Strategic planning for survival—A short-term priority for the South African mining industry

by J. Engelbrecht*

Introduction

South Africa's re-entry into the fast moving and competitive global economy calls for some careful strategic planning and a good deal of co-operation between suppliers and end-users.

The issues that need addressing are generally well known and include:

- South Africa was ranked 45th out of 46 i.r.o. productivity
- SMMEs contribute 1% to exports compared to 40-60% for the 'tigers'
- High unemployment
- Limited skills of the majority of workers
- Slow growth rate of the economy
- The vast majority of suppliers are not world-class
- The vast majority of suppliers are not export or marketing orientated.

In order to survive, all parties, i.e. government, labour and business, will have to play their part.

Government

The private sector is often quick to criticise the Government, but Government is doing much to assist the industry, including:

- The Foundation for Research and Development expenditure increased from R65 million to R112 million in the past year through the Human Resources for Industry Programme (THRIP)
- Funds are available through the I.D.C. Support Programme for Industrial Innovations (SPII) project for joint development with industry. The response from industry is so poor that the fund has grown to over R130 million
- The GEAR Initiative
- The Cluster Initiative.

Labour

Hard work lies ahead for all concerned to convince labour that other players are sincere about becoming world-class. Obviously Labour must share in the benefits if it is successful.

Some key areas for improvement are:

- The standard and level of education
- Skills
- Business education.

The recent crises in the gold industry, and the combined forums have illustrated what can be achieved if the players work together. Approximately 14 000 jobs were saved!

Industry

This is a fairly mixed bag. We certainly have some world-class companies such as The Rembrandt Group, SA Breweries, Billiton, AAC and so on. If we concentrate on the mining industry, we find a distinct lack of successful global suppliers with unique product of South African origin. This is part of the problem we as an industry must address. If the suppliers want to be successful with good export potential, the following characteristics must be nurtured:

- Innovation and entrepreneurship
- Management quality
- Value of long-term investment
- Community and environmental responsibility
- Ability to attract, develop and keep talented people
- Top quality products and services based on differentiated and unique products, knowledge and skills.

In essence, we have to become world-class in niche markets.

Clusters

The Department of Trade and Industry realized the importance of 'clusters' and took the initiative to finance with industry a number of clusters.

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A cluster[1] is defined as:

> 'A geographically bounded concentration of similar, related or complementary businesses, with active channels for business transactions, communications and dialogue, that share specialized infrastructure, labour markets and services, and that are faced with common opportunities and threats'.

Successful clusters are defined largely by the degree of animation and dynamism powering the cluster. This vigour relies on the tightness of the social fabric that supports trust and facilitates the movement of ideas, information, innovations and business transactions. Highly developed and successful clusters feature:

- A critical mass of similar, or related, economic enterprises
- Specialized services and infrastructure
- Accessible and rapid exchange of information and knowledge
- A workforce skilled in, and well-informed about, the industry
- Competition to keep firms on their toes and spur innovation
- Demanding end users
- High rates of new business formation to imitate and innovate, fill needs, or diversify
- A social infrastructure and high enough level of trust to make it easier for companies to co-operate and learn from each other.

Capital equipment Cluster (C.E.C.) in South Africa

The importance of the mining and related industries prompted the D.T.I. to look for a group of industrialists to start a Mining Equipment Cluster.

The cluster was started eighteen months ago and was officially launched in October 1998.

The strategic segmentation of the cluster quickly showed that the major suppliers to the mining industry are also major suppliers to other industries as shown in Figure 1. The value of equipment is estimated at R30 billion, of which 60% is imported Figure 2.

The C.E.C. proposed various action programmes, but short-term priority was given to the following:

- World-class manufacture
- The workplace challenge
- Market intelligence and development.

As part of the Technology Task Group, the following problem areas were identified in the mining industry:

- Insufficient applied research at tertiary level
- The lack of entrepreneurial training at tertiary level, and which should be directed at the engineering faculties as a first priority
- The formal co-operation of end-users especially to define needs and priorities
- Insufficient full-scale applied research in conjunction with end-users
- The lack of venture capital.

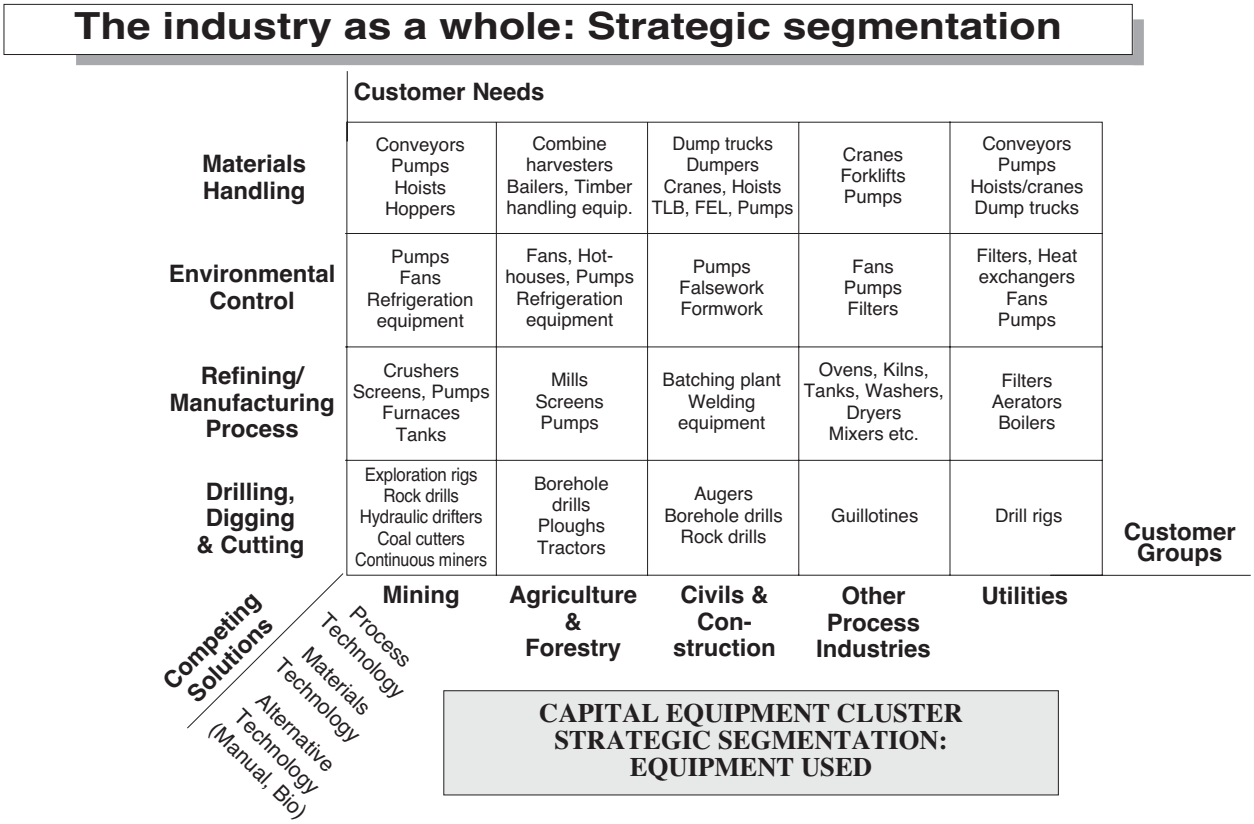

Figure 1—Current status and structure of the industry: Strategic segmentation

Strategic planning for survival—A short-term priority

The mining industry in South Africa certainly has the basic elements to form a successful cluster and it will depend on these to mobilize all the 'forces'. If successful, it will assist South Africa to export:

- Equipment
- Processes
- Projects
- New mining ventures and to be sub-suppliers to existing international companies.

The essential component, to be continuously successful, is to build the advantages on sustainable building blocks which should be:

- Unique equipment
- Niche market equipment
- Unique process technology
- Unique manufacturing processes
- Raw material advantages
- Unique skills.

The basic components of the C.E.C. are shown in Figure 3.

Our mining industry has succeeded in certain areas, for example

- deep mining
- shaft sinking
- C.I.P. process
- linear screen
- autogeneous milling
- bacterial leaching

It is believed, however, that significant additional success could have been achieved if all the players were focused on the market potential. The Finnish mining industry is a good example where equipment developed for their limited mining activity is successfully marketed world-wide.

The mining and extractive metallurgical industry

The question remains as to how South Africa and the mining and extractive metallurgical industry specifically, can achieve a significant improvement in exports.

It is believed that mining and extractive metallurgical knowledge is moving from the northern hemisphere to the southern hemisphere before moving to the Pacific Rim. We will have to passionately believe the words of Brutus in Julius Caesar:

> 'There is a tide in the affairs of men, which, taken at the flood, leads to fortune. Omitted, all the voyage of their life is bound in shallows and in miseries. On such a full sea are we now afloat, and we must take the current when it serves, or lose our ventures'.

In order to succeed, we will have to:

- Become world-class
- Innovate and protect our technology
- Become market orientated and sell our technology
- Co-operate through networking and trust.

In order to become world-class, some of the characteristics as seen by Clem Sunter[2], are highlighted:

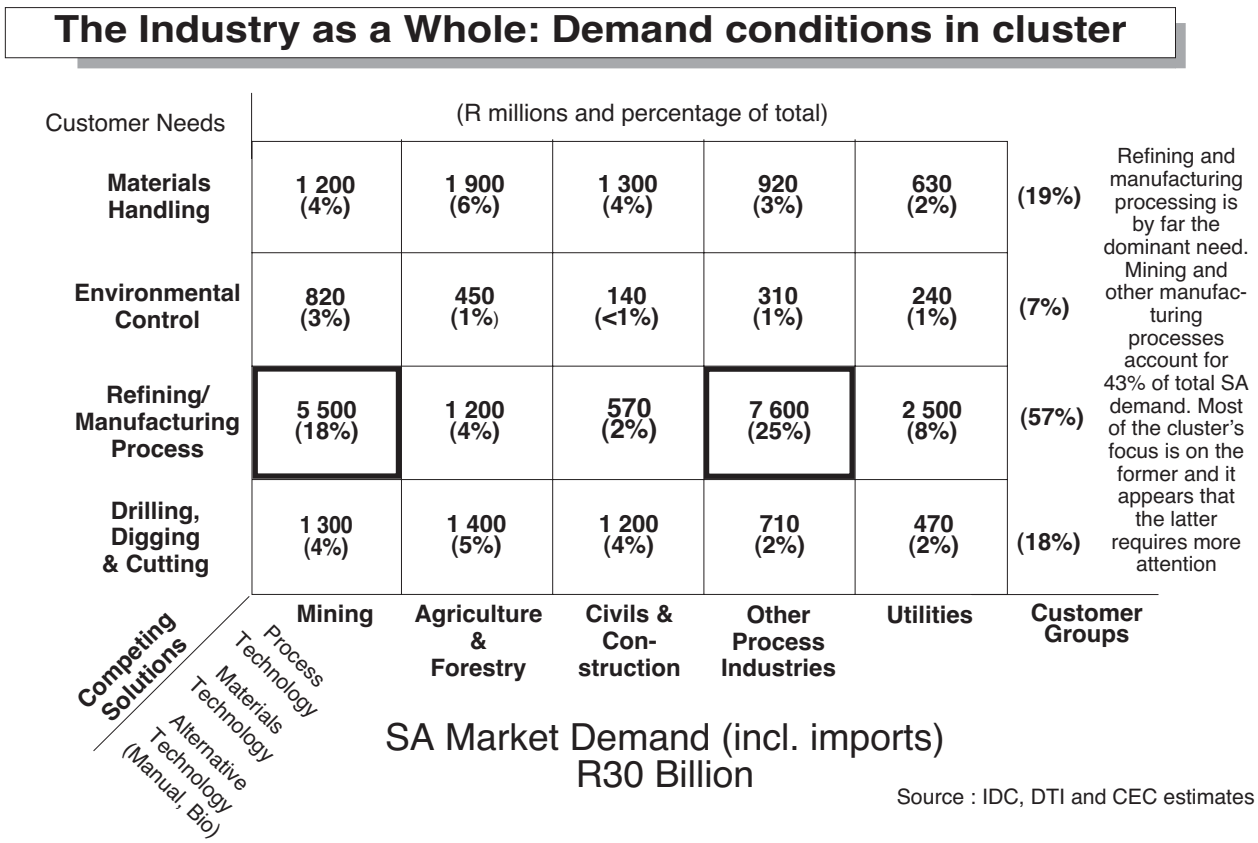

Figure 2—Current status and structure of the industry: Demand conditions in cluster—percentage of total

The Industry as a Whole: Demand conditions in cluster

Customer Needs	(R millions and percentage of consumption per segment)				
	Mining	Agriculture & Forestry	Civils & Con-struction	Other Process Industries	Utilities
Materials Handling	680 (55%)	1 100 (52%)	710 (55%)	510 (55%)	350 (55%)
Environmental Control	550 (67%)	260 (56%)	75 (56%)	180 (59%)	140 (58%)
Refining/ Manufacturing Process	2 400 (44%)	700 (61%)	350 (62%)	5 000 (65%)	1 600 (62%)
Drilling, Digging & Cutting	840 (63%)	870 (62%)	690 (57%)	460 (65%)	260 (56%)

Customer Groups

Competing Solutions: Process Technology; Materials Technology; Alternative Technology (Manual, Bio)

The two most significant segments are highlighted. The mining segment is the only one where the local industry dominates, illustrating SA's position of relative competitive advantage in this area.
The Other Process Industries segment is the largest and the one which has the highest import dominance. This segment could be the focus for possible import substitution.

SA Import Demand
R18 Billion
(60% of SA Consumption)

Source : IDC, DTI and CEC estimates

Figure 3—Current status and structure of the industry: Demand conditions in cluster—percentage of consumption per segment

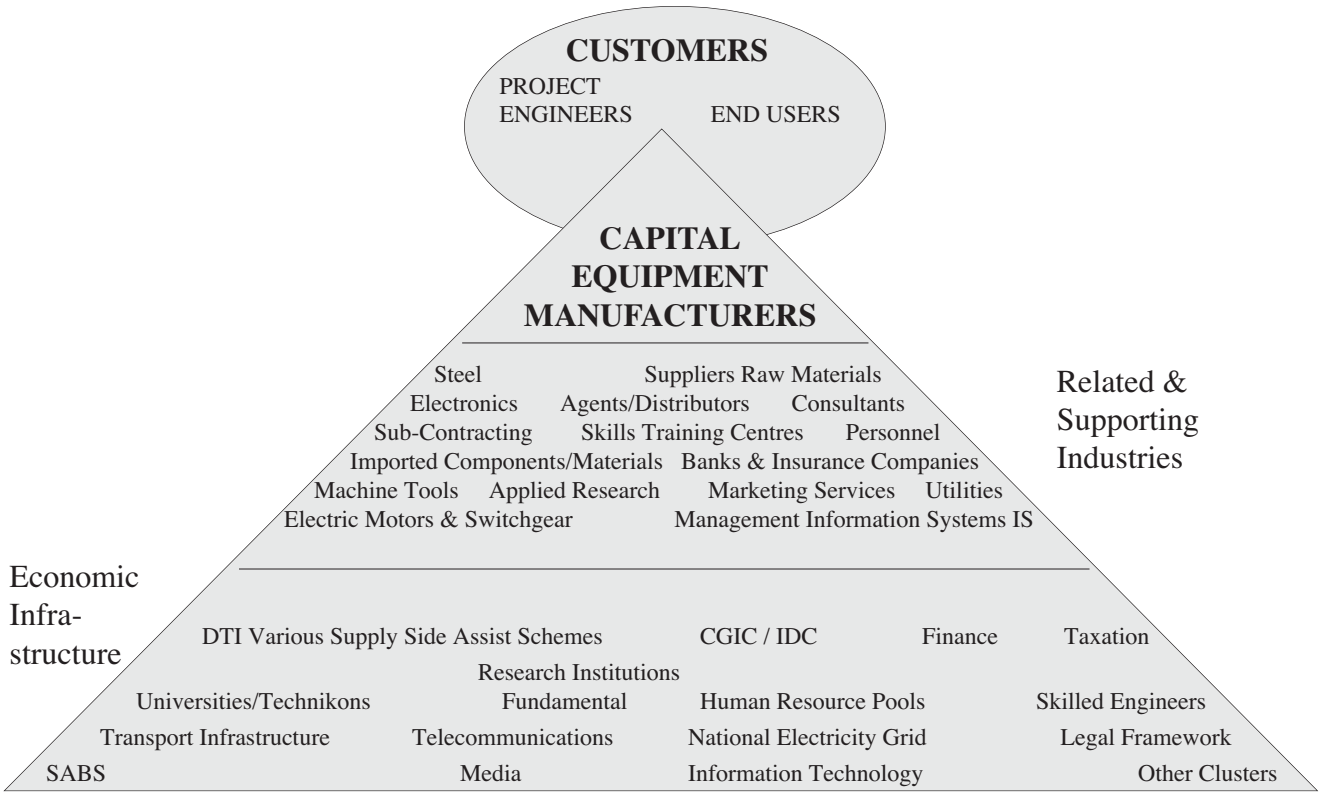

Figure 3—Simplified cluster map

Strategic planning for survival—A short-term priority

- ➤ Sound financial results and growth (5 x 10 x 10)
- ➤ Good MVAs and EVAs
- ➤ Differentiation through a sustainable competitive advantage
- ➤ Branding—'Out of Africa' from 'RSA Inc.'
- ➤ Focus on core technology and be global
- ➤ Innovation. Ideas are the DNA of everything that is worthwhile—the rest is housekeeping
- ➤ Falling price boom. Not only Kaizan principles, but step changes in technology
- ➤ Intelligence as a sensitive radar system
- ➤ Flexibility in prediction
- ➤ Ability to attract and keep talented young people
- ➤ Social and environmental responsibility.

In more detail we can look at some of the characteristics that are *in* and *not in* according to Dr Victor Ross[3], the Innovation Manager of De Beers:

WHAT'S *IN*	**WHAT'S *NOT IN***
• Passion	Inward focused
• The individual	Faceless company
• The brain	Brawn
• Service	Take it or leave it
• Intellectual process	Intellectual property
• Personal	Technical
• Innovation	Long term strategising
WHAT'S *IN* ***(Continued)***	**WHAT'S *NOT IN***
• Leadership	Management
• The customer is the company	The customer is the 'king'
• Networking	Linear thinking
• Design	OK, as long at it does the job
• Branding	Polyparts

The South African suppliers have started a forum through the Capital Equipment Cluster. This is an essential part of the supply chain for the mining and extractive metallurgical industry and you are invited to become active participants for the survival of both our industries.

If we are successful the famous words of Robert Browning may apply:

'Ah, but a man's reach should exceed his grasp, or what's a heaven for?'

References

1. Rosenfeld S.A., Over Achievers Business Cluster at Work: Projects for regional Development. *Reginonal Technology Stategies Inc.* 1996.
2. Sunter C., What it really takes to be World Class. *Human & Rousseau, Tafelberg*. ISBN 0 7981 3758 4. 1998.
3. Dr Ross V.E. Technology Innovation: Shaping the Future. *Mineral Processing 1998*, Cape Town. ◆

Mintek quiz to promote science and technology*

Minquiz, an important element in Mintek's efforts to promote careers in science and technology at high-school level, will be held on Wednesday, 3 March (at regional level) and Friday 8 April (the national final) this year.

The preliminary rounds of the contest will be held at educational institutions in Cape Town, Port Elizabeth, Kimberley, Bloemfontein, Pinetown, Potchefstroom, Randburg, Pretoria, Lydenburg, and Pietersburg. The national final will take place at Mintek's auditorium in Randburg where the finalist teams will compete for bursaries for studies in minerals-related topics at South African universities.

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