

BENCHMARKING RESEARCH OF STEEL COMPANIES IN EUROPE

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In present time steelworks are at a stage of permanent changes that are marked with still stronger competition pressure. Therefore managers must solve questions of how to decrease production costs, how to overcome competition and how to survive in the world market. Still more attention should be paid to the modern managerial methods of market research and comparison with competition. Benchmarking research is one of the effective tools for such research. The goal of this contribution is to compare chosen steelworks and to indicate new directions for their development with the possibility of increasing the productivity of steel production.

Key words: steelworks, benchmarking, competitiveness, market research, economical effectiveness

INTRODUCTION

From the global view steelworks industry presents a large number of various producers, the majority of which are mid- size producers. Ten biggest steelworks represent only 25 % of the whole world production. Such a fraction of the steelworks industry resulted lately in excessive increase of production capacities and decrease of steel prices. Steelworks organizations are now in a situation, in which the value of firms has been significantly increased through reduction of the production costs. Therefore managers are confronted with the question of how to decrease production costs, how to overcome competition and how to survive in the world market. So it is necessary to pay still more attention to the modern managerial methods of market research and comparing with the competition.

Benchmarking is one of the effective tools for improving the firms, which is orientated to increasing the operative and strategic effectiveness that is the real content of organization activity [1]. This method leads to the realignment of the firm's culture towards the process of new knowledge acquisition, increasing working knowledge, qualification and effectiveness.

Although benchmarking means mainly comparing with others through certain standard „Benchmark“, the goal is not to be equal to others. The final goal is higher: to become the best in given area of business activity and that means to become a new Benchmark. But it is not possible to enter into such situation only by comparing numerical data from performance indexes and finding the answer to the question: *How? Or How much to be behind?* Benchmarking namely answers to the three basic questions:

- Where are we now?
- Where do we want to get?
- How to get there?

Answers to such questions are the goal of this contribution along with the determination of new directions for the development of steelworks society and discovering the possibility to increase productivity of steel production.

SITUATION AT THE MARKET WITH STEEL PRODUCTION

In 1980, there were more than 500 000 U.S. steelworkers. By 2000, the number of steelworkers fell to 224 000 [2].

The economic boom in China and India has caused a massive increase in the demand for steel in recent years. Between 2000 and 2005, world steel demand increased by 6 %. Since 2000, several Indian [3] and Chinese steel firms have risen to prominence like Tata Steel, Shanghai Baosteel Group Corporation and Shagang Group. Arcelor Mittal is however the world's largest steel producer.

In 2005, the British Geological Survey stated China was the top steel producer with about one-third of the world share, Japan, Russia, and the US followed respectively [4]. In 2008, steel began trading as a commodity on the London Metal Exchange. At the end of 2008, the steel industry faced a sharp downturn that led to many cut-backs [5].

Table 1 illustrates 10 Top steel-producing companies in 2011.

Over the course of the 20 th century, production of crude steel has risen at an astounding rate, now fast approaching a production level of 800 million tons per year. Today, it is difficult to imagine a world without steel [6].

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Table 1 Top 10 steel-producing companies

Rank	Company	Tonnage/t
1	ArcelorMittal	97,2
2	Hebei Group	44,4
3	Baosteel Group	43,3
4	POSCO	39,1
5	Wuhan Group	37,7
6	Nippon Steel	33,4
7	Shagang Group	31,9
8	Shougang Group	30,0
9	JFE	29,9
10	Ansteel Group	29,8

In present time steelworks production is in a global recession. It is a consequence of continuing imbalance among steelworks capacities in Europe, USA, Canada, Japan and the global demand. Figures 1, 2 illustrates change of world's rate of steel production in 2011 (1 518 million tones) against 2001 (851 million tones) crude steel.

From the development of steel production we can see that production in Europe decreased about 47 %, as well as in other countries, excluding China that recorded more than two-fold (253 %) increase of steel production [6].

Eventually, Europe as well as EU countries will profit from the EU extension from the viewpoint of steel market, mainly because this process will bring the removal of production capacities in incorporated countries as well as higher possibilities of sales in these countries. In this way both sides will profit from general advantages of globalization. The development of steel market shows an emergent need to reduce steel production in the industrialized countries in accordance with the present cyclic decrease of demand.

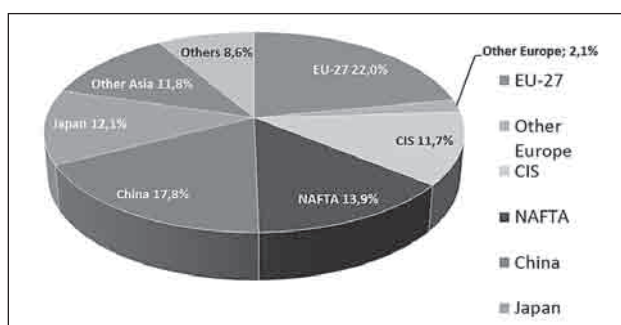


Figure 1 Steel production and use in 2001

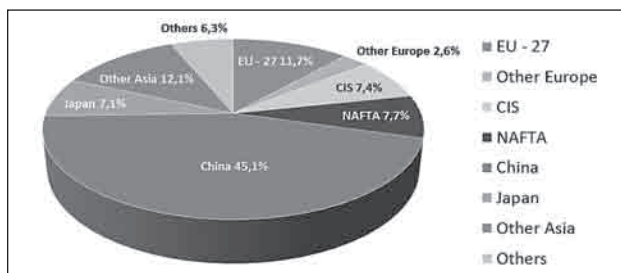


Figure 2 Steel production and use in 2011

BENCHMARKING IN CHOSEN STEELWORKS COMPANIES

Competition-oriented benchmarking was realized from the viewpoint of orientation and level of application that means comparing the U.S. Steel, s.r.o. Košice (USS KE) performance with the performance of competition steelworks companies:

- Arbed – Luxembourg company,
- Rautaruukki – Finnish company,
- Voestalpine AG – Austrian Co.

The main business in chosen companies is production and sale of steel products. The main consumers of the metallurgical companies are EU states, then other states from Central and Eastern Europe and also states from the Mediterranean, Balkan, Near East and Asia are important consumers.

The above-mentioned chosen companies are ranking among west European competitors of USS KE, which was the main reason for their choice as benchmarking partners for the biggest steel producer in Central Europe.

The chosen companies have been analyzed from the following viewpoints:

- Basic characteristics of the chosen companies – total consolidated sale according to territories and division of the company, firm's structure and its main products, annual steel production, and average number of employees
- Comparing the company based on economic indexes in 2006-2010 – market rate, cost index, work productivity, employment and structure of workers.

In the following Table 2 are illustrated summary results from the performance comparing in individual companies, mainly according to the level of achieved economical results that are illustrated by the individual economic indexes. A steelworks company received 5 points in the case when it reached, in given area, at least twofold better results than its competition.

According to point evaluation the first place belongs to USS KE due to the outstanding point lead. The largest influence on these results had the best situation in the area of immediate liquidity, stocks management, management and usage of long term property, indebtedness, mark of employee per profit and profitability. USS KE also achieved, against its competitors from the EU, the lowest wage, depreciation, and total cost index [7]. At the same time the development of employment was positive from the viewpoint of work productivity in this steelworks company that is different from its benchmarking partners.

On the other hand USS KE reached the lowest rating in the global world and European markets. During the analysis in the case of biggest Central European producer of rolled plates, problems have been identified in the area of common liquidity, claims management, work productivity and employee's equipment with long term

Table 2 Comparison of companies

Index	Metallurgical company			
	USS KE	Arbed	Rautaruukki	Voestalpine
Absolute mark on world market	1	5	2	3
Absolute mark on European market	1	5	2	3
Immediate liquidity	5	3	1	2
Common liquidity	1	2	3	5
Turnover of stocks	5	1	3	2
Turnover of claims	1	5	3	2
Turnover of long term property	4	1	3	2
Total indebtedness	4	3	1	2
Measure of indebtedness	4	4	1	2
Profitability of total capital	5	2	0	3
Profitability of own capital	5	1	2	3
Service cost index	2	1	4	3
Cost index for material and energy	2	1	3	4
Wage cost index	4	3	2	1
Depreciation cost index	5	3	2	1
Total cost index	5	1	3	2
Mark of employee per profit / loss	1	5	4	3
Work productivity (thousand EUR/ employee)	5	2	1	3
Work productivity (tonnes / employee)	1	4	2	3
Using of long term property	5	2	3	2
Employee's equipping with long term property	1	5	3	4
Development of total employment	4	1	3	1
Sum of points	72	62	56	60
Average number of points	3,13	2,70	2,43	2,61

property, in which USS KE obtained lowest number of points in comparison with the chosen companies.

CONCLUSION

Benchmarking method can be applied in every activity of the firm. In this contribution we have been dealing with the firm's evaluation and its business activity as a whole by means of economic indexes, while from the viewpoint of orientation and application level it meant competition-oriented benchmarking, comparing the performance of USS KE with the performance of competition firms.

According to the obtained results we came to the following recommendations for the steelworks company USS KE:

- Prevention of further increase of claims by consistent rating of clients and suppliers.
- Determination of credit limits and their control with the goal of preventing the rise of high claims against one client and in this way diversify the risk of nonpayment.

- Prompt payment of invoices by clients must be stimulated by advantage discounts from goods.
- Decrease service cost index by providing performance from own sources through reevaluation of present contracts.
- Modernization of existing production equipments and building of new services with the aim of increasing work productivity.
- Gradual increase of the number of employees in production and decrease of the number of administrative employees.
- Finding new markets for realization of steel sale, with regard to the stagnation of sale in Western Europe.

Conclusions from comparing chosen companies in given business areas, used for suggestions of recommendations on how to increase the effectiveness of management in USS KE led to optimization of economical and technical processes and improvement of the position on the market. However, if the company wants to improve its competition position on the European steel market and to decrease great differences mainly in the area of work productivity, it must involve every employee in the process of increasing production effectiveness.

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