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Challenges of Growing Research at New and Emerging HEIs

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i. Towards a political economy of higher education

There is little dispute amongst policy-makers or in the literature that the post-World War 2, post-Sputnik era ushered in a period of rapid and tremendous change in higher educational structures, provisions and demand across almost all OECD countries. Indeed, the import of these changes has been marked by terms such as massification, democratisation, diversification, harmonisation, internationalisation and globalisation. Several factors are pointed to, including the economic and demographic boom, the significance of scientific discovery, the heightened importance of educational attainment and career opportunity, and the birth and subdivision of academic disciplines and the professionalisation of academic careers. A combination of domestic and external pressures and actors, including the active engagement of supra-national agencies such as the EEC/EU, OECD, UNESCO and World Bank have played a part in fostering these changes. Between WW2 and the late 1970s, the number and type of students seeking higher education accelerated rapidly alongside the number of academic and support staff, and public investment.

The history of this rapid growth in the range and type of educational opportunities and institutions has been well documented. Polytechnics, fachhochschulen, advanced colleges of education, institutes of technology, community colleges, etc. as well as *ab initio* universities emerged to cater for a wider range of socio-economic groups, and educational and employment requirements. Policymakers and educational managers talked of a higher educational *system*. Universities offered advanced post-graduate study and conducted research, answerable to a worldwide academic community; teaching focused on the abstract and was less concerned with immediate needs. In contrast, non-university institutions catered variously for vocational or undergraduate needs, often with a regional or community bias; their emphasis was on training, and academic staff were expected to concentrate on specific workplace needs. The difference was 'not so much inherent as secured by fiat, since colleges

were not funded for research and only some were permitted to enrol a few coursework masters students' (Meek & O'Neill, 1996, p65). As part of an integrated national system, (elite) universities and (mass) colleges and institutions enhanced social mobility, met the needs of the labour market, and offered opportunities for innovation. Its comprehensiveness provided opportunities for most students. Some transferability between 'sectors' was permitted, but the awarding of advanced degrees and the title 'university' were strictly monitored. The 'binary', whether *de jure* or *de facto*, was enforced.

By the late 1970s, however, strains and countervailing pressures began to appear. Two inter-related factors are particularly important for the purposes of this chapter. First, the emergence of the knowledge-based or information society has undeniably transformed the mode of production and social organisation of advanced societies. National governments now purposively attach great strategic importance to capacity-building decisions and investment, and the necessary management and 'institutional arrangements that enable individuals and societies more fully to appropriate its material benefits' (David, 1999, pxiii). Research expenditure is seen as critical to national geo-political positioning, and higher education has been required to respond accordingly. Second, institutional existence is no longer guaranteed. Government and public support for the financial underpinning of public services has waned. Higher education is being asked why it exists and 'to grapple with the fact that we are not an ends, we are a means…through which our society educates itself and shapes itself…' (1988 Australian White Paper, quoted in Di Adams, 2000, p69). Public funding is tied to measurable outcomes, students are demanding assurances about educational quality, and the role of academics and content of academic work is being redefined and restructured. Intra-institutional tensions have surfaced, and inter-institutional rivalry is prevalent. Inevitably there are winners and losers in this process.

At the beginning of the 21st century, the once benign higher education system is being transformed into a competitive market place. Aspects of national 'higher education systems' and the role that different institutions play are being reshaped. Previously sharp boundaries between elite and mass education, vocational and academic, technological and traditional, and undergraduate and (post)graduate have come under scrutiny, and in some instances broken down or been altered. Traditional universities are no longer the sole, or in some instances, the primary site for advanced learning or research. In line with a broader understanding of the production of knowledge, there has been a 'relative decline in the attraction and prestige of the academic paradigms represented by conventional universities with a growing emphasis on "employment relevance"' (OECD, 1991, p72). Many of the new institutions have charted significant careers in applied or industrially relevant research and consultancy, and begun to

win a sizeable share of government and industrial funding. There is also evidence of innovative new courses and disciplines; new fields of knowledge, such as business and management, engineering and applied sciences, nursing and social care, the media, and the creative arts have gradually become professionalised, fuelled by, and in turn fuelling, a rapidly expanding academic literature. As staff become more involved in advanced level teaching, they have begun to spend more time on research and compete for research funding. The rationale for dual sectors or the binary system continues to be argued, but 'over time the division…[is proving] difficult to maintain, and the boundaries between the classical and the technical institutions…blurred (OECD, 1999, p16).'

To some observers, these developments represent a breakdown in national higher education systems via a process of convergence or dedifferentiation[1]. Newer institutions are accused of adopting the accoutrements of traditional universities, actively copying their research profile and teaching programmes, and engaging in 'academic' or 'mission' drift. For others, however, these changes are part of the natural or inevitable process of institutional development and historical change, or a further step in the democratisation of the 'Humboltian ethic' (Neave, 2000, p265). If massification and expansion in 1960s differentiated the second stage in higher educational development from its elite origins, then the late 1990s marked the beginning of the third stage. By then, it was clear that a broadly educated population could no longer be formed by and within universities alone. In societies where knowledge and knowledge creation are highly privileged and integral to both national and institutional prestige, advanced learning and research capacity are allied and critical. Paradoxically, by seeking to conform to their mission, new and emerging HEIs soon outgrew the straitjacket of their birth.

ii. Institutional mission and strategic choices

There is little disputing the fact that external forces are influencing in a much more directive way both the structure of higher education systems, and the way in which individual institutions are organising and managing themselves. Drawn from preliminary data collected from case studies of higher educational institutions from across fifteen countries established or reconstituted since circa. 1970, this section focuses on issues of institutional mission, strategic choice and organisational structure. In particular, it looks at issues of research

[1] For an outline of the debate on differentiation, see Skilbeck, 2001, pp.58-71.

management and capacity building, asking if there are particular characteristics and experiences that new and emerging institutions share.[2]

Research as mission and strategy

For new and emerging HEIs, the case study evidence highlights two primary forces fuelling their research ambitions: mission and survival. First, many new institutions were established as part of a regional economic strategy. They were required to focus on local and regional needs, and specifically to develop and help 'retain an *educated* manpower in the area.' Initially they were allowed to undertake only limited research activity – often the emphasis was on development and consultancy – with a specific commitment to relevant knowledge and applied learning. In this respect, their role was primarily viewed as 'teaching only.' Yet, over time, and commensurate with the global omnipresence of the knowledge-based economy, their commitment to providing 'economically useful skills with industrial relevance' and ensuring that 'academic activities are aligned with the economic development of their region' has become inextricably bound to growing research capacity. Moreover, many of the disciplines they parented now require a more sophisticated response to economic and labour market pressures; hence institutions state that they engage in research to ensure 'academic excellence in a professional context.' By obeying their mission – to serve and respond to specific training and more general needs at the local and regional level – new HEIs have needed to adopt policies, practices and strategies that paradoxically strain their original role.

Second, research or 'scholarship' is increasingly related to institutional status and in turn to students, staff, and facilities. Reductions in block government funding, the geo-political significance of knowledge for national prestige, and the emergence of benchmarking and other evaluative criteria across OECD and non-OECD countries have had a powerful impact on HEI behaviour. In this respect, new institutions are no different from their older colleagues; they are acting as rationale organisms by responding to 'specific funding opportunities.' As institutional status becomes more and more linked to survival, inter-institutional competition has sharpened. Almost all participating institutions state that research activity and priorities are directly related to their competitive position: it is necessary to 'sustain academic and professional reputation in a knowledge-based economy' or to 'retain

[2] 'Participants' or 'participating institutions' come from Australia, Canada, China, Czech Republic, Denmark, Finland, Greece, Ireland, Japan, Portugal, New Zealand, Spain, Sweden and UK. Non-referenced quotations are used to ensure anonymity.

and improve their position' vis-à-vis their competitors. Participants variously describe the factors influencing their research ambitions and strategy as follows:

> The fundamental factors influencing research strategy, as listed in the order of importance, are: excellence and reputation; recruitment and retention of faculty, student (graduate and undergraduate); research and scholarly activity being an inseparable part of the academic function of the university.'
>
> To foster the development of technology and research,…innovation and technology transfer [within a specific region of the country].
>
> The necessity to integrate education and research…,[attract] researchers…[and] diversify funding…

For some, their research reputation is so important that they have provided funds from their own block grants, often contrary to government approval.

These comments are mirrored in other studies; for example American 'universities found that enhancing their reputation for research paid dividends in terms of attracting better students, projecting a positive image of public service, and enlarging voluntary support (Geiger, 1993, p321). A study of UK polytechnics argued similarly; research activity was necessary 'to sustain academic reputation, to attract the right sort of staff, to enable course development, to attract students (undergraduate as well as postgraduate) and to provide an extensive consultancy service for the region (Pratt, 1997, p142). Even less prestigious and teaching-oriented colleges have accommodated research, not to compete with the research elite, but rather to 'try to secure a small group of scholarly distinction to give their campus national visibility so as to compete with others at levels similar to their own (Lipset, 1994, p222).'

'Sheer underdevelopment of profile'

New and emerging HEIs vary in origins and context; many developed as a result of the transformation or amalgamation/merger of smaller, regional/community or vocationally-oriented, colleges, while others were established as *ab initio* institutions. Some are called universities while others fall within the broader category of 'tertiary', 'alternative', 'postsecondary', 'new generation,' or 'non-university' higher education. Many of these institutions share common experiences with respect to funding and infrastructure, and human resources and research capacity.

The most frequent remark is that the process of conversion or formation has ignored their status as either *late-developers or newcomers*. Participants point to the fact that they were not

traditionally resourced for research and as a consequence they have poor institutional infrastructure and technical support. The funding gap between new HEIs and older universities continues, and over time differences between the two groups has widened; indeed, one person described the difficulties of trying to keep pace as running as if a lead-ball was attached to one's ankle. Moreover, because academic staff at new institutions were hired originally to teach, they often lack the necessary prerequisites – a research postgraduate qualification, for example – and the necessary research experience. In addition, academic workloads are significantly greater than their university colleagues; hence, research is being built on the back of relatively heavy teaching commitments, producing, in some instances, internal tensions and morale difficulties. These conditions are compounded by salary and career differentials which inhibit faculty-building strategies. As the parent of many new disciplines, many of which had no research tradition, institutions face particular difficulties achieving recognition and funding, and navigating from successful applied and professional teaching programmes to research postgraduate activity.

Many of these issues may not be unique to new and emerging HEIs, although some participants expressed the view that older universities often act as a 'cartel', intentionally or not and with or without government endorsement, to inhibit the activities and progress of newer institutions. Older universities resent sharing 'research spoils' with new institutions (Meek & O'Neill, 1996, p74). Criteria and rules for research funding are, they argue, introduced and altered to meet the needs of the established universities and are 'deliberately' disadvantageous to new institutions. There is some support for this view; UK and Australian institutions, for example, experienced an 'over-night' conversion to university status but without the requisite funds to enable them to compete directly with other/older universities. Some ground was 'grudgingly' made up in the latter case, but ultimately market forces are being used crudely to delineate between research and teaching universities. One participant stated forcefully that:

> It is difficult for the smaller, newer universities to compete with the larger, older ones in at least two respects: less income and poorer infrastructure… Governments like institutions to share, but this is usually at the disadvantage of the smaller one.

Clark (1996, in Meek, Goedegebuure, Kivinen & Rinne, p22) concurs, stating that while governments muddy the waters by

> calling all higher education institutions by a single name…the river of reality runs in the other direction, fed by the massive tributaries of differentiation…and [sic] by government policies that deliberately encourage operational differentiation.

Building a ' culture of scholarship'

According to Clark (1995), the nexus between research and teaching too narrowly describes higher education's role as a place of inquiry. A few years earlier Boyer had also rejected the dichotomous view of research vs. teaching to pose a broader understanding of 'scholarship.' Scholarship, he argued, embraced a more integrative understanding of knowledge production and dissemination: discovery, application, integration and learning (Boyer, 1990). Gibbons et al provided another leg to this frame, recognising and amplifying the intellectual and strategic importance of collaborative and interdisciplinary work via the concept of Mode 2 research (Gibbons, Limoges, Nowotny Schwartzman, Scott & Trow, 1994). Given the particularities of their history, many new and emerging HEIs have, often unwittingly, adopted these concepts.

Participating institutions talk of 'adjusting ministerial criteria' to fit their disciplines, and embracing the wider conception of scholarship, most notably in reports from Australia and New Zealand. In this respect, research includes innovation and creativity, traditional publications and creative/professional practice, and cross-disciplinary and industry relevant work. Definitions of research and focus are variously explained as follows:

> The main focus is on applied research…with its outcomes applied in consulting and experimental production.
>
> Research is defined as critical and creative activity undertaken on a systematic basis in order to extend knowledge and understanding and/or solve practical or theoretical problems.
>
> For the statistical report to government, we use the distinction of basic and applied research and development. However, our daily research activities are so much diversified, we do not strictly distinguish [between] these categories.
>
> The emphasis is on applied or relevant research with a local and regional dimension, although local does not necessarily mean the immediate vicinity; it can refer to local development anywhere, e.g. in Africa.

Institutions aim to conduct research which 'informs and is informed by learning, teaching and professional practice' and is 'tightly interwoven with the region' via innovative partnerships and commercialisation.

Given their histories, most new institutions have adopted a pragmatic view of achievement. While some institutions have embarked on formally renegotiating academic contracts to either include research or to create research-only positions, others are focused on recruiting experienced researchers directly into academic departments or into (semi)autonomous research units/centres. Institutions, and the literature, have mixed views on whether it is

possible to grow research from their existing base or whether they need to rely more heavily on recruitment strategies; there is also some debate around whether staff development plans and flexible workload schemes should be focused selectively (Hoare, 1995; Jones & Lengkeek, 1997). In some instances, funding is targeted controversially at research-active staff only while others are eager to ensure that new ideas and new researchers are not neglected. Nevertheless, all institutions emphasize that growing a critical mass or community of scholars, based on interdisciplinary teams, is essential to success. This includes increasing the number of postgraduate research students and experienced supervisors. Infrastructure supports and services are significant elements of all strategies.

The process of growing a culture of research and scholarship can be lengthy and challenging. One author suggests that the process of change can be so long that many good researchers leave out of frustration (Berrell, 1998, pp.277-93). Accordingly, institutions signal the need to attune their research ambitions to institutional reality. Skoie (2000, p.418) similarly advises that the task of introducing research should be 'approached carefully to generate an effort with reasonable standards. The time horizon should be carefully set' Hence, with careful planning of academic activities, new institutions can realise the appropriate scale and foster an ethos which reinforces their mission of research and related teaching (Johnston, Jones & Gould, 1995, p.47).

Institutional organisation and research

Management and productivity are two issues of critical importance in the current climate of competitive funding, evaluative criteria, and monitoring and reporting requirements. The move towards greater accountability for public funds has been matched by greater attention to managerialism: 'Research expenditure – whether by industry or government – is an investment which demands a return. It should not be a discretionary expense (Turpin, Garrett-Jones, Rankin & Aylward, 1996, p.19).'

Not surprisingly, new institutions like their older colleagues are investing much time and effort into issues of research management, internal structures, facilities and support services. The Research Office is now virtually 'ubiquitous' within institutions seeking to grow research. Led most often by a Deputy or Pro Vice-Chancellor or Vice-President for Research or Research and Development, it has an explicit role to manage, organise, and improve the competitive performance of research. The formulation of a research strategy or research management and training plan is the primary starting-point, on the basis of which each

institution seeks to identify a selected number of research priorities or 'interdisciplinary' themes. Depending upon institution, the Deputy/Pro Vice-Chancellor or Vice-President for Research is the institutional link and co-ordinator between and across faculties and management, via Deans and/or Research Committees. Institutions vary on whether they consider postgraduate activity – some make no distinction between taught and research – under this ambit.

The research planning process invariably involves elements of top-down and bottom-up, albeit the balance differs across participants. Compare the following two examples:

> The Office of the Vice-President (Research) chairs a committee of Associate Deans of Research …[which represents] the members of faculty as a whole and perform strategic outlook exercises to determine future priorities. Faculty members contribute to the exercise via departmental or faculty sessions and in some cases through participation in University, enterprise-wide priority setting exercises. Individual researchers overall are a crucial part of this process.

> The Strategic Planning Committee sets the broad strategy for every University function for the next 6 years, once every 6 years. The Research Committee then sets strategy and policy for research and research programmes. The President is consulted on important matters. Researchers' views are heard on relevant matters.

How and where research activity is currently organised within institutions also differs; yet, the majority of participants were clear that they wished to shift the locus of activity away from individuals and towards clusters. Whether that new focus is departments, units or centres, the desired outcome is critical mass, with grant-awarding reputations and timely outcomes. Priorities are determined by a combination of factors; national priorities, funding, competencies and evaluation are mentioned frequently. The overwhelming majority of institutions, however, cited competitive advantage as the most important factor influencing their research agenda.

Most participating institutions have a process for internally allocating research funds; in some instances this mechanism is quite formal, such as through an Office of Research, and via faculties/departments or according to other criteria. The latter variously involves financial support for staff development, sabbatical leaves, grants to areas less-likely to receive external funding, travel grants, start-up grants, matching funds and research students. Operationalizing the distribution model is potentially contentious and divisive, as the debate at participating institutions about top slicing to support central services or institution-wide research activities/centres revealed. Other participants described their approach as follows:

> Internal finance as far as possible supports an up-qualification of the teaching and/or generates external allocations and cross-institutional research co-operation.
>
> The basic research allocation model [seeks to] stimulate the ability to attract external funding.
>
> We use a performance-based model to determine what amount of resources each department gets for research projects or research student programmes. This approach has forced departments to improve their performance. For other activities like supporting research infrastructure or postdoctoral fellowship, an allocation to departments is not made and applications are considered on a competitive basis by the Research Committee.

Greater emphasis on research has raised intra-institutional tensions. One institution acknowledged the 'difficulty in reconciling individual, college and wider institute objectives and aspirations' while another stated that the 'review of research concentrations…involved significant uncertainty' and that 'developing a strategy to codify research active staff experienced strong resistance.' A third stated that they

> are facing a generational change among the academic staff…,newly recruited staff come with a new view of the necessity for research as well as co-operation with the trades and industry. There is also some concern that the increased research activity will be at the expense of the teaching. On the other hand, the research offers a possibility for professional development for the benefit of the teaching.

Growing research and establishing a nexus between teaching and research is not without personal costs in terms of time required; squeezing 'research out of people and departments that have no training, aptitude or inclination (Skoie, 2000,p416)' inevitably generates tensions. Participants are drawing various lessons from their experience and the ever-growing literature on the changing academic workplace: 1) not everyone needs to be involved in research, 2) policies which enhance the nexus between research and teaching should be encouraged, 3) a range of services, awards and rewards to encourage and facilitate should be introduced, and 4) a wider definition of scholarship, rather than a traditional dichotomous view of basic and applied, would help provide a more encouraging environment.

iii. Theorising late-development and research structures

Case study methodology is often criticized for its lack of rigour and generalization from a small sample. Individual experiences involve several interrelated factors often unique to the institution, society or context and comparisons are far from direct and unproblematic. Yet,

such studies can contribute uniquely to our knowledge of individual, organizational, social and political phenomena by enabling us to generalize from specific experiences. This section will seek to draw some tentative theoretical propositions from the specific experiences of new and emerging HEIs.

Theorising late-development

The academic literature and higher education policy has tended to discuss recent changes in higher educational systems in one of two ways. Van Vught, Meek (1996), Huisman and Morphew (2000), for example, have variously described the process whereby newer institutions have developed a research agenda as a *problem* of academic or mission drift. Drawing upon the very large literature on differentiation and diversity, Van Vught (1996, pp.51-57) has likened higher education institutions to other organisms, which grow and change in response to external factors. The 'nature, number and distribution of organisations at any given time is dependent on resource availability and on competition within and between different species of organisations.' To survive, higher educational institutions need to secure a continuous and sufficient supply of resources. In an era of decreasing public funds, competition for scarce financial resources has encouraged institutions to copy each other rather than develop distinctive profiles (Huisman, 1998, p94). Because research is perceived as more highly valued than teaching, institutions have converged on a single model of 'university.' Likewise, reflecting on the Carnegie Classification system, McCormick (2000) suggests that '[t]here are strong incentives for institutions to conform to particular models of institutional activity, and indeed to particular indicators of activity.' In this scenario, institutional homogenisation or de-differentiation is an inevitable result of competition. Terms such as 'mockers and mocked', 'pseudo-universities,' 'institutional chameleons' and a 'contagious effect' are often used to describe this rush towards uniformity.

An alternative view is presented by Dill and Teixeira, Geuna and Pham (2000), who seek to explain the changes as an outcome of rational choice theory. Borrowing from economics, they argue that in a competitive environment, institutions will search out their own niche and develop their own mission and institutional profile. The emphasis here is on innovation and the development of 'new products, new ways of delivering or organising them, and the use of new resources (Dill & Teixeira, 2000; Geuna, 1999).' For example, because reputations for teaching and research are becoming intertwined, universities are positioning themselves and re-organising their institutional structures accordingly (Zubrick, Reid & Rossiter, 2001). Research is also necessary to ensure that vocational/professional disciplines keep pace with sophisticated labour market demand. As social and economic organisations, HEIs are

focusing on building unique competencies in order to position and differentiate themselves. Finding a specific niche in the research market is one such approach. In this scenario, competition leads to diversity not conformity.

Evidence from the case studies however suggests a third interpretation. Borrowing from the literature on late- or new-industrialising countries and competitive advantage (O'Malley, 1989, pp.8-31; Porter, 1990), [3] this view sees the changes and challenges discussed in this chapter as part of the inevitable process of historical change and institutional development rather than the result of misguided mission drift or product diversification. New HEIs can be viewed as *late-developers or newcomers* established in response to different events and circumstances. As such, they are experiencing all the disadvantages of starting late from a poor base, and competing against the strength of established providers who have built up a firm relationship with policy makers and dominant groups. Responding to this new environment, governments have often maintained an ambiguous attitude towards their higher educational system, and particularly newer institutions. Endorsing diversity while demanding knowledge production and industrial relevance, they have variously favoured statutory instruments or market forces, in the conventional (neo-liberal) belief that intervention would undermine efficiency or productivity and lead to underperformance. The impact on new institutions has, however, been, at best benign and at worst devastating. Thus, in this scenario, *late-developers and newcomers* come up against open and hidden barriers to entry or what Geiger refers to as the 'insuperable advantage of established institutions and the immutability of the university hierarchy'.[4]

In response, new and emerging HEIs have sought to devise strategies for survival, selectively adopting policies to help overcome barriers or restricted barriers to entry. Similar to the experience of late or newly industrializing countries, they have proactively sought to attract external funds and providers – for example, buying-in well-established researchers or research projects, or forming strategic alliances – and to develop their resource base. Of most relevance to this chapter, new and emerging HEIs have sought to identify and exploit exceptional and niche advantages based on their particular experiences and expertise. Despite difference in origins and context, and the obvious challenges (Curran, 2001, pp.223-251), every participating institution is attempting to build a research culture as the proceeding section illustrated. If recent developments are understood as the next stage in the evolution of

[3] The concept of late- or new- industrializing countries has been used to examine particular difficulties facing what were previously viewed as underdeveloped economies. As higher education takes on many attributes of other sectors (indeed, higher education is often referred to as 'the knowledge industry' or the 'higher education industry'), this literature becomes increasingly helpful.
[4] Geiger (1993, p295) uses the term 'late developer and late-comer.'

higher education or a ‘delayed catching-up process (Berry, 1999)’, then barriers to entry can be recognized as such and appropriate action taken. There are important policy issues that emerge from this analysis.

- Theorising research structures

New and emerging HEIs, like their more established counterparts, are actively grappling with the complexities of research management and capacity building; for *late-developers and newcomers* the challenges are that much more difficult, not least because many of them have not traditionally been resourced for research activity. While newer institutions have not fared as well as traditional universities in competing for research funds, this has not deterred them. They ‘have found it necessary to strengthen their research capabilities, and…have gone about it in a variety of ways (Turpin, Garrett-Jones, Rankin & Aylward, 1996).’

The growing literature in support of Gibbons’ Mode 2 concept reflects research practice within universities, across higher education more broadly, and across national research/science systems. Coupled with arguments drawn from Boyer, new institutions in particular have been able to develop research strategies which more accurately reflect their experience, expertise and mission. In fact, it could be argued that Mode 2’s emphasis on inter-disciplinary team work focused on useful application, moving non-hierarchically across the ‘boundaries’ of basic, applied, strategic, industrial research and professional/creative practice, more aptly suits their profile. Perhaps not surprisingly, many of the participating institutions mentioned these issues specifically in their responses, while, at the same time, emphasizing the importance of priority setting and niche areas. ‘The key question is how to structure and organise teaching and research in the universities, given that research practices are changing (Gibbons, 1995, p101).’

It is self-evident that there has been a dramatic transformation in the relationship between knowledge production, higher education/institutional mission and society. While research and scholarship is still grounded on the activity of individuals, it is less and less conceived of as an individual activity. Over recent time, there has been a rapid progression from knowledge as an individual activity to maintain intellectual rigour to the production and dissemination of knowledge as responsive to the social/regional economy and national/global R&D policies. Indeed, it is arguable that the former can any longer be distinguished from the latter. One participating institution referred to its mission as a ‘global orientation with a regional responsibility.’

Depending upon their stage of development and preferred nexus between teaching and research, participating HEIs appear to be introducing the following organisational and strategic research arrangements (see Table 1). In the early stages (Type 1), institutions and academics favour a very close relationship between teaching and research, perhaps spawning small research groups which are retained within the department. As a critical mass develops the needs of the research team and the strategic needs of the institution favour a more formalised structure for research; existing academics may move seamlessly between teaching/departmental commitments and the centre (Type 2). The ability of institutions to attract substantial external research funds is increasingly conditional on highly productive teams and timely outputs, factors which are potentially inhibited by normal academic workload issues; hence many of the institutions have acknowledged the need to renegotiate contracts and strategically recruit. Autonomous research centres or campus companies (Type 3), located either within the institution or in science/industrial parks, are favoured when the research group has reached a size effectively incompatible with the routine academic demands of the institution. Type 4 suggests a clear separation between teaching and research, for example the establishment, usually by government, of independent research institutes only some of which support postgraduate students; perhaps not surprisingly, this strategy was not widely favoured by participants.

Table 1

Model of Institutional Teaching/Research Relationships and Structures

Type 1: T = R $\rightarrow$ Inclusive departments
Type 2: T & R $\rightarrow$ Departments + units/centres
Type 3: T $\mid$ R $\rightarrow$ Departments + autonomous centres
Type 4: T $\neq$ R $\rightarrow$ University + autonomous institutes

(Adapted from Clark as quoted in Coaldrake & Stedman, 1999, pp.22-23)

This model works on two levels: 1) a structural and organizational manifestation of the nexus between teaching and research, and 2) a developmental and strategic relationship between each of the 'types'. Several issues arise. First, while there is a 'natural' progression, there are many strategic and academic reasons and issues of context and timing to explain why institutions might favour one relationship and arrangement over another. For example, new institutions wishing to develop a 'culture of scholarship' from a green-field site might retain larger groups within departments. On the other hand, institutional tensions, academic contracts and reward systems might favour the formation of autonomous centres or 'outreach'

entities much earlier. Second, the idea that the 'structuring of research activities must serve to reinforce the academic role of the university' remains strong (Gutiérrez, 1996, p.19ff). Hence, there is concern that research activity removed from the academic core and graduate education have contributed to an incremental fragmentation of universities as places of inquiry, as expressed via Derek Bok's 'over-extended organisation' (in Geiger, 1993, p.327). The more an institution moves down this road, the more it encourages 'two parallel structures within universities: one for teaching and another for research (Coaldrake & Stedman, 1999, p.23)'. Third, case study evidence suggests that *growing research* is a process: individual → cluster (unit) → larger cluster (centre). If there is a developmental relationship between each of these positions, can the process be shortened, and if so, by what mechanisms: staff development, strategic recruitment or buying-in large-scale projects? Drawing upon the late development literature, buying development off-the-shelf has been tried with varying degrees of economic success around the world. Important policy issues emerge from this analysis.

Summary

This chapter has examined some issues facing new and emerging higher educational institutions; four main points emerge. First, based on case study evidence, the problems these institutions face are arguably associated with the challenges of late-development not mission drift. Second, the latter argument is often based on the view that research activity is an accoutrement of universities. In contrast, new institutions argue that research and scholarly activity is integral to their mission; these are attributes of higher education in general not specific to 'universities.' Third, new understandings of knowledge production and dissemination favour new structures and frameworks. Participants strongly favour and encourage interdisciplinary teamwork, and are strategically seeking to formalize this work into clusters supporting academic work. And finally, there is little dispute that innovation, application and knowledge specialization has increasingly become a primary indicator of competitive advantage, performance and survival. While research management and research capacity are high on the strategic agenda of all higher educational institutions – as signaled by the participation of a few well-established universities in the study – new institutions as *late-developers and newcomers* encounter barriers to entry.

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