

Reconceptualising engagement: A conceptual framework for analyzing university interaction with external social partners

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Introduction

Currently in universities, we find a widespread and formal promotion of ‘community engagement’, but conceptual confusion, debate and contestation, reflected in vastly differing interpretations of what counts as ‘engaged practice’. Universities are grappling to define what ‘community engagement’ or ‘social responsiveness’ means (Hall 2010, Nongxa 2010, Muller 2010), and what strategic and systemic changes are taking place – or should take place - to realize new visions.

A lively debate on the relationship between the university and society in a developing country like South Africa is emerging (CHE 2010a, University of Witwatersrand 2009, Muller 2010, Cloete 2011), centering on definitional boundaries, around whether engagement requires new forms of knowledge that differ from traditional academic modes and around who is defined as ‘the community’ – at local, regional, national or international levels (Hall 2010). There is general agreement that the field is conceptually under-specified and rather theoretically thin.

The ‘state of the art’ of research on community engagement in South African higher education is captured well in a 2010 Council on Higher Education (CHE) publication. Hall’s (2010) seminal work concluded by arguing for the promotion of research on the conceptualization of community engagement, which he defined as the development of public goods in the ‘third space’, that is, neither the space of the state nor the market. What is required, he argued, is to map what universities are actually doing in terms of teaching and responsiveness, and to research the institutional systems for incentives and the support, and how new organizational forms are

aligned with development needs. Nongxa (2010), while critical of Hall in other respects, concurred that the current need is to pay attention to what academics do and say, as the best way forward. Muller (2010) likewise called for an inductive process of identifying successful engagement practice as a way to begin constructing a typology, importantly, appropriate to the diversity of institutional and local developmental contexts. Slammat (2010) too, emphasized the issue of differentiation, arguing for recognition of the differences between higher education institutions, and a profiling of all activities defined as 'community engagement' within each institution, to facilitate a bottom up process that feeds into national debate. Favish (2010) argued for the value of a national conceptual framework but that it should be wide enough to accommodate different responses to the developmental challenges.

This paper contributes to such theoretical debate around the definition and conceptualisation of 'community engagement' in South Africa. It presents a conceptual framework that was developed to conduct empirical research to map forms of interaction in different types of university and disciplinary fields, the results of which are discussed elsewhere (Kruss 2011). The research project on which the paper draws was commissioned by the National Research Foundation, to contribute to a system-wide understanding of 'what exists' in universities at present, by taking up the research challenge outlined by the authors of the CHE (2010) publication. What are the ways in which institutions are interpreting the imperative of 'social responsiveness' and 'community engagement' in their internal policy and external activities, how are the concepts defined and what are their outcomes? And in the end of the day, what is the potential contribution to social innovation, poverty reduction and socio-economic development?

To undertake the empirical research, we required a conceptual framework that would allow us to measure existing 'engaged' academic activities. The objective of the paper is to show how this conceptual framework was developed, and how it can be used to guide empirical research, institutional strategic planning and national higher education policy processes.

The conceptual origins of the research project lie in an unfolding body of research on the changing role of universities in development in a country like South Africa, using a national system of innovation framework. The paper begins at the theoretical level, developing a working conception of the role of the university in economic and social development in Section 1. It then shifts to consider the policy debate and emerging research literature in South Africa, highlighting a disjuncture between higher education and innovation studies in Section 2. A growing alignment provides a foundation for developing a new conception of university social

responsiveness or engagement. It then focuses specifically on the adaptation and extension of a conceptual framework used for studying university-firm interaction, to the study of university interaction with a range of external social partners – community, government, civil society, firms or farmers in Section 3. The final section sets out how such a framework can be used to map interactive practice within a university and across the national system of innovation.

1. The role of the university in economic and social development

The literature on national systems of innovation has paid increasing attention to the central role education and knowledge institutions play in the ability of a country to ‘catch-up’ or fall behind the leading economies (Nelson 2007, Fagerberg & Verspagen 2007). A high level of R&D investment and high-level skills is widely hypothesized to explain the ability of some developing countries, typically newly industrializing countries such as South Korea, Taiwan and Malaysia, to succeed in ‘catching-up’ with leaders in the developed countries (Nelson 2007, Abramovitz 1986). While it has long been assumed that universities’ contribution in developing countries is limited to their educational role, both academics and policy makers now focus on their potential role as knowledge producers in technological upgrading in firms, and hence, to a more direct contribution to competitiveness, growth and development (Mazzoleni 2008, Albuquerque 2001, World Bank 2009, Whitley 2002). Increasing research attention is paid to the potential contribution of universities interacting with firms to build learning and technological capabilities in a national system of innovation. The interest is in how knowledge institutions may be a source of innovation and change for firms in distinct sectors, and how the interaction among actors in networks plays a role in catch-up (Malerba & Nelson 2007, Schiller & Brimble 2009, Saad & Zawdie 2011). New national policy frameworks have tended to focus on universities’ direct role in economic development in a global knowledge economy, with the result that a research literature on university-industry interaction in developing countries is growing.

The pursuit of these relationships poses challenges for universities in developing countries in terms of changes to their traditional missions, the balance between research, teaching and their response to social and economic development needs. Much debate has ensued on the ideal nature of the ‘third mission’ (Göransson, Maharajh & Schmoch 2009, Gregersen, Linde & Rasmussen 2009, Maculan & Carvalho de Mello 2009, Bortagaray 2009, Zawdie 2010). Middle and low income countries in particular experience the global imperatives under very different,

often disadvantageous and unequal conditions (Sagasti 2004, Lundvall et al. 2009, Conway & Waage 2010, Mwamila & Diyamett 2009).

A key difference is that the economies in many low and middle income countries remain strongly resource based, particularly focused on small-scale and peasant-based agriculture. This means that there is a relatively small industrial base, and that the significance of university interaction with firms differs from developed economies. In a middle income country like South Africa, with a great socio-economic divide and high rates of unemployment, the large informal and 'survivalist' sector, and community development initiatives, are significant features of the conditions within which universities interact. That is, the range of social partners with which universities should engage to play a role in development is wider than and not restricted to, firms in industrial sectors. It includes actors in the informal sector, cooperatives, communities, small scale farmers, social movements and even, individuals and households (Kruss, Adeoti & Nabudere 2009, Lorentzen 2011).

A related difference is that in developing countries that have not attained threshold conditions in health and education, or have severe inequalities of access such as South Africa, it is impossible to ignore issues of human and social development, of poverty reduction and equitable distribution when promoting university's role in development. It has been argued that national innovation research in such contexts should focus not only on capability building for technological upgrading of firms, but equally, capability building for 'freedom from want' such as food insecurity or disease. Mobilising science, technology and innovation to address problems of health, environmental sustainability and agricultural productivity is a priority and key challenge (Conway & Waage 2010). That is, a holistic focus on the university's role in social and economic development, and not a sole focus on firms and economic development, is required. To build a national system of innovation in developing countries, universities should contribute to social and economic development, and interact with a wide range of social partners, ranging from firms to farmers, communities to civil society, to government, at various levels whether regional, national and global.

Such an approach is not solely evident in developing economies, however. There is growing recognition in developed economies too, of the limitations for higher education of a sole focus on economic development, and an emergent global trend towards promoting social engagement as a complement to the rapid growth of university-industry interaction. In the United Kingdom, for instance, a small body of literature reasserts that universities have key roles in social and not

only economic development, particularly linked to regional development (Newcastle University. 2009, Hart et al. 2008, Benneworth & Jongbloed 2009, Goddard 2009, Bond & Paterson 2005). As Goddard (2009) claims, 'we must view innovation in the round, not merely as a process in which academic research leads to saleable products'. He calls for a multi-level and multi-modal (OECD 2007) civic engagement agenda that integrates teaching and research in the service of academic and of social or industrial agendas, focused on the development of particular local places set within their national and global contexts.

The 'civic university' has a key role to play in fostering such system-wide innovation and tackling the big challenges that confront the modern world... It can do this by serving public as well as private interests and embracing business and the community found outside its front door, connecting these communities to the global arena (Goddard 2009).

A parallel resurgence of the tradition of land-grant universities in the US saw universities reasserting their vision of the 'scholarship of engagement' (Boyer 2004) or civic engagement. The Carnegie classification system developed a new index for assessing community engagement (Zuiches 2008), defined as collaboration between universities and their communities 'for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity' (Driscoll 2008). National networks were established, and universities are working on renewed visions and missions (Anderson & Douglass 2005, University of California 2005, Watson 2008), to 'reinvigorate and prioritise civic and community involvement in their surrounding communities' (Stanton 2008).

Thus, there is an emerging recognition that an exclusive focus on universities' roles in economic growth and development, without sufficient attention to human and social development, is severely limited. Such an approach calls for a reconsideration of the nature and beneficiaries of development – of who the social and economic partners of a university might be – and is extremely appropriate in the South African context. Section 2 considers the South African policy debate and research literature on university interaction in relation to these global trends.

2. The South African debate on the university's role

A disjuncture is evident in the conceptualization of the role of the university in development. Reflecting global trends and national imperatives, new policy frameworks after 1994 proposed that higher education institutions, as crucial sites of knowledge production and technological innovation, should become more responsive to social and economic needs. However, on the one hand, the tendency has been for innovation policy mechanisms – and the innovation

research literature - to focus primarily on the university's responsiveness to economic needs and promoting global competitiveness. On the other hand, higher education policy – and the higher education research literature - tends to focus primarily on the university's responsiveness to issues of social justice and promoting the interests of the 'public good'.

2.1. University-industry interaction: towards global competitiveness

New science and technology policy frameworks adopted wholesale the OECD models promoting high technology, frontier 'big' science initiatives. With regard to universities, the White paper on Science and Technology (DACST 1996) identified strategic alliances, networks, partnerships and collaboration between universities and industry as a primary means to reposition higher education to play a new role in economic development. The Department of Science and Technology established funding and incentive mechanisms and new institutions – such as government and industry research co-funding programmes, innovation incentivisation funding programmes, sectoral incubators and technology platforms - to drive university-industry interaction aimed to address technology achievement problems. The US paradigm was a strong influence, evident in new policy mechanisms to promote technology transfer, commercialization and incubation in high technology fields of biotechnology, nanotechnology and ICT. A number of national conferences and symposia were held to facilitate and promote university-industry interaction. A national organization, SARIMA, was established to develop expertise in research and innovation management.

The response of higher education institutions and academics was diverse, depending on their historical trajectories and research capabilities, particularly in the key disciplinary fields of science, technology and engineering (SET) (Kruss 2006, Kruss 2005). Most institutions engaged with these national policy imperatives to inform their strategic and research policies, and established formal interface structures such as contracts offices, technology transfer offices or university owned umbrella enterprises to promote innovation and firm interaction, articulated with their research structures, however ad hoc or weakly aligned within institutional structures (Kruss 2005). A few institutions and some academics adopted the model of an 'entrepreneurial university' and proposed strategies to commercialise their intellectual property as a source of 'third stream' income, such as spin-off firms (Kruss 2008). Financial imperatives – given significant cuts and redirection of priorities in research funding nationally from the late 1990s – drove a large proportion of academics in science, engineering and technology fields to pursue consultancies and contracts with firms. Some institutions – particularly the former technikons

and historically disadvantaged universities – had weak research cultures and/or SET capability, and were focused on developing threshold conditions, rather than interaction.

New legislation influenced by the US Bayh-Doyle Act was introduced in 2008 to promote the utilization and commercialization of intellectual property developed from publicly funded research to social and economic benefit. A centralized coordination structure, the Technology and Innovation Agency, was established to stimulate and intensify technological innovation. Hence, there is increased pressure on universities to exploit viable knowledge and technology developed through research, and a renewed emphasis on technology transfer offices at all universities.

2.2. A higher education agenda: citizenship and engagement

In stark contrast, higher education discourse in the late 1990s was dominated by a concern with the negative impact of globalization, the perceived spread of a neo-liberal framework to South African policy making, and the growing global pressure towards marketisation of the university (Cloete et al. 2002, Muller 2001). Vociferous debate arose around the changing nature of academic roles and the impact of a perceived shift away from basic to applied research on future knowledge generation, influenced by the global debate around Mode 1 and 2 forms of knowledge production (Waghid 2002, Muller & Subotzky 2001). Some universities - and many individual academics, both in SET and other disciplinary fields – actively resisted interaction with industry, viewing it as 'inimical to traditional academic work', a potential threat to their scientific credibility and integrity, and to future knowledge generation. There was strong opposition to the 'innovation' agenda, which was seen to be informed by a narrow instrumentalist model of the university - meeting the needs of industry and the labour market for skills and problem solving – and ignoring wider roles such as contributing to critical citizenship (Lange 2003, CHE 2003).

The argument was that rather than increasing the university's interaction with the private sector to enhance competitiveness, engagement is required that will promote the public good and act in the interests of social transformation and those most marginalized and disadvantaged (Subotzky 1999). An alternative discourse of 'engagement' and responsiveness took root, with debate around the purpose, the partners and the nature of engagement, in line with the transformation agenda of the White Paper on Higher Education (DoE 1997), that universities should demonstrate 'their commitment to the common good by making available expertise and infrastructure for community service programmes'.

One specific form of engagement promoted was regional collaboration and engagement between local government and their local higher education institutions, particularly in the newly created urban metropolises (CHET 2003). This remains a strand of engagement with largely unrealised potential, particularly when linked to the promotion of regional innovation systems (CHEC 2010, DST 2009).

2.3. Community service and community engagement

A second – and more predominant - form of engagement focused on changing processes of teaching and learning within the university to promote students' civic awareness and to improve the quality of life of the 'communities' they serve. A practice-oriented debate emerged, around new more relevant forms of teaching and learning and knowledge transmission in partnership with communities in which students were placed for experiential learning processes (HEQC/CHE 2007, HEQC/JET 2007, Lazarus et al. 2008, Bender 2008, O'Brien 2009, Muller & Subotzky 2001). A direct impetus for much of this work was an international funding agency the Ford Foundation, building on the US outreach tradition of extending knowledge in service to society, influenced by the work of (Boyer 1996) on a 'scholarship of engagement'. This strand tapped into a long-established local tradition of activity in relation to social welfare and community outreach, to drive the promotion of academic service learning programmes. The Community-Higher Education-Service Partnerships initiative (Lazarus 1999, Lazarus et al. 2008) was developed in partnership with JET Educational Services, the Department of Education, SAQA and the HEQC.

Pilot programmes were supported in partner universities, aimed to inform national and institutional policies and implementation of community service learning programmes across the higher education system. As with university-industry interaction, a differentiated institutional response was evident. An evaluation study found that the institutionalization of service learning in academic practice was uneven, with institutions interpreting the concept and devising programmes in their own ways (Mouton & Wildschut 2005). In some institutions, initiatives were underpinned by a philanthropic position of social welfare services to the disadvantaged, a notion that entailed little change to the university or the academic project (University of Stellenbosch 2008). In others, it was recognized that rather than 'any add-on bit of welfarism', engagement should be entrenched in core academic activities (Fourie 2006: 10).

2.4. Alignment of agendas

Thus, for the past decade, the tendency was for higher education and innovation policy mechanisms to operate on separate parallel tracks, a dichotomisation and policy misalignment that potentially weakens the national system of innovation. Likewise, the higher education and the innovation studies research literature have a distinct focus and unit of analysis.

Over the past few years, a shift is evident in the form of a realignment of these two tracks. A shift in innovation policy implementation is increasingly evident, away from the predominant 'frontier science' orientation and towards harnessing science and technology for inclusive development. For example, NACI has created an innovation for development group, and DST is developing a strategic programme to fund research on the 'grand challenge' of human and social dynamics of innovation, promoting community-based technology transfer aimed at poverty eradication, based on partnerships between universities, science councils, government agencies and other development organisations (DST 2008: Target IX). One direct stimulus of the new thrust towards 'broad-based social innovation' was an OECD (2007) critique that the policy mission of 'technology for poverty reduction' had been poorly implemented. The impact of the global recession and political shifts towards a stronger 'pro-poor' agenda after changes in government in May 2009 meant that the critique fell on fertile ground. There is growing consensus to extend policy implementation to be more inclusive of communities, people and activities in the informal economy, to take into account other forms of indigenous knowledge and to understand the complex social and cultural dynamics that influence the adoption and diffusion of innovation.

At the same time, a shift towards institutionalization of a broader concept of 'community engagement' as integral to academic scholarship is emerging across the higher education system driven most strongly by national coordination and regulatory processes. The DST, CHE and NRF have initiated a research and intervention programme to strengthen community engagement in universities.

The emerging alignment represents an opportunity to build a more comprehensive, holistic and developmental vision of the university's engagement with wider society and its contribution to building an inclusive national system of innovation. How may engaged academics inform development-oriented knowledge generation, application and diffusion, to wider social benefit?

The problem is that there may be general support for such a role and task, but there is little clear guidance in the higher education or innovation research literature as to what it entails. The challenge is to link the conceptual insights of the higher education literature, in terms of the

commitment to the public good, social justice and development, in terms of higher education knowledge imperatives, in terms of a broad conceptions of interaction and a wide range of external partners, with the systemic insights of the innovation studies literature, in terms of interaction and capabilities and concepts to understand the relationships between knowledge producers and users.

Therefore, we attempted to develop a conceptual framework that would allow for empirical investigation of the extent and ways in which South African academics and institutions are engaging to wider social and economic benefit, building on but extending the research literature on the role of universities in economic development.

3. Extending the framework: from interaction with ‘firms’ to ‘external social partners’

The new framework begins with a focus on interaction, capabilities, learning and innovation. As its core, it provides a conceptual basis to identify forms of interaction, and their associated benefits or risks for institutions and the national system of innovation as a whole, for private benefit and public good. It extends this framework to include both social and economic development imperatives, and a wide range of external social partners, not only firms. It deepens this framework by adding a stronger conceptualization of the university as a knowledge-based institution driven by substantive sources of disciplinary growth, and characterized by reputational competition. It adds concepts to understand organizational changes within universities. Finally, it develops a way to define engaged and non-engaged academic activities in an integrated and interdependent way. These dimensions are outlined systematically in this section.

3.1. From developed to developing contexts

The work of Cohen, Nelson & Walsh (2002) on the links between and impact of universities on firm R&D in the United States was influential in shaping a body of research in developing countries that was used to refine and build a more robust national system of innovation analytical framework. Their aim was to identify flows of knowledge and capabilities and the advantages of and constraints on building interactive relationships. Hence, it emphasised the fields and sectors, the channels, and the outcomes and benefits to firms of interaction with universities. This approach was first adapted to frame research on the nature of interaction between firms and universities in Brazil (Albuquerque et al. 2008, Rapini et al. 2009). The instrument developed aimed to map university-firm interaction across a national system of

innovation, to inform policy. It was subsequently adapted to study the nature and patterns of university-industry interaction in selected sectors in twelve developing countries in Latin America, Asia and Africa (Adeoti & Odekunle 2010, Arza & Vazquez 2010, Dutrénit et al. 2010, Dutrénit 2010, Eom & Lee 2009, Eun 2009, Fernandes et al. 2010, Intarakumnerd & Schiller 2009, Joseph & Abraham 2009, Orozco & Ruiz 2010, Rasiah 2009). The instrument was extended to investigate universities' interactive practices in relation to firms.

3.2. From firms and research to teaching and other partners

The approach was further adapted for Southern African contexts, to map universities' interaction with firms in a number of SADC countries. The concern was that these universities were relatively young, for the most part had a strong teaching focus, did not have a strong science and technology research base, and in general, had low levels of research activity. Items were thus added to determine the existence of collaboration in general, with a wider range of partners. In addition, items were added to reflect the teaching focus more strongly and not only research activity, as well as more tacit and less formal forms of interaction (Kruss & Petersen 2009). This process of adaptation provided a useful precedent for the present study.

3.3. Channels, benefits and risks

The Latin American work was also seminal in developing a conceptual framework to identify forms of interaction, and link channels with the associated benefits and risks of interaction in developing country contexts (Arza 2010, Dutrenit & Arza 2010).

The framework drew on a South African matrix of types of interaction presented in Figure 1, but developed it more systematically in relation to the research literature, and tested it through econometric analyses of data from a survey of firms and universities in each of four countries. Channels of interaction were classified into four broad types, distinguished by the combinations of goals that motivate firms (passive or proactive innovation strategies) and universities (economic / financial or intellectual strategies) to interact. Interaction motivated by the economic strategies of universities and passive strategies of firms is more likely to take the form of 'service' channels, whether scientific or technological, where knowledge flows mainly from the university to the firm. Examples are consultancy or testing or quality control. This is akin to 'dominant new' forms in Figure 1.

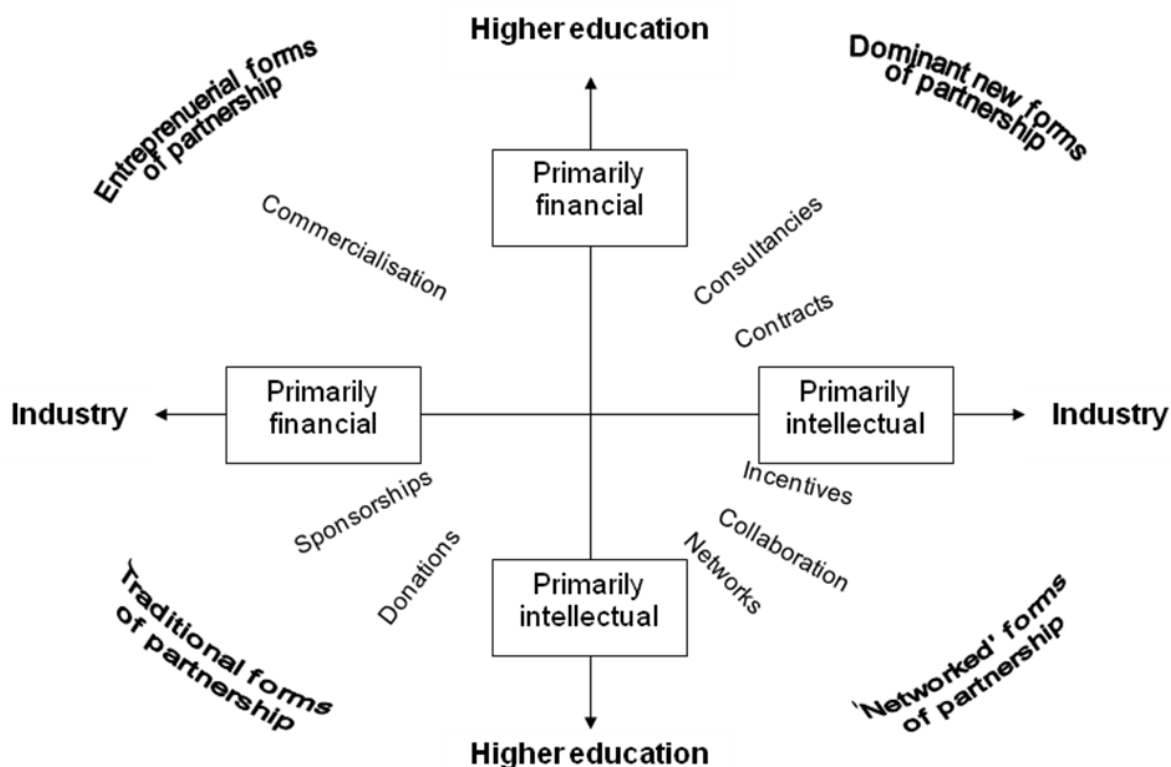


Figure 1: Forms of interaction

In contrast, interactions motivated by the intellectual strategies of the university and proactive strategies of firms are more likely to take ‘bi-directional’ forms, where knowledge flows are two-way and there is a high potential for joint learning. Examples are joint R&D projects or networks, akin to ‘network’ forms of interaction in Figure 1. ‘Traditional’ forms of interaction are driven by the intellectual imperatives of the university and the passive strategies of firms, with knowledge flows to firms but defined strongly by academic functions, such as hiring graduates, conferences and publications. They may also take the form of financial flows from firms to support the academic function, such as endowments of facilities or chairs or scholarships. These channels are indirect, in that they are available freely in the public realm, and do not require a personal exchange. Finally, ‘commercial’ forms of interaction are driven by the economic strategies of universities and the proactive strategies of firms, taking the form of spin-off companies or incubators that, like the bi-directional channels, require direct personal interaction at critical stages. These are akin to ‘entrepreneurial’ forms in Figure 1.

The university-firm literature typically focuses on the private benefits or risks of interaction – for the firm or for the academic, research group or university involved. Arza (2010) points to research that highlights that benefits and risks may be social, and may impact on knowledge generation and dissemination in the national system of innovation, particularly in developing

countries (Nelson 2004, Lundvall et al. 2009). Certain channels of interaction may lead to the risk of diverting research agendas from topics that may be more socially useful. In health research, for example, this may mean a focus on lucrative clinical trials for pharmaceutical companies to deal with 'lifestyle' diseases of the rich, rather than clinical interventions to deal with resistant strains of tuberculosis amongst the poor. Another instance is where time devoted to firm interaction reduces the time available for teaching students or basic research, impacting potentially on the academic system.

A framework that can identify and help to balance the benefits and risks of different forms of interaction for an institution and for the national system of innovation as a whole is a potentially important strategic tool.

3.4. Universities as knowledge-based institutions

A potential weakness of the national systems of innovation literature is a tendency to focus on universities in relation to their roles in firm learning, technological upgrading and innovation, whether in the form of human resources, R&D, training or technological expertise. Universities have specific characteristics that need to be taken into account. The significance of a focus on the substantive nature of universities is increasingly recognized (Whitley 2003, Kruss 2011, Schiller & Brimble 2009). Mowery & Sampat (2005) emphasise that it is difficult to conceptualise universities in the same way as economic institutions, because of their distinct forms of governance and the multiple roles universities play. They argue that current analytical frameworks like the Triple Helix Models, or Mode 2 forms of knowledge, or even a national system of innovation framework, may shed some light but downplay the very real tension among the different roles universities are expected to play within a knowledge-based economy, and hence, provide limited guidance. They call for a stronger analytic framework to understand the roles of universities within a national system of innovation.

Clark (2008) provides important guidance to understand the distinctive nature of universities. He argues that what is absolutely essential, that any research cannot ignore, is the 'knowledge-base' of universities, particularly, the discipline-centred nature of academic work. Disciplinary fragmentation is the source of rapidly growing complexity and 'substantive growth' in higher education systems, as opposed to the 'reactive growth' driven by increases in students or labour market demand: 'academic territories are first of all subject territories, even while they are clientele territories and labor market territories' (Clark 2008: 452). Substantive growth is led by knowledge and research generation, requiring postgraduate expansion and academic specialities, while reactive growth is led by student demand and enrolment, relating to

massification of higher education and the accompanying demand for undergraduate education, remedial, and introductory teaching. These may be in tension within parts of an institution (in different faculties, or between academics and management). Or they may lead to growing segmentation within a differentiated national higher education system, a growing knowledge gap between research-centred universities and those that respond to mass demand for access. The situation of individual institutions within the national system, and as a national system, with other countries, thus becomes more competitive.

A similar conclusion is reached by Whitley (2000, 2003) who argues that universities are fundamentally 'reputationally controlled work organisations', in that their production of knowledge is structured by academics' competitive pursuit of intellectual reputations, judged by their peers – and Clark would add, their disciplinary peers. National systems can be distinguished depending on the intensity of reputational completion and the extent of intellectual pluralism and flexibility - which impact on the degree to which research is coordinated between different kinds of institutions (those with stronger and weaker reputations), and the openness to new research goals, approaches and programmes to address new kinds of (social) problems. In a highly differentiated and segmented system with strong reputational competition between research universities and applied research institutions for example, hierarchies of institutions typically limit and restrict what is possible in setting new research agendas, novelty is restricted, the flow of knowledge between different kinds of institution is limited, and mobility between institutions is difficult without loss of reputation. As Whitley (2003: 1023) explains:

In highly concentrated and hierarchical academic systems, the best researchers are not only recruited and trained in the leading organizations but are also likely to remain in them for most of their careers because of their superior status and resources.

These competitive dynamics weaken the development of capabilities and interaction across the system and hence, the national system of innovation as a whole. The nature of differentiation and what is possible for different kinds of institution within a public science system, is significant for understanding the scale and forms of interaction that prevail.

What is useful for our framework is that *responding to external social partners is of greater benefit and less risk, when it is driven by substantive growth, rather than reactive growth – when it is integral to the expanding knowledge-base of a discipline, to the work of scholarship, and research-based teaching and learning. And it is of greater value for the national system of innovation when there is more pluralism and flexibility and less restrictive 'reputational competition' between institutions.*

3.5. Universities responding to change

Individual universities respond to changing imperatives in different ways, and are challenged to change their missions, policies, structures and incentive mechanisms to promote interaction. Here too, the higher education literature can complement the innovation studies literature. One useful focus is on the ways in which universities organise internally to facilitate change (Roxå, Mårtensson & Alveteg 2010). Another is the role of disciplines in responding to new institutional pressures (Reale & Seeber 2010). A particular focus is the structures and mechanisms required to facilitate interaction with external social partners, to 'cross boundaries' more effectively (De Wit 2010, Vakkuri 2004 , Jongbloed, Enders & Salerno 2008).

Again, the conceptual work of Clark (2008) has been widely used to inform institutional responses and the research literature. He argues that the notion of the 'entrepreneurial university', so often cited in relation to his research, has been widely misunderstood. It does not mean 'entrepreneurial' in the sense of promoting commercialization or a revenue-generating or profit-seeking third mission for the university. Rather, it means entrepreneurial in the literal sense of 'enterprising' - a university that is able to continually 'find new ways to proceed that can be mixed with traditional procedures' (Clark 2008: 456). The ability of a university to respond to change and be flexible and adaptive in how it organizes is critical to higher education's role in innovation. Clark (1998, 2004) suggests a framework of five elements by which universities can develop the necessary strategic capabilities to respond to the multiple new demands of government, industry and social groups, while maintaining their traditional roles as knowledge based institutions. They need a diversified funding base (a spread of different sources of support), a strengthened steering core (from central management to faculty and departmental levels), an expanded outreach periphery (the units and centres that typically move across boundaries to bring in external social partners), a stimulated academic heartland (that is, strong departments that are committed to change) and an integrated entrepreneurial culture (an institutional culture that is shared widely). Including such analysis of the elements required for an institutional 'change-orientation' provides a complementary component for an integrated framework.

3.6. Defining a new term – external social partners

The advantage of such an integrated framework is that it allows for a comprehensive mapping of university interaction with all forms of social partners in relation to all academic activity, reflecting the complexity and diversity of the roles of the 'university' as a knowledge-based institution.

A challenge was identifying a term that was wide enough to include the full spectrum but specific enough to be recognizable in different institutional contexts. There are a number of possible terms available in the South African discourse: community engagement, social responsiveness, community service, academic engagement and so on. Each was considered and rejected as being too strongly associated with specific positions. Other potentially useful terms in the higher education literature were considered, such as civic engagement. The most useful options related to the notion of the ‘scholarship of engagement’, which reinforces the concept of substantive growth, and has the advantage of familiarity in the South African context.

A definition of ‘engaged academic scholarship’ developed by a top American land grant institution (see Cooper 2011) was thus adapted:

...a form of scholarship that cuts across teaching, research and services. It involves generating, transmitting, applying and preserving knowledge for the direct benefit of external audiences in ways that are consistent with university and unit missions (Michigan State University 1993).

This core term and definition stress that scholarship is core, and that interaction is about ‘extending knowledge resources’. It is not an activity that academics engage in as citizens, but is core to their disciplinary commitments and reputational identity as academics. Nor is it an ‘add-on’ to ‘normal’ academic work, in that it ‘cuts across’ teaching research and services in an integrated manner. Nor is it driven solely by external demand, whether from markets or government or communities. The notion that engaged scholarship should be related to the mission of the unit or university, to substantive growth, is important for analytical purposes. It introduces a nuance to the normative dimension typical in the South African debate, in that it highlights the possible differentiation and segmentation between institutions or knowledge fields.

Figure 2 reflects the distinction that can be drawn between engaged and not engaged forms of scholarship, using this definition.

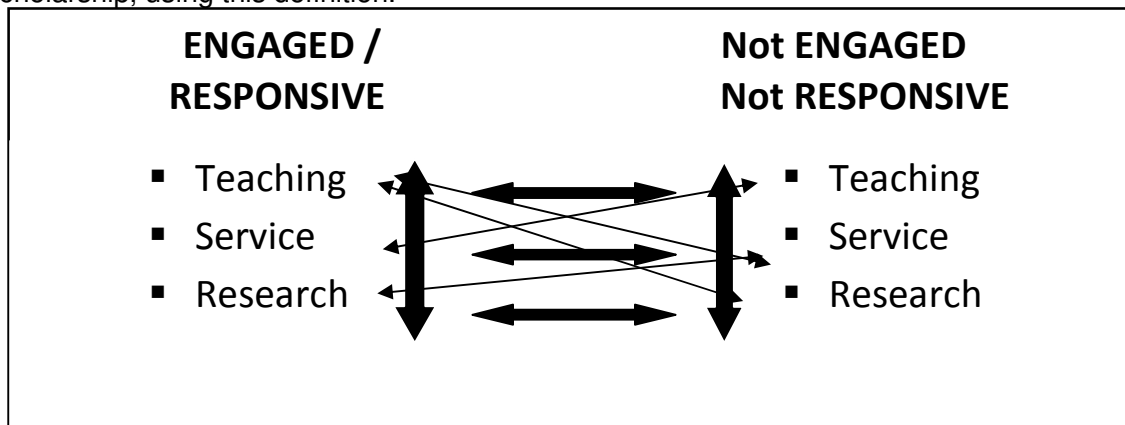


Figure 2: A model of engaged academic scholarship

Academics engage in core tasks of teaching, research and outreach, but each of these may take engaged forms when they are to the benefit of external social partners – a term preferred to the more passive notion of ‘audiences’. They take non-engaged forms when they relate to social partners internal to the institution or solely to the academic profession. As others have argued, engagement often occurs in integrated ‘bundles of activity’ (Newcastle University 2009: 71), a research-teaching-study nexus (Clark 2008: 455) that is not easily distinguishable. The notion of ‘cutting across’ or nexus is illustrated in Figure 2, that teaching and research may feed into one another, and likewise into service, in various combinations (depicted in the arrows between the activities on the left or right hand side). Non-engaged research may form the basis for engaged service or teaching, or be linked to new forms of engaged research, whether directly or indirectly, and so on (depicted in the arrows joining the left and right hand sides). Engaged and non-engaged activities overlap, influence and contribute to each other. For institutions, the major organizational challenge is to strategically balance these activities, and manage potential tensions in prioritization, allocation of resources and reward, internally and externally.

3.7. A framework for analysis

In conclusion, the conceptual framework took the approach for analyzing firm interaction and amplified it, using complementary concepts to encompass social partners and the substantive nature of universities responding to change.

Such an approach is extremely useful in distinguishing different academic activities while showing how they are integrated through scholarship, and interdependent on one another in mutually reinforcing ways. It informs a broad but focused conceptualisation: ‘extending scholarship to the benefit of external social partners’. And it highlights the need for strategic balance between academic activities, appropriate to institutional or specific unit missions, whether disciplinary units within the academic heartland, or boundary crossing units at the development periphery.

The approach and framework developed here can provide a useful set of strategic tools for individual institutions, and across the higher education system. It can be used to map interaction across a university empirically, to inform institutional policy and interventions. It will be possible

for an academic unit, faculty or institution to map the balance of engaged and non-engaged academic activities, and then, the main forms of interaction that do occur, the main type of external social partners and the main benefits and outcomes associated, relative to their academic mission in general or in different disciplinary fields. On this basis, they can plan a new strategy, or identify where further strategic intervention may be required to achieve their strategic mission, or whether specific kinds of mechanisms or structures may be required to build forms of interaction with sets of partners that do not yet exist on a sufficient scale to meet policy goals. Such an approach provides a basis for identifying more contextually appropriate and differentiated strategic interventions.

It can also be used to map interaction across different types of university, in relation to the national system of innovation as a whole. It is possible to assess the potential impact of the current balance of interaction on the knowledge production system or in relation to economic development or to social development, and identify targeted strategies accordingly.

Most significantly, it provides a way for academics to reconceptualise their roles without contradiction to their core disciplinary commitments and activities, by extending their knowledge to the benefit of a wide range of external social partners.

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