Introduction: Universities and economic development in the SADC countries

The extent and ways in which universities as knowledge generators make their resources available for innovation in firms and industrial sectors can make a critical difference to knowledge intensification and competitiveness in developing countries (Albuquerque, 2001; Bernardes and Albuquerque, 2003; Box and Engelhard, 2006; Correa, 1995; Passos et al., 2004). The challenges for Sub-Saharan Africa and the SADC region are similar to other countries of the south, but at the same time, very specific (Gammeltoft et al., 2003; Adeoti 2002, Lall and Pietrobelli, 2002). As Muchie (2008:1) so clearly proposes, the issue is how African universities can be aligned to economic development, poverty eradication and sustainability – "Here research and knowledge, far from being ivory tower pursuits, become critical to making poverty history and preparing countries to cope with disasters." New knowledge and technological developments can be harnessed to address public health, food security, water resources, extraction of mineral wealth, exploitation of bio-diversity and indigenous knowledge (see UNECA, 2002 and UNCTAD, 2004 for instance).

There is emerging consensus around a new vision for African universities, but conditions for realising this vision are not optimal. As a recent United Nations report on sustainable development in Africa set out the challenge:

> Throughout the 1980s and 1990s, science and technology investments were not prioritised despite considerable empirical evidence from South East Asia and other regions showing that investment in science and technology yields direct and indirect benefits to national economies… Institutions of higher education... are in urgent need of renewal after many years of neglect and disorientation from local and national priorities (UNECA, 2008:134-5).

The impact of decades of the World Bank education and development agenda on higher education has been negative, resulting in the widespread decimation of academic capacity and university infrastructure since the 1970s, when priority was accorded to promoting universal primary education. Samoff and Carrol (2003) argue that the influence has been both direct and indirect, with complex interactions along multiple pathways. With each shift in World Bank policy, they see a corresponding change in African countries, reflecting in part the internalisation of assumptions, as well as convergence with local agendas to limit the authority and activities of universities. The result is that universities have had little autonomy and have tended to respond primarily to externally set priorities and agendas.

Recent global and regional developments have promoted optimism and renewed efforts to build African universities and science and technology systems. The establishment of new universities since 2000 has corresponded with shifts in World Bank policy towards promoting a knowledge economy and asserting a new developmental role for African universities (World Bank, 2000, 2002; Organisation for Economic Co-operation and Development, 2000). Bloom et al. (2005), amongst others, have

argued that growing higher education can promote technological 'catch-up' and enhance a developing country's ability to participate in the global knowledge economy. They have made the influential proposition that "investing in tertiary education in Africa may accelerate technological diffusion, which would decrease knowledge gaps and help reduce poverty in the region" (Bloom et al., 2005:ii).

University systems play multiple roles in innovation systems in a knowledge-based economy (Schartinger et al., 2002; Nelson, 1993). Basic or fundamental scientific research, and contribution to knowledge generation in the long term, is the first role, which is important at the technological frontier. The point is often made that this role is critical for the long-term sustainability of the knowledge-generation capacity of a national higher education system (Nelson, 2004). Second, universities may conduct applied or strategic research in the form of prototypes or designs that are directly applicable to industry. And third, through their teaching they provide graduates who contribute directly to industrial innovation in the form of research and development workers in firms or through personnel exchanges between universities and firms. Fourth is the 'spill over' indirect contribution through teaching in general, to provide graduates with high-level skills and requisite knowledge to work in and manage firms in a knowledge-based economy, across a range of industrial sectors (Lundvall, 1992, 1999; Kraak, 2007). A fifth role of universities in the contemporary global context is that of the 'entrepreneurial' university that can generate revenue to supplement public funding – a role that is extremely controversial and strongly debated by academics and universities. Universities in the SADC region are now challenged to play a renewed developmental role, not only as producers of skilled human resources, but also as generators and disseminators of research, technology and new locally relevant knowledge, and as facilitators of technological upgrading for a wide range of private and public enterprises.

An emerging new paradigm frames the challenges of sustainable development within the knowledge economy, pointing to the opportunities for Africa. There is strong advocacy and an aspirational push from continental, regional and international organisations to promote science and technology, enhance the role of the university and promote university-firm interaction (African Development Bank, 2007a and 2007b; SADC, 1997; NEPAD, 2003; Abertay, 2005).

To take but one instance, the Association of African Universities-Association of Commonwealth Universities has identified nine themes in its programme to renew the African university, including:

> To encourage the development of partnerships between universities and the corporate sector to promote the development of both urgently needed specific skills and entrepreneurship (Abertay, 2005:3).

The New Partnership for Africa's Development (NEPAD), through the African Ministerial Council on Science and Technology, has led the adoption of a plan of action for science and technology, centred on the vision of an Africa "free of poverty and well integrated into the global knowledge economy through science and technology and innovation" (AU, 2007:4) . Visions of what should be in the future,

of the promise of science and technology and the knowledge economy to achieve development goals, abound.

In many of these vision documents there is an awareness of the kinds of constraints experienced in African countries, such as weak political support for science and technology, inadequate policies, low research and development spending, low quality of sector education and training, high levels of brain drain, weak science and technology institutions, and weak links between public research and development and industry (NEPAD, 2003).

However, the risk is that African universities will continue to be driven by external agendas that do not take these regional and national constraints sufficiently into account. The danger is that they will be expected to – or aspire to – adopt uncritically the strategies and practices that have proved effective in developed economies, or in developing economies with very different trajectories of development.

Hence, we need to understand the conditions of possibility for the new roles of the developmental university in Sub-Saharan Africa. This report aims to contribute to such a massive task in a very limited, highly focused and extremely modest manner. It will focus on one new role identified for the university as knowledge producer – that is, to enhance linkages and interaction with knowledge users, specifically firms. We focus on understanding the nature of existing university-firm interaction in the SADC universities at a single point in time, 2008.

We aim to do so in order to inform the work of SARUA in promoting the interests of its member universities.

A focus on university-firm interaction in the SADC region

The understanding of the role of universities in facilitating technological upgrading in Sub-Saharan Africa has been largely speculative, proposing ideally what could be (Adeoti, 2002), or anecdotal, describing specific initiatives (see, for example, Partnership for Higher Education in Africa, 2006). We do not really know whether universities interact with firms on any significant scale. If they do, which universities tend to interact most typically? What are the main forms of interaction that take place, what are the channels of interaction, and how do they benefit universities and firms? Are these the most desirable and effective forms, or should we focus on a wider, more strategic range of interactions?

Empirical research is required to investigate the complex multiple tacit and codified forms of interaction possible between universities and firms in Southern Africa. It is important to understand the extent and nature of interaction between firms and universities as a first step, in order to design strategic policy and mechanisms that do not simply impose 'best practice' drawn from elsewhere. On this basis, we can promote stronger interactivity and collaboration around research and technology development within the SADC region.

Existing research on university-firm interaction

The existing research literature on university-industry interaction is predominantly based on the experience of large, developed countries. It is primarily focused on understanding the dynamics of a single specific form of university-industry interaction, whether the extent of co-patenting or co-publication, the optimal conditions for promoting spin-off firms, technology transfer offices or science parks, and so on (Klitkou et al., 2007).

As South Africa accounts for 75% of the higher education enrolments in SADC, it is important to consider this country's body of literature on university-firm interaction. It seems that much of it is influenced by United States research and focuses on the university's role in technology transfer (Garduno, 2003; Pouris, 2006). There is some research on the perceptions of industry leaders (Wickham, 2002; Mouton et al., 2003), but generally, research generated in South Africa is relatively small scale (Abrahams, 2005; SAUVCA, 2004).

What does not exist sufficiently in the research literature are systemic studies of the scale and nature of university-industry interaction that exist across a national or regional system of innovation, particularly in a developing-country, and an African, context.

There is a small body of emerging literature that can inform a SADC study, however. HSRC research conducted from 2001 to 2004 attempted to map the extent and forms of university-industry interaction in South Africa (Kruss, 2005a, 2005b, 2006). The studies provided insight into the forms that university-industry linkages take and into the structures, practices and dynamics within universities that promoted or hindered their formation, operation and successful performance. Other emergent studies provide further direction. For instance, researchers in the Developing Universities network are conducting case studies of university-industry interaction in Tanzania and Mozambique, amongst others (Mwamila and Diyamett, 2006). Likewise, a World Bank study of universities' contribution to economic development focused on Tanzania, South Africa and Mauritius, amongst others (Bunwaree and Sobhee, 2007; Kaijage, 2007; Kruss and Lorentzen, 2007). These studies provide useful templates and conceptual frameworks for analysis.

What is now needed is a systematic investigation of the scale and nature of university-industry interactions in the SADC countries. Such research can facilitate comparison of countries and regions at different stages of development and inform regional and institutional development strategies.

Research questions

The objective of this SARUA study is to analyse the current state of university-firm interactions across the SADC countries, in order to inform SARUA interventions. In particular the study examines the following questions:

- What is the scale of interaction between universities and firms across the SADC countries?
- What are the distinct forms of interaction that take place most commonly?
- What are the products and benefits of interaction?
- What are the main facilitators or constraints identified by those involved?

Such a mapping process is a crucial foundation to inform future networking between higher education and business or industry at the institutional and regional level. It is essential to know what 'exists' in order to be able to plan what 'could be' in a realistic and strategic manner.

Methodology of the study

One research methodology would be to access data that indicate where research specialisation and industrial strength coincide (Lorentzen, 2008). This is important and is certainly possible for some of the SADC countries. However, the data on which key indicators rely are not comprehensive, up-to-date or easily available across all the countries.

Hence, as a first step towards understanding 'what currently exists', a survey of university-firm linkages and interaction from the perspective of universities in each of the SADC countries was conducted.

Table 1 describes the data available that informed the design and methodology. It lists the 14 SADC countries, the number of institutions and the size of higher education enrolments in each, as well as their proportion of total regional enrolments in 2004. The dominance of South Africa is striking.

The survey thus excluded South Africa and focused on the 13 other SADC countries, for two reasons. First, data are less available for the 13 countries, whereas it was possible to draw on and integrate the emerging body of data and research on South Africa. Second, including South Africa would significantly skew analysis of data trends for the region as a whole. Note that this does not mean South Africa is excluded from the study altogether, only that South African universities were not included in the survey.

Table 1 Universities in the SADC region 2004

	Number of institutions	Total enrolment	% of SADC total
South Africa	23	717 793	75,2
Zimbabwe	7	55 689	5,8
Tanzania	4	42 948	4,5
Madagascar	6	42 143	4,4
Mozambique	3	22 256	2,3
Mauritius	2	17 781	1,9
Botswana	1	13 221	1,4
Angola	1	12 982	1,4
Namibia	1	11 788	1,2
Swaziland	1	6 954	0,7
Lesotho	1	6 108	0,6
Malawi	1	5 089	0,5
Zambia	2	Not available	Not available
Democratic Republic of the Congo	4	Not available	Not available

Source: SARUA website

The survey was designed as an audit, in that it would attempt to gather data on the state of play at all universities in the 13 countries.

The sample

By 2008 there were 41 university members and potential members of SARUA in the 13 countries, excluding South Africa. Table 2 lists the number of universities in each country included in the sample.

Table 2 The audit sample 2008

Country	Number targeted	Number responded
Zimbabwe	9	8
Tanzania	7	5
Madagascar	6	4
Mozambique	4	3
Mauritius	2	2
Botswana	1	1
Angola	1	0
Namibia	1	0
Swaziland	1	1
Lesotho	1	0
Malawi	2	2
Zambia	2	2
Democratic Republic of the Congo	4	1
TOTAL	41	29

Source: HSRC database

The process required to obtain the sample and the implications for our analysis will be discussed in the sections below.

The instrument

The research was strengthened through links with a comparative study of university-firm interaction currently being conducted by the HSRC and partners in twelve countries in Sub-Saharan Africa, Latin America and Asia as part of an International Development Research Centre-funded project entitled Knowledge for Development: University-Industry Interaction in Sub-Saharan Africa.

A university survey instrument was developed for the comparative project by the Korean and Latin American project teams; these are adaptations of an instrument originally developed by Cohen, Nelson and Walsh (2002) in the American context. That research aimed to assess the contribution of university and government research institutes to industrial innovation in the US, in order to deepen understanding of the determinants of technological change and contribute to debate on

the economic impact of publicly funded research. The Korean and Latin American research aimed to evaluate the national contribution of public research, primarily to try to understand the ways in which their economies can 'catch up' to those of the developed world (Albuquerque et al., 2005). Such an instrument is thus appropriate for our purpose, to strategise the contribution of universities in SADC to economic development.

An advantage of this instrument is that it has been adapted and administered in other developing countries such as Korea, India, China and Brazil (Albuquerque et al., 2005; Eun et al., 2006). This also provides a basis for future comparison with regional trends in SADC.

Adaptation of the instrument

At the core of the study is an attempt to investigate the disciplinary fields and industrial sectors in relation to which there is interaction, the channels and modes of interaction, and the outcomes and benefits of interaction.

Adaptation of the instrument was informed by a scan of university websites, to investigate the distinct features of universities in SADC. A number of contextual features were taken into account.

First, the universities are relatively young, with most having been established in the 1960s, linked to processes of national independence from the colonial powers. A sub-set is even younger, having been established since the late 1990s. For the most part, universities have a strong teaching focus, and are aimed at the preparation of local elites. There has not been a strong focus on science and technology, nor a research base. Questions were added to determine the existence of collaboration in general, with a range of partners. Items that reflected the teaching focus more strongly, as well as more tacit forms of interaction, were added to the schedules.

Second, significant new trends have been the establishment of universities dedicated to specific niche areas, such as a university of science and technology, or the establishment of new institutions in regions that have historically been more isolated, away from a concentration of higher education around capital cities. Questions were added to determine the location of such new campuses and foci.

Third, on a logistical level, adaptation was informed by the fact that the audit focused on a university as the unit of analysis, whereas the original instrument was designed to be administered to individual academics. This meant that new items were devised in order to assess the scale of interaction within a university.

For ease of administration and completion, the instrument was divided into two separate schedules. Schedule 1 focused on the university itself, investigating academic structure, size, location and focus, and aiming to gain a sense of the importance of research, teaching and outreach in its functions. It was proposed that Schedule I could be completed by the vice-chancellor: academic or the director of research with help from the registrar.

Schedule 2 required reflection on the existence and importance of various forms of interaction with firms for academics and researchers at the university. We requested that it should be completed by the most senior person who is familiar with the university's research and outreach activities; again, the vice-chancellor: academic or the director of research. Schedule 2 was designed so that it could also be completed by each leader of a research centre or unit in the university, in order to gain a sense of the scale of activity.

The aim was to have one completed Schedule 1 on each university context, and at least one completed Schedule 2 reflecting on forms of interaction in the university.

Survey administration

A high response rate depended on support from institutional research managers who appreciated the potential value of such data. Hence, the initial step was to network with senior institutional managers responsible for research and development in each university in the 13 countries, to convince them of the value of such a survey. This took two forms:

- Mailing of a letter introducing the HSRC, the project leader and the project, including copies of articles on university-firm interaction in South Africa.
- Presentation of the research proposal at a SARUA workshop in May 2008, attended by a number of vice-chancellors or their representatives. This personal contact impacted positively on the rate of return.

SARUA records were used to create a contact database. The process of networking through a set of letters, email and telephonic contact with vice-chancellors, deans or directors was protracted and intense. Table 3 illustrates the successive waves of communication, moving from postal administration, through email administration of the survey instrument, through extensive personal telephonic contact interspersed with emails, through in-person requests by Centre for Research on Science and Technology researchers visiting some of the countries, to ongoing telephonic follow-up.

Table 3 Process of administration of the survey

Postal correspondence	Date		
Letter 1	9 April 2008		
Letter 3 and schedules (English)	25 April 2008		
Letter 3 and schedules (French)	13 May 2008		
Email correspondence	**Date**	**Number of responses**	**Number of emails undelivered**
Letter 1	9 April 2008	2	6
Letter 2	16 April 2008	8	6
Letter 3 and schedules (English)	6 May 2008	11	8
Letter 3 and schedules (French)	13 May 2008	1	3
Reminder: Letter 1 and 3 and schedules (English and French)	22 – 26 May 2008	3	4
Follow-up emails with SARUA workshop contacts*	26 May – 3 June 2008	5	0
Additional reminder emails (English and French)	3 June – 18 July 2008	7	6
Telephone correspondence	**Date**	**Number of universities**	**Average number of calls per university**
Telephone reminders (English)	27 May – 15 August 2008	15	5
Telephone reminders (French)	3 and 20 June 2008	7	2
Centre for Research on Science and Technology country visits	**Date**	**Number of universities**	**Number of universities with no contact**
Hand delivery of schedules	1 – 30 July	14	4

* Delegates who attended the workshop and recommended contacts

A French translation of the instruments was created for use in the Democratic Republic of the Congo, Mauritius and Madagascar, and a translator was engaged to telephone these universities to follow up submissions.

The Centre for Research on Science and Technology country visits were most successful in eliciting responses from the universities in Zimbabwe. In the case of Democratic Republic of the Congo and Madagascar, the universities in our sample were situated in isolated locations that Centre for Research on Science and Technology researchers were not able to visit.

The realised sample

The goal was to obtain a minimum of 30 of the 41 universities.

The returned sample

Ultimately, despite our best efforts, we received responses from 29 universities.

Of these, two universities indicated they were too new to be included in the study. The University of Dodoma in Tanzania effectively came into operation in September 2007, when they admitted the first group of students. As the new deputy vice-chancellor: academic explained:

> We are not even one year old in the business! Thus, at the minute we are extremely busy and tied up with a wide array of activities to put proper operational systems/instruments/facilities in place. Recruitment of academic and administrative staff is high on our agenda. Over the past few months we have been busy preparing curricula for new programmes. Our research policy guidelines and priority areas document is not yet even published. It is in the final touches. So I find it difficult indeed at this stage for us to genuinely respond to questions about our experiences on interaction with industry (Prof Kinabo, 2008, personal communication, 1 June).

Similarly, Lupane University in Zimbabwe is stalled in the process of being established. It registered only twelve students in 2007, and the construction of the campus was delayed by a land dispute between the government and the owner of the farm on which it is situated (http://changezimbabwe.com/). In July 2008 the *Zimbabwe Independent* reported that construction of the campus had stalled once again, due to inadequate funding and a critical shortage of building material in the context of the crippling inflation rate (http://allafrica.com). A major disappointment was that the hard copy submission by the University of Zambia was lost in the post. Efforts to encourage the university to redo the schedules were fruitless. The realised sample thus consisted of 26 universities. Unfortunately, some universities submitted Schedule 1 only, and some submitted Schedule 2 only. We thus have a usable sample of 22 institutions, on which the analysis is based.

The non-respondents

While reading the analysis in the sections below, it will be important to know which 12 universities did not respond and were not included in the study. Table 4 lists these 12 universities, providing a brief description from their website. Like Dodoma, some of these universities were too recently

established to be able to participate meaningfully. Others, particularly in the Democratic Republic of the Congo and Madagascar, were located in remote and isolated areas, making communication extremely difficult. Major communication difficulties were experienced in relation to the University of Agostinho Neto. The universities in italics promised to submit returns after repeated calls and emails, but by the time we began the analysis, they had not done so.

Table 4 SADC universities that did not participate in the survey

Democratic Republic of the Congo	
Kinshasa	Established in 1954 as the University of Lovanium, the university underwent two transitions. First, it merged with two other universities in 1971 to form the National University of Zaire; and then finally became the University of Kinshasa after the National University of Zaire was divided into three separate universities: the University of Kinshasa, Kisangani University, and the University of Lubumbashi. (http://en.wikipedia.org/wiki/University_of_Kinshasa). The key focus areas of the university are sciences and health sciences.
Lubumbashi	The history of the University of Lubumbashi dates back to the establishment of the University Officielle du Congo and Rwanda-Urundi in 1956, which underwent a few structural changes before being merged with other academic institutions to become the National University of Zaire. The University of Lubumbashi was one of the universities formed from the division of the University of Zaire into three separate institutions in 1981 (www.unilu.ac.cd). The university is currently the largest university in the Democratic Republic of the Congo and is located in the resource-rich "copperbelt province" of Katanga. (http:en.wikipedia.org/wiki/University_of_Lubumbashi,www.unilu.ac.cd).
Kisangani	The University of Kisangani, initially the Free University of Congo, was founded in 1963 by Protestant missionaries. The university is one of the three universities formed from the original National University of Zaire in 1981 (http://en.wikipedia.org/wiki/University_of_Kisangani).
Tanzania	
UCLAS/Ardhi	The University College of Lands and Architectural Studies, now Ardhi University, was founded in 1956 as a survey training school (www.uclas.ac.tz). In 1996 the university became a constituent college of the University of Dar es Salaam. Ardhi University is a relatively small university with the following key focus areas: land surveying, urban and rural planning, and land and environmental engineering. (www.uib.no/udsm/udsm/uclas).
Mzumbe	Mzumbe University is a relatively new teaching and research university that was established in 2006 (www.mzumbe.ac.tz). The university faculties include faculties of Law, Science and Technology, Commerce, Social Sciences, and Public Administration and Management.
Mozambique	
Instituto Superior de Relacoes Internacionais	The Instituto Superior de Relacoes Internacionais is a relatively small teaching and research university that was established in 1986 (Mario, Fry, Levey and Chilundo, 2003). It is one of three universities in the country that have sought to institutionalise university research activities. (www.bc.edu/bc org/avp/soe/cihe/inhea/profiles/Mozambique.htm). Although growing in size, this institution is still striving to obtain full university status (www.unisa.ac.za).

Madagascar	
Mahajanga	The University of Mahajanga, previously one of the regional university centres of the University of Madagascar, was established in 1977. At the time it was the only institution specialising in dental medicine. The University of Mahajanga became an autonomous university in 1988. Currently, the key focus areas of the university are science and the health sciences (www.univ-mahajanga.mg).
Universite de Taomasina	Universite de Taomasina, previously one of the regional university centres of the University of Madagascar, was established in 1977 and became an autonomous university in 1988. The university's key focus areas are economics and management, and arts and education (www.refer.mg).
Zimbabwe	
Great Zimbabwe	The Great Zimbabwe University, previously Masvingo State University, is one of the universities the Zimbabwean government opened after independence in 1980. (http://en.wikipedia.org/wiki/Masvingo_State_University). The university was renamed in 2007.
Angola	
Agostinho Neto	The history of the Agostinho Neto University dates back to the establishment of the General Studies University of Angola in 1962. In 1976, after independence, the university was renamed the University of Angola, and in 1985 it became Agostinho Neto University. It is a fairly large university that has campuses in ten of the 18 provinces in the country (www.uan-angola.org).
Lesotho	
National University of Lesotho	The National University of Lesotho, previously part of the University of Botswana, Lesotho and Swaziland, is the only university in Lesotho. The university's history dates back to the Catholic University College, established in 1945 by the Roman Catholic Hierarchy of Southern Africa to become a constituent of the University of Botswana, Lesotho and Swaziland in 1966.
Namibia	
University of Namibia	The University of Namibia was established in 1992 and is the only university in the country. It is a relatively large university with a diverse subject area.

Source: HSRC database

Table 4 reflects that we were not able to include the only institutions in Lesotho, Angola and Namibia. This was despite considerable effort.

The situation at the University of Lesotho is worth some discussion, as we were unable to secure participation because of instability and change in research management. Follow-up with contacts suggested to the Centre for Research on Science and Technology researchers during their visit led us to identify an acting director of research and graduate studies, whose brief was to undertake an audit of research activities, and develop a research policy and a framework for postgraduate study. When we contacted him, it was days before the end of his five-month secondment, and he refused

to participate in the study on behalf of the university. This is perhaps a reflection of the difficulties he reported in eliciting research profiles from academics to inform the university audit.

For Madagascar we have managed to include a spread of universities. For Tanzania, Mozambique and Zimbabwe, the institutions that have not responded tend to be very newly established, and we can speculate that akin to Dodoma, they did not find the survey relevant to their experience. The majority of Democratic Republic of the Congo universities did not respond, given communication problems, but here too, we may speculate that the universities did not find the survey relevant to their experience, given the civil war and state of political instability until recently.

The chapter

The chapter is structured to provide an overview of the current state of university-firm interaction in the SADC universities, in order to inform interventions.

Part 1 provides a contextual overview of the SADC countries, and the nature of their science and technology systems and their higher education systems. It then presents descriptive data on the universities in the sample against this background.

Part 2 considers the extent and importance of collaboration with a range of higher education, government and civil partners. It focuses on analysing the nature of interaction and channels of communication between universities and firms as revealed by the survey data, aggregating across the sample.

Part 3 attempts to identify the differences between SADC universities, analysing the profiles of three groups of universities based on the extent of their interaction with firms.

Part 4 goes on to consider the ways in which all the universities perceive the benefits and constraints of interaction.

Based on the premise that South African university policy and practice has much to suggest for SADC countries in general, Part 5 draws on existing research to describe the state of interaction in universities in this country. The section further indicates the different ways in which universities respond to the challenge by setting up policy mechanisms and structures to manage distinct forms of interaction.

Finally, Part 6 summarises the main trends of the survey and of the analysis of the South African case. On this basis, it provides a set of cautions and spaces for action, to guide strategic interventions.