Role of Productivity in Quality Management

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Abstract- The aim of this paper is analyzing the issues of the productivity using quality management. It should be mentioned that operating companies have to meet the different needs of men. Satisfying this, it is possible only if it arises a number of measures called resources which can freely made. The state of resources and their execution express the strength or weakens of competitive enterprises. Knowing the state of enterprise resources makes it is easy to track called circle of "areas of strength and weakness of the company". This paper introduces the role of productivity in quality managements in different typical companies in Poland. It presents the quality improvement percentage and its relation with the productivity.

Keyword- Satisfying, arises, weakens, productivity.

I. INTRODUCTION

Introducing the issues of productivity, it should be mentioned that the strength of competitive companies is more dependent on the right (from the point of view of their use) of the structure (generic, qualitative and quantitative) of the resources, than on their size. Therefore, the phenomenon of the constant search for an appropriate relationship should meet the resources and the effects of the company. Finding these relationships is not an easy task. It can be believed that humanity since the dawn of its existence this task and to this day has not found (even though many sub-discovered, efficient and effective techniques) satisfactory solution. Currently has gained international acclaim productivity and move productivity with economic and social success of companies that use it [1-6]. Quality is the "blade" of competition in countries with a high level of development. Apart from the price and timing of product quality has become a key factor in the degree of customer satisfaction, and thus the success of the manufacturer. Virtually every business has its own specific view of what is quality. This applies both to managers, persons directly involved in the production, support services, i.e starting from the director, to the lowest level employees in the ending. Each company is therefore a definite quality system that performs according to his philosophy [7].

II. PRODUCTIVITY GROWTH USING QUALITY METHOD IN POLISH COMPANY

Polish Productivity Center in 2013. organized a "self-esteem" to improve economic and social performance. This project consists of several stages:

1) To conduct a self-assessment by the company, in particular filling out a form containing information about the results of the economic and social well as organizational endeavors undertaken - the technical.

2) Visit Polish Productivity Center experts in the enterprise: a meeting with the management of the establishment and trade union leaders and other participants in seminars and workshops; a visit to the production departments; meet again to discuss the proposals.

3) Interregional Productivity Forum - a conference dedicated to the summary of economic and social results obtained by the companies benefiting from the support of Polish Productivity Center, compared to those applications and the emergence of leaders productivity and the exchange of experiences on the best ways to achieve success [8,9].

Because participation in the self-assessment is voluntary, in practice, use this opportunity to companies just starting implementation. To self-joined the following companies: Bydgoszcz BELMA SA Electromechanical Plant in Bydgoszcz, Factory Instruments and Uchwytów BISON - BIAL SA Bialystok, Chemical Plant and Plastics BORYSZEW SA Sochaczew, SA Radio Factory ELTRA in Bydgoszcz, ENERGOMONTAŻ SOUTH SA in Katowice, KRAKOWSKA FURNITURE FACTORY, LEGMET Mechanical Works Ltd. in Legnica, Chemical Plant ORGANIKA ZAMECH in Bydgoszcz, Pabianicka PAFANA SA Tools Factory, Factory of the powders sintered POLMO in Łomianki, Piston Rings PRIMA factory in Lodz, Enterprise Mechanized PRI PZRI in Krakow, PZL - AMP in Warsaw, Regional Grain Industry Company - Młynarski ROC in Pabianice, STOMIL - Bydgoszcz ŚLĄSKA CABLE FACTORY in Czechowice - Dziedzice, Tarnów TAGOR Mining Equipment Factory in Tarnów Mountains, Stalowa Wola - DEPARTMENT DIE FORGE Stalowa Wola , Plant and Equipment Galvanic ZUGIL SA Paints in Wielun, Plant and Equipment Technical Elements ZUT in Lodz.

Table 1 presents the dynamics of productivity of labor and capital, and data on some putative sources to improve productivity. When calculations, the following definitions apply: Labour productivity - Added Value approximate, produced by one employee. Productivity of capital - Value Added approximate, obtained from the Total Capital unit. Approximate Added Value = Sales - (materials and energy + Services) First of all struck by the fact that all of the surveyed companies, with the exception of the Krakow Furniture Factory, swa improved productivity. Higher than the rate of inflation growth in labor productivity has reached 18 companies and capital productivity growth - 13 companies. All companies listed in the table, which raised labor productivity, achieved thanks to an increase in sales and improving efficiency of operations management (ie, an increase in the total capital turnover ratio, which is a general measure of the degree of utilization of resources of the enterprise).

Can disturb only the fact that only slightly more than half of

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the companies also improved its activity on the "demand side", making their products more attractive commercially, "saturating" them greater added value [10,11]. Only TAGOR company is an exception in this respect, since based its development - with a big result - an increase in the share of value added in sales. Since improving governance was the major driving force to improve productivity in the analyzed period, so it is advisable to compare the results of companies in this regard. Table 2 shows the company and classifies them in terms of increased productivity and streamline operational management level.The third column of the table contains the ranking of the companies surveyed in terms of the same size as the previous table, accompanied by an improvement in ranking indicators receivables and inventory turnover. The second column contains the sum of the ten indicators to improve the use of resources such as labor, materials and energy, the cost of total current assets and its components, liabilities and assets. The use of so many indicators is dictated by the desire to eliminate the influence of random and random factors on the total score [12-14].

TABLE 1. Improving productivity in the twenty companies and its main factors

Business Company	Dynamics of Capital Productivity	dynamics Sales	Labour Productivity	Growth Dynamics of Participation Value Added Sales	Growth in the Total Capital Trading
ZACHEM	178.1	170. 4	203.00	119.16	149.49
BELMA	154.0	155.25	145.78	93.90	163.99
ELTRA	184.9	207.84	320.59	154.25	119.85
ZUGIL	197.4	181.95	231.00	126.96	155.50
PRIMA	109.8	143.99	130.54	90.66	121.06
ZUT	135.9	226.23	231.79	102.46	132.68
PAFANA	140.4	156.23	156.35	100.08	140.30
ROC	128.5	185.25	177.26	95.68	134.35
STOMIL	98.79	150.19	145.44	96.84	102.02
FURNITURE	104.76	103.08	98.39	-	-
P.Z.R.I.	103.2	180.95	145.43	80.37	128.37
TAGOR	101.3	91.40	116.13	127.05	79.74
BORYSZEW	139.3	183.53	199.51	108.71	128.10
POLMO	321.2	155.43	207.53	133.52	240.55
HSW	167.5	165.88	146.36	88.23	189.84
BISON-BIAL	142.5	151.45	154.56	102.05	139.67
SOUTH	208.6	153.23	222.75	145.37	143.46
LEGMET	153.1	159.34	156.93	98.49	155.45
PZL-AMP	152.5	136.31	138.91	101.90	149.67
CABLES	77.06	213.98	146.91	68.66	112.24

TABLE 2: Ranking improve management performance.

Business company	Ranking Ranking dynamics of resource use	productivity dynamics of trading indicators	Sum
ZACHEM	18	18	36
ELTRA	18	18	36
BELMA	20	15	35
ZUGIL	16	18	34
PAFANA	16	18	34
BORYSZEW	18	15	33
HSW	18	15	33
ZUT	16	15	31
STOMIL	16	15	31
P.Z.R.I.	16	15	31
LEGMET	16	15	31
BISON-BIAL	14	15	29
SOUTH	14	15	29
PZL-AMP	14	15	29
POLMO	12	15	27
PRIMA	10	15	25
ROC	12	12	24
CABLES	10	12	22
TAGOR	8	9	21
FURNITURE	8	4	12

III. RESTRUCTURING OF THE MANAGEMENT STRATEGY OF THE COMPANY

1. Tasks:

a- Through the use of specialized technology and experience of small and medium-sized enterprises, the company is scheduled to survive in conditions of sudden changes, expected in the 90s.

b- In order to increase the productivity of the company and increase its competitiveness, the possibility to improve the management company with the most global point of view. The aim will be to achieve maximum effect.

2. Analysis and capture the current strength of enterprises.

a- Analysis of own resources.

b- Capturing the level of the labor force and employment levels.

c- Capturing the inherent strength in the technology and experience and current developments.

d- The analysis of the company's own specialized technology.

3. Definition of the company.

a- Determination of the issues to be implemented in the near future and define medium- and long-term objectives.

b- Identify specific goals, such as the level of sales, profit rate, lower costs, reduce defects like.

4. Examination of management and production tasks.

a- The search for factors that require innovation management according to changes in the external:

- technological innovation;
- changes in the structure of supply and demand for labor;

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- changes in the structure of supply and demand for products;
- progress in internationalization;
- problems associated with social risks.

b- To examine the issue of restructuring of production from a global perspective:
- plan for development of production;
- capital investment plan;
- sales plan;
- employment plan;
- plan benefits;
- financial plan.

5. The strategy to diversify the company's activities.
a- How to identify future trends in technology and market?
b- How to make a change and variety, based on its own technology company?
c- What fields are the most favorable for small and medium-sized enterprises?
- small series products;
- products with a short time of delivery;
- products requiring after-sales service;
- services that require interest of the local community;
- products sold directly to customers;
- products requiring close proximity to the customer in relation to the place of production;
- repair;
- production of specialized, high accuracy and precision manufacturing.

Improving the efficiency of production methods.
6. The measures to increase the productivity of raw material:
a- to examine the efficiency of raw materials and consumable materials;
b- finding, by analysis of cheaper materials;
c- the use of materials compatible with the standards;
d- reduction of unit prices of cooperative factories and re-examine them.
2. Measures to improve the productivity of equipment:
a- promotion of manufacturing automation;
b- improving the layout of jobs;
c- improvement of equipment, tools and means of transport;
d- promotion of the use of machinery, currently not used yet;
e- increasing the number of machines operated by one employee.
3. Measures to improve the productivity of the workforce:
a- improve the ability to work through education and training;
b- the promotion of a multi-skill;
c- directing the employees of the departments of non-production to production;
d- examining the possibility of changing the nature of work used to talents;
e- the establishment of labor standards and working to standardize as much as possible;
f-to promote the continuous operation;
g- the application of measures to improve the morale of work, behavior and foster a lower cost [15-17].

IV. THE RELATIONSHIPS AND CAPITAL PRODUCTIVITY.

Figure 1presents the diversity of the companies in question in terms of "effort and material." The graph shows the industries with high labor intensity in which they operate companies such as: PZL - AMP, BISON - BIAL, or PRIMA. In these factories produced - on an industrial scale - products with high precision. High intensity work means that work in them a lot of people, a typical product "passes through many hands." There are also activities with high material- and energy represented here by the cable industry and rubber, grain and milling, chemical, and electrical machinery. Most of these companies in 1000 zł. sales consumes almost as much work, materials and energy - a total of about 650 - 700 zł. Meanwhile, it would be expected that the "labor-intensive" industries, adding more "value-added" to purchased materials and energy should be generally more profitable, or to obtain higher prices in the market compared with expenditure, than industries "material consuming." Therefore the bars at the beginning of the graph should be lower than those at the end of the chart [17-20]. Companies belonging to the labor-intensive industries generally produce a very wide range of products in a short series. This kind of activity is to a certain extent intended for small and medium-sized businesses. Compared with the companies benefiting from economies of scale, there is a tendency to reduce their rate of profit due to the relatively high complexity of processes, loss of time on the retooling, cost more and new tooling. Therefore you need to make them special techniques and technologies of production control, called in short the technology group, enabling them to overcome the consequences of this disadvantage and get similar benefits from the management as companies "mass". It is possible that the energy intensity of our industry is still too big for the actual technical equipment, labor, and therefore there is a substitution effect and energy work. The costs of labor and materials and energy on cash sales of 1,000 units.

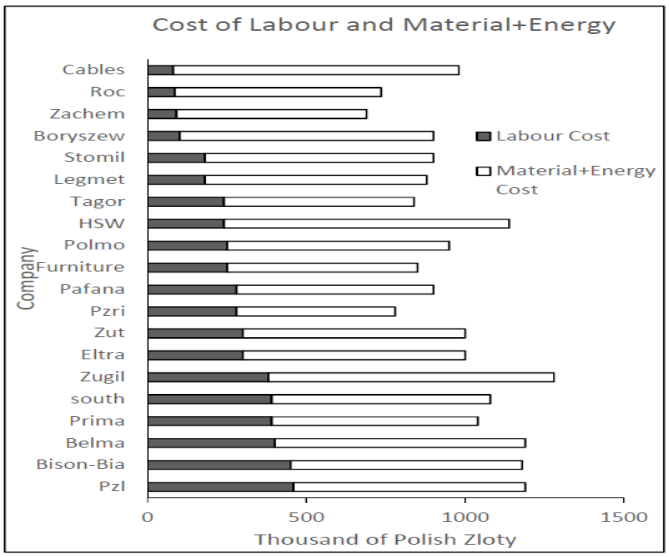

Figure 1: The cost of labor with material+Energy for different companies

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Figure 2 shows the capital intensity of the previously discussed (Sec. IV) companies. The graph shows the cases, even drastic - like ELTRZE - excess assets. If these cases are ignored, so one can deal with "unwanted overinvestment" It turns out that for capital-intensive industry determines the working capital requirement, which is the largest in the industries 'labor-intensive'. The graph shows the analyzed size of the individual components of current assets needed to produce products of 1000 monetary units. As you can see the graph shows clearly that the demand for working capital and inventory levels determines that it is the highest in the industries 'labor-intensive'.

The most important modern industry development strategy - the strategy of restructuring management - associated with industrial engineering and production control. This is a solution to two problems at once[20-23] :

a- reduction of inventories in the production process;

b- decrease in unit labor by improving its organization

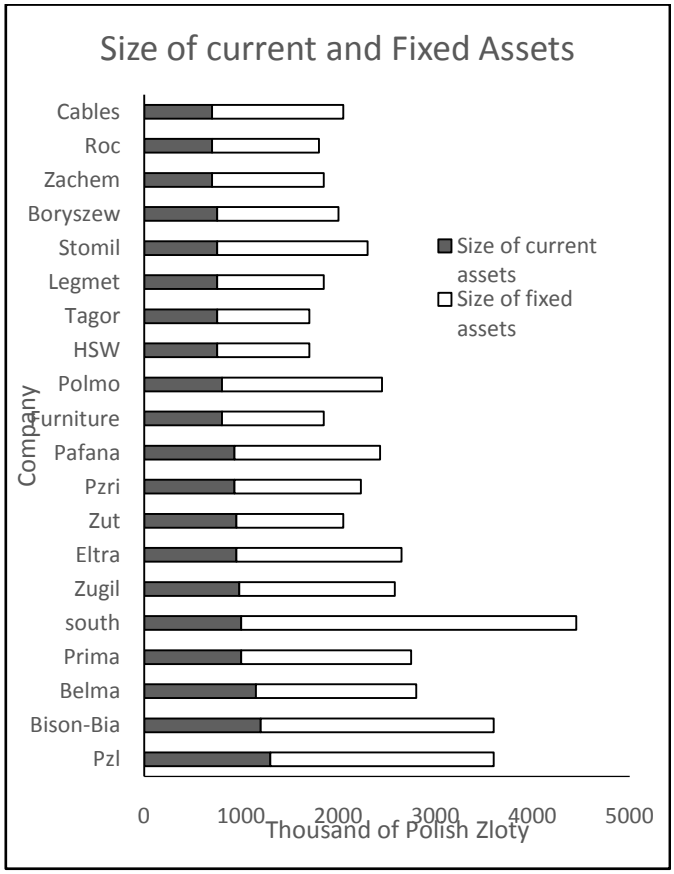

Figure 2: The size of current and fixed assets for different companies

V. CASE STUDY OF QUALITY POLICY

1- various enterprise (organization):

a) Quality is an integral part of our entire organization. Continuous development and growth of the company is based on the implementation, change tracking, documenting and managing the quality of products and services at all stages of their work, from development to production and service products.

b) quality policy of our company is to gain customer confidence by our willingness and ability to meet their expectations. It is desired for customers to know that companies should listen to their comments and suggestions, and that our relations with them are and will always friendly and informal.

c) quality policy of our company is to provide products and services that meet the requirements and expectations of our customers, taking into account the price and competition, as well as the realization of this so as to maintain and achieve the highest recognition and a reputation for quality across the enterprise and beyond.

2- QUALITY STRATEGY

there is form a functional strategy, therefore needs to be developed alone for each product and for each market (or segment). The strategy must include a continuous qualitative answers to the following questions:

a- what is the level of expectations (including qualitative) our customers?

b- how can increase the number of our customers (market share)?

c- whether the balance of costs and benefits is beneficial for us (impact quality)?

d- have available in order to introduce qualitative changes?

e- what is the position and actions of our competitors in terms of quality? [27]

VI. CONCLUSION

The new situation in which they were present operators, requires the development of their strategies and undertake a comprehensive reconstruction of the management system. Pro-quality strategy requires the granting of the absolute primacy of the ongoing economic purposes. Adoption of quality management in the Polish economy is the only way to exit the country out of a deep crisis. Specialists quality issues in Poland believe that the long-awaited moment has come to recognize the quality as the main criterion in management. Polish economy displays characteristics comparable with countries that in similar situations have been forced to take pro-quality strategy and consistently using it to obtain a high efficiency management. Pro-quality strategy calls for the conferment of the characteristics of the absolute primacy of the ongoing economic purposes. Adoption of quality management in the Polish economy today is the logical consequence, and also the only chance. The currently accepted and introduced in Poland economic model assumes a special role for sustainable and open market, as a regulator of adjusting the level of quality to the capabilities and expectations of the users. Consideration of the benefits arising from participation in the European market today, are unfounded, if not raised the quality level of products and services that will represent the Polish economy in this market. Increasing the quality of jobs is essential for achieving high and sustainable position in the system of the world economy - a chance to obtain benefits resulting from participation in this system.

Quality and productivity are inextricably linked. Higher productivity leads to higher quality and vice versa. Thus, the provision of high quality must comply with all of the subject of responsibility in the company. All employees must be aware of the fact that, since all activities in the company are interrelated, the quality standard of work units affects the standard of the work of others. When there is full control of the quality of manufactured goods and services, and stand on a high quality level.

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