

Should South Africa invest in high-technology R&D?



When we look back at South Africa's success with regard to the development of high-technology systems over the last years, the trend seems worrying. The question to be asked is whether South Africa, as a developing country, should invest large amounts of money in research and development (R&D), or should we rather source knowledge and technology from countries that can afford to develop it.

The closure of the pebble-bed modular reactor (PBMR) in 2010 was obviously a serious point of discussion, especially in engineering circles. During several of these discussions, reference was made to the Rooivalk helicopter project that was also reduced to become nothing more than a small project in its own local industry.

Recently, the development of South Africa's own electric car, the Joule, also disappeared off the radar. The reasons for all of these examples can probably be found in politics, a shortage of funding, the slow pace of progress in development, etc.

Sceptics rightly ask the question about future projects, such as the square kilometre array (SKA), new nuclear generation plants and concentrated solar generation systems. Should South Africa invest large amounts of money in the development of complex, high-technology systems? The intention is not to try to answer these questions here, but an analysis of these case studies would certainly bring interesting perspectives to the table.

The opposite scenario, where South Africa decides not to invest in the research and development of complex, high-technology projects, raises another alarming set of questions.

During the 1990s, policy-makers in South Africa came up with the concept of South Africa as a 'technology colony'. A technology colony is characterised by a low level of activity and investment in R&D, which obviously leads to a high dependence on technology. It also has the implication that intellectual property belongs to foreigners and, along with that, so does much of the decision-making around the commercialisation of technologies.

This is certainly not a future scenario that a country like South Africa would envisage for itself!

The answer for South Africa probably lies somewhere in between. Although it may seem that we do not have the capability to develop and commercialise complex technological systems, we certainly need to invest in the R&D of smaller products, processes and services. In addition, we have to build strong R&D ties with foreign partners, especially where complex technology transfer has to take place. Government and industry see this as a growing priority, which is reflected in various initiatives.

The role of universities and other research institutions is clear. The institutional research themes at the University of Pretoria show a clear commitment towards this important national goal. The Faculty of Engineering, Built Environment and Information Technology, in particular, makes a valuable contribution to the research effort, as is reflected in the articles in this edition of *Innovate*.

In this issue, you can read more about the new initiatives in health technology management, as well as various contributions from researchers in the four schools of the Faculty (Engineering, the Built Environment, Information Technology and the Graduate School of Technology Management).

I trust you will once again enjoy this edition of *Innovate*. 🍷

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