

# **Optimization of commodity portfolio management**

**Company: ULJARICE BAČKA, LLC**

## **Problem statement for 99<sup>th</sup> European Study Group with Industry**

ULJARICE BAČKA, LLC has operated successfully for 15 years. The core business activities of the company are following: trade of agriculture commodities, warehousing and distribution and crops production. Company operates under the highest professional standards and has a leading position in this field. The main traded goods are: corn, wheat, barely, sunflower, soybean, soybean meal and raw material for crops production: fertilizers, plant protection products, seeds and other. Apart from own crops production, stability in supply has been provided also by partners' network, with established long-term ground business relationships. Significant quantities of goods are provided from own production and from the partners network. Before last year, significant volume of trade was achieved by export. From last year this trade was performed locally to daughter companies of the same multinationals. Major stocks are acquired in harvest time: at end of June, wheat and in autumn corn and oilseeds. Financing is provided by own working capital and loans.

The main business aim of this company is to maximize the net income by adequate stock portfolio management, minimizing the impact of bad prediction risk for input parameters values that influence commodity prices and liquidity and expected output values resulting in operating income and net income (referred as: main business aim). In other words, for each commodity optimal stock level is set, purchase and selling time, determined by pricing and liquidity on buying and selling, while switching to different commodity stock expected to be more profitable and/or less risky (in the manner defined above) in order to maximize cumulative net gains and minimize cumulative risks on set time frame.

In context of continuous skills improvements and business operation innovations as main pillars of midterm strategic development plan, the company has set as a goal optimization of the main business aim, applying the most recent achievements in mathematics.

The initial project frame includes specifically the following:

1. To determine all parameters that makes impact on price and liquidity of the main traded goods
2. To determine type and intensity of impact and level of relevance for each parameter
3. To overview price prediction issues for set time intervals
4. To overview liquidity prediction issues for set time intervals.