

A LARGE BUSINESS ENTERPRISE AT THE STOCK EXCHANGE¹

COMPETITIVENESS OF THE CHEMICAL CORPORATION TVK (TISZAI VEGYI KOMBINÁT)

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Received: Febr. 1, 1998

Abstract

The study gives a review of the petrochemical industry. It analyses the factors of the TVK competitiveness. The competitiveness of the corporation meets the world standard on the basis of its leading technology, the high quality of its products, its cost structure, and the vertically integrated structure. The study gives details about the risk factors as well. Because the TVK is export oriented corporation the main risk factor is the ethylene price in the world market. One other risk factor is the size of the Olefin Plant, the other is the possibilities of the ethylene import. The study underlines that the further investments in the industry – if it is necessary – require substantial capital and take a long time.

Keywords: competitiveness, market share, internal market, polymer productions.

It is the rare occasion in the Hungarian privatization process to privatize large state owned firm by the admission to the stock exchange. Selling the TVK stocks in 1996 was followed by strong home and foreign interest. Majority of TVK shareholders were foreign financial intermediaries. This solution seems a guarantee not just for the firm but for the whole industry too, for improving the return of capital, the cost structure and efficiency. From 1989 the structure and the profile of the firm has changed and resulted that the profile of TVK activity is concentrated now in petrochemical industry and inside it the plastic material industry. The milestone of structural change was in December of 1991 when the company was transformed into public limited company. During this process the production and service – supplementing the main profile – have been organized in small business firms, meanwhile the interest of TVK in such firms activity remained strong.

By the creation of small, independent business firms, the enterprise's organization structure and efficiency has improved, and in the meantime the scale increased and quality of the production in the new firms improved.

¹Data, materials from TVK

Today the TVK is one of the largest companies of the Hungarian industry. Its ranking of sales revenue is the 3rd (the first is the MOL Ltd., the second is the Opel Kft.), of net income is the second. (the first is the MATÁV). In the ranking of export sales revenue TVK is 4th among the industrial and 5th among all Hungarian firms. That is the reason why the competitiveness of TVK is important not only for the industry, but for the economy as a whole and its future as well. The article deals with the factors of the competitiveness of TVK.

1. Production: the Supply

The main profile of TVK is polymers production and the company is the sole supplier of this product in the internal market. So TVK can be considered as a monopolist in the home market. In the production structure the polymers (polyethylene, polypropylene) play a determining role (see: *Table 1*).

Table 1. Distribution of sales revenue²

Items	%
Olefin products	20.8
Polyethylene granulate (PE)	43.0
Polypropylene granulate (PP)	21.5
Plastic processing products	9.0
Other	5.7
All together	100.00

Source: TVK

TVK is characterized by vertically integrated structure, on the base of naphtha (see the the structure below). In its own crackery (Olefin Plant) produces the ethylene and propylene, basic materials for polymers. These polymers are partly processed by its own Plastic Plants. Meanwhile the further processed plastics play marginal role in the production's quantity of TVK.

The main part of ethylene, propylene crackery's cost is the raw material's (naphtha and gasoil) cost. Before the reconstruction the Olefin Plant could process 1 million tons naphtha per year, and from this quantity 200 000 tons can be substituted with gasoil. It is very advantageous because of reducing the risk. 90% of TVK naphtha and gasoil needs are satisfied by MOL, the Hungarian monopolist naphtha and gasoil supplier, through the pipeline.

²Data: facts from the year 1996, but no changes in the previous data from the year 1997.

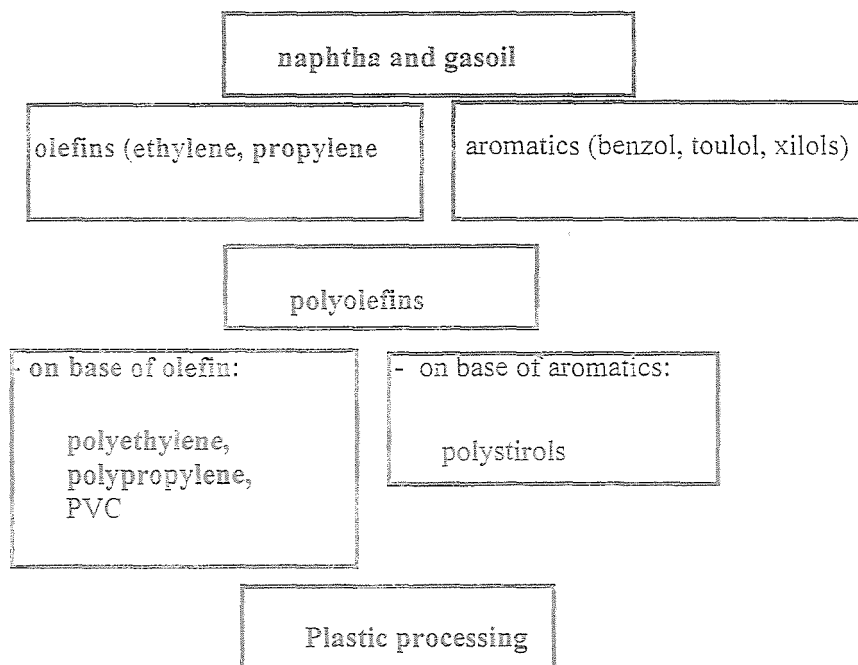


Fig. 1. Vertical structure of the polyolefin industry

That is the reason why the two corporations are mutually dependent on each other. The role of benzine import is not large, but important. The import is coming from Ukraine, Russia, Slovenia, and others in tankers. The tankers' delivery cost is more than the one of pipeline. At the same time the raw material quality – considering its paraffin content – coming from MOL is much poorer, than the import ones. This results lower efficiency ethylene conversion from benzine in the TVK. In the near future the TVK plans the increase of benzine import quantity. To increase the import further investments would be needed, because it is necessary to increase the capacities of raw material storage.

Data of *Table 2* indicate that the total quantity of ethylene and majority of propylene produced by Olefin Plant is further processed by TVK itself. TVK is the sole supplier of olefin, so it satisfies the olefin needs of BorsodChem too (the second largest company in polymer industry.) The relationship of the two companies is based on long term agreement till 2003. According to this contract TVK is delivering to BorsodChem yearly 66 000–80 000 tons ethylene. The ethylene demand is above of the limit of the Olefin Plant's capacity, so the TVK is importing ethylene from Ukrainian

³Chem System Analyses, 1996

Table 2. Demand and supply of TVK Olefin Plant³ (tons/year)

Year	1995	2000 planned
Ethylene		
TVK production	271 003	290 000
Import from Kalush	75 093	66 696
TVK usage	279 731	290 696
Sale to BorsodChem Co.	64 956	66 000
Change in inventory	1409	0
Propylene		
TVK production	144 114	154 216
Import	2 410	0
TVK usage	139 211	149 170
Sale	4 641	5 046
Change in inventory	2 672	0

Chem System analysis III

firm (Oriana) through pipeline. The Ukrainian partner performed a large polyethylene investment, and it is expected that the import from Kalush will be decreased. In order to satisfy the needs of BorsodChem, it was considered to enlarge the capacity of the joint venture Chemopetrol (Kalush Klorvinil, MOL, TVK) and a joint development is also planned. Further on TVK is intending a capacity enlargement of Kalush Olefin Plant, too, plans to decrease the production of one of its unefficient Plants (LDPE I. Plant) production. As result of this plan the total ethylene import needs will be reduced appr. 15–35 000 tons. All the alternatives mentioned above require high investment costs.

2. The Polymer Production

The items of TVK polymer production: (see: Table 3).

Everywhere in the world the polymers are processed in the large scale factories. In the long run the capacity determines the quantity and structure of the products, the supply is non elastic. The TVK capacities (while are smaller than its competitors) obviously are larger than the needs of our internal market.

The polyethylene products:

LDPE (TIPOLEN): TVK produces 15 types of these items. 50% of the sale goes to the home market, where it satisfies 65% of total demand. (The newest product LLDPE is very successful, not only its production quantity,

but the quality as well).

HDPE (TIPELIN): The capacity of this Plant is too large, and the further processing is too low right now. The internal market share is 77% (rather high).

PP (polypropylene): TVK produces three different types of PP. (TIP-PLÉN). The polypropylenes satisfy 92% of the home market demand.

The plastics productions:

In the TVK today are four plastic divisions:

1. Agroplast: 70% of the home market demand. The agricultural demand decreased dramatically in the last years, so the capacity is too large.
2. BIAFOL (BOPP): While demand of these products is rapidly increasing, the division develops its technology.
3. FLEXOFOL: 80% of all production goes to the home market, satisfying only 20% of the total demand.
4. FORMPLAST: 85% of all products goes to the home market, where its market share is only 20% of the total demand.

Table 3. Structure of TVK polymer production %

Plastics	1996	2000
LDPE	25.3	25.9
HDPE	41.8	40.5
PP	32.9	33.6
All together	100.0	100.0

Source: TVK

3. Technology

In the polymer processing the quantity of production depends basically on technology. Technologies used in TVK plants meet the world standards. Technology used is based on licences. Before the corporation was admitted to the stock exchange, the Chem System international firm prepared an analysis, where TVK was compared with the laggard and leader corporations of the world market. On the base of the analyses all the verticum of the TVK is competitive.

The quality of the polymers meets the European standard, and TVK has ISO 9001 as well. Data of the used technology are to be seen on the *Table 4*.

⁴Ipargazdasági Szemle, No. 1996/1-3 p. 141

Table 4. Technology

Factory	Factories, products and capacities		
	Licence-seller	Product	Capacity % kt/year
Olefin Plant	LINDE	ethylene	290 27.8
		propylene	145 13.9
		C4 fraction	80 7.6
Polyethylene Plants	ICI	LDPE (I)	55 5.3
	Philips	MDPE+HDPE	190 18.2
	BASF	LDPE (II)	60 5.7
Polypropylene Plants	Hercules	PP I. (homo-copolymer)	40
	Sumitomo	PP II. (homo-polymer)	50 4.8
	HIMONT	PP III. (homo-, copolymer)	90 8.6

Source: Várhegyi Miklós: 1995 – a year of success in the TVK.⁴

4. Costs

The competitiveness of TVK is based on its relatively efficient cost structure. First of all the labor cost is much lower in the TVK than of other market leaders. The second cost-advantage is the lower calculated ethylene/propylene price, because of lower benzín-gasoil delivery cost. (The pipeline is much less expensive than the tankers).

At the same time the cost analyses underlined that TVK capacity is much smaller than the leaders' capacity, so the unit costs can be higher, unless the lower labor cost, and the lower raw material price cannot compensate this cost disadvantage.

5. Market Structure and Perspectives

TVK is an export-oriented corporation. In his polymer-verticum more than 55% of the production is directed to the world market (see *Table 5*). The Olefin Plants and the further processed products serve the home market. The export for the TVK is not only a possibility, but a need as well to survive. This is the weakest point of its competitiveness. (The next is the price). The corporation highly depends on the situation of the world polymer market. The largest market of TVK products today is Western Europe (80% of the export is directed to this region). In this region the competition is very keen. The working capacities are too large, and in the near future there is no possibility to enlarge the export quantity. Only the export of HDPE and LLDPE production can be increased toward Western

Europe. It would be a big success to maintain its status quo.

Table 5. Market structure (on the base of sales revenue)(%)

	Distribution of sales revenue		Distribution of export
	home	export	
Products units			100.0
Olefin Division	90.8	9.2	4.2
LDPE Division	42.8	57.2	17.7
HDPE Division	31.1	68.9	44.6
PP Division	41.4	58.6	28.0
Plastic Processing Division	62.9	27.1	5.5

Source: TVK

In the previous years export toward East-European region was marginal. The Chem System's analyses and the data of the the markets (see *Table 6*) indicate that in the near future improving possibilities can be seen for the TVK in this region. In Eastern Europe the demands for the polymers will be higher than in other parts of the world.

Table 6. Annual average growth rate of polyolefins market 1995-2000

	LDPE	HDPE	PP
All together	2.1	6.4	7.0
West-Europe	0.2	4.5	6.4
East-Europe	6.9	10.3	12.1

Source: Chem Systems

6. The Prices

The successes of export-oriented TVK depend on the world market situation, mainly on the world-market price of its productions.

All analyses reveal that the petrochemical industry of the world is characterised by the cyclical movements of ethylene prices. One of the reasons of these cyclical price movements is the too big polymer's capacities. The usage of these raw materials is less than the capacities and the disequilibrium results the strong price fall. The ethylene price – falling in the same time – is the reason of the deep recession in the whole petrochemical industry.

The price change is the most important factor influencing the TVK's competitiveness. This factor determines the financial position of the corporation independently from its efficiency, or its own other possibilities.

7. Summary

The shareholders of the corporation invested to an industry, having a good present and perspective. In the mean time the shareholders have to take a long-term risk because of the cyclical ethylene price, and of the demand in the world market.