

Capitalising on intellectual property

South African universities could benefit significantly, and boost the communities they serve, by creating start-up companies to exploit their research and generate much-needed revenue, writes Anita Nel

THERE are a number of compelling reasons for universities to create start-ups that utilise their research.

For one, delivering academic astute students is just not good enough any more – exposing researchers and students to opportunities to follow alternative careers and develop as entrepreneurs can broaden their minds. In addition to delivering broader-minded students, entrepreneurial universities also attract the bright entrepreneurial research staff and students who can produce important breakthroughs.

Dwindling state subsidies are forcing universities globally to rely more on alternative income streams. The ways of commercialising research results (intellectual property) involve primarily licensing as a technology transfer mechanism to generate revenues. Consultancy, namely the provision of expert advice to external clients (public and private sector organisations worldwide) by university staff, normally for payment, and the formation of new companies (spin-out companies) as a powerful launching vehicle for new inventions, are next in line. While the commercialisation of university research is still an emerging university priority in SA, in the US universities have been the launchpad for new businesses for more than 30 years.

Many universities globally still often think conservatively about innovation. Even though the concept of taking equity in start-ups is not new, many universities undervalue the benefits of getting involved with start-ups and prefer to focus solely on “straight” licensing deals, which is generally an expensive model that generates relatively low income for a university.

Technology transfer professionals are hesitant to license technology to cash-strapped start-ups because they often lack the funding

to afford upfront payments associated with the traditional licensing model; while many believe state-funded research should not be used to start a company and give it an advantage in the marketplace. Some are concerned about possible conflict of interest issues. Others feel universities will lose their primary and independent role as bastions of knowledge if they venture into the area of taking direct equity in companies. I disagree – and it’s a view shared by many others.

A university and a start-up can achieve a highly symbiotic relationship. Two equity models are common: a university can either take equity instead of upfront payments in an existing company, or it can take a shareholding in its own spin-out company in return for intellectual property and/or a “sweetheart” deal. It is well known that university spin-out companies, compared with their non-university peers, have a significantly better chance to receive venture capital funding and survive the critical early years.

There are many reasons for this: First, even though a weakening factor of university technology is the early stage at which it finds itself, the quality of the technology is normally very high. It was not invented in a garage but has probably evolved from years of fundamental research to more applied research and has often delivered several postgraduate degrees. The technology has also most probably received sufficient patent protection from a forward-thinking technology transfer organisation (TTO) at the university. Entrepreneurial success is also highly correlated with tertiary academic achievement, probably because such an entrepreneur is generally intelligent, ambitious and possesses perseverance, a desire to learn and the ability to process large amounts of new information.

This, combined with the poten-

tial for good returns on the investment, is encouraging and underlines the view that university spin-outs are perhaps an even more attractive option to consider than a “normal” start-up. This is supported by the findings reported in a recent article in the New York Times where an index of start-ups from 50 top-flight US universities showed a respectable average of a 33 percent rate of return for their investors.

For the start-up, the fact that the university took equity signals to investors that it has acquired valuable technology and has the support of the research institution behind it. Through equity, the university can benefit from all future successes of the company, not only those it contributed to.

In addition to this, the university may be able to license more technology to the start-up once it is successful and looking towards diversifying its product lines. In many cases, the professor who is closely involved in the technology only takes equity and does not join the company.

In a straight licence deal, the university has little control over the successful development and introduction of the technology to the market. However, through direct involvement in a company, the university can keep a closer eye on the ongoing development work that is essential in order to take university technology to the market.

At Stellenbosch University, like any academic institution, leadership is focused on achieving its mission: to create and sustain, in commitment to the academic ideal of excellent scholarly and scientific practice, an environment where knowledge can be discovered (research), can be shared (education), and can be applied (innovation) to the benefit of the community. Universities have progressed from primarily educational institutions to being research-driven, and

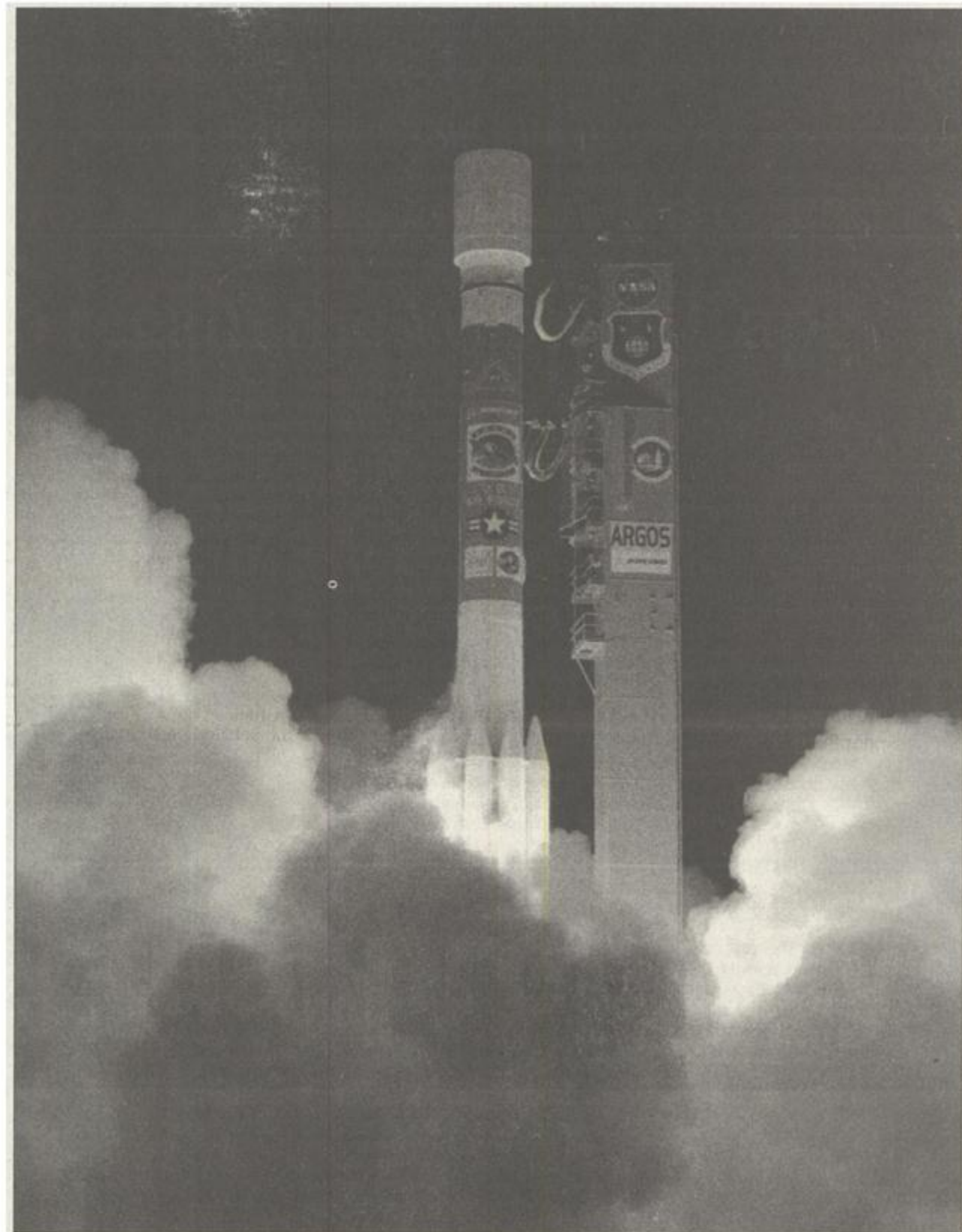
more recently to entrepreneurial institutions with a greater responsibility for innovation and the effective solution of real-world problems.

Stellenbosch has long appreciated the value of commercialising academic activities and pioneered this concept by establishing the first formal technology transfer office at an SA academic institution in 1999. The university’s wholly owned technology transfer company, InnovUS, is involved in academic entrepreneurship over a broad spectrum, such as negotiating the intellectual property and commercialisation clauses of research contracts, funding development work, licensing technologies, incubating start-up companies, assisting start-ups to acquire venture capital, raising and supporting academic entrepreneurs, and assisting academics. In the past year, five companies in the university’s group of spin-out companies had a combined turnover of R106m and the companies employ 192 people, which highlights the fact that the social and economic impact of university start-up activity can be significant to a region.

Any university faces challenges and risks around spin-out activities, but these can be dealt with through an institution’s intellectual property and commercialisation policies, its commercialisation structures, well thought-through contracts, good corporate governance and careful planning. Some university technologies are clearly outright candidates for licensing, but we should also consider spin-out companies, the Cinderella of the university technology commercialisation strategy.

The time has come for industry, government and universities to join forces and to create a well-endowed fund to support university start-ups.

● Anita Nel is chief executive of InnovUS, the technology transfer company of Stellenbosch University.



SKY'S NO LIMIT: Nasa's Delta 2 rocket lifts off in 1999, carrying South Africa's Sunsat satellite, built by Stellenbosch University postgraduates. Spin-out company Sunspace and Information Systems was launched shortly afterwards. Five of the university's spin-outs had a combined turnover of R106m last year. PICTURE: AP