial information.

The famous capital asset pricing model CAPM used to calculate the price discounts is based on the market data. The initial presumption of such calculations is that the market price should equal capitalization in the process of market

progress. This presumption permits to calculate the discount rate proceeding from the CAPM model.

The more this prerequisite agrees with the true economic reality the more accurate determination of the company's market value it yields if the CAPM-model is applied. In this case, the market acts as the main and most fair arbiter.

Business value is calculated by the formula:

$$BV = V_D + V_{dFA} \pm D_{CA}, \qquad (11)$$

Where: V_d – discount value – modern value of capital flow,

V_{dFA} — discount value of excess fixed assets; D_{CA} — change of current assets.

There are several concepts regarding the business value (the value of an enterprise, a company): the full value of shares (the own capital cost) from the standpoint of the owner; the amount of all invested capital that managers control in order to benefit shareholders and long-term creditors from the standpoint of management. The difference in calculation of the full capital and just own capital value is an application of different money flows, either for all the investors or just for owners as well as different discount rates reflecting the risk of all the investors or just the risk of the business owners.

Let us make out 3 models of capital flow:
− DIC - capital flow of investment capital = net worth (NW) and liabilities (long-time);
− DNW - capital flow of net worth;
− DTA - capital flow of total assets without accounting of tax incentive.

Capital flow may be calculated by:

$$D_{IC} = Pr * (1 - G) + a_m - I - D_{NWC} + g * C * G; \qquad (12)$$

$$D_{NW} = Pr * (1 - G) + a_m - I - D_{NWC} + g * C * (1 - G) - P_C + \Delta C; \quad (13)$$

$$D_{TA} = Pr * (1 - G) + a_m - I - D_{NWC}; \qquad (14)$$

where: Pr - profit;

G - tax;

a_m - depreciation charges;

I - investments;

D_{NWC} - increase of net working capital;

G - interest rate of long-time financial investment;

C - sum of long-time financial investment;

P_C - repayment of a credit;

ΔC – receipt of new credit.

INDEXES OF THE ENTERPRISE'S VALUE MANAGEMENT IN BELARUS

To promote the attractivness of business for investors, it is essential to achieve optimum profit distribution to satisfy aspiration of the business and its owners. The state budget is keen to obtain the maximum profit; managers of businesses strive to allocate most of their profits into production expansion, meanwhile the share holders' interest is to boost their share in profit distribution and dividends they get back. Let us consider the dynamics of financial results shown by the data in the Table that the open stock companies in this Republic achieved during 2001–2006.

Table 1. Finance result of enterprise's activity in 2001–2006 years *

Enterprises	Years			
	2001	2003	2005	9 month. 2006
Number of enterprises, units	1400	1530	1684	1652
Number of enterprises, which pay the dividends, units Specific gravity, %	691 49,4	605 39,5	564 33,5	606 36,7
Number of enterprises with profit > 0 , units Specific gravity, %	995 71,0	1085 70,9	1309 77,7	1184 71,3
Number of enterprises with net profit > 0 , units Specific gravity, %	787 56,1	823 53,8	1036 61,5	1150 69,6
Number of enterprises with account payable and account receivable, units** Specific gravity, %	1376 98,3	1503 98,2	388 23,04	765 46,3
Number of enterprises with ratio account payable / account receivable > 2/1, , units ** Specific gravity, %	622 44,4	758 49,5	154 9,1	269 16,3
Dividends / Net profit, %	27,0	3,6	8,1	3,8
Dividends / Profit, %	18,6	2,4	4,6	2,4
Profitability, %	12,9	18,7	10,0	10,8

* Calculation according to figures: *«Информация о результатах финансово-хозяйственной деятельности открытого акционерного общества»*
**In 2001 and 2003 years indexes is calculated on all account payable and account receivable; in 2005 and 2006 – on overdue account*

The analysis permits to conclude the following. During 2001–2006, the dividends were paid only by part of theses business and the proportion was between 49.4% and 36.7%. The proportion was reduced by 1.7 percent points during the last five years. The specific share of the businesses earning profit was higher

than the share of those paying dividends. The share of businesses with positive profits during the reported period ranges 71-77%; the share of the businesses with net profits grew from 56.1% to 69.6% during these 5 years. It proves that the dividend-paying businesses have resources to grow in numbers. Over two thirds of the businesses have potentials to pay dividends. The level of dividend paying is rather low currently. The proportion of the dividends in the profit value during the reported period amounts to 2.4%, while the net profit value is 3.8%. This level makes the businesses unattractive for investments, hence the conclusion is that dividends should augment and so should grow the number of dividend-paying businesses.

Let us analyze one of the ratios used for management of enterprises value., i.e. price-earning ratio – correlation of the market value of the share (P) and of the profitability of one (E). It is one of the conditions of the developed market which characterizes the degree of the investors' interests in the given enterprise. P/E reflects the relations between the enterprise and its shareholders. This coefficiency shows how many money units are agreed by the shareholders to be paid for one money unit of the pure profit of the company. The highest is the value of this index, the highest is the investors' appreciation of the investment qualities of the company. An important characteristic of the given index is not only its level, but its dynamics in comparison with the dynamics P/E of other enterprises and with the general dynamics of the market. It is particularly important for the investors to examine long-term aspect of investment.

Let us calculate the ratio of market value of the share and its profit for Byeloussian joint-stock companies (table 2). The investors can evaluate the repayment of the investments and examine the condition of the facilities of the enterprise by the use of the index of profitableness.

Table 2. Market activity indexes of the enterprises according the P/E in 2001–2006 years *

Years	All enterprises	Enterprises with index P/E > 1	
		Numbers	%
2001	1400	5	0,4
2002	1414	16	1,1
2003	1530	15	1,0
2004	1621	105	6,5
2005	1684	24	1,4
2006 (9 *month.*)	1652	22	1,3

* Calculation according to figures: *«Информация о результатах финансово-хозяйственной деятельности открытого акционерного общества»*

While investigating Byelorussian enterprises according to the value of the coefficient P/E for the four years (2001–2004) we determined, that the level of this index for the majority of the subjects is rather low, but the level of this index in the period 2005-2006 is reduced. In 2004, 105 subjects had correlation P/E higher than 1, in 2006 the number of such subjects was only 22. It means that for one monetary unit of the pure profit the shareholders agree to pay no less than one monetary unit. The share of such enterprises is 1,3% of the total number of enterprises.

The investors can evaluate the repayment of the investments and examine the condition of the facilities of the enterprise by the use of the index of profitableness. Let us calculate some indexes of market activity of the enterprises which characterize the dividends' level and profits of enterprises. Four groups of enterprises are taken into consideration (table 3):

Table 3. Market activity indexes of the enterprises in 2002–2006 years*

Indexes	Enterprises			
	All	P/E > 0,3	P/E > 0,8	P/E > 1
2001				
Dividends / Pure profit, %	27,0	17,24	39,03	44,75
Dividends / Profit, %	18,6	11,20	25,49	31,26
Profitability, %	12,9	27,7	3,4	3,6
Number of enterprises	1400	28	10	5
2003				
Dividends / Pure profit, %	3,6	18,5	33,6	54,1
Dividends / Profit, %	2,4	11,8	20,8	27,1
Profitability, %	18,7	14,9	22,8	14,9
Number of enterprises	1530	121	22	15
2005				
Dividends / Pure profit, %	8,1	23,97	17,4	16,9
Dividends / Profit, %	4,56	12,07	7,27	7,44
Profitability, %	9,98	7,96	7,2	7,28
Number of enterprises	1684	52	27	24
2006 (9 month.)				
Dividends / Pure profit, %	3,8	29,6	47,85	49,45
Dividends / Profit, %	2,37	16,26	7,63	7,9
Profitability, %	10,8	8,4	2,66	2,8
Number of enterprises	1652	37	26	22

* Calculation according to figures: «*Информация о результатах финансово-хозяйственной деятельности открытого акционерного общества*»

1) all enterprises;

2) the enterprises in which ratio P/E is higher than 30%: one monetary unit of the pure profit of the shareholders can pay 0,3 monetary units;

3) the ratio P/E is higher than 80%;

4) the enterprises in which P/E is higher than 100%. It means that for one monetary unit of the pure profit of the enterprise, the shareholders agree to pay no less than one monetary unit.

Investigating Byelorussian enterprises according the value of the coefficient P/E for the last six years we determined, that the level of this index for the majority of the subjects was rather low. In 2006, 22 subjects had correlation P/E higher than 1, but in 2001 – only 15. It means that for one monetary unit of the pure profit the shareholders agree to pay no less than one monetary unit. The share of such enterprises is 0,5-1,5% of the total number of enterprises.

The number of the enterprises with the ratio P/E higher than 0,8 (0,8 rouble for one rouble of the company's profit) increased from 10 up 26 units in 2006 in comparison with the year 2001. The value P/E higher than 0,3 (0,3 rouble for one rouble of the company's profit) in 2001 – 28 enterprises, and in 2003 it is number increased up to 121 enterprises (7,8% of the general totality), but in 2006 – only 37 units (2,2% of the general totality).

Table 1 shows also that there is a high specific share of businesses with accounts payable and accounts receivable. In 2006, the businesses with concurrently account payable accounts receivable amounted to 46.3% characterizing a poor quality of indebtedness and evidencing retardation of main assets turnover. The acquaintance by debtors is a practical source of discharging of the bills payable. Acceleration of the turnover of bills receivable provides the businesses with conditionally free means in the amounts corresponding to the rate of turnover of the amount payable and amounts receivable.

Comparison of the turn-over of amounts receivable and amounts payable is essential in order to assess to the financial position of a business: if a creditor is to be paid more often than the money is received from a debtor the business grows short of means; when the turn-over of the amounts payable and receivable is reversed it appears extra means that can be allocated to other purposes. How to calculate excessive and lacking means properly in practice? This calculation is impossible from the difference between the turnovers of amounts receivable and amounts payable; each indicator of the turnovers is a product of the factors inherent to each turnover. The difference between the turnover is just a sign of extra or lacking means and enable to determine the latter case to what extent this difference can be reduced or generally how to change minus to plus. For instance, in our case, acceleration of the turnover of the amounts receivable would favor more sales without boosting the average due amounts payable. It would

practically mean changing the relations between buyers and other debtors. Another way is to alter the terms of contracts with suppliers, for example, to extend the time between delivery and payment. Since the indebtedness of buyers is determined by both the turnover and the amount of sales, while debts to suppliers are caused by both the turnover and the price of deliveries, the total amounts of maturing amounts receivable and amounts payable should be compared. It is still more essential to consider the total amounts due by a business to both creditors and suppliers. The lack or extra means in the turnover of the business can create positive or negative difference between the amounts receivable and amounts on a certain date. This assertion is true providing that the reserves are fully payable by own financing sources. The business may need to borrow in case the amounts payable grow in excess of the amounts receivable. There is an alternative: either to borrow or resort to factoring services.

Thus, there is one way to solve the problem of how to improve financial results of businessed and their attractiveness to investments. It can be achieved by a better management of indebtedness quality and the payment discipline.

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Summary

The aim of work is to analyze the methods of business value. The internal profit earning mechanism is a core method of cost assessment and the aggregative business assets (property) that are involved in the production process. The assessment methods based on the capital flow are the simplest and the most popular once. To promote the attractive of business for investments it is essential to achieve optimum profit distribution to satisfy aspiration of the business and its owners.

Problemy zarządzania wartością przedsiębiorstwa

Streszczenie

Celem opracowania jest analiza metod oceny wartości przedsiębiorstwa. Mechanizm wewnętrznej oceny zysków stanowi podstawową metodę oszacowania kosztów, podobnie jak zagregowanych aktywów przedsiębiorstwa (własności), które zaangażowane są w proces produkcyjny. Metody szacunku oparte o przepływy kapitału są najprostszymi i najczęściej stosowanymi metodami. W celu promowania atrakcyjnych przedsięwzięć inwestycyjnych istotne jest osiągnięcie optymalnej dystrybucji zysków satysfakcjonującej aspiracje przedsiębiorstwa i jego właścicieli.