EXECUTIVE SUMMARY

The case describes the initial implementation and evaluation of an e-procurement system, using reverse auctions, for a large manufacturer of brown coal in the Slovak Republic. One of the biggest problems when making decisions on e-business investments is unclear return on investment (ROI) and uncertainty about what method should be used for measuring the results. An outline of the reverse auction process is provided, followed by the presentation of a number of metrics that evaluate the current performance of the system versus intended future performance matrix. Specifically, it focuses on the ROI and other performance indicators that have been adjusted according to e-commerce specifics, particularly to procurement with dynamic pricing transactions. The case results proved that the investment into the e-commerce solution is highly effective in reducing input costs.

Keywords: automated tendering; B2B e-commerce; business performance measurement; e-commerce measurement; e-commerce transaction; electronic tendering; e-procurement; financial models; IT management; reverse auction

ORGANIZATION BACKGROUND

Hornonitrianske bane Prievidza (Upper Nitra Coal Mines, Prievidza, UNCMP) (http://www.hbp.sk/index.shtml.en) is Slovakia's most important producer of brown coal which represents national primary source of energy. It is situated in the Upper Nitra Basin, the richest and largest brown coal deposit in the country. In 2002, the company produced 79% of the national coal output. As for the production portfolio, the coal dust for the energy industry was a core item and represented 85.6% of the company’s total output. Sorted coal with the proportion of 14.4% was the second most important product. In terms of coal sales, Slovenske Elektrarne — Novaky Power Plant — was the most important business partner.

The company was founded by the government decree in 1993, when the Slovak Coal Mines, Corp. was split into seven independent companies (in order to privatize
them later). The state owned enterprise UNCMP was one of them. It consisted of the following subsidiaries:

- Baňa Cigel’ (Cigel’ Mine),
- Baňa Handlová (Handlová Mine),
- Baňa Nováky (Nováky Mine),
- Banská mechanizácia a elektrifikácia Nováky (Mine Mechanization and Electrification, Novaky),
- Hlavná banská záchranná stanica Prievidza (Main Mine Rescue Station, Prievidza).

The Mining Mechanization and Electrification subsidiary was producing and repairing machinery of mining and driving processes.

The Main Mine Rescue Station, Prievidza provided services for all mining organizations in Slovakia. It also developed and marketed commercial activities of its own mainly in the field of professional counselling and training services, specific climbing equipment maintenance and distribution, distribution of gas pollutant analytical equipment, fire extinguishers, fire equipment, breathing and resuscitation equipment as well as inertisation equipment.

In 1996, the UNCMP was transformed into a state owned corporation that had to be closed down by June 30. However, on July 1 it was reestablished by the National Property fund under the same name and 97% of its shares were sold to employees.

By January 1, 2003, in order to reduce costs and increase the mining process efficiency, Cigel Mine and Novaky Mine subsidiaries merged into a joint venture. The board of directors, after evaluation of production capacities and economic performance of the Handlova Mine, decided to close it down by October 1, 2003. All of its operations were overtaken by the UNCMP.

At present, the company headquarters is situated in Prievidza. Its main responsibilities include creating and applying mine development concepts, forecasting and long-term planning, performing global assessment, and coordination of core activities.

The UNCMP belongs to the region’s largest companies — in 2002, it had on average 6,183 employees. However, it turned out to be inefficient and the management had to apply measures improving the labor productivity (mainly layoffs). As a result, the 2002 average monthly salary rose to SKK 15,306, which represented an annual increase of about 6.9%.

The company’s core activity is brown coal mining. Its mission is to use effectively existing brown coal resources of open deposits. The UNCMP also operates in the sector of engineering production and offers recreational and tourist services. Furthermore, considering the time limitations of current operations, it has been looking for and has desired to implement new manufacturing and entrepreneurial activities.

From the long term perspective, the management focuses on cost reduction and improving the efficiency of business processes. Considering current huge purchasing volumes, good industrial references, implementation simplicity and proclaimed fast return on investment (Pastore, 2001), the company decided to develop the reverse auc-