



Innovative leadership required

Engineering skills caught in
the global boom-bust cycle

As the world continues in its economic tailspin, South Africa's development and acquisition of scarce skills in engineering and related spheres finds itself in something of a quandary.

In many badly affected industries – mining, motor vehicle, construction, metal – the impact of the global economic crunch has been devastating. Despite this, new opportunities have emerged in respect of skills development, employment and business.

The signals and currents, however, are mixed and running against each other. It will take cool heads and innovative leadership to emerge from this intact, let alone in a stronger position.

While South Africa is making good progress in growing its engineering skills pool, the global economic crisis has had a negative impact on the skills and development sector, resulting in the decline of training budgets, says the Presidency.

Meanwhile, the government's Accelerated and Shared Growth Initiative for South Africa (AsgiSA) has boosted

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the construction and engineering sectors and continues to hold much promise, with an accompanying boost for skills development. However, these sectors have at the same time become dependent on the government as private sector investment has dried up. And even government spending is now slowing down due to the economic crisis, while foreign investment is not forthcoming.

While the global crisis is impacting negatively on skills development and training, the government says its Joint Initiative on Priority Skills Acquisition (Jipsa) has made "huge strides" in 2008. Echoing such sentiments is the Engineering Council of South Africa (ECSA), which says it has reached the highest registration of qualified engineers in its 40-year history, with previously disadvantaged persons accounting for 56% of new registrations over the past three years.

However, South Africa's pool of qualified and experienced engineers and other skilled people is caught in a vicious cycle.

When the mining industry experienced massive worldwide expansion during the recent boom, South Africa was losing skilled people and qualified engineers to other countries, necessitating interventions to rapidly grow the domestic skills pool.

But now the global economic crisis is impacting negatively on skills development and on mining, construction, automotive engineering, manufacturing and other sectors.

There is less money for training and skills development and less employment opportunities for skilled workers and qualified engineers. And with the automobile industry in a panic as it verges on the edge of implosion, skills in this sector are becoming redundant.

At the same time, however, the global crisis has led to considerable job losses abroad, enabling the return to South Africa of much-needed qualified and skilled people. All of which places the engineering and related skills situation in South Africa somewhere between a rock and a hard place.

According to Alan Hirsch, the deputy head of Policy Co-ordination and Advisory Services in the Presidency, there was a risk of a decline in investment in training and human resources development in the immediate future as a direct result of the global economic crisis.

Hirsch said in April at the release of the 2008 Jipsa annual report that the economic downturn has resulted in job losses, while training budgets are often "the first to be slashed in times of economic recession".

Meanwhile, there is considerable concern in the engineering profession in South Africa about the built environment professions Bill, which will do away with the independent system of registering new engineers via mentorships and peer review, a system that is internationally recognised and used. It is feared that if passed, the new law could trigger an exodus of engineers going abroad to protect their international recognition – something that will worsen the already serious shortage of engineers.

Nonetheless, despite the negative effect of the global economic crisis on Jipsa and skills development, the annual report says the initiative made huge strides in 2008 and by March 2008, a total of 18 879 people had been registered for artisan training. This is against the background of Jipsa's priority to train 50 000 artisans by 2010.

The report also refers to last year's matric results that showed "a big change" for the better in maths and science results. The report found that the Department of Education was on track to meet the target of 2 000 engineers graduating from universities in 2010. Jipsa's target had been to increase the annual output of engineers from 1 500 to 2 500 per annum.

Against this background, ECSA announced its highest ever registration of qualified engineers in South Africa. ECSA is statutorily empowered to register engineering professionals in the categories of professional engineers, professional engineering technologists, professional certificated engineers, and professional engineering technicians, as well as candidate engineers and technicians.

The ECSA database now has over 29 000 registered engineering professionals in all categories across all disciplines. ECSA says both South Africa's universities and the industry are to thank for this. There has also been a marked increase in the number of engineers from previously disadvantaged backgrounds registering with ECSA, as well as female engineers.

The mining industry has made great strides in tackling its crucial skills shortage and employment equity challenges and in many instances now outperforms other industries in these respects. Despite this, the mining industry still fell far

short of its actual skills requirements as overseas companies poached South African skills. However, the global economic crisis has now probably put the brakes on that.

Sandra Burmeister, CEO of executive search agency Landelahni Business Leaders, has warned that the pipeline of engineers for the mining industry continues to be alarmingly small. A study by her company also showed that out of 304 240 engineering students who enrolled at South African

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universities between 1998 and 2006, only 35 511 graduated as engineers across all disciplines.

The training of artisans is another area of critical importance for technical and engineering-based industries.

In 2007, Jipsa reported that the country was producing only 5 000 artisans per year, while at least 12 500 artisans would have to be produced each year over four years to meet the immediate demand.

In August last year the Steel and Engineering Industries Federation of South Africa (SEIFSA) reported that a study undertaken for Business Leadership South Africa (BLSA) by the National Business Initiative indicated that at least 10 major projects, aimed at increasing the number of artisans and other technical staff, had recently been initiated in the private sector.

According to SEIFSA, an analysis of the number of artisans who will qualify from these initiatives showed that unless far more extensive action was taken, the number of artisans trained by 2010 would fall short of Jipsa's target of 50 000 by between 15 000 to 20 000 artisans.

Nonetheless, SEIFSA president Johan Fourie said that during 2008, apprentice numbers in South Africa's metals sector rose to over 4 000 for the first time since 1999.

He was optimistic that intake levels would surpass 5 000 during 2009.

A senior executive at the motor retailer, Imperial Holdings, says that the supply of skilled artisans in the motor industry has failed to keep up with increased demand. Quoting Retail Motor Industry Organisation (RMI) statistics, the executive says there were 3 376 apprentices contracted nationally in all motor industry trades in 2007, but 5 876 qualified artisans would be required by this year. At present only 1 800 third- and fourth-year apprentices in the system are ready to qualify, leaving a significant shortfall.

Apart from mining, the manufacturing, engineering and related services industries sector is one of the sectors hardest hit by the global crisis. Many of its workers face retrenchment or have lost their jobs.

According to the latest figures released by Statistics South Africa, some 208 000 people in all sectors lost their jobs between the last quarter of last year and the first quarter of this year.

To help counter the effects of job losses, the Seta for Manufacturing, Engineering and Related Services (merSETA) launched its Retrenchment Assistance Plan with the aim of first preventing job losses, but also to assist those who have lost their jobs or are about to lose their jobs to acquire the necessary skills and training to facilitate their re-entry into the labour market.

Other developments in this sector include merSETA's Institutes of Sectoral and/or Occupational Excellence (ISOEs) to improve the quality of education and training in the sector.

And as part of its quest to increase the number of learners participating in learning programmes aimed at developing scarce and critical skills, merSETA announced it would disburse R1 billion over the next two financial years.

Furthermore, the new Motor Industry Development Programme (MIDP) unveiled in September last year in itself implies greater levels of investment by the industry in skills development and other complementary incentives, including one that would support skills development across industry.

The private sector is actively trying to address the shortfall, with initiatives such as Imperial Holdings investing more than R77m in training during the 2007 financial year and establishing its Technical Training Academy, which offers courses accredited by merSETA.

Volkswagen SA and BMW South Africa have both facilitated and financed engineer training programmes at the Nelson Mandela Metropolitan University (NMMU) in Port Elizabeth and the Tshwane University of Technology (TUT) respectively.

In October last year the RMI pledged a further R5m to address the skills shortage in South Africa's automotive industry. RMI president Ferose Oaten said the organisation was making training and solutions to the skills shortage a priority, as there was a shortage in the country of 9 000 petrol vehicle technicians and 2 500 diesel-engine specialists.

The government's spending on the infrastructure upgrade was widely expected to be the saving grace of the local engineering and construction sector in 2009, things in this sector also took a turn for the worse due to the global economic meltdown.

Government spending is losing steam and earlier this year, JSE-listed diversified industrial group Barloworld warned that trading conditions had deteriorated last year and that the outlook for 2009 was uncertain.

Various South African engineering and construction companies like Murray & Roberts, Group Five and Aveng have had contracts to the value of between R5bn and R15bn cancelled.

At the same time, the Presidency says government attempts at attracting foreign investment in South Africa's infrastructure upgrade programme have been badly compromised by the global crisis. Against this background, the first casualty seems to be skills development and training.