

Vanishing borders and new boundaries

Introduction

This paper is not a debate with Castells in the sense of a dispute. Rather, it is an attempt to reflect on some of the implications of Castells' work on globalisation for higher education. The first section attempts to show that globalisation is a very different phenomenon from Internationalisation, with vastly different implications. The second section explores some of the challenges facing South African higher education from the perspective of global developments.

Globalisation is not expanded internationalisation

There is a tendency to perceive globalisation as intensified internationalisation, or to use the concepts interchangeably. Peter Scott (2000) provides a convincing argument for a clear distinction between internationalisation and globalisation in higher education. The former reflects a world order dominated by nation-states; the emphasis is on strategic relationships for aid, development and exploitation. The latter reflects global competitiveness between great market blocs and intensified collaboration and competition in the emergence of new regional blocs which are not only economic, but also cultural and educational.

Internationalisation is closely linked with and dependent on autonomous nation-states which have autonomous but interdependent higher education institutions. The autonomous state has a great degree of control over its economic priorities and development projects, and usually provides, directly or indirectly, more than 50 per cent of the budget of public higher education institutions. The state also has a fair degree of control over who can provide higher education and what counts for higher education. International exchange of students and staff, and international collaboration in the production of knowledge is central to the life-world of the modern nation-state university (Scott 2000). In this system the boundaries between the state, the market and the university are fairly clear, albeit constantly contested.

In contrast, in a globalising higher education 'system', nation-states have limited or no control over policies regulating higher

education. The private sector offers free higher education programmes in countries where there is no free higher education, the shape and size of the system are determined by partnerships between business and institutions, and quality assurance is determined and monitored by third party agents.

Effects of globalisation on higher education The possibility of instant transactions, the ability to produce and disseminate knowledge globally in real time, the need for global capitalism to have restructured institutions, and the need for states that can make this new system function, are having a profound effect on higher education.

Globalisation is associated with a restructuring of the nation-state in terms of the deregulation of financial controls, the opening of markets and notions of efficiency, and redefining the core business of the state. These notions are antithetical to the classic notion of the welfare state, on which traditional European higher education depended very heavily. The new privatised, outsourced professional state is no longer clearly above or outside the market, but is now itself a 'market-type institution' (Scott 2000). This state of affairs is not imposed upon unsuspecting governments by an invisible hand; on the contrary, globalisation depends on being enthusiastically promoted and implemented by nation-states, who then, in the words of Castells at the Gauteng seminar, 'lose control'.

The restructuring of the state is to some extent mirrored in higher education institutions. So this is a major effect of globalisation on higher education: institutions are expected to become open to competition, be more competitive, identify core business, plan according to cost centre accounting and have a flexible, retrainable and redeployable staff who are efficiently line or project managed.

Restructuring also applies to the market, which no longer consists of small, medium and multinational firms. The market now sees its operations and its clients as global, adds value to what it regards as desired and 'switches off' what is regarded as not of value. The market does not only try to satisfy needs and make a profit in the process, but it also 'manufactures' desires and needs (Scott 2000). The market is not outside of culture and politics, but is becoming more embedded in them, and thus becomes part of shaping and reshaping both culture and politics (Scott 2000). The market is thus increasingly becoming a web of complex relationships and interdependencies which is integral to the state and culture, as well as to higher education. According to Scott:

The frontiers between State, Market and Culture have been breached. They are more and more difficult to tell apart. Also as a result, State institutions, Market institutions and Cultural institutions are more difficult to distinguish. The university, for example, is all three. And, more radically still, the very idea of stable institutions is being undermined by technological innovation and organisational volatility. (Scott 2000: 5)

The second major effect of globalisation on higher education has to do with the changing role of knowledge, information and information technology. While these are quite separate constructs, they are becoming increasingly interrelated. Carnoy (1998) asserts that 'if knowledge is fundamental to globalisation, globalisation should have a profound impact on the transmission of knowledge'.

The centrality of knowledge to globalisation has contributed to the emergence of new paradigms and new social relations for the production and dissemination of knowledge. There are new trans-institutional arrangements for the development of knowledge production sites and multiple agencies are involved in the production and dissemination of knowledge. The emergence of multiple, networked, global knowledge production partners is redefining the role of higher education institutions. The Von Humboldt model of higher education which integrates teaching and research under one roof might be reaching its end, and Peter Drucker (1999), a guru of change management, is predicting the end of the comprehensive university as we know it today.

The revolution in knowledge dissemination is as far reaching as are the new modes of knowledge production. Government, corporations, international development agencies and institutions operating individually or in partnerships are promoting and supporting globalised course delivery. A new taxonomy of institutions has emerged, ranging from virtual, for profit, spin-offs of virtual institutions, to consortia of existing institutions. There are also institutions set up that enrol predominantly foreign students. A more frivolous classification is 'brick and click universities' versus 'click universities' (Levine 2000).

There are many new initiatives. These include the British Open University which has started to operate in the United States, the expansion globally of institutions such as Monash University from Australia, the announcement by Sylvan Learning that it is planning to open for-profit universities around the globe, and the World Bank initiative to set up the African virtual university (see also discussion in Hall in Section Four

Chapter 2 of this volume). Established institutions have also formed consortia to provide higher education programmes to the non-traditional clientele. For example, consortia consisting of Princeton, Yale and Stanford propose to offer on-line courses for their alumni. Entering the competition, Oxford has just established a commercial web education centre from which it is expected that 'tutors will become as familiar with teaching the public via interactive links as traditional Oxbridge dons are with musing in their studies over vintage port' (London *Sunday Times*, 7 October 2000).

The University of Maryland University College, UMUC Online.com Inc., is creating a global marketing plan to expand the reach of the college's on-line courses. The new company will seek corporate partners to develop innovations for delivering courses on-line. 'To be competitive, [universities are] going to have to market in such a way that is quantitatively different in order to be qualitatively different' (Selingo 2000).

The 'difference' will - amongst other things - mean an increasing demand for packaged and 'branded' materials that are more similar to the mass culture media than to traditional lectures. This raises the question as to whether higher education institutions will merely be the primary producers of academic materials that are processed, packaged and disseminated by global corporations. Universities could then become 'knowledge warehouses' where knowledge produced off-site is reprocessed before it is supplied to the corporation. The corporation's task would be to make the materials more 'user friendly' before passing them to the worldwide distributor, who might sell them, like old soap operas, at a reduced rate to the Third World once the knowledge was a little out of date.

Such 'edutainment' also raises the possibility that the names of world-class professors could become far more important than the institution in which they work, as has happened in Hollywood where the dominance of the studios has given way to the star power of the actors (Levine 2000).

There is a dramatic increase in the use of on-line courses and virtual institutions. In 1999 54 per cent of United States college courses were offered on-line. In April 2000 there were estimates of 878 institutions offering virtual courses (Newman 2000). There has been an extension of existing institutions to capture new markets and to provide greater numbers of skilled workers. In the United States the Education Commission has identified 650 for-profit degree-granting institutions. The rising demand for distance learning is challenging providers to provide high levels of cus-

tomers service and other services that were not anticipated, such as electronic alumni magazines (Young 1999).

In February 2000 the British government announced a distance learning project called 'e-University', which has a £300 million start-up fund. It is aimed at encouraging and enabling the United Kingdom system to compete with major virtual and corporate universities in the United States and globally, in order to expand Britain's share of the overseas higher education market. Several partnerships have been formed between established institutions and for-profit companies. The *Chronicle of Higher Education* (16 June 2000) reported that nine universities on four continents have formed a venture with NextEd Company to offer on-line courses in Asia. The market in Asia is estimated to be worth US\$10 billion annually. Two new associations representing Web-based education companies have started a Washington lobby group: 'a new trade association was necessary, because none of the existing higher education associations represents the interests of distance education' (Selingo 2000).

Quality assurance of many of the on-line courses has shifted from institutions or states to transitional quality assurance and accreditation agencies. Their emphasis is on the measuring of competencies (outcomes) that are relatively easy to measure. Examining agents operate at 5 000 sites in 140 countries and administered an estimated three million assessments in 1999. In January 2000 it was estimated that 1,7 million credentials had been awarded. There is also a move towards international standards and licensing (Adelman 2000). Trans-national quality assurance accreditation in the globalised higher education arena raises questions as to whom, and on what basis, should standards be set and monitored. The new arrangements in the accreditation of higher education courses will have a profound impact on traditional peer-certified expertise.

Commenting on these changes, Scott asks:

But what is the impact likely to be? To put it simply, will the university thrive or will it wither away in this new global environment? Will it reach new heights as the leading knowledge institution in a Knowledge Society, or will it be superseded, by-passed, by more vigorous rivals (some of which, of course, may steal our name as a convenient 'brand')? And will the university of the twenty-first century, of the next millennium, be anything like the universities that have existed up to this point in history? (Scott 2000: 1)

Some responses to the effects of globalisation on higher education The following are somewhat overstated 'positions' implicit, or explicit, in the way that the debate on globalisation is being conducted in higher education in South Africa and elsewhere.

We must increase our market share

(Or, the new global academic entrepreneur.)

Once academics - at first reluctantly, and then with some enthusiasm - have accepted the new managerial language of strategic planning, students as clients, core business, outsourcing, cost centres and privatisation, perhaps it is not surprising that the next logical step is to globalise this mindset. When the local market is saturated, then the global market must be tapped (as any good local capitalist business expanding its horizon and its market knows). As in economic globalisation, new technology is crucial in making it possible - and the core business is both knowledge driven and about knowledge.

The new global higher education entrepreneur looking for niche markets was inherent in the academic restructuring of the 1980s in the United Kingdom and the United States. Perhaps Peter Scott's distinction between internationalisation and globalisation could be viewed differently; internationalisation in the United States and United Kingdom gave them a competitive advantage en route to globalisation. Traditional academics find the unreflective way in which First World academics, and a few aspiring Third World academics, talk about expanding markets quite 'un-academic'. Rather shocking to Third World academics is that the vast majority of First World academics do not show much, if any, awareness of the cultural bias of their wares. They also show no compunction towards their fellow Third World academic colleagues who may be losing not only their students, but also their jobs and ultimately their institutions. This raises the question as to whether these structural changes may lead to the end of collegiality and international 'solidarity' amongst academics. It will in all likelihood also perpetuate the other phenomenon associated with globalisation: increasing inequality, both between academics within institutions and between academics in different institutions and countries.

I van't to be left alone

(Attributed incorrectly to Greta Garbo.)

In a recent discussion piece on globalisation and higher education Simon Swartzman (2000) said that 'Brazil will remain, for the next several years, a large and mostly inward-looking country'. This is remarkable, but not unusual. The Brazilian President, Frederico Cardoso, is arguably one of the foremost theorists and practitioners of globalisation in Latin America, but his academic community may well lag behind him. In many developing countries the government may be pursuing a vigorous globalisation agenda while the academics steadfastly remain orientated to the local. Castells argues that you cannot be indifferent to globalisation: you are either in or you are trying to get in. If you stay out, survival is what you are heading for - if you are lucky (Castells 1998). While academics may want to operate in the familiar locale, and occasionally hanker after a bit of the good old internationalisation, it seems that globalisation will not leave them alone, either in the way in which their workplaces are reorganised or through their colleagues on another continent recruiting their students through the Internet.

Fight the new cultural imperialists

Oppose Californication! (With acknowledgement to the Red Hot Chilli Peppers.)

From the previously colonised in the Third World this fighting talk sounds like just another despairing cry en route to applying for more grants; but far more serious is when the Europeans and the Canadians start making moves to oppose the 'Californication' of the world. Three types of approaches can be identified:

Protectionism

It is estimated that 70 per cent of Internet distance education materials originate in the United States. The first, instinctive response from many public institutions has been to ask the government to intervene and to put an embargo on foreign institutions. The French Minister of Education M. Allegre called for a 'counter-attack' in the battle over the right to offer distance education across national borders. M. Allegre bases his argument not on economic disadvantage, but on the preservation of national identity, culture and language (*Chronicle of Higher Education*, 10 December 1999). The Egyptian government has declared foreign distance education a national threat.

In South Africa some universities have asked that, since the government is providing five years of protection for the national

telecommunications utility, the same should be done for higher education. While the South African Minister of Education seems quite sympathetic, he is clearly out of line with government economic policy of opening up competition and lifting protectionist measures. If the World Trade Organisation approves the proposal to make education a 'service' then such protectionism could be illegal.

Be competitive

The new British government-sponsored higher education distance consortium is on the one hand justified in opposing United States dominance, but on the other hand it sounds more like a revival of a much older British tactic - join the race for colonial domination. For the Third World this type of competition is very daunting. Successful competition is the exception rather than the rule, despite a South African university recently winning a contract for distance education in the health sciences from Israel and Turkey in competition against a number of United Kingdom institutions. The competitive advantage was because of cost and relevance: at more than ten South African rands to the British pound, South Africa has a competitive advantage and as a developing country, South Africa has a health system that is more similar to those of Israel and Turkey.

Form partnerships

Partnerships come in all shapes and sizes, and with all their inherent tensions and inequalities. In pursuing partnerships, appropriate guidelines for public and private, Third and First World partnerships will have to be developed. Some of the complications of partnerships are demonstrated by the decision of the Minister of Education in South Africa earlier this year to place a moratorium on new partnerships. According to the Minister's spokesperson:

What has tended to happen in these private-public partnerships is that a number of public universities have, in the name of efficiency, outsourced the delivery of some of their academic programmes (especially distance learning programmes) to private sector partners. This in itself may not be a problem, but in our experience, these collaborations have often resulted in a compromise of quality. In the South African context, the students who are often short-changed in such arrangements are in the main black, and poor. (Kulati 2000: 2)

Similarly, First World-Third World partnerships could easily perpetuate the inequalities associated with globalisation.

Debates have started about the possibility that in the global arena where the authority of nation-states and institutional policy-making structures is weakened it may be necessary to look at the possibility of 'global policy' or 'supra-policy'. A lesson learnt from experience in the globalising new South Africa is that formulating policy is easier than making it work.

Finally, the process of globalisation is making the boundary between the state, the market and higher education much more permeable - the thrust is both a redefinition, but essentially a weakening of boundaries, and in some cases, such as 'nationless' distance education, a total obliteration of boundaries. The new possibilities of links between information technology and knowledge production and dissemination, and new forms of economic production and competition, drive these new forms of cross-border education delivery.

**Challenges facing
South African
higher education**

Higher education systems and institutions worldwide need to reconfigure their new roles. For South Africa the predominant challenge has been taken to be to address, or redress, past inequalities within a new framework of democratic participation and to respond to the competition from commercial higher education, rather than challenges arising from globalisation. From the overview above it is quite clear that there is an additional set of challenges that higher education needs to confront: information technology, knowledge, human resources, institutional restructuring and a new relationship between government and institutions, not to mention a globally competitive market.

Information and communication technologies

Information and communication technologies (ICTs) have the potential for transforming education towards the new knowledge-creation, educational model. Central to transforming education through technology is access to technology and new enabling policies.

Overall Internet use in South Africa increased in 1998 by 86 per cent, by 53 per cent in 1999 and is predicted to increase by about

40 per cent in 2000. The slowdown is reported to be due to lack of competition for the current telecommunications operator - Telkom - and the high cost especially of international bandwidth. In 1999 a 40 per cent growth was reported in corporate users accessing Internet via high-speed digital leased lines because the business sector, unlike the education sector, could absorb these costs. The costs are high and the bandwidth ordered for Internet purposes is small by comparison. For example, it is simply not possible to make good use of JSTOR, the United States-based electronic journal storage resource because it takes too long and costs too much to download journals. During early 1999 a United States consultant wrote that South Africa is some 15 years behind other developed countries in the use of ICTs for teaching, research and management purposes in higher education (Leatt 2000).

South African higher education has operated its own network for international and domestic bandwidth called Uninet. The network was owned and managed by what is now the National Research Foundation. The costs of bandwidth were high and escalating - bandwidth costs constituted a major constraint to the development of co-operative library ventures. Due to Telkom's monopoly Uninet had to purchase its international and local bandwidth from the national telecom provider. Furthermore, Uninet had done pioneering work for higher education, but it was not quite an Internet service provider (ISP) and was now facing stiff competition from the growing ISP market. It simply did not have the resources to update its technology and to become higher education's preferred service provider.

The story of how to obtain greater bandwidth for higher education is almost like another 'struggle story'. A task team consisting of a number of higher education luminaries had their first meeting with the Minister of Communications and senior Telkom management in 1996. In October 2000, with the assistance of a United States donor consortium, a deal was finally struck, but not yet signed, to establish the Tertiary Education Network (Tenet) that will manage higher education's future inter-networking service contracts (Leatt 2000).

It is hoped that the deal which higher education is about to strike with Telkom will give South Africa an adequate and affordable international and m

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could take advantage of much better bandwidth. It could also start to realise many of the ideas set out in the policy documents that have emanated from higher education, such as those written by the Working Group on Library and Information Technology for the National Commission on Higher Education (1997) and the report on the feasibility of a 'national virtual library'. Furthermore, higher education would be in a position to seriously consider the strategic advantages of how to integrate technologies much more effectively into higher education systems to improve the quality and scale of higher education provision in the country. The challenge is for higher education to apply technology imaginatively and effectively, and to develop new organisational systems that can facilitate, rather than retard, ICT application (Bouchard 2000).

The 'struggle for bandwidth' is a very pertinent example where policy flows from innovation, and is driven by a consortium of funders and institutions, while the government oscillates between opposition and passivity. A future policy challenge will be for government to be ready, to be responsive, to policy development that flows both from the top and from the bottom.

Another challenge for South Africa is to determine where and how ICTs are best used. It is not unlikely, after the spectacular loss of confidence in dotcom companies, that a correction in the current extravagant claims for electronic distance education will occur. The challenge for South Africa is not to jump on the wrong bandwagon at the wrong time, as is so often the case with Third World countries.

Knowledge

There are at least three salient trends in knowledge production in the higher education sector in South Africa. Firstly, as far as scientific output is concerned, the best available data suggest a decline in total published output over the past two to three years. Whereas scholars at South African universities and technikons maintained an average output of approximately 5 500 publication units per year between 1992 and 1997, results for 1998 and 1999 show an annual decline of around ten per cent. This decline is mirrored by a comparable decline in our share of world output (as measured by Institute for Scientific Information statistics). The best figures suggest that South African scientists produced approximately 0,51 per cent of world science in 1998, compared to 0,7 per cent in 1994 (Mouton and Boshoff 2000).

Secondly, there is growing evidence that research being done at South African universities and technikons is increasingly

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directed at strategic (socio-economic and industry) goals. Although no data is available, there are indications that more contract research is being conducted, which could account for some of the overall reduction in publication output. Data from the National Research and Technology Audit (Mouton and Boshoff 2000) showed a marked decline in the proportion of basic research being done within the higher education sector.

Thirdly, there are clear shifts in the kind of knowledge produced as far as scientific fields are concerned. Data from the SA Knowledgebase show a shift over the past ten years towards more health research and applied natural sciences research with a concomitant decline in basic natural sciences research. A similar shift away from general humanities research towards more applied social sciences research is evident (Mouton and Boshoff 2000).

Although various forces are at work within the higher education sector which are driving these changes, the overall picture that emerges is of a body of science that is struggling to maintain its current levels of capacity and that is increasingly driven by strategic and national goals and concerns. South African academic science faces a double challenge: to increase strategic or 'problem-solving in context' research, and to be able to maintain and - if possible - strengthen its core knowledge-base in basic science. This is essential, not only because it ultimately feeds into strategic and problem-oriented research, but also because it forms the basis for high-quality postgraduate training

In response to a question about issues regarding higher education and knowledge in South Africa, Manuel Castells wrote the following: 'The global economy is knowledge-based. If you do not perform in this new system, you fall into low-value added production and you never, never develop, regardless of how much you trade' (cited in Cloete 2000: 12). A point to note is that sub-Saharan Africa, excluding South Africa, has a higher proportion of its gross domestic product in international trade than average Organisation for Economic Co-operation and Development (OECD) countries; but it is mainly in devalued primary commodities.

Castells further asserts that the knowledge economy is based on the combination of technological infrastructure, connectivity and human resources. Without human resources, nothing works. Human resources require not just technical skills amongst a minority, but a broad level of education in the population at large. In addition to generating knowledge and processing information, universities need to produce

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research-orientated institutions. In addition, innovation will have to be specific in its connection to the knowledge economy. The implication is that institutions have to develop a cadre of academics to serve these institutions and also develop innovators to link institutions with the business sector. Such partnerships can contribute to accessing funding for research and for faculty in applied research programmes. It is important to bear in mind that key research developments happen in international networks, often working on-line. To enter these international co-operative networks there is need for a certain level of excellence to be achieved. Once this connection is made, then the system becomes self-expanding. The issue is how to prime such a system.

Given the scarcity of resources, the problem is how to concentrate resources in some institutions and in some areas, because an equal spread leads to minimal gain (see also Castells in Section Four Chapter 1 of this volume). Thus, the choice of investing in a few areas and in a few departments or institutes must be confronted. One implication is that rather than concentrating on a few universities, funding could be given to a network of very good groups in various universities for a limited period of time (five to ten years, depending on fields), which are then evaluated in terms of their performance. As part of the building of these networks, mechanisms of diffusion of their discoveries and graduates to the overall university system should be established. In other words, resources would be concentrated on innovative and excellent networks of a few groups, while, at the same time, ensuring that this is not the construction of a non-accountable elite. In general, it is not a good policy to work on selected areas, such as information technology. Yet it looks like some key areas, which are at the cutting edge, could be critical for a while. A large investment in these areas could ensure the dramatic technological upgrading of South Africa in a short time, say ten years.

The inter- and intra-institutional differentiation in South Africa will increasingly be based on knowledge capacity, which means a combination of the academic backbone of the institution and how it is organised and connected or networked. In South Africa the term 'disadvantage' is often directly linked to a shortage of financial resources, while the real difference often lies in academic capacity, of which the so-called 'academic culture' is just a symptom of differences in knowledge capacity. Policy demands for mission re-engineering, life-long education, engaging in problem-solving research and so on, all presume a certain academic capacity for modifying, or retooling, existing skills. A problem we have to confront is that Castells' 'self-programmable

labour' is not in abundance, and is over-concentrated in certain institutions. In a certain sense South Africa has a largely 'generic' academic labour market - people who are left out of the information networks and who do not have the knowledge skills to rethink their occupational tasks and apply their skills in different contexts and to different problems.

The 'knowledge portfolios' (see Carnoy in Section One Chapter 2 of this volume) of academic workers are going to allow some to become increasingly market-linked and competitive, pulling them further away from the national public institutions and more into the global knowledge-production, problem-solving consultancy world. At the other end of the spectrum of generic labour, are academics who will become more local, 'switched off' out of knowledge networks, with rising frustration and resentment. For them private higher education and global edutainment enterprises will be an increasing threat. These different knowledge portfolios are going increasingly to drive differentiation between institutions, but also within institutions, leading to new meanings to concepts such as advantage and disadvantage.

Recent South African government-related policy developments (Council on Higher Education Report 2000; National Commission on Higher Education 1996; Department of Education 1997) have not addressed these issues. There is still a preoccupation with the lingering effects of apartheid on individual and institutional equity. Yet it seems quite urgent that knowledge generation and information processing require focused policy interventions. These will need different types of interventions, not to mention investigating the possibility of some institutions becoming national or focus institutions with a predominant technology mission.

Human Resources

Higher education has two important functions in the knowledge economy. The one function is to produce medium-skill level professional graduates for the professions and the service sector; the other is to produce highly skilled knowledge producers for high-level innovation. As the conceptual share of the value added in economic processes continues to grow, the ability to think abstractly will be increasingly important across all professions (Greenspan 1999). Skills must be adaptable or flexible and updated through life-long learning ('self-programmable' workers). Gibbons in his World Bank paper (1998) summarises some of these skills as computer literacy, knowledge reconfiguration skills, information management, problem-solving in the context of

application, team building, networking, negotiations/mediation competencies and social sensitivity. In terms of the latter, in modern democracies graduates will have to be able to deal with and manipulate different cultural symbols, operate in diverse social settings and develop complex notions of identity and citizenship. These skills and higher level understandings should not be taught in the abstract, but could be integrated into disciplinary knowledge - be it mathematics or fine art.

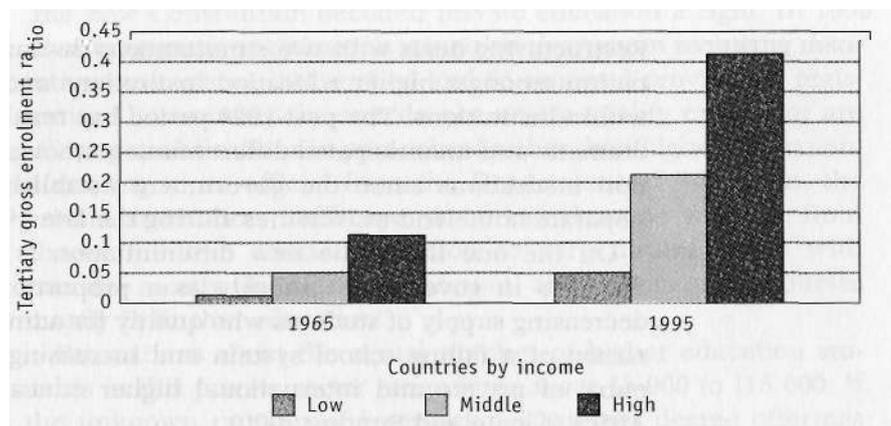
The South African labour market has in recent years undergone a major demand shift caused by changes in production methods and other structural adjustments. Following international trends, South Africa has undergone a massive shift in the relationship between capital and labour in production. The increasing capital intensity and the dramatic shift to micro-electronics in all sectors has resulted in a demand - which is growing by the year - for skilled professionals, technicians and managers who will develop, implement, operate and maintain the new technologies. Concurrently, this capital-technological change is displacing and replacing the unskilled and low skilled labourers, farm workers, production workers and basic service workers (Bhorat and Hodge 1999).

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The South African economy is moving away from primary and manufacturing production towards a greater emphasis on output in the services sector. The consequence of this has been a growth of at least five per cent per annum in skilled professional and managerial occupations over the past two decades. This has resulted in these categories increasing their share of total employment in South Africa from 4,7 per cent in 1970 to 15,2 per cent in 1997. It is estimated that their share will be 22 per cent by 2002. The only other occupational category to achieve remotely similar growth is the service-orientated sales and clerical group (Bhorat and Hodge 1999).

In a 1999 survey of 273 of South Africa's major employers, 76 per cent reported that they were experiencing a shortage of professional workers. This survey predicted that in the period 1998 to 2003 the job opportunities at this professional level would grow by between 16 per cent and 18 per cent, and that those for unskilled workers would decrease by around 35 per cent (Cloete and Bunting 2000). Aids will also have a negative effect on employment. According to a World Bank-sponsored investigation (Arndt and Lewis 2000) there are major differentials in skill-based infection rates, and given the current endowments in the economy (an abundance of unskilled labour and a shortage of skilled labour), the Aids epidemic will impact negatively on labour and capital. The combination of these factors poses a huge challenge to higher education to produce more graduates in a wide range of areas.

According to an international summary of the research evidence



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more 'self-programmable' labour. In the next section the issues will be raised as to whether all institutions can produce 'self-programmable' labour.

The productivity section in the government's Growth, Employment and Redistribution policy does not refer to the knowledge economy, information society, Internet connectivity and its link to human resources. In contrast the whole notion of improving productivity is orientated towards a training scheme under the control of the Department of Labour and financed through a mandatory payroll skills levy. The underpinning of the report is on technical and vocational training and skills. A related problem is that after six years the Departments of Education and Labour have not yet produced an overall human resource development policy. The ultimate challenge for higher education is to influence and change the 'pre-globalisation' thinking of the Departments of Finance and Labour and their policies which do not regard higher education as central to the country's development strategy.

Institutional restructuring

Restructuring deals with two simultaneous phenomena: differentiation amongst higher education institutions and reorganisation within institutions. The post-1994 period has resulted in the most dramatic and unanticipated differentiation amongst higher education institutions since the government established the racially 'separate homeland universities' during the late 1950s.

On the one hand, the new differentiation is attributed to a decrease in government subsidy as a proportion of income, a decreasing supply of students who qualify for admission (a combination of a failing school system and increasing costs) and the entry of private and international higher education into South Africa (Cloete and Bunting 2000).

On the other hand, from the argument developed in this paper, at the heart of this fragmenting system lies an interaction between knowledge capacity, connectivity, institutional resources and management capacity. These factors, within a context of a policy implementation vacuum, resulted first in intense competition amongst public institutions and second, but simultaneously, in competition between the public and the new private/international sectors.

From a system differentiated by race and ethnicity, a new institutional landscape shaped by market and globalisation effects is emerging. On the one end of the spectrum there are a number of

emerging 'entrepreneurial' institutions that have been very successful in adopting market strategies to increase their student numbers. They have formed numerous partnerships, increased their contracts with industry and implemented cost-centre based accounting and planning throughout the institution (Cloete and Bunting 2000). The highest proportion of 'self-programmable' labour is concentrated in these institutions, and they are increasingly able to attract (or 'loot') people with these skills from other institutions.

On the other end of the spectrum there are a number of institutions, about 25 per cent of the system, that are experiencing serious financial problems, mainly due to a drop in student numbers, chronic management problems and a lack of capacity to respond to new opportunities. These institutions, instead of differentiating, are becoming more homogeneous in their marginalisation. These institutions, almost all black, have been characterised as 'unstable' or 'crisis-ridden', and in a number of cases the government has had to appoint external administrators and assessors for crisis management (Cloete and Bunting 2000). It is in these institutions that there is a high percentage of 'generic academic labour'.

Private higher education has proliferated in South Africa since the new Constitution declared private education a right. In 1999 the Department of Education issued an instruction requiring institutions to register; 300 applied and 65 received provisional registration. Presumably the rest do not satisfy quality criteria or are offering qualifications in post-school rather than higher education. According to an official from the Department of Education, the private institution landscape is 'a kaleidoscope ranging from almost full-time contact provision to very distant; some with courses mostly in higher education and others with courses mostly in further education'.

Estimations about the actual number of higher education students in this private sector range from about 15 000 to 115 000. If the unknown number of international Internet degree offerings were to be added, then it becomes clear that South African students have never had such a wide choice, or such a confusing proliferation, of course offerings. The landscape is not like a higher education supermarket, but more like one of the new South African huge shopping malls: a mixture of niche market boutiques (Armani-style), large supermarkets, small home-industry shops and a number of mobile pavement vendors. Competition is thus not only between public and private higher education - school-leavers have an array of post-school courses with all kinds of claims to international recognition and job opportunities never before offered in South Africa.

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The differentiation and competition is not only amongst institutions, but also within institutions. The salary gap between the management with market-related packages and the professoriate seems to have widened significantly over the past few years - from a ratio of about 2:1 during the early 1990s to a ratio of 4:1 in the late 1990s (Naidu 2000). At the bottom end, the salaries and numbers of service workers seem to have declined in relative terms, particularly if outsourcing is taken into consideration. Some of the institutions have also introduced the notion of 'super-professors' who are offered substantially larger packages than their colleagues. Added to this is the increase in proportion of contract staff and temporary employees who are often exploited. The allocation of resources within the institution is differentiated into core and non-core activities, and some institutions are setting cost centres similar to those in corporations as a strategy to increase efficiency. The marketisation of higher education has penetrated the employment conditions and campus relationships, resulting in a profound change since the 1980s 'unity in opposition' to apartheid between workers, students and progressive academics. The individualisation of the academic workforce is at its highest in institutions which are the most involved in globalising. At the other end of the spectrum, unity in opposition has also dissolved, into fractious fights over decreasing resources (Nhlapo 2000).

The development of such divergence and inequalities in the system poses a number of challenges. Firstly, will government put together a rescue plan for the faltering public institutions, and will the justification be redress, or the need to increase participation rates, or because it is very important to defend and build institutions in Africa? Secondly, entrepreneurialism has certainly led to increases in efficiency and provided access to previously excluded students. However, it is not an unqualified 'good' - in the previous section we referred to the Minister of Education putting an embargo on partnerships that do not ensu14 Tc(puttin) Tj0 Tas

Contradictory and/or complementary challenges

Higher education seems to be confronted with what could be perceived to be three sets of competing or contradictory demands.

- Firstly, the 'scholarisation' of the general population has to be improved, demanding a sustained focus on teacher education and school improvement.
- Secondly, at the lower end of the high skills band much larger numbers of students must be better educated in terms of the use of technology, problem-solving and social skills. This layer forms the backbone of the new technology and social service occupations associated with globalisation; be it as data processors or tour guides.
- Thirdly, at the high end of the high skills band more knowledge-production and management skills are required for global competitiveness.

To address challenges at all three levels the use of ICIS must be vastly expanded. Many institutions must be reorganised to promote, rather than obstruct, ICT expansion and innovation. To repeat: according to Castells, the central ingredients of the knowledge economy are knowledge; technological infrastructure (connectivity), human resources and institutions.

A differentiated system with differentiated policies is required to respond to these sets of demands. This may need a serious rethink, if not an abandonment, of a central policy principle of the 1997 White Paper on higher education, namely to develop a 'single co-ordinated system'. The policy was aimed at addressing differentiation based on two types of missions and historical racial differentiation. A new differentiation policy will formalise and assist institutional restructuring by providing a framework, guidelines and regulations. Differentiated institutions will be better positioned to address issues that cut across institutional types and racial differentiation to address new challenges as outlined in this paper, especially the three focus areas above.

A new system will have to be quite different from the more common undifferentiated, essentially elite Third World and, particularly African, higher education systems described by Castells in the first chapter of this section. A recent report by an advisory body to the Minister of Education tried to grapple with this problem by proposing a plan to create a three-tier system con-

sisting of 'bedrock' institutions, mid-level (mainly master's degree-granting institutions) and comprehensive research and postgraduate institutions (Council on Higher Education 2000).

This bold proposal has met with little enthusiasm and considerable opposition from university leadership (Kotecha 2000). Firstly, the rigid differentiation ('hard boundaries') between institutional types means that institutions will be locked into a hierarchy which in South Africa will have considerable equity overtones - the historically black institutions will almost without exception be in the bedrock category. Secondly, the proposals do not provide a development rationale for the differentiated functions, which can motivate institutions to develop new missions to address new challenges raised throughout this paper. Thirdly, the report hardly makes any reference to the provision of the technological and institutional capacity required to make a new system work. The result has been that many of the debates, and opposition, have been driven by arguments over institutional boundaries and by self-interest.

If the basis of the Council on Higher Education (CHE) proposal is to address the functional labour market and knowledge differentiation as outlined above, through sets of institutions that themselves have different knowledge and institutional capacities, then the differentiation (or more correctly, stratification) is theoretically correct. But it is politically flawed within the South Africa racialised context and contrary to global trends which are towards softer and more permeable boundaries.

While the focus of the CHE report is institutional differentiation, the real issue is policy differentiation. Policy differentiation is a major challenge for the government, because clusters or groups of institutions are going to require different policy and resource responses. Policy differentiation means that certain targeted policies are developed for specific periods, say five years, in order to achieve targeted effects. Targeted policies for specific periods of time are more likely to receive external financial support.

The globalising, highly differentiating, institutional cluster needs to be influenced through a high degree of incentives. If government provides these institutions mainly with block grants, they will increasingly respond to local and international market incentives that will make them drift further out of the nation-state, exactly at the moment that the nation state needs them.

On the other end of the institutional landscape, targeted institution building and knowledge capacity development support is required to enable some of the barely functioning institutions firstly to function, and secondly, to fulfil their important task in the first two bands of skill provision listed above. A five-year insti-

tution infrastructure-building project for a limited number of institutions, based on well-defined criteria, will be essential to ensure that some staff from these institutions are at least minimally able to participate in cutting-edge nodes. One of the better administered institutions in the country, the University of Cape Town, recently received such a type of grant from an international foundation to business re-engineer all their administrative procedures and technologies.

Another challenge for policy differentiation is the need that Castells raises for 'focus' or specialised institutions, and incentives, with strict accountability criteria, for cross-institutional networks in specific areas of competence and relevance. To develop some institutions, particularly one or two historically black technikons or universities, into successful technological institutions will require more than stimulating cross-institutional nodes of excellence that are part of global networks. The advantage of this is that in addition to being responsive to development needs, the upgrading of a few historically disadvantaged institutions will be a new mode of redress and will buy enormous legitimacy, which as Castells shows, is a central problem for globalising states. Also, if this does not happen, then as Castells tells us, inequality and polarisation will increase, meaning the top and the bottom will continue to separate at an accelerated pace.

Providing incentives for nodes of excellence has a double positive: it connects South African academics into the global networks and it crosses institutional boundaries. Policy and financial support for groupings, or consortia, can also be generalised to distance education. The proposal by the CHE (2000) for the consolidation of distance education into a single behemoth is exactly contrary to the trend towards multiple institutions in partnerships with information technology companies delivering par

Providing incentives for nodes of excellence has a double positive: it connects South African academics into the global networks and it crosses institutional boundaries.

effort for modest amounts. Until government provides clear focus areas, these agencies will continue to hand out grants on the basis of their own agendas. A survey by Moja

... globalisation tends to weaken the state at the very moment more state steering is required to achieve reforms and increase competitiveness.

top is weakened, the South African resistance to new hard boundaries between institutions is not difficult to understand.

Another apparent contradiction of globalisation is that while it 'weakens' the state, it also expects, and demands, efficient state apparatuses with well-developed civil societies that provide growing markets, stable political conditions and steady public investment in human capital (Carnoy 1999). It seems that a distinction has to be made between a state that is weakened in terms of regulating its macroeconomic policy, in setting its priorities and the level of its currency, versus an efficient state that can operate according to modern management principles. It is this reorganising of the operations of the state bureaucracy that is a huge challenge: how to become more modern, with information technology-based management systems, within a context of decreasing resources for the state - in other words, how to become a 'networked state' (see Carnoy in Section One Chapter 2 of this volume) that can steer strategically. If this does not happen, then the gap between the networked institutions and the others will grow, and the system will become differentiated along status, rather than functional, lines or boundaries.

While globalisation demands a greater role for the market, internationally the jury is out on what exactly is a good balance between private and public provision in higher education. In most countries the public/private balance developed much more as a result of a lack of provision by public institutions than due to government policy. In certain countries, such as Chile and Portugal, the private sector was stimulated as part of government policy in order to improve participation. Currently South Africa seems to be following another model, more like Kenya and Brazil, where the expansion of private higher education is due to a failure of delivery by the public system, and then all the government can do is try and impose weak and inconsistent controls. A priority for South Africa is to gain greater clarity on a constructive role for private higher education, while controlling the 'fly-by-nights'.

In conclusion, at the same time that international boundaries are both breaking down and being redrawn, with serious consequences for higher education in the Third World, within South Africa major contestations are raging about the boundaries between institutions within the public system, and between public and private higher education. At this 'scrambled' moment of disappearing, emerging and possibly hardening boundaries, it is difficult to tell which changes are contradictory and which could become complementary.

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