Development Management for the Companies that Act in the Romanian Processing Industry

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As the opportunities given to Romanian companies rose, due to the global market process, while growing competition, at both macro and micro-economical level, so grew the necessity for an analysis able to stress competitively and to substantiate the best developing means.

At C.A.E.N. [*] division level it appeared the necessity to calculate the internal market quota and imports/exports ratio, in order to rank the processing national companies from the competitive abilities` point of view versus external competition. It was also evaluated the representation degree of various indexes as far as companies` competitively is concerned for seven industrial fields of the national processing industry, using the Excel Regression Module, by multiple regression.

The conclusions drown afterwards can help company managers who aim to develop, to base their decisions an elements with a high positive effect and to efficiently use available resources.

The major changes, that took place in the world industry evolution, some domains' development and others' limitation, the opportunities given to the Romanian companies together with giving the market an

[*] Classification of National Economic Activities

international aspect, but also the dangers appeared because of the competition increasing, claims a deep analysis, at the macroeconomic level as well as at the industrial companies one, performed by each manager, so that the best action strategies can be chosen for active assistance at the world value circuit. To reduce the risks associated with the growth, the means of development, the native managers have to use ways of planning through which they can identify the best means of development, the efficient grant of the investment funds and achieving the balance between work and production process. A good manager also has to foreseen the most exactly as possible the effects the company's dimension development and increasing can perform in what concerns the competition.

For these reasons, the conclusion that the primary resources of the competition which are represented by the capital and work can be drawn up, and that the application of the scientific management upon the production issues presupposes these measures contribution improvement.

At the same time with the Romanian processing industry importance, as well as with the fact that this economic domain is situated under the increasing rhythm of national competition, it is necessary to identify the actual eminently domains, as well as the critical points of the incorporate sectors, respectively where shortages of internal performance are pointed out. Thus, the measure acknowledgement where the native companies respond to consumers' exigency is aimed in conditions which it confronts the external competition and the evolution of this ability in time.

The main domains of the processing industry, from the contribution's point of view in GDP are, in a decreasing order, the provisions industry (DA-15), iron (DJ-27), clothes industry (DB-18), means of road transport (DM-34), chemical industry (DG-24), furniture industry (DN-36), crude oil processing and coal coking (DJ-28), machines and equipments exclusively the electric and the optic ones (DK-29) etc. At

the same time, through the domains of the processing industry with the least share in GDP, there are, in an increasing order, tobacco products (DA-16), means of estimation and office technique (DL-30), apparatus, medical and precision instruments, optical and clocks and watches (DL-33), equipments, radio, television and communication equipments (DL-32) etc.

To place the domains afferent the divisions C.A.E.N. from the medium level point of view in which the native companies that act in these economic sectors own competitive abilities to respond the consumers' demand in the conditions in which they confront an external competition, the internal market quota is calculated, with the formula[1]:

$$C_{pi} = \frac{P_{ind} - E_{xp}}{P_{ind} - E_{xp} + I_{mp}}$$

And the remittance level of the imports through exports

$$G_a = \frac{E_{xp}}{I_{mp}}$$

Interpreting the obtained data makes allowance for the fact that, the internal market as well as for the remittance level of the imports through exports show, at a sector level, the commercial exchange balance and the competition level of the companies that act in these domains.

It is important to know the market quota, at a macroeconomic level, for the analyzed industrial sectors, but at each industrial enterprise level as well.

Thus, the market quota for each company can be calculated after the formula:

$$Cp_{FirmaX} = \frac{P_{ind\ FirmaX} - E_{xpFirmaX}}{P_{\text{int}}}$$

This indicator helps the managers of the native enterprises to place in market and to identify the influence level of the products tender upon the consumers' preferences, as well as the company's performances effect that they lead upon the stakeholders. Pushing forward in time of the mentioned indicator may help at the strategic decisions fundament of the company, as well as the developing, consolidation or limitation and at the future evolution foreseeing, important element in performing the planning activities on medium and long term.

In what concerns G_a, the smaller than 1 this is, it indicates a commercial shortage that signals the low competition level of the native manufacturers as against the external ones.

Thus, relevant are the industry domains of the means of estimation and office technique (DL-30), publishing houses, polygraph and reproducing the registering on supports (DE-2) and the substances and chemical products industry (DG-24), where the low value of G_a indicates, at the industrial enterprises, the need of investment granting for re-technology and know-how import or strategic associations regarding the competition increasing. At the same time, the distinguishing is assigned to the imperatives of development, for the strategic sectors or basing on the import alternative, at the same time with the added value contribution for the downstream activities, on the technological chain to the final consumer.

As a matter of fact, for the industrial sectors placed on the inferior levels of the production cycle, generally catalogued as being with low added value, the companies that act in the developed countries aim a low G_a, and for the activities that belong to the superior processing sectors, a big G_a, that shows a positive specialization of the internal manufacturers.

It is assigned the identification of those indicators that draw manager's attention, priory, to be subject to the necessary funds to improve

them, contributing, thus, at choosing the best strategies to increase the competition, using the disposed resources efficiently.

The competition level estimation for the processing industry, during the period 2002-2005, is assimilated within this study of the industrial production evolution (Pind), with the reason that this must be sold, so there is outlet for it and it is not agglomerated on the supply, and the main indicators that influence the medium position of the companies that act in these industrial domains, in comparison with the competition, are considered the corporal immobilization value (Ic), investments (I), expenses with the research-development (CD) and the medium number of the employees. (Nr. sal.).

The choice of the industrial domains for which the estimations are performed takes consideration, at the same time, for their contribution at GDP organizing, their dependence of capital investment amount, of intern market quota, respectively the remittance level of imports through exports, as well as of the training effect estimated in the equipments and services supplying companies implication from the horizontal industry. Thus, there are chosen 7 industrial domains, considered important in the Romanian processing industry assembly, for which it is desired choosing the action directions for increasing the competition level, the above mentioned indicators' value registered in these sectors, during the period 2002-2005, presented in table 1.

Table 1 – The main economic indicators value for 7 domains of the processing industry.

Industrial Domain	*Period*	*Industrial Production -millions RON-*	*Corporal Immobilizations -millions RON-*	*Investments -millions RON-*	*Research-Development Expenses -millions RON-*	*Medium Number Employees -thousands people-*

Processing Industry D From which:	*2002*	*100157,9*	*54201,3*	*6033,6*	*215,685*	*1594*
	2003	*123512,4*	*69271,6*	*8947,4*	*231,488*	*1581*
	2004	*148312,0*	*82616,7*	*11869,8*	*328,142*	*1491*
	2005	*170129,7*	*94085,5*	*11295,4*	*356,092*	*1425*
Grocery and beverage DA-15	*2002*	*16570,2*	*8057,3*	*1176,9*	*1,804*	*163*
	2003	*20589,2*	*11022,6*	*1784,2*	*2,576*	*162*
	2004	*25575,1*	*12930,1*	*1930,1*	*5,033*	*161*
	2005	*29300,4*	*16276,3*	*2294,5*	*7,236*	*166*
Crude rock processing, coal classification and nuclear combustion treatment DF-23	*2002*	*14251,7*	*2531,6*	*161,4*	*23,436*	*18*
	2003	*15946,4*	*3251,5*	*415,5*	*33,051*	*15*
	2004	*17405,7*	*3712,9*	*901,8*	*55,969*	*15*
	2005	*25342,4*	*3855,0*	*732,6*	*42,323*	*14*
Chemical substances and products DG-24	*2002*	*7042,7*	*4117,0*	*329,7*	*19,759*	*64*
	2003	*8732,0*	*5732,8*	*375,5*	*18,332*	*58*
	2004	*10990,4*	*6400,3*	*639,6*	*27,959*	*51*
	2005	*9979,3*	*6857,0*	*701,3*	*45,099*	*49*
Building materials and other products manufacturing from non-metalic minerals DI-26	*2002*	*3988,7*	*3362,1*	*377,7*	*4,191*	*77*
	2003	*4859,3*	*4320,0*	*554,4*	*6,207*	*72*
	2004	*6375,4*	*5309,6*	*1032,1*	*5,522*	*63*
	2005	*6660,6*	*5796,0*	*775,5*	*6,810*	*60*

Metallurgy DJ-27	*2002*	*15254,2*	*10042,4*	*482,2*	*19,168*	*85*
	2003	*17180,7*	*9097,8*	*369,3*	*23,498*	*76*
	2004	*18714,8*	*9804,5*	*817,2*	*27,719*	*63*
	2005	*19531,7*	*10859,8*	*774,9*	*22,765*	*57*
Metalic constructions and products DJ-28	*2002*	*3371,2*	*1498,3*	*212,7*	*136,106*	*78*
	2003	*4679,6*	*2144,8*	*298,3*	*137,063*	*86*
	2004	*6098,8*	*2680,1*	*406,1*	*194,947*	*86*
	2005	*7050,2*	*3142,4*	*516,3*	*215,401*	*85*
Furniture and other industrial activities unclassified somewhere else DN-36	*2002*	*3405,1*	*1441,0*	*274,5*	*2,555*	*99*
	2003	*4116,2*	*2335,7*	*364,4*	*2,415*	*106*
	2004	*5193,1*	*2938,8*	*422,8*	*1,392*	*103*
	2005	*5298,3*	*3496,2*	*407,5*	*2,145*	*99*

Source: Romanian Statistical Yearbook, National Institute of Statistics

The problem consists of importance amount valuation of each 4 indicators, and its solving implies using the multiple regression, having as estimation basis the time series 2002-2005 and appealing to the *Regression* module from the *Excel* application.

The dependant variable which gives the medium competition measure that act in the analyzed domains, is the industrial production , and the independent variables that influence the competition are the 4 indicators above established, as it results from the figure 1 , that represents the estimations for the processing industry assembly.

Fig. 1 – Multiple regression of the 4 economic indicators influence upon the production amount in the processing industry.

SUMMARY OUTPUT

Regression Statistics	
Multiple R	*0,994428*
R Square	*0,988887*
Adjusted R Square	*0,98724*
Standard Error	*4878,201*
Observations	*32*

ANOVA

	df	SS	MS	F	Significance F
Regression	*4*	*5,72E+10*	*1,43E+10*	*600,6395*	*5,97E-26*
Residual	*27*	*6,43E+08*	*23796844*		
Total	*31*	*5,78E+10*			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	*1448,092*	*1078,089*	*1,343203*	*0,190389*	*-763,964*	*3660,148*	*-763,964*	*3660,148*
X Variable 1	*1,583592*	*0,292502*	*5,413949*	*1E-05*	*0,983427*	*2,183757*	*0,983427*	*2,183757*
X Variable 2	*1,362305*	*2,046568*	*0,665653*	*0,51128*	*-2,83691*	*5,561515*	*-2,83691*	*5,561515*
X Variable 3	*10,4206*	*14,8052*	*0,703848*	*0,487554*	*-19,9571*	*40,79836*	*-19,9571*	*40,79836*
X Variable 4	*-0,71506*	*6,126262*	*-0,11672*	*0,907946*	*-13,2851*	*11,85499*	*-13,2851*	*11,85499*

As it can be seen in fig. 1, the multiple determination coefficient (Multiple R), of correlation between the y_i and y^*_i values adjusted through the regression equation (R Square) and through determination adjusted (Adjusted R Square), that has to be as closer of 1, performing the conditions that the linear regression should be accepted.

At the same time, the values of F (600,6395) and Significance F (5,97E-26) determines the hypothesis that the chosen model adjusts well the data in the pattern.

The influence coefficients values for the 4 variables are:

Ic – *1,58*

I - *1,36*

CD – *10,42*

Nr.sal. - *-0,71*

The sold production dependence, as competition element, on corporal immobilization value (Ic), investments (I), expenses with research-development (CD) and the medium number of the employees (Nr. sal.)can be estimated through the following equation:

$$Pind = 1{,}58 * Ic + 1{,}36 * I + 10{,}42 * CD - 0{,}71 * Nr.sal + 1448$$

A first conclusion that can be drawn from the equation coefficients analysis is the necessity of assigning funds for research-development, at the same time with improving the employees' training level and, on this background, the increasing of work productivity, including through decreasing of the odd staff.

At the same time, for a company's manager that wants to develop himself through the business increasing, the gross formation importance of fixed capital and the corporal immobilization amount are highlighted.

A company's high level of competition is equivalent with the economic efficiency, and in order to reach it is necessary to adopt those strategies that optimally combine the inputs at the lowest cost for society.

In what concerns the labour, the inputs improvement is performed through education and continuous training, and for the capital, through technological progress.

That is why the performed investment to improve these indicators must be assigned in a balanced way. An industrial enterprise cannot obtain performance if assigns only for the endowment with high technology if it does not present interest for the professional training of the employees.

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