

# Achieving higher value-added in Ontario's Mineral Industry Cluster

by Indira Singh, director, Executive Projects Office, Ontario Ministry of Northern Development and Mines, and executive director, OMICC

*Canadian mining industries are directing their product lines more towards higher value-added downstream products.*

*Higher margin specialty products used in new technological innovations have growth rates several times the growth in demand for base metals.*

— Mining Innovation: An overview of Canada's dynamic, technologically advanced mining industry. 2001

Ontario's Mineral Industry Cluster is one of the major contributors to the province's economy. From the mining and processing of ore through parts manufacturing and sophisticated products, the cluster makes a vital contribution to wealth generation and employment. Notwithstanding this impressive record of economic contribution, only a small percentage of Ontario's total mineral production is considered to be value-added.

"Value-added" refers to any economic, environmental, or social benefit that results from the further processing and manufacturing of minerals and metals. In the case of mining, value-added is the value of production, less the cost of raw materials and services required to produce those goods. For example, an electronic circuit is worth considerably more per unit than the minerals and metals of which it was made. Likewise, a crafted bronze statue is worth more than the metal alloy from which it was cast. The higher the value-added, the larger the income that can be shared by companies and workers.

## Why Value-Added

Value-added products and services are essential to becoming an advanced economy and crucial to sustainability for a number of reasons: the demand for value-added products is four times higher than the demand for raw materials; growth rates are several times

higher; the profit margin is higher; they create high paying jobs and in case of a resource-based economy, they are less subject to a volatile market. Industries that produce and export value-added products, services, and knowledge pay higher wages. Their customers are local, national, or international because they become internationally competitive. They create sustainable standards of living for their communities.

The Houston Oil and Gas Cluster is an excellent example of how value-added products and services have been developed around natural resources (petroleum), contributing to a stable standard of living. Today, Houston is known more for exporting brainpower, knowledge, and other supporting businesses than for drilling and delivering petroleum. Exploration and engineering firms, equipment suppliers, financing syndicates, petroleum trading, and many other knowledge-based services have successfully converted Houston's understanding of petroleum into a more than sustainable cluster of companies whose salaries average well above the Houston and national averages. This transition from a heavy reliance on commodities to higher value-added products and services has provided a higher and much more stable standard of living than was the case in the days when more wages were tied directly to the highly volatile price of oil.



## Ontario Mineral Industry Cluster (OMIC)

The Ontario Mineral Industry Cluster (OMIC) includes: a rich endowment of mineral resources; active exploration and development industries; seasoned production industries; globally-acting suppliers; top-ranked capital markets; strong education and training networks; dynamic research and development supports; infrastructures of knowledge; committed communities; and a supportive, stable political environment.

Diagram 1 provides a broad overview of the OMIC, illustrating linkages between diverse industries, companies, products, processes, and technologies. Opportunities to promote value-added products and services exist in all areas.

## A Case for Value-Added

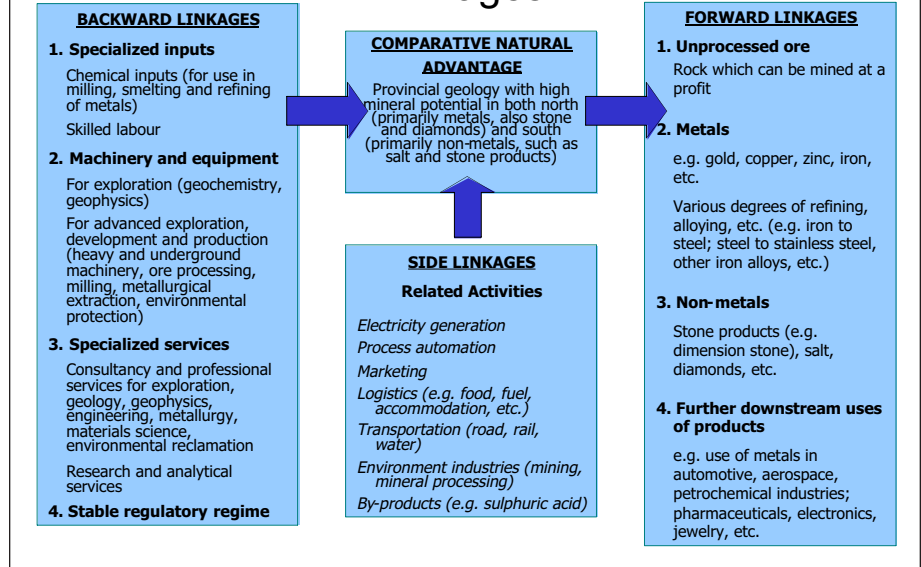
In a global economy, reliance solely on resource endowments poses formidable risks. The risks and vulnerabilities are: resource depletion, the emergence of low-cost competitors, being subject to cyclical demands, and commodity shifts. Mining is closely tied to a non-renewable resource, while experience, expertise, and tech-

nologies can continue to be a source of export worldwide. For example, Finland no longer has a rich mineral endowment but continues to be the chief producer and exporter of mining-related products and services. Similarly, India doesn't have diamond mines but attracts over 90 per cent of the diamond cutting/processing business.

The other reasons to accelerate value-added include the following:

- Other mining jurisdictions such as Chile, South Africa, and Australia are pursuing aggressive strategies to strengthen their manufacturing sector and promote the export of goods and services. Similarly, British Columbia, Nova Scotia, and Quebec are striving to achieve diversification through value-added products and services.
- Mining is a high technology industry that already has a substantial value-added component. Ontario mining companies are world leaders in production, environmental control, and health and safety technologies and are one of the largest contributors of "value-added per employee." The capabilities and expertise to develop further value-added components already exist!
- Technological innovations outside the industry have created new demands for currently mined metals; it takes 37 minerals and metals just to turn on a personal computer. Important linkages as well as opportunities for reverse technology transfer exist between the mining sector and other sectors such as medical, space, and military.
- Lastly, but most importantly, the mining sector has been, and continues to be, a pillar of the northern economy. Over the last ten years, there has been a steady decline in direct employment in the sector. With the adoption of advanced technology, this trend will continue. To offset the loss of employment in northern communities, it is critical that there be a move to attain higher value-added using Ontario's natural mineral endowment.

## Ontario Mineral Industry Cluster - Linkages



### Ontario Mineral Industry Cluster Council (OMICC)

The Government of Ontario recognizes the importance of the Ontario Mineral Industry Cluster. In November 2003, it announced the creation of the Ontario Mineral Industry Cluster Council (OMICC). OMICC's mandate is to foster a sustainable and rising standard of living and bring together industry, academia and the public sector to win more prosperity.

OMICC is private sector led with 45 members including standing, alternate, and working group members. Members represent major mine operators, junior exploration companies, suppliers, environmental groups, First Nations, professional associations, education and aca-

demical institutions, labour, and three levels of government. The Council is chaired by George Pirie and Warren Holmes, two distinguished leaders in



the Ontario mining community. The council is an advisory and advocacy body, but also an effective vehicle to influence government policies and programs which impact the cluster and

OMICC meetings, forums, and workshops provide the members and partners a unique opportunity, otherwise not available, to have face-to-face interactions to network, exchange informa-

tion and insights, build alliances, and develop social capital.

be on achieving “quick hits” by perfecting and expanding export of existing products and services. The longer term strategy should focus on research and commercialization of new concepts, techniques, and technologies as it typically takes ten to fifteen years to commercialize a new

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mobilize support for and launch a value-added strategy that would help the cluster exploit opportunities for value-added.

Rick Bartolucci, Minister of the Ministry of Northern Development and Mines, directed OMICC “...to examine ways to create or attract more high-quality jobs to the North through mining-related, value-added activities...” In response to the Minister’s request, one of OMICC’s key priorities in 2005 is to develop a comprehensive value-added strategy. To develop, commercialize, and market a value-added product from a concept to a product requires many organizations and institutions to cooperate and collaborate. The regular

tion and insights, build alliances, and develop social capital.

### **A Value-Added Strategy**

Key elements supporting on value-added strategy are already in place: sophisticated financing; major mine operators; a strong supplier base; a skilled workforce; research and educational institutions, and favourable government programs. These elements need to be pulled together into a strategy.

A dual strategy is proposed to target both products and services in the short and longer term in all stages of mineral and metal production and manufacturing. In the short term, the focus should

idea. Best practices and lessons learned from other mining jurisdictions such as Finland, Australia, and South Africa and their applicability to the Ontario Mineral Industry Cluster could be instructive.

A value-added strategy would require industry and government to embrace a culture of innovation, uniqueness and differentiation. Government would be required to focus on education and specialized skill development; major operators would be required to support local suppliers rather than importing machinery etc. from outside suppliers; suppliers would be required to continuously upgrade their skills and expertise and tap into the global market; and research and education institutions would be required to develop technologies and programs connected to industry needs.

## **Achievements**

### **Goldcorp receives reclamation award**

This year’s recipient of the Jake MacDonald Mine Reclamation Award is Goldcorp Inc. Presented annually for outstanding achievement in British Columbia, the company was selected for its reclamation of the Golden Bear mine.

### **Entrepreneur of the Year**

Gekko Systems founders, Sandy Gray and Elizabeth Lewis-Gray, were awarded the Southern Region Entrepreneur of the Year Award in the Technology, Communications, E-Commerce, and Life Sciences category. The company’s mineral recovery systems help improve the environmental and economic performance of mines.

### **Telfer recognized**

The president and CEO of Goldcorp Inc., Ian Telfer, received the Ernst & Young Entrepreneur of the Year Award for the Pacific region. Since 1994, the program has been recognizing recipients as world-class entrepreneurs, and provides a benchmark for entrepreneurial excellence.

### **Diavik wins literacy award**

Diavik Diamond Mines received the Conference Board of Canada’s Award for Excellence in Workplace Literacy in the large business initiative category. The company was selected for its work done at the mine site through the Workplace Learning Centre.

### **In Conclusion**

Higher value-added is fundamental to the long-term prospects of Ontario’s Mineral Industry Cluster and the province’s economy. The demand for mining-related machinery and equipment, potential opportunities for the development of downstream industries, and the world-wide growing demand for minerals, metals, and value-added products and services provide unprecedented opportunities for the mineral industry to meet global demands. Focusing on higher value-added through technological innovation and ingenuity will position the industry as a dominant global player capable of creating high-paying jobs in northern Ontario communities, contributing to the province’s overall economy, and entering into a new era of enhanced environmental sustainability and new product development. ■