

Mining innovation in Chile, present and future

by Eduardo Magri, professor, mining engineering, University of Chile



There is a general correlation between the different ruling political parties, government support, private companies, research institutes, and universities about

the importance of technological innovation in order to achieve real competitive advantages that will push the country's economic development further. Chile, due to the highly involved nature of its government in the domestic copper mining industry, is significantly impacted by governmental shifts. At present, with the high metal prices, the conditions are favourable to achieving support for technological development. Some elements worth highlighting are: 1) government funding for science and technological development has risen drastically, achieving today some US\$500 per annum; and 2) next year, fresh funding due to the new "Mining Royalty Tax" will allow, for the first time in history, approximately 0.85% of the country's Gross Domestic Product to be spent on technological innovation.

In order to achieve well-funded, useful technological innovation projects it is essential to coordinate the efforts between government, industry, research institutes, and universities.

The mining engineering department of the University of Chile has earned several government grants for technological innovation in mining technology, resource/reserve evaluation, and mineral economics. Examples of these partnerships include:

- A project on modelling uncertainty in geology and grades to assess the impact of selectivity in mining projects. The budget is over US\$1 million for two and a half years.
- Development of a capital market oriented to the financing of junior exploration and medium-sized mining companies in Chile. By adopting Australia's Code for Reporting of Mineral Resources and Ore Reserves (JORC),

which is currently in Parliament awaiting approval, Chile, which rates at the top of the Fraser Institute report on economic liberty in the mining sector, hopes to launch a venture capital program aimed at exploration companies and mid-sized mining ventures.

A process of gaining graduate degrees abroad has resulted in highly capable researchers returning to Chile to start these research and graduate programs within the country. New sources of research funding should solidify the position of these young professors.

The universities, in their effort to serve the community and industry, provide frequent training programs and conferences. Industry in Chile greatly values life-long learning, from providing refresher courses in mine design to cutting-edge training in IT. A private company that does much of the organization of these various short courses and conferences is often hired by the host organization so that more attention can be placed on technical content rather than organizational processes. A few examples include:

- Training program for mining engineers and geologists on "Geostatistical Resource/Reserve Evaluation"
- Short course on the principles of block cave mine design
- International program in mineral economics in conjunction with the Curtin University of Australia
- Training program in geo-metallurgy in association with Codelco

- Short-course on Modern Information Technology for Mining Engineers with the University of Arizona
- II International Conference on Mining Innovation - MININ 2006, on May 23 to 26, 2006, Santiago, Chile. Organized by the University of Chile, University of Santiago, the Catholic University of Chile, and GECAMIN
- International Symposium on the Application of Computers and Operations Research in the Mineral Industry - APCOM 2007, on April 18 to 20, 2007, Santiago, Chile. Organized by the mining engineering department of the University of Chile and GECAMIN
- Eighth International Geostatistics Congress - GEOSTATS 2008, on November 30 to December 4 in Santiago, Chile. Organized by the mining engineering department of the University of Chile and GECAMIN. ■

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