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When Is ‘Techno-talk’ a Fatal Distraction? ICT in Contemporary Development Discourse on Africa

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Abstract

The last two-and-half decades have seen a resurgence of neo-modernisation thinking, which is most evident in the imageries of modernity that infuse the dominant contemporary development discourse on Africa. The discussion on Information and Communication Technology (ICT) has become a signifier of that development mindset and the alleged solution to Africa’s development problems. In this paper, we argue that while ICT offers tremendous potentials, its use in the current dominant development discourse tends to confuse the appearance of things with their essence. It fails to address the multidimensional nature of the development crisis and impediments that have developed in the last twenty-five years, and is in danger of reproducing elements of perverse growth identified in first two decades of post-colonial development experience. In failing to address how twenty-five years of neoliberal vivisection compounded Africa’s development crisis, the ICT techno-talk is in danger of becoming a distraction. It becomes a fatal distraction where its discourse diverts attention from the key elements of this vivisection and its consequences. Fundamental to rethinking Africa’s development, the paper argues, is connecting the dots: the relationship between development crisis and debt peonage, aid-dependency, the retreat from the public (social) policy domain, and the dissonance between the regional development objectives and current trade regimes. Critical to sustainable ICT, specifically, and development broadly is reinventing the public domain. We use the state of higher education on the continent to illustrate this, and the imperative of endogeneity.

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Résumé

Ces deux dernières décennies et demie ont vu la résurgence d'une forme de pensée caractéristique de la néo-modernisation, très visible à travers l'imaginaire de la modernité dont est imprégné le discours contemporain dominant sur le développement africain. Le débat sur les Technologies de l'Information et de la Communication (TIC) est devenu un symbole de cette mentalité du développement ainsi que la supposée solution aux problèmes de développement de l'Afrique. Cet article affirme que même si les TIC offrent d'énormes potentialités, leur usage au sein de l'actuel discours dominant sur le développement conduit à un amalgame entre l'apparence et l'essence du phénomène du développement. Ils n'apportent pas d'explication appropriée à la nature multidimensionnelle de la crise de développement qui s'est accrue ces vingt-cinq dernières années. Pire, les TIC risquent de reproduire les mêmes éléments d'une croissance malsaine qui avaient été identifiés lors des deux premières décennies de l'expérience de développement post-colonial. En fermant les yeux sur les vingt-cinq années de vivisection néolibérale qui ont rendu plus aiguë la crise de développement de l'Afrique, le techno-discours sur les TIC risque fort de nous mettre de la poudre aux yeux. Les TIC sont en passe de nous distraire fatalement de l'essentiel, car le discours sur lequel ces technologies sont basées risque fort de divertir notre attention des éléments clés de cette vivisection et de ses conséquences. Afin de mieux repenser le développement de l'Afrique, il faudrait rassembler les pièces du puzzle: rétablir une relation entre la crise de développement et l'endettement, la dépendance envers l'aide extérieure, le retrait du domaine de la politique (sociale) publique et la dissonance entre les objectifs de développement régional et les régimes commerciaux actuels. Nous nous inspirons de la crise au sein de l'enseignement supérieur africain, afin d'illustrer ceci, de même que l'impératif d'endogénéité.

I. Introduction

The market-oriented 'development' discourse of the past two-and-half decades has not only been about the insistence on mono-economics¹ but the reinvention of the modernisation mindset. Development economics and sociology, in their early post-Second World War guise, were defined by their scepticism regarding the efficacy of neo-classical or marginalist economics and rational sociology for understanding the structure and dynamics of 'developing' societies. By contrast, since the 1980s, the dominant form of development thinking has combined mono-economics with Rostow's (1960, 1971) modernisation approach. The teleological reasoning in Rostow's approach is that the development track open to 'developing' countries was self-evident in the growth path of the countries of North America and North-western Europe. The end point was self-evident: to be developed is to be like the West – in institutional and behavioural terms. The difference between the old version of the modernisation paradigm and its current, neo-liberal, variant is in the latter's commitment to a market-oriented growth path. I refer to

this latter version as the neo-modernisation thesis, in which state involvement in productive economic activity or active social policy is considered inherently prejudicial to the efficient allocation of resources. The implications of neo-modernisation thinking are evident in the imageries of modernity that permeate much of contemporary development discourse on Africa. It is in the field of Information and Communication Technology (ICT) that the neo-modernisation thinking is most apparent: both as a signifier of development and as a solution to Africa's development challenges. By 'contemporary development discourse' I mean the set of conceptual and policy prescriptions rooted in the ontological assumptions of neo-liberalism (cf. Note 1). While there have been twists and turns in the presentation of neo-liberal discourse, including claims of a post-Washington Consensus within the Bretton Woods Institutions, I would argue that the ontological mooring remains largely the same. My concern is with this mooring. Further, there is little doubt that this discourse remains dominant – setting the policy boundaries in which most countries in Africa operate. While the neo-liberal discourse has been confronted by a counter-hegemonic agenda or what Krugman (1993) called the 'counter counterrevolution', this has been against the overwhelming weight of the political and institutional forces pushing the neo-liberal agenda.

In this paper, we argue that while ICT offers tremendous development potentials, much of the current discussions: (a) confuse the appearance of things with their essence; (b) fail to address the multidimensional nature of the development crisis and the impediments to Africa's development over the last twenty-five years of neo-liberal vivisection (Adesina 1994); and (c) are in danger of reproducing the structural weaknesses identified in most African economies in the 1970s. In failing to address the linkages between the policies that have produced the current endemic development crises and what it considers the weakness in Africa's ICT capabilities, the techno-talk of the 'ICT-savvy' is in danger of becoming a distraction. It becomes a fatal distraction when it diverts attention away from the fundamental issues in Africa's development challenges.

Fundamental to rethinking Africa's development and the value of ICT is 'connecting the dots'. In other words, the need to grasp the relationship between development crisis, on the one hand, and debt peonage, aid-dependency, the retreat of the state from active public social policy, the dissonance between the imperatives of regional development objectives and the trade regimes of neo-liberal globalisation, on the other hand. Finally, is the need to connect these dots to another: the imperative of reinventing the public domain, i.e., bringing the state back in – a state that is developmental and

democratic (Mkandawire 1995, 2001, 2004).² Two lessons to be learnt from the experience of Africa's immediate post-colonial decades are the need to avoid (a) 'perverse growth' and (b) the lack of intersectoral articulation that Samir Amin (1974, 1990) identified with 'peripheral capitalist formations'.

For our discussion in this paper, we will focus on a limited set of issues. First, that sustainable technological development (ICT or otherwise) depends on sustained public investment in education. Second, that the ability to do that has been undermined by two related elements: one is the neo-liberal discursive and policy frameworks; two is that the debt peonage under which many African countries labour continues to undermine social investment, generally, and in higher education, more specifically. The result of the neo-liberal mindset – which puts private capital at the heart of Africa's development – is in the re-emergence of 'perverse growth',³ and the ICT sector is the most obvious example. Going beyond neo-modernisation thinking requires overcoming the ICT hype that mistakes parody for development.

The discussion in the remaining part of this paper is divided into four sections. In Section Two, we outline the central elements of the ICT aspects of contemporary development discourse and the imageries of modernity inherent in them. We go beyond official documents like NEPAD in demonstrating the prevalence of this thinking. We show what is promised and the critical development questions that the discourse fails to acknowledge. We return to the argument (Adesina 2002, 2004) that the discourse is rooted in the neo-Washington Consensus framework. In Section Three, we examine in some depth some of the issues that the techno-savvy talk about ICT fails to recognise. In Section Four, we explore the links between endogeneity and sustained public financing of education, which ensure sustainable research and development. It is only in this context that the innovation that makes ICT such a promising venture is possible. The evidence, we demonstrate, points to the areas that the current neo-liberal discourse evades. Contemporary development discourse focuses on the consumption of technology rather than its production. In the context of the post-Uruguay Round global trade regime, the current absence of endogeneity is the antithesis of what the development discourse claims that it wants to achieve: sustainable, auto-kinetic development. We show how debt peonage undermines availability of resources for public investment. In Section Five, we make some concluding remarks and highlight the development options available to the continent-beyond the neo-liberal dead-end.

II. Imageries and discourse of modernity

In an advertisement that Telkom SA Ltd ran in South Africa between August and September 2004, we saw the ultimate promise of 'touching tomorrow',⁴

with the technology available today. We start our discussion with this advertisement because in several ways it demonstrates both the enormous possibilities that ICT offers and the poverty of analysis that surrounds much of the current discourse. The neo-modernisation prognosis and its limitations are demonstrated in the private sector focus of the UN Economic Commission for Africa's African Information Society Initiative, and the New Partnership for Africa's Development (NEPAD) document. Both share several aspects of the imageries of modernity that inform the ICT discourse (cf. Adesina et al. 2006).

Against the background of the mournful sound of a Muezzin calling the Faithful to the afternoon prayer, the advert opens with a bird-eye view of an old Zanzibari town. The camera view pans to the entrance of a building in decay: this is the 'Julius Nyerere Hospital'. The camera view moves into the building and we see a very sparse hospital ward, with a row of hospital beds, and a nurse going behind a screen. We meet a young boy in a white cap and matching white kaftan. He is buttoning up his dress, with the help of the nurse. We get a glimpse of the surgical wound dressing covering his left chest. The camera moves us to another scene: to a good-looking white male driving a car through a tunnel: well lit and modern as they come. The car carries a plate number of South Africa's Western Cape Province. The camera returns to the young boy; now sitting on the hospital bed, arm over his small portmanteau; quietly waiting for someone or something. He seems ready to leave the hospital. The voice-over introduces us to the boy: a Tanzanian boy, who 'has just turned six. He would not have done so', we are told, 'without an emergency operation, performed by a Cape Town heart surgeon'. A brown-skinned hand, with a copper ring on the index finger, reaches for Jumah. Next we see him walking through a long, poorly lit corridor, with a tall female person who is dressed in an ankle-length dress and a scarf covering her head and neck. The camera cuts back to Cape Town; the surgeon is getting out of his car; he walks off a multi-storey car park. The voice-over informs us: 'After eleven exhausting hours, Jumah's fighting spirit and Anton's skill ensure he will enjoy many more birthdays'. Jumah walks out of the dark hospital doorway, with his female companion (perhaps his mother).

Across the concrete-paved, open space outside the hospital, stood Jumah's father and some relations, waiting. Arms stretched out, Jumah runs across the open space towards his relatives. A man, who passes for his father runs towards Jumah: arms stretched; he kneels to Jumah's level; the camera angles to his face, he embraces his son. A grateful father who has his son returned to him. He converses with his son, while the relatives mill around,

surrounded by run-down multi-storey buildings of a Zanzibari Kasbah, forming a small square space in front of the hospital. The hospital looks even more run-down on the outside. 'But the real miracle' the voice-over tells us, 'is that Jumah and Anton were three thousand miles apart' – stressing the 'three thousand miles'. We see Anton, in surgical dress, working a pair of joysticks in a theatre. He follows his arms movements and the image of the open surgery he is performing on the console of a machine: a main monitor and an LCD screen attached to the main equipment. We are taken outside the hospital; shown the entrance, which tells us that this is the famous Cape Town Groote Schuur Hospital. This was where Professor Christiaan Barnard pioneered heart transplant surgery in December 1967. 'Thanks to ISDN technology', the voice-over notes. 'From telephone to distant surgery...' – the screen fades to reveal the Telkom SA logo, on a lonely dark background: 'And this... is just the beginning!'

This is an outstanding piece of advertisement, with a most effective combination of images, ideas, message, executed in one minute and ten seconds. South Africa's largest and most profitable public-private enterprise invites us to imagine how the pursuit of profitability and global 'competitiveness' combine to deliver on a matter of urgent developmental and human interest. A determined six-year-old, saved by the skill of a brilliant specialist, Professor Anton Louw. Distance surgery delivering on the promise of technology in aid of a child's right to life, and a 'poor' country's healthcare deficiencies redeemed a considerable distance away. It is also one of the more seductive presentations of the neo-modernisation discourse. The 'tradition-bound' existence of a Muslim community comes in contact with the dynamism of the technology-bound versatility of a modern society. This is science in aid of humanity. A six-year-old will have many more birthdays because of the skills of a heart surgeon and the technology provided by a profit-ridden South African transnational corporation (TNC).⁵ This is the promise of modernity – embedded in classical development discourse – that the post-modern and post-development critics underestimate (Escobar 1995; Rahnema 1997).⁶ In spite of the exaggerated failure of the 'modernist' project – its production of weapons of mass destruction; its rationalist mindset going awry in Hitler's concentration camps, the pollution of the earth, and so on – modern science works more often than it fails.

Distance surgery, or telesurgery more appropriately, is a unique combination of skill, technology and how both can cohere in areas that previously were the domains of imagination. It promises to revolutionise medicine. Telesurgery is a branch of 'Telemedicine' and 'Telepresence'. The latter 'was spawned in the 1950s by the atomic energy industry's unique need for

the remote handling of dangerous isotopes' (Allen 1997). Scientists could remotely handle these dangerous nuclear materials, at a distance, using robotic arms. Video feeds allowed the scientists to monitor the movements of the robotic arms on television screens. Four decades later, there have been considerable developments in the technology of robotics and Telepresence. Robotic arms are not only capable of reproducing the movement of the human hands but much more. Where the human arm has seven degrees of freedom, modern robotics can produce more than twenty distinct movements (Allen 1997). This affords fine motor movements that are inconceivable in human terms: for example, a 360-degree turn of the 'arm' and surgical instrument, without the surgeon leaving the same spot. Computer-assisted control of movement has also made it possible to correct for sudden or jerky movements of the arms of the surgeon feeding into the remote robotic arms (Brower 2002).

Telemedicine broadly involves the use of communication technology in health care delivery from a distance. It ranges from using video and audio link-up to talking another surgeon or physician through an operation, as in the ground-breaking case at the US Antarctica research station in 2002 (NSF 2002),⁷ to telesurgery. The idea of telesurgery involved combining advances in robotics, optics technology, and the advances in high-speed data transmission (Brower 2002). The technology itself was inspired by developments in laparoscopy and endocrinology. If you could insert surgical objects into the human body and perform surgery by manipulating equipment through small punctures in the body why not take it a step further with the developments in robotics and communication technology? The original inspiration for remote surgery was for use on battle fields (Brower 2002). Being able to match the hand movements of the surgeon to the remote robotic arms or instruments requires high-speed data transmission that reduces the delay to less than 200ms (Brower 2002). The robotic technology and the data transmission provide the real life 'haptic feedback' to the surgeon (Allen 1997). The visual display that the surgeon needs to create a real-time 'presence' has improved significantly with the development of high-speed data transmission technology and bandwidth. In September 2001, the first transatlantic telesurgery was performed on a 68-year-old patient at a Strasbourg hospital (France); a gall bladder operation (BBC 2001; Brower 2002). The surgeon did the operating from a New York hospital in forty-five minutes, at a cost one million euro!

The promise of the Telkom advertisement goes to the heart of the seduction of 'techno-savvy' talks in contemporary development discourse, and the domain of imagined power of celluloid story-tellers. In this specific instance, the technology of telesurgery was delivering on something that President

Thabo Mbeki had previously requested in a different context. During a visit in 1999 to the Silicon Valley in the United States, President Mbeki envisioned a situation where US surgeons would use the power of the Internet to perform surgeries in a rural Ugandan setting (Bond 2004). Increasingly, embracing Information and Communication Technology (ICT) is seen not only in helping Africa to overcome its 'marginalisation' but delivering on specific and urgent development needs. This is an idea that dominates the development discourse across a spectrum of African institutions and role-players.

If ICT is presented above in terms of its developmental impact from the point of view of health care delivery, the argument for embracing the technology has been at a much wider level of development discourse and aspirations. In 1996, the African Information Society Initiative (AISI) was created at the instance of the UN Economic Commission for Africa, to develop and coordinate 'a continental digital agenda' (Opoku-Mensah 2003: 2). Elaborate steps were taken to persuade the fifty-three member-states of the ECA to develop national ICT policies from the village level to the national level. The AISI, its official website argued, 'is not about technology. It is about giving Africans the means to improve the quality of their lives and fight against poverty'.⁸ While there is considerable pessimism expressed at the slow (or non-existent) speed of adoption of Internet technology (Opoku-Mensah 2003), the firm belief that ICT holds great prospect for 'ensuring (Africa's) prosperity' is dominant (cf. Ebam-Etta and Parvyn-Wamahiu 2003). Since May 1996, the AISI programme has been adopted by the OAU Heads of State (1996), the G-7 (1997), and a range of donor agencies, as the official African initiative for using ICT to address its development needs.

Around the same time that the AISI was taking off, the World Bank was piloting the African Virtual University (AVU) project in 1997. After a decade in which the World Bank had argued that higher education was too expensive for Africa; had insisted that market-led approaches should be found to reduce the 'burden' of public-provisioning of education; and that states should redirect public spending to primary education (World Bank 1986); the evidence of the devastating impact became too overwhelming to be neglected. The solution that the Bank offered was to harness ICT to provide higher education via distance learning. In place of the traditional institutions of knowledge production and dissemination that had been devastated by major cuts in public investment and funding allocation from national budgets, the Bank offered university education in cyberspace. The AVU was promoted as an initiative to harness ICT for development purposes.

The link between ICT techno-talk and neo-liberal discourse as inherently bounded solutions has been taken up since 1997 by a new class of Africa's

globalising modernisers. The NEPAD document and the globally-linked 'business community' have taken this distinct approach. In the NEPAD document Information and Communications Technology was identified as one of the sectoral priorities, under the broad spectrum of addressing infrastructure gaps that Africa faces. The document identified the salience of infrastructure for economic growth and in the context of finding solutions that would 'permit Africa to rise to the level of developed countries in terms of the accumulation of material and human capital' (para. 100). Bridging the 'digital divide' requires investing in ICTs in order to build 'the knowledge-based economy of the future' (para 107):

Rapid advances in technology and the diminishing cost of acquiring the new ICT tools have opened new windows of opportunity for African countries to accelerate economic growth and development. The goals of achieving a Common Market and an African Union can benefit immensely from the revolution in information technology. In addition to fostering intra-regional trade, the use of ICTs could also accelerate Africa's integration into the global economy (para. 107).

The value of embracing ICT ranges from bringing 'unprecedented comparative advantages to the continent' to providing 'an impetus to the democratisation process and good governance', using 'cultural diversity' to leverage Africa's 'integration... into the new information society', to 'conflict management', 'establishing regional distance learning and health education programmes to improve the situation in the health and education sectors' (para. 108).

In setting the specific objectives, the NEPAD documents envisaged doubling teledensity in Africa by 2005: from less than one percent (actually 0.16 percent) in 2001; 'achieve e-readiness for all countries in Africa'; create a pool of 'ICT-proficient youth and students from which Africa can draw trainee ICT engineers, programmers and software developers'; and develop local content software that is located in Africa's cultural milieu (para. 110). In achieving these objectives, the document laid out specific actions: working with several agencies, building regulatory capacity, connecting schools and youth centres, and 'establishing a network of training and research institution to build high-level manpower' (para. 111).

In elaborating the intersectoral linkages, NEPAD links 'bridging the "digital divide"' with 'bridging the education gap'. The objectives it sets are: achieving the universal primary education target set out in the Millennium Development Goals of the United Nations, improving access to ICT, expanding 'access to secondary education and improving their relevance to Africa's development', and promoting 'networks of specialised research and

higher education institutions' (para 120). Among the specific actions set out is creating a task-force that will 'accelerate the introduction of ICT in primary schools' (para. 121). Finally, it identified the 'brain drain' that the continent has experienced in the last twenty-five years, and seeks the objective of retaining skilled Africans on the continent and drawing on the skill of Africans in the Diaspora (para. 124). Among the specific actions for realising the objectives are the need to create the environment and conditions necessary 'to curb the brain drain and attract much-needed investment' and a database of skilled Africans for utilisation on the continent (para. 125). These and other issues within the document are set against the background of a private sector-led investment strategy and the support of the 'donor community' (both vital to its idea of 'partnership'). Compliance with current international trade regimes and the neo-Washington Consensus development discourse (Adesina 2002, 2004; Keet 2003, 2005) provide the discourse and policy settings.⁹

In September 2002, the e-Africa Commission was created within the NEPAD Secretariat as the instrument for driving the ICT initiatives (cf. www.eAfricaCommission.org). While little or no specific elaboration on ICT in original NEPAD document has emerged from the Commission, as at October 2004, the idea of 'e-Schools' has been presented as a top priority project to achieve the human development objectives of NEPAD with the focus on 'the application of ICTs to education' in Africa (Chasia 2002).

There is, however, a third leg to the development discourse that is our concern in this paper. The neo-liberal thinking of the NEPAD is often most eloquently articulated by the operators within the emerging South African transnational corporations. Kekana, a senior executive at Telkom, for instance, argued that realising the ICT vision in NEPAD requires 'among other things, embracing market liberalisation and competition'. Essential to using ICT for development objectives is 'firstly establishing the policy framework for action, then building the necessary infrastructure and lastly undertaking ground level projects' (2003: 6).

III. Imagining development: Beyond techno-talk

In several ways, the neo-modernisation discourse embedded in the different ideas of using ICT to leverage Africa's development, in Section Two above, shares much of the crisis at the heart of classical modernisation thinking. It is not so much that it is wrong as that it confuses the appearance of things for their essence. It projects a shared transnational class discourse of particular ideas of development for its essence. The idea that much of the NEPAD discourse, for instance, needs to be understood in terms of the fundamental transformation (the structural adjustment) of class politics in Africa, especially

of the new petty-bourgeois class, is something that has been argued elsewhere (cf. Adesina 2004a). In this sense, it shares the discursive framework of a set of new age modernisers that turned their backs on Africa's development path that is rooted in challenging the current neo-liberal, corporate, globalisation agenda. The development paradigm, in spite of the best intentions of its propagators, is driven by an insistence of market-transactional relations as the most efficient mechanism for achieving the desirable ends of development. That much appeal is made to poverty, the poor, and ending misery on the continent, is neither new nor sufficient for assuming that the agenda will, ipso facto, produce the desired outcomes. Much of the arguments of orthodox neo-liberalism of the 1970s and the 1980s were infused with a similar appeal to the poor and poverty. The insistence on rolling back the state was, for instance, based on such. The rampant populism of the Austrian economists gave neo-classical arguments seemingly progressive appeal, while the latter's scientism offered some measure of respectability to the Austrian economists (Chang 2001; Adesina 2004b). The result was neo-liberalism. Central to the emergence of the neo-liberal project has always been its claims to being on the side of the poor and offering the more efficient allocation of development resources to the benefit of the poor. Michael Lipton's clarion call in *Why Poor People Stay Poor* (1977), was driven by an ostensibly Gandhian mindset.¹⁰ What it produced, of course, was often the reverse of what it promised: unprecedented increase in poverty and misery in Africa in the post-1980 period. 'Urban bias', 'rent-seeking' behaviour, greed, self-interest, and corruption were imputed to the functionaries of the public domain and the state, while being remarkably silent about the same in the functionaries of capital!

The problem with classical modernisation thinking, as with the neo-modernisation discourse, is that it hides more than it reveals, and in the use of imageries and discourse driven by the naked use of power, imposes silences and amnesia. The significant thing about paradigms, broadly, is not that they shift. What is salient about paradigms is that they limit the discursive vision. To make sense of this, for our current discussion, we examine some of the silences and blind spots in the current discourses of ICT in Africa's development project, and argue what it hides is more important than what it reveals.

We return to telesurgery. This is a development in health care delivery that, as we mentioned above, holds great promise for sharing skill both within and across countries. The problem is obviously not with the availability of the technology. If development is about endogeneity; about the carrying power or capacity of a country or community to innovate and reproduce innovation, then the Tanzania advert raises several questions – similar to the ones

about the discourses embedded in AISI, AVU, and NEPAD conceptions of the role of ICT in development.

The imageries of the binary divide between the 'traditional' and the 'modern' raise the question of how and where Jumah's surgery was done. The Julius Nyerere Hospital (JNH) that we saw in the video had nothing close to the equipment that a surgical theatre needs for the operation. The complementarity of resources that makes telesurgery feasible requires a considerable amount of surgical equipment with robotics. It is through these robotic arms and equipment that the skilled surgeon in Cape Town interfaces. To sustain that, you need high-speed (broad-band) data transmission link-up and medical personnel on the Tanzanian side to support the telepresence of the Cape Town surgeon. We see no evidence that the JNH has any of these facilities. The questions that arise will include: how did JNH come to be so derelict and rundown? Where are the Tanzanian doctors and surgeons? Where is the infrastructural (communication) backbone that supported the bandwidth necessary for ensuring continuous data streaming extremely vital for successful telesurgery? The issue here is not whether the surgery took place – we know it did not. The main concern is that beyond experimental implementation to see what is feasible, and a Band-Aid approach to meeting development challenges, sustainable use of ICT in health care (here, telesurgery), more than in other areas, requires that we focus on endogeneity: the capacity for robust intersectoral linkages. It is possible to have specially rigged equipment, in specially designed ports, cabins or ships with self-contained satellite link-up facilities and robotics for surgery. Sustainable delivery of health care facilities, however, requires more than that. The use of telemedicine in many developing countries involves something less compelling than the telesurgery displayed in the advertisement. In Mozambique, telemedicine takes the form of doctors in Beira and Maputo (which has a higher density of more skilled health care personnel) sharing information on diagnosis and best options in treating patients (cf. Chetty 2003). In India, it involves the use of images fed through web cameras in village cybercafes to eye specialists in the Aravind Eye Hospital (BBC 17 June 2002).

The images of Jumah and his family raise the most pertinent questions in Africa's health care environment since the deployment of the policy instruments of Structural Adjustment Programmes (SAP) for the provisioning of health care and education. Among others, these questions include: who pays for the operation? The Strasbourg telesurgery, mentioned earlier, was at the cost of one million euro. At the mid-October 2004 exchange rate, the cost of the surgery would be about R8 million (South African Rand) or TZS1.305 billion (Tanzanian Shilling); sustainable health care need, however, is about

affordability. The option of even a third of that cost in Tanzania (TZS435 million) would be considered preposterous, even in the private health care sector. You most definitely can treat ten Jumahs, by flying them to the hospital in Cape Town or renovate the JNH and re-equip it at that price.

One of the key lessons we have learnt about health care provisioning in development contexts, as with the approach to all aspects of development efforts, is that while hi-tech options can be seductive, there are always more cost-effective approaches to achieving the same objectives. Paying attention to primary health care needs at the village level will not eliminate the need for tertiary-level health care resources, but it will reduce the need for expensive surgery. While telesurgery may be seductive and demonstrate how much we have come to becoming like the West,¹¹ development that works and that is sustainable may require something less techno-savvy. It is this obsession with being like the West that reveals the self-loathing and schizophrenia at the heart of much of the current development paradigm. The fascination of Africa's new age modernisers with ICT will produce the same crisis of perverse growth and enclave social and economic life-style that precipitated the balance of payments crises of the late-1970s. There is enough evidence to support the claims that Amin (1974, 1990) made about how patterns of urbanisation and consumption exacerbated balance of payments crises in Africa. This obsession with western consumption patterns was characterised in the Lagos Plan of Action document as a situation where most African countries became 'producers of what we do not consume, and consumers of what we do not produce'. The pattern would seem to have worsened in the last two decades. This approach to ICT, without a wider understanding of the requirements of endogeneity, mistakes the acquisition of western consumption patterns for development.

Finally, the idea of a transnational corporation, like Telkom SA Ltd, becoming the backbone for sustainable and equitable health care provisioning raises the broader issue of commitment to a private-sector led development project in Africa. I will argue that there is nothing in the domestic behaviour of Telkom that suggests it as a development-partner for African people: local or on the continent. Indeed, nothing puts the contradictory imperatives of national development and valorisation of capital into more stark relief in South Africa than Telkom. While all its indicators of valorisation of capital have risen in many cases between 2000 and 2004, Table 1 shows that there are clear problems in areas that have more developmental impact and implications: 16,770 jobs lost; a 672,000 reduction in fixed line access, and an 18.75 percent drop in fixed line teledensity. By contrast, business-focused services (management of network sites) have grown by a factor of more

than six. If the pursuit of profit delivers on development objectives it is a matter of coincidence not intention.

Table 1: Telkom SA Overview of Performance (2000–2004)
(in ZAR millions)

	2000	2001	2002	2003	2004
Operating Revenue	27,015	31,243	34,087	37,507	40,795
EBITDA	8,082	10,315	10,044	13,012	16,337
Operating Profit	3,908	4,984	4,191	6,514	9,088
Net Profit	1,527	1,622	1,221	1,630	4,523
Fixed access lines (thousands)	5,493	4,962	4,924	4,844	4,821
Fixed-line penetration rate (%)	12.8	11.4	11.1	10.7	10.4
Fixed-line employees	49,128	43,758	39,444	35,361	32,358
Man Network sites	23,205	37,122	48,995	98,690	142,208

Source: Telkom SA Limited Group *Annual Report* 2004, p.50. EBITDA: Net profit before minority interests, taxation, finance charges, investment income and depreciation, amortisation, impairment and write-offs.

On top of the job shedding and reduction in fixed line access, members of the Board of Telkom awarded themselves performance bonuses of between R6 million and R11 million each in 2004. Yet the reduction in unemployment, as an important policy instrument for poverty reduction, is widely understood in development studies. The argument here is that there is nothing in Telkom’s domestic behaviour that suggests that the imperative of equitable development rather than profit will define its behaviour on the rest of the continent. That the net wealth outflow will be in the direction of South Africa and its fiscus is cold comfort for Burundians or Tanzanians. While trade liberalisation and a common regulatory framework, which ensure that private capital will not be expropriated, may be comforting to TNCs migrating around the continent, they will exacerbate the crisis of uneven development (and perhaps underdevelopment) rather than reduce it.¹²

What the Telkom advertisement did not do, and could perhaps not have done, is ask and answer the question: 'Why?' Why is the JNH so decrepit and bare? Why are the Tanzanian doctors absent? These and other questions are what we expect more studied documents and programmes like AISI, AVU, and NEPAD to answer. The critical challenge for a viable development programme for Africa is not in describing the problem – that is almost trite. The problem is to answer the question 'Why?' The viability of a development discourse is in how well it answers the 'why' questions and the appropriateness of the policy instruments for achieving the desired ends.

Explaining the crisis: Higher education and sustainable knowledge production

Central to the discussion below are two things: first is endogeneity, and second is sustained public funding. Endogeneity is fundamental to sustainable production and the application of science and technology. Experience everywhere suggests that sustainable endogenous Research and Development (R&D) is driven by the higher education sector, and that this requires significant and sustained public commitment and funding. The crisis of the HE sector dates back to before the deployment of structural adjustment programmes in many countries in Africa – coinciding with the fiscal crisis that many countries experienced in the 1970s. What was a fiscal crisis took on an ideological and entrenched form under the neo-liberal policy regime, when social expenditure, broadly, became a soft target and higher education was declared a luxury that these countries could least afford. As we argue below, research in the HE sector suffered severe contraction. Even in the post-stabilisation phase of adjustment programmes, when some universities have been celebrated for their 'financial recovery', research is one area where the crisis has persisted or deepened. A central argument in this section is that efforts at deploying ICT – via virtual universities and libraries – were in reaction to the crisis but without a concerted effort at mobilising public re-investment in this aspect of the HE sector. To do one without the other, we argue, is a fatal distraction; to embark on the deployment of ICT in the education sector without understanding the historical context of the crisis is what we refer below as the crisis of historicity. Investment in R&D is important for local knowledge capacity in the ICT sector and avoiding the current account crisis that import-dependence on ICT resources will create.

Integral to the imperative of endogeneity is the need for intersectoral linkages: between basic research, production activities, and service provisioning. Development is about mutually self-sustaining inter-sectoral linkages. Rebuilding Africa's HE research capabilities, with a focus on national and regional challenges, creates a transmission belt between basic research,

applied research, and production and service activities. This is the second concern that this section seeks to underscore. We demonstrate some cross-national experiences in Section Four of this paper.

Crisis of historicity and market-centric logic

The NEPAD document, quite rightly, described a range of problems: from brain drain to the need to develop the human resources necessary for developing local content in ICT. Changing the environment that has driven so many African experts out of their countries is important; and none of these is new. However, we can identify two problems, *inter alia*, in this analysis.

First is the crisis of historicity. For instance, how did major universities like Dakar, Ibadan, Dar-es-Salaam or Makerere, that were major centres of research excellence, become shadows of their old selves? Only in answering the question can we begin to reconstruct such institutions in a manner that recreates the endogeneity of knowledge production (cf. Zeleza and Olukoshi 2004a, 2004b). Second is the over-eagerness in NEPAD to present itself as investor-friendly and not antagonistic to its benefactors in the G-8 countries. This eagerness reinforces the crisis of historicity. This sharing of a common discourse of development with the neo-Washington Consensus at the heart of Joseph Wolfensohn's Comprehensive Development Framework (cf. Adesina 2002/2006a), and commits NEPAD to the same idea of the role of ICT in development (the same narrow market-centric logic) that created the crisis in the first instance. These two weaknesses are endemic to the AISI, the AVU, and the e-Africa Commission. In a sense, having techno-savvy experts with limited understanding of the political economy of current global architecture can produce a very deterministic misreading of the linkages between technology and development. The tendency to confuse the nature of the relationship between ICT and development is something that Chetty (2003) noted about the NEPAD document. The search for one key that unlocks development is emblematic of modernisation thinking. It assumes that technology is causative of development: acquire it and you are on your way to development. As Chetty (2003) notes there is insufficient evidence for that conclusion: whether ICT is 'cause', 'consequence' or 'manifestation of economic growth'.

I will address the questions of historicity and the development discourse here. The notoriety of the World Bank's 1986 policy document, *Financing Education in Developing Countries*, is now widely recognised. As Zeleza and Olukoshi (2004a: 2) note:

It may seem like distant memory already that only about a decade or so ago, powerful international forces promoting a neo-liberal agenda and led in the African context by the World Bank had suggested, literally, that Africa had

no need for universities because the return on investment which it received from its expenditure outlay was both too low and unjustifiable... Rather than establish, maintain and invest in the university, Africa, it was argued, would be better served by investing in primary education and vocational education, while exploring more cost-effective foreign options for university-level training... In any case, continuing investment in the university system and doing so at the expense of needed investment in primary, secondary and vocational education was seen as unsustainable and African governments were called upon to re-consider their policies through pro-active remedial action.

In what had by then become the staple of neo-liberal language, the argument for divestment away from the university-level education was premised on equity, efficiency, and fiscal restraint. The funding pattern at the time was not only unsustainable but was generating social inequities (World Bank 1986: 13). Public investment in the HE sector was diverting resources away from basic education, which the poor need. Investment in higher education was not Pareto-optimal or sustainable given the resources available to developing countries (World Bank 1986, Ch 2). In what was the standard orthodox neo-liberal policy prescription, developing countries were asked to increase 'user fees', reallocate public spending away from the HE sector (World Bank 1986: 17), decentralise education offering through increased private provision of higher education and non-publicly funded community schools (World Bank 1986: 33-36). Public universities would be responsible for generating the funds they needed. The puzzle is that an earlier World Bank publication (Eicher 1984) had expressed scepticism about the efficacy of the statistical and methodological bases of much of what came out in the official 1986 policy document.

The World Bank arguments and policy options were presented at a meeting of African Vice-Chancellors in Harare in 1986: the now infamous 'Harare Declaration'. Djibouti, the Bank argued, had no university and was no worse off for it. As Mkandawire (2004) noted, the Vice-Chancellors were strongly opposed to the position. I will argue that this opposition made no impact on the conversion of policy options to instruments. Precisely because of the virtual stranglehold of the World Bank and the IMF in the African countries implementing the structural adjustment programmes, the Bank's policy recommendations became de facto public policy. The impact on the higher education landscape in Africa was horrendous. To cite one case, public spending on education in Nigeria declined from ten percent of the GDP in 1980 to 0.6 percent by the early 1990s. The massive decline in funding took two forms: direct cuts or stagnation in an environment of declining purchasing power, often the result of the devaluation of national currencies.

Previously vibrant science laboratories that produced world-class doctoral theses and staff research became empty. Ground-breaking research in the humanities and social sciences ground to a halt. The loss of earning power was so enormous that university teachers and researchers faced the options of emigrating, moonlighting in the non-formal sector, and doing tenuous consultancy work with little or no returns to fundamental contributions to knowledge. The hollowing out of the universities flew in the face of the optimism about the efficacy of the market. The argument is not that the 'World Bank caused the problem'. It did not. What its imposed policy options did, however, was to turn short-run fiscal crises into endemic tragedy for Africa's HE sector.

While there is no single narrative of the underlying problem that the HE sector (like other sectors) faced from the late-1970s, there are common strands to most of the cases. In most countries of sub-Saharan Africa, the funding crisis was a direct result of the budgetary and balance of payments crisis that the negative terms of trade precipitated in the mid to late-1970s. As the state faced these constraints, funding allocations to the HE sector (as with the broad education and other sectors such as health) were cut back to deal with the short-term fiscal problems. In very few cases such as Zaire and Uganda, the neglect into which the universities fell was inexorably linked to the hostility and crisis of the polity. In Zaire, for instance, the social science faculty of the University of Kinshasa was exiled to Lumumbashi. In Uganda, the decline of Makerere was a combination of the political crisis that intensified and became generalised terror, the murder of the Vice-Chancellor of Makerere University, the expulsion of people of Indian descent, and academics who fled into exile to escape the savagery of the Amin regime. But this was the exception rather than the rule. In a case like Kamuzu Banda's Malawi, state repression against perceived enemies of the regime was combined with diligent efforts to nurture the universities and maintain 'quality' of an English type. The HE sector in most of post-colonial Africa was seen as serving several objectives simultaneously: meeting the human resource needs of the countries development agenda, nation-building, and generating social cohesion. In almost all cases, bursaries and scholarships were provided to support bright students from poor backgrounds.

What is significant about the neo-liberal intervention is that in most countries the crisis became compounded. If the fiscal crisis was seen by most governments as short-run, the stabilisation component of structural adjustment had involved stiff cuts in the budgetary allocation to a wide range of areas of public spending, especially the social sector. This was before the Bank justify its policy on education in the 1986 document. In a sense, the

1986 document sought to justify existing policy position and budgetary practice. The Bank and the current development discourse share two characteristics. First is a failure to link the fiscal and balance of payments difficulties to Africa's mode of integration into the global 'economy'. Africa's integration into the global regime of accumulation was (and is still largely) characterised by excessive openness based on primary commodity production. The balance of payments and current account disequilibria that this mode of integration caused impacted on the higher education section, among others, in declining public funding and support.¹³ Demanding intensified integration into the global regime of accumulation misreads the origin of the crisis. This does not suggest that one exonerates the crisis of leadership and endogenous policy, but these are of an entirely different order from that suggested by the neo-liberal paradigm. Second, is the failure to link the deployment of the Bank's policy on higher education to tripping the fiscal crisis into the hollowing out of several institutions of higher learning, institutions that were previously acknowledged as centres of excellence in research and training.

Much of this hollowing out of the HE sector, of course, met the internal political agenda of the political class that emerged as the hand-maidens of structural adjustment. The suspicion with which intellectuals were held by military regimes in a country like Nigeria, for instance, played into this new agenda. The shifting of external funding away from state/public institutions generally came as part of the same neo-liberal ideological package. Much of this funding that had traditionally flowed into the university system was diverted to the 'emerging' civil society. The policy on education was increasingly driven by the discourse of commodity and market transactions. Ideologically, this shift was driven by the anti-State sentiments of the time. Grant-making bodies (that are now setting up consortia to 'rescue' African universities) were happy to invent a whole sector of private 'research and advocacy' bodies run by the same individuals who were supposed to be teaching in the public universities. It was a restructuring of the pattern of incentives that promoted an entrepreneurial approach less concerned with knowledge production than with going with the changing focus of the grant-making bodies – often with no relationship with local development concerns. It nurtured a patron-client relation with programme officers that would have been unimaginable if these officers were dealing with institutional agencies like universities.

While funding for basic and secondary education is fundamental, the crisis of the neo-liberal discourse was that it, as Tilak (2004: 2) notes, 'widely felt that basic education goals could be reached only if the public attention is diverted rather completely away from secondary and more particularly higher education'. This position was vigorously articulated by the World Bank in its

1994 publication, *Higher Education: The Lessons of Experience*. The vigorous response from agencies such as UNESCO about the deleterious implications of the prevailing policy focus on higher education, at the time, had no impact whatsoever (Tilak 2004).

Either higher education was ignored in the policy planning exercises of the governments and of the international organisations, or special measures were initiated to reduce the intensity of public efforts in higher education, or both. Many policy and plan documents, and public discourses on education policy tended to pay, at best, some lip service to higher education and to focus on the preparation of plans for literacy and primary education. If at all the growing demand for higher education was recognised, it was assumed by the governments that such a demand could be met either by distance education programmes or by the private sector, in neither of which governments have to invest any substantial resources (Tilak 2004: 3).

An initiative like the African Virtual University (AVU) was conceived within this mindset; essentially outsourcing higher education provisioning to a range of second-rate US universities. That education of any kind is strongly situational is completely lost on the adherents. The current offerings of the AVU demonstrate the futility of assuming that the pedagogic process, inherent to a university environment, can be outsourced over the Internet (cf. www.avu.org). Initiatives such as the African Economic Research Consortium served an auxiliary objective of creating a new generation of African economists that could propagate the neo-liberal project, while the Bank and the Fund kept a tight grip on the programme and its research agenda! Internships at the IMF, which were built into the funding of research proposals, were driven by this auxiliary objective.

Much is often made of the World Bank's 2002 apparent U-turn over the salience of higher education for 'the knowledge society' and undoing the damage its imposed policies did over the 1980s and the 1990s. However, as the cases of Makerere University and the University of Dar-es-Salaam show, rebuilding the universities has not shifted in any way from the idea of private provisioning. The universities are expected to generate their own funds by taking in more private fee-paying students (cf. Obong 2004; Court 2000). By the 1999/2000 academic year, privately sponsored students at Makerere were 80 percent of the student body, from 32 percent in 1993/94 (Obong 2004: 111). The university was on a more viable budgetary basis, less dependent on state subventions, but even the most enthusiastic supporters of the project acknowledge the demise of research (cf. Musisi and Muwanga 2001; Court 2000). Equity of access that the neo-liberal agenda claimed as its objective has all but fallen off the radar (cf. Musisi and Muwanga 2001).

The idea that the public universities must find their own resources and compete with private universities continues to define higher education policy in countries like Nigeria, with the decline of the universities looking increasingly terminal.¹⁴ Again, while commercially viable courses flourish, research generally and especially those in the sciences continues to suffer enormously (cf. Zeleza and Olukoshi 2004a, 2004b). Contrary to what one would assume from the argument that funding for higher education will be diverted to the basic education sector, the experience of the last two-and-half decades is an acute decline in funding for primary education.

To reiterate the issues raised earlier in this section, several higher education initiatives involving the deployment of ICTs derive from the negative impact of the fiscal crisis and stabilisation policies on the sector: the neo-liberal policy regime of the last twenty-five years is strongly implicated in the damage done to higher education research capabilities in several African countries. The decline in R&D would require renewed public investment in the sector. Among other things this is important for endogeneity and sustainable ICT capacity in a wider developmental context. To deploy ICTs in a manner that fails to address public investment concerns risks becoming a distraction. As we demonstrate in the next section both a commitment to basic research and a robust public investment in national R&D capacity, via the HE sector, are widespread among countries that insist on the market-logic for Africa's HE sector.

V. When is techno-talk a fatal distraction?

What the AVU demonstrates is precisely a distraction. So much energy goes into claims about the efficacy of ICT that it distracts from the imperative of endogeneity in education generally, and research specifically, through sustained public resource provisions. While information technology is the public, user-friendly face of research in science and technology, the basis is in basic research in physics and mathematics. This constitutes long-range research that is funded not primarily because of immediate results but in the awareness that investments in these areas will produce spin-offs that will enter the consumer market at some stage in the future.

If there is a lesson that we can learn from successful producers of technology (ICT or otherwise) it is that sustainable development in this field rests on sustained support for higher education and research and development, and that much of the long-term support for research comes from public funding. Further, in several developed countries, commitment to the 'advancement of knowledge' qua knowledge is important for innovation and development. Data for 2000, from the US National Science Foundation (NSF 2000), show that the United States accounted for 41 percent of the year's

global spending on R&D of US\$686.9 billion. The share of non-OECD countries was twelve percent; 58 percent of which came from China. Until 1980 the bulk of R&D funding in the United States came from the public sector: this in a country that is supposed to be the exemplar of private capital dominance of society and economy. While defence spending in R&D in 2002 dominated total R&D expenditure in the US, this is an area that we know is least concerned with the immediate gratification of the consumer market, and is defined by state funding and the state's agenda. Indeed, much of today's ICT gadgets and facilities emerged as spin-offs from defence-related R&D in which the US dominates: cell phones, the Internet, and telesurgery!

The significance of this is not that African countries should parody the West in R&D spending or the share of the funding or devote enormous public funds to military ventures. Rather, the point is that much of the neo-liberal discourse is not supported by evidence in the G-8 countries. Strong public support for higher education is fundamental to research and development activities, which in turn are fundamental to the endogeneity of research competencies and innovation; which in turn are vital for sustainable endogenous intersectoral linkages. Development objectives may demand urgency regarding the 'relevance' of research. It is, however, in the areas of technology that an instrumental approach to research (for immediate gratification) is most inappropriate.

The fundamental failures of the current discourses of ICT are many. First is the continuing focus of public funding attention on basic (and sometimes, secondary) education. The Millennium Development Goal on education is restricted to basic education. Second, where the discussion comes to post-primary education and research, the mindset remains firmly rooted in the neo-Washington Consensus discourse. The failure to locate the source of the damage done to the higher education landscape in the neo-liberal mindset and the Bank's discourse and policies is a defining aspect of contemporary development discourse. In many ways, it explains the incoherence and timidity of the NEPAD document. To the extent that much of the 'Africanisation' of the ICT discourse deters from the fundamental task of a vigorous reconstruction and reformulation of the policy landscape, away from the Bank's neo-liberal logic, it constitutes a fatal distraction. Creating enclave e-schools or networks of specialist research centres, creating local content, and so on, without fundamentally addressing the basis for the reconstruction of the higher education landscape in Africa, away from the immediate gratification of 'marketable skills' or those who can use the ICT produced by others, is even more fatally so.

The salience of endogenous research and development capacity is perhaps more urgent today than it was forty or thirty years ago. In the context of the post-Uruguay Round global trade regimes, the instruments of technological development that were available to the late-industrialising countries like South Korea are no longer available. The trade regime, defined by the Trade-Related Intellectual Property Rights (TRIPs) agreements, in particular, has put the options of reverse-engineering out of the reach of non-industrialised developing countries. The regime of copyright in everything from medicine to music to technological gadgets makes even more urgent the task of rebuilding the traditional institutions of knowledge production on the continent. In side-stepping these issues, much of the development discourse distracts from the fundamental development tasks and the threat of the global trade regime that NEPAD enthusiastically endorsed. The discourse is in danger of leading Africa down the path of 'perverse growth' again! This point raises the question of where the funds will come from. I will argue that fundamental to the crisis of public investment in Africa is debt peonage. It was precisely in the period that the Bank and the IMF had the most detailed control, micro-managing many of Africa's economies, that the debt crisis turned into debt peonage (see Table 2).

The impact of the burgeoning debt burden has been particularly harsh on public investment, and the inequity that makes the World Bank/IMF and the G-8 countries the beneficiaries of Africa's net resource loss. Here Nigeria well illustrates the point – more appropriately because it would seem to fit, at first glance, the case for rejecting debt cancellation. Between 1998 and 2002, the external debt stock, when denominated in the local currency, increasingly outstripped federal revenue. If the transition from a dictatorship to 'liberal democracy' is what African countries need to make them attractive on the grounds of good governance, the Nigerian experience shows the reverse.

In the period when African leaders are jumping through the hoop to convince their G-8 patrons that they have mended their ways, as the basis for a new partnership, the structure of Nigeria's external debt makes for interesting reading. For instance, 76.95 percent of the debt stock is bilateral, and 99.44 percent of the bilateral debt is owed to the Paris Club countries. However, 88.35 percent of the debt owed to the Paris Club (sovereign states rather than commercial debt) does not consist of new loans. It is made up of consolidation of arrears, penalties, capitalised moratorium, and interest (IMF 2001)! In 1999, the first year of its return to 'liberal democracy', interest payments on its debt stock consumed 45.6 percent of the total federal budget and 59.6 percent of recurrent spending. External debt service was eight-

and-a-half and eleven times more than the total spending on education in 1999 and 2000 respectively. In 2002, external debt service was thirteen times more than the total spending on health. In 1998, the year before the return to civil rule, the Paris Club countries’ share of the total debt service payment was US\$229.05 million, out of a total of US\$1.27 billion (or 18 percent). In 2001, three years into ‘liberal democracy’, the total debt service payment had risen to US\$2.128 billion, and the Paris Club’s share had gone up to US\$1.276 billion or sixteen percent (Central Bank of Nigeria, several years). Yet while the arguments at the OAU/AU were about campaigning for debt cancellation, NEPAD opted for using the World Bank and IMF enhanced HIPC instruments that took a contrary view. Even the clause in the MDG base document that argued for debt cancellation was neglected.¹⁵

Table 2 gives a wider picture of the escalation of the debt crisis across several African countries. Apart from applying to a minority of countries, the ‘debt deal’ announced at the end of the 2005 G-8 Summit at Gleneagles in Scotland coupled debt ‘forgiveness’ to the HIPC instruments which undermine the fiscal basis of the states. On the other hand, Nigeria’s debt negotiation with the Paris Club ended with the country being required to make an advance payment of US\$12 billion (or 1.62 trillion naira) in return for the cancellation of US\$18 billion of the country’s US\$35 billion external debt stock at the end of 2004!

Table 2: External debt stock of selected countries: 1980 to 2000 (current US\$ million)

	1980	1985	1990	1995	2000	% Increase**
Côte d’Ivoire	7,462.40	9,659.00	17,251.10	18,898.50	12,138.00	62.66
Ghana	1,401.70	2,256.50	3,880.90	5,935.80	6,657.30	374.94
Kenya	3,386.80	4,181.30	7,058.10	7,412.40	6,294.90	85.87
Malawi	829.90	1,020.70	1,558.20	2,242.50	2,716.20	227.29
Mozambique*	67.50	2,870.50	4,649.70	7,458.40	7,135.40	10,470.96
Nigeria	8,921.40	18,643.30	33,438.90	34,092.50	34,134.30	282.61
Senegal	1,473.30	2,566.10	3,735.60	3,841.30	3,372.30	128.89
Tanzania	5,322.10	9,107.20	6,453.80	7,414.80	7,444.80	39.88
Uganda	688.90	1,231.90	2,582.90	3,572.50	3,408.50	394.77
Zambia	3,244.40	4,498.70	6,915.90	6,952.50	5,729.90	76.61
Zimbabwe	785.60	2,414.60	3,246.70	5,006.70	4,001.90	409.41

Source: 2002 *World Development Indicators*.

*Start data for Mozambique are 1981. ** 1980 to 2000; Mozambique is 1981

If the argument for the sustainable linking of technology and the development agenda is the re-construction of Africa's institutions of knowledge production, and to do that requires increased public investment, surely the debt burden is a major obstacle to realising the objective. A disembodied fascination with ICT that side-steps the core issue of the debt burden (without donor-dependency) qualifies for a distraction. It becomes a fatal distraction when there is no effort to connect the two: to engage in serious contestation of the argument for debt cancellation or to opt for a financing path that makes foreign investment and ODA-funds the premise on which to build this new African development edifice.

How the responses of critical agencies in Africa to the ICT initiatives are perceived by those directing the projects are particularly telling in the disconnection of the links between elements of the crisis. Opoku-Mensah (2003) expressed the frustration about how 'the African media are lagging behind in their coverage of Information Society issues'. A study commissioned by the ECA, she notes, reveals that:

with notable exceptions, the media in Africa are far from being a promoter of the Information Society in Africa... Most editors interviewed from the selected media underscored the fact that there is simply no real capacity for reporting in this particular area.

Opoku-Mensah expressed shock at the response of a national newspaper editor who said 'we have not reached the stage as a nation where IT matters would attract serious attention from our readers, despite their importance'. The media 'should be at the forefront, asking questions and seeking answers on how Africa can address its poor information infrastructure and what government and society at large are doing'. That the problem could be the failure of those designing these initiatives to connect with the real concerns of people, rather than the cyber-trekking modernisers, did not seem to enter the picture. It would seem reasonable that in the period when Malawi was facing basic problems of food security, popular despondency with the 'liberal democratic' regime, and crisis of infrastructure, cyber-trekking might not be the most urgent thing on the mind of an editor. A focus on ICT without connecting food insecurity with the policy instruments deployed by the Bank and the IMF, is a distraction.

Similarly, NEPAD set itself the priority of bringing connectivity to primary schools as part of its development objectives, which itself is not unimportant, but the issue of the appropriateness of the model for development thinking and programming could not be more pertinent. ICT connectivity for primary schools in Soweto or even the Northern Cape Province in South Africa may not seem such a disconnected idea. The available infrastructure

(electricity, standing school buildings, etc.) and a country with the resources to roll out such initiative would not be so out of place. When such model is transposed onto the rural border region of Cameroon and Nigeria, the crisis of appropriateness becomes evident.

The idea of private sector-led ICT initiatives highlights the difficulties at the heart of the discourse and targets that are set in initiatives such as NEPAD. Doubling Africa's telecommunication footprint (teledensity) between 2001 and 2005 (from less than one percent to two percent) seemed like a major target setting. However, at the end of 2003, mobile phone teledensity was 6.2 percent, with 51.8 million subscribers, while fixed line teledensity was three percent with 25.1 million subscribers (ITU 2004). Outside of South Africa and Egypt the growth has been mainly in the area of mobile phone, with 70 percent of all subscribers being mobile phone users (ITU 2004). In other words, the target was achieved through the expansion of cell-phone services in most parts of the continent, with South African telecommunication companies being major service providers, in an extremely profitable market.¹⁶ Indeed, between 1998 and 2003, Africa was the fastest growing mobile phone market in the world, with an annual growth rate of 65 percent, ahead of the 38 percent growth rate in Asia (ITU 2004). However, no-one with a serious understanding of the ICT sector will consider mobile phone technology an appropriate and affordable backbone. While there might have been a coincidence of objectives between private transnational firms (African or otherwise) and those promoting this 'development framework', the antinomies of what was achieved have more to do with the faulty assumption that development objectives can be achieved via economic entities driven by the profit motive. The expansion of this communication technology is without doubt beneficial in several ways, and the explosion in cell-phone uptake in several countries demonstrates the level of unmet pent-up demand for telephone connectivity. In the same way that the growth of cybercafes facilitated national and transnational communication, the cell-phone technology, voice and text-messaging, fundamentally altered the way people live their lives. The issue, from a sustainable ICT perspective, is that the ideological commitment to private capital may (as it did in this case) produce the most inappropriate mechanism for implementing an objective. It is growth, all right, but it is 'perverse growth'. Efforts to increase fibre optics connectivity, on both the West and East African sides of the continent, would suggest a more viable alternative that would depend on (a) significant local involvement in the various countries, rather than being incidental to Telkom's connection with Europe or Asia; and (b) significant public sector investment in the telecommunication sector. In this sense, the growth in mobile phone

technology may divert attention from the need to invest in and expand fixed line connectivity: either using fibre optic cables or high speed wireless technology.

The assumption that there is an inherent complementarity between capital valorisation criteria and the public policy objective (of equitable and poverty-reducing development) is difficult to justify. That the companies are South African rather than South Korean or French would also make very little difference. Again, it raises the question of conscious public investment in national infrastructure. Intra-national experience of the take-up and the location of access to ICT, that is private sector-led, shows an enormous concentration and clustering around major cities and wealthy neighbourhoods. For instance, all the core Internet service providers in Nigeria are located within an area of Lagos that is not more than two square kilometres wide. Teledensity in cities from Maputo to Dakar is reproducing the phenomenon of uneven development and the enclave economy that defined the typical post-colonial peripheral capitalist formations of the 1960s and the 1970s. Again, a disembodied commitment to ICT is in danger of being a fatal distraction, reproducing the same growth pattern that led to the disequilibrium of the 1970s.

Conclusion

I wish to return to the issues raised in the Introduction to this paper. Fundamental to sustainable development in Africa is the relationship between several issues. The promise of ICT is indeed enormous – from simple communication with distant relatives, to economic activities; from providing remote diagnosis for hospitals to sharing medical expertise; digitising rare manuscripts and e-book facilities for out-of-print materials to sharing the resources among libraries; to computer-based orthography for African languages, and so on. Understanding the nature of Africa's development crisis, the policy instruments and the forces that tripped the crisis into an endemic development morass is important for making sense of what is to be done. However, much of the current hype about ICT and its development implications suffers from policy and discursive problems.

To champion ICT for the purpose of improving 'Africa's competitiveness' as an investment destination risks being a fatal distraction when those concerned with the project fail to 'connect the dots with Africa's dependence on primary commodity markets – mineral and agriculture. Even as the mineral sector continues to be the primary destination of current investment, without the effort to internalise Africa's engine of growth we will remain locked into a sector that is not policy-responsive. This would represent a fatal distraction. Neither the price of oil for Nigeria nor that of coffee for

Uganda is a function of domestic policy in any significant manner. Arguing about reversing the brain drain in the absence of a critical engagement with the specific policies that undermined African academics and their institutions will be a distraction from understanding why a shift away from the current (neo-liberal) policy trajectory is fundamental to the reconstruction of the institutions and domains of knowledge production on the continent.

Rather than focus on a neo-modernisation inspired idea of ICT, what is required is an endogenously-driven framework. One can illustrate this argument with a simple and compelling urgent need: developing computer-based orthography for African languages that can be ported across operating platforms. African languages are in danger of becoming extinct by default largely because of the difficulty in generating characters that are specific to many of the languages on computer keyboards. This is a simple illustration of what can be done, but this requires an endogenously driven sense of development rather than the current neo-modernisation orientation. It requires a coherent effort, beyond the current efforts by individuals. The latter tends to privilege large language groups like Zulu, Yoruba, Amharic, Ki-Swahili or Hausa. It is the same endogenously-driven approach that is needed for addressing different dimensions of Africa's development challenges.

While NEPAD highlights infrastructure as a priority area, the understanding that underscores this important area of sustainable development remains trapped in a neo-liberal mind-set. Even after all the uproar around the paradigm that gave birth to it, NEPAD officials still see this important area in purely business terms. Infrastructure is seen predominantly as vital for 'the provision of an environment conducive to investment, particularly in reducing the costs and risks of doing business in Africa'.¹⁷ It was as if the latter was self-evident. To tie such infrastructure development to a private capital-led development, rather than a heterodox approach, is to become a slave to ideology. As we showed earlier, the result in the teledensity has been to reproduce perverse growth. There is more to infrastructure development than providing a platform for private investors. Contemporary neo-liberal discourse confuses trade discourse for development discourse!

Neo-liberal discourse and policy instruments, I wish to reiterate, are at the heart of Africa's development crisis. To engage in a debate about promoting ICT in Africa without engaging with the policy discourse and terrain will be a fatal distraction. Endogeneity is fundamental to sustainable technology use and production. Outsourcing Africa's higher education is a fatal for endogeneity and rebuilding local capacities. It distracts from the urgent task of rebuilding the continent's teaching and research infrastructure within the larger education sector. Central to this is a sustained and conscious public

investment in the sector. Finding the resources for this requires ending Africa debt peonage: it calls for complete cancellation of what are essentially odious debt. The leading protagonists of ICT have tended to shy away from prioritising unconditional and complete debt cancellation – doing one without the other is a fatal distraction. Techno-talk becomes counter-productive when it fails to premise itself on the fundamental developmental issues that need to be addressed before falling into the illusion that in the world wrought by the post-Uruguay Round trade regimes Africa can simply reproduce the East Asian ‘miracle’. Fundamental to rethinking Africa’s development concerns and the value of ICT is connecting the dots; connecting the dots requires an appreciation of the imperative of reinventing the public domain.

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Notes

1. Development economics, specifically, and development studies, generally, rested on the argument that the central assumptions of neo-classical economics (i.e. marginalist economics) are of limited relevance in the context of ‘underdeveloped’ or ‘developing’ countries: market structure or whether market, as understood within neo-classical economics, exists at all in these contexts; motivation for human (‘economic agents’) behaviour, etc. In other words, these characteristics of the countries require an approach to economic analysis that is quite different from the assumptions and logic underscoring neo-classical economics. The premise of the neo-liberal ‘counter-revolution’ (Toye 1987) is to dismiss all that and insist on a single (mono)economic paradigm. It seductively rests on the claim, quite apparent in Lall (1981), that all human beings respond the same way to the same structure of incentives, and that claiming a difference for developing countries is patronising on the part of leading development economists. However, the problem for neo-classical economics and neo-liberalism is more foundational. The ontological foundations of the counter-revolution are sociologically dubious: the market as understood by neo-liberalism is not primeval; foundational assumptions of how markets function are a delusion; human beings are essentially social; the

collective is not merely an aggregation of its constituent elements; and possessive individualism and greed do not explain a whole lot about what is uniquely human.

2. In the period in which so much has been written about the crisis of the state in Africa, it is quite surprising that the implications of the dissolution of the bonds of obligations and privileges that binds states and citizens in a polity is hardly theorised or appreciated. The legitimacy of any state is rooted in the strength of this mutual bond of obligations and privileges. What structural adjustment did was to deepen, and in many cases dissolve, this aspect of state/society nexus. If the weakening of this bond, in the pre-1980s, was a result of economic crisis and vagaries of the abuse of state power, adjustment provided a coherent theoretical justification for the withdrawal of the state from social policy provisioning. It is in that sense that it marked a qualitative break in the post-colonial state/society pact. As we will show later, in several cases this break was a conditionality of adjustment, and rammed down the throat of policy-makers; in other cases it involved extensive personnel changes in the state structures themselves (cf. Adesina 2004). If the state withdraws from social policy provisioning (education, health care, etc.), why would citizens accept its legitimacy or that it deserves their allegiance? Is it a coincidence, therefore, that the implosion of many of the states listed as 'failed states' happened around the same time that the adjustment programmes were being implemented? In some cases, latent differences were tripped into genocidal conflicts (cf. Mkandawire 2003).
3. Economic development is associated with quantitative growth in output and qualitative or structural changes in an economy. In the 1970s, 'perverse growth' was used to refer to economic growth without any appreciable structural change in the economies of most sub-Saharan African countries; changes away from primary commodities to manufacturing, both in domestic production and export. Urbanisation and economic activities (especially those driven by the static import substitution strategy) fuelled rapid growth in consumption – primary, intermediate, and capital goods. The export items (largely made up of primary commodities) suffered from fluctuations in earnings and a long term secular decline in terms of trade; imports by contrast rose steadily in monetary terms. The result was the balance of payments crises that became pervasive in the late 1970s and early 1980s.
4. This is the advertising claim that Telkom SA Ltd uses with its logo.
5. Telkom was forced to pull the advertisement off the air by the South African communications regulator (ICASA). It turned out that the claims made in the advertisement were completely false: there was no telesurgery on Jumah! My appreciation to Wilson Akpan, my doctoral student, for drawing my attention to this development.
6. For more on this see Pieterse (2000, 2001).
7. On 5 July 2002, a physician at the Amundsen-Scott South Pole Research Station was assisted by a medical team in Massachusetts to perform an urgent

operation on a colleague at the research station, who had damaged his knee in a fall. This was considered a major breakthrough in medicine. Using a two-way audio and video link-up, via a satellite, the team of doctors in Massachusetts had guided the physician through the delicate surgical operation.

8. Cf. www.uneca.org/aisi.
9. What is interesting in the competing claims to speak for Africa is the deafening silence in the NEPAD document concerning the AISI project in UNECA. It is as if to acknowledge the AISI is to diminish the claims of those promoting NEPAD's monopoly of voice on matters that concern Africa's development. I have noted a similar tendency for silence and forgetting concerning other initiatives that may or may not offer alternative paradigms of addressing Africa's development challenges (Adesina 2003).
10. Which reminds one of Dr Frankenstein who wanted to save humanity but ended up creating a monster!
11. In the words of the authors of the MAP and NEPAD documents: to 'permit Africa to rise to the level of developed countries' (NEPAD para. 100).
12. What the current discourse has done (cf. the NEPAD document) is to impose neo-liberal trade regimes (WTO-type) on the idea of the regional market. Regional integration, economic communities, and markets in the 1991 African Economic Community Treaty have an entirely different intent and development discourse from those found in contemporary market-driven discourse.
13. The idea that Africa's problem is a result of insufficient integration into the global regime of accumulation reveals the intellectual poverty at the heart of the neo-liberal discourse. Using trade as a percentage of GDP to measure the openness of an economy, sub-Saharan Africa was between 1960 and 1992 the world's most open economy; and only became second to the East Asia and Pacific economy in the 1990s (cf. Adesina 2003/2006b).
14. In the Nigerian case, at the same time that the Federal Government is reducing allocations to the public universities, new private universities are being licensed. Two of these are owned by the President (Olusegun Obasanjo) and the Vice President (Atiku Abubakar). Conflict of interest for someone at the helm of NEPAD's implementation and its Peer Review Mechanism could not be more evident! The paradox is that the fiscus of the Nigerian state has never been more robust, given the level of the international oil price.
15. The position of South Africa's Finance Minister (Trevor Manuel) on this matter is quite instructive. In the documentary, 'The two Trevors go to Washington', Manuel dismissed the idea of debt cancellation with a measure of scorn. 'The problem about a call like big, big debt forgiveness', he argued, 'is that you need the consent of the people who are owed the money'! At the time, Manuel was the Chair of the Board of the World Bank and South Africa had no external debt burden. Both of these would seem to have created a lack of empathy with the countries that the proponents of NEPAD like himself claim they are leading. It was as if it was morally justifiable for the rest of Africa

to say in the 1980s that since the Apartheid regime was not about to give its consent to its own demise, the victims of Apartheid should get used to their oppression and stop resisting the regime!

16. For instance, in 2003 and 2004, 60 percent of the declared headline earnings by the South African company, MTN, came from its operations in Nigeria and Cameroon. Nigeria alone accounted for 50 percent of MTN's earnings (MTN 2004).
17. *NEPAD Newsletter*, 69(4) November 2004. That this was the colonial model for infrastructure development would seem to escape the NEPAD Secretariat officials.

References

- Adesina, Jimi O., 1994, *Labour in the Explanation of an African Crisis*, Dakar: CODESRIA
- Adesina, Jimi O., 2004a, 'NEPAD and the Challenge of Africa's Development: Towards the Political Economy of a Discourse', *Society in Transition*, Journal of the South African Sociological Association, Vol. 35, No.1.
- Adesina, Jimi O., 2004b, 'Africa's Encounter with Neo-liberalism: From Development crisis to tragedy', Paper presented at the IDEAS Conference on The Economics of the New Imperialism, Jawaharlal Nehru University (JNU), New Delhi, 22-24 January.
- Adesina, J., Graham, Y., & Olukoshi, A., eds., 2006, *Africa's Development Challenges in the New Millennium*, London: ZED Books/CODESRIA Books.
- Adesina, Jimi O., 2006a, 'Development and the Challenge of Poverty: NEPAD, post-Washington Consensus and beyond', [2002] in Adesina, J., Graham, Y., & Olukoshi, A., eds., 2006, *Africa's Development Challenges in the New Millennium*, London: ZED Books/CODESRIA Books.
- Adesina, Jimi O., 2006b, 'Beyond Silence and Forgetting: Africa's Experience with Regional Development Frameworks', *Africa Development* (forthcoming).
- Allen, David, 1997, 'Current Status of Telesurgery', *Telemedicine Today*, June, (www.telemedtoday.com)
- Amin, Samir, 1974, *Accumulation on a World Scale: A Critique of the Theory of Underdevelopment*, New York: Monthly Review Press.
- Amin, Samir, 1990, *Maldevelopment: Anatomy of a Global Failure*, Zed Books: London.
- BBC, 2002, 'Connecting the villages' (Monday 17 June) http://news.bbc.co.uk/1/hi/world/south_asia/2044878.stm.
- Bond, Patrick, 2004, *Elite Transition: From Apartheid to Neo-liberalism in South Africa*, London: Pluto Press.
- Brower, Vicki, 2002, 'The Cutting Edge in Surgery', *EMBO Reports* Vol. 31, No. 4, pp. 300-301.
- Cashdan, Ben (Director, Producer), 2001, 'Two Trevors Go to Washington', Documentary, Johannesburg (<http://go.to/two.trevors>).

- Chang, Ha-Joon, 2001, 'Breaking the Mould: an Institutional Political Economy Alternative to the Neo-liberal Theory of the Market and the State', Paper No.6 (Social Policy and Development, PP-SPD-6), Geneva, UNRISD.
- Chasia, Henry, 2002, 'The NEPAD ICT Programme and the role of the UN ICT Task Force', A presentation to the UN ICT Task Force meeting in New York, 30 September (Power Point).
- Court, David, 2000, 'Financing Higher Education in Africa: Makerere, the Quiet Revolution in Education', *Perspectives in Education*, Vol. 19, No. 3.
- Ebam-Etta, Florence and Sheila Parvyn-Wamahiu, eds., 2003, *Information and Communication Technologies for Development in Africa: The Experience with Community Telecentres*, Volume 2, Ottawa/Dakar: IDRC/CODESRIA.
- Eicher, J.C., 1984, *Educational Costing and Financing in Developing Countries: Focus on Sub-Saharan Africa*, Washington DC: World Bank.
- Escobar, Arturo, 1995, *Encountering Development: The Making and Unmaking of the Third World*, Princeton: Princeton University Press.
- IMF, 2001, 'Nigeria: 2001 Article IV Consultation, Staff Report, Staff Statement and Public Information Notice of the Executive Board Discussion', Washington DC, IMF.
- International Telecommunication Union (ITU), 2004, *African Telecommunication Indicators 2004*, Geneva/Cairo, ITU/ATU.
- Krugman, P., 1993, 'Towards a Counter-Counterrevolution in Development Economics', in Proceedings of the World Bank Annual Conference on Development Economics 1992, (Supplement to the *World Bank Economic Review and the World Bank Observer*) pp.15-38.
- Lipton, Michael, 1997, *Why poor People Stay Poor: A Study of Urban Bias in World Development*, London: Temple Smith.
- Mkandawire, T., 1995, 'Beyond Crisis: Towards Democratic Development State', 8th CODESRIA General Assembly, Dakar, 26 June 2 July (processed).
- Mkandawire, T., 2001, 'Social Policy in a Development Context. Social Policy and Development', Paper No.7, Geneva, UNRISD.
- Mkandawire, T., 2004, 'Governance: The Itinerary of an Idea', *D+C Development and Cooperation*, Vol.31, No.10 (October).
- MTN Group Limited, 2004, 'Summary of the audited results for the year ended 31 March 2004 and dividend declaration', Johannesburg, MTN (www.mtn.co.za).
- Musisi, Nakanyike B., and Nansozi K Muwanga, 2001, 'Makerere University in Transition, 1993-2000: opportunities and challenges', The Partnership for Higher Education in Africa (www.foundation-partnership.org/case_studies/makerere.php).
- National Science Foundation (NSF), 2002, 'Telemedicine Link with South Pole Allows Remote Knee Surgery' (NSF Press Release, NSF PR 2-61, 17 July; www.nsf.gov/od/lpa/news/02/pro261.html).
- NEPAD, 2004, Newsletter Issue 69, 4 November (NEPAD Secretariat, electronic version).

- Obong, Quintas Oula, 2004, 'Academic Dilemmas Under Neo-Liberal Education Reforms: A Review of Makerere University, Uganda', in Zeleza and Olukoshi (2004a).
- Opoku-Mensah, Aida, 2003, 'Bamako-Geneva-Tunis: The Summit with Two Peaks', *Rhodes Journalism Review*, 23, pp.12-13.
- Pieterse, Jan Nederveen, 2000, 'After post-development', *Third World Quarterly*, Vol. 21. No.2.
- Pieterse, Jan Nederveen, 2001, *Development Theory: Deconstructions/Reconstructions*, London, Sage Publications.
- Rahnema, Majid, with Victoria Bawtree, 1997, *The Post-development Reader*, London: Zed Books.
- Rostow, Walt W., 1971, *Stages of Economic Growth*, Cambridge, Mass.: MIT, (Second edition).
- Telkom SA Limited, 2004, *Group Annual Report 2004*, Johannesburg: Telkom SA Ltd. (www.telkom.co.za).
- Tilak, J.B.G, 2004, 'Are We Marching Towards Laissez-fairism in Higher Education Development?', Paper presented at the 12th General Conference of the International Association of Universities (The Role of Universities in Promoting Dialogue and Development), 25-29 July, Sao Paulo, Brazil.
- Toye, John, 1987, *Dilemmas of Development: Reflections on the Counterrevolution in Development Theory and Practice*, Oxford: Basil Blackwell.
- World Bank, 1986, *Financing Education in Developing Countries: An Exploration of Policy Options*, Washington DC: World Bank.
- World Bank, 1994, *Higher Education: The Lessons of Experience*. Washington DC: World Bank.
- World Bank, 1997, *Revitalizing Universities in Africa: Strategy and Guidelines. The Partnership for Capacity Building in Africa*, Washington DC: World Bank.
- World Bank, 1998, *Knowledge for Development: World Development Report*, New York: Oxford University Press.
- World Bank, 2000, *Higher Education in Developing Countries: Peril and Promise*, Washington DC: World Bank.
- Zeleza, Paul Tiyambe and Olukoshi, Adebayo eds., 2004a, *African Universities in the Twenty-first Century. Volume I: Liberalisation and Internationalisation*, Dakar: CODESRIA.
- Zeleza, Paul Tiyambe and Olukoshi, Adebayo, eds., 2004b, *African Universities in the Twenty-First Century. Volume II: Knowledge and Society*, Dakar: CODESRIA.