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FLOSS Redux: Notes on African Software Politics

By Soenke Zehle

The info-technological development of Africa is providing a critical laboratory for testing the utilitarian and egalitarian claims of the FLOSS community. The question of whether to adopt a free or proprietary route quickly expands beyond the immediate consideration of set up costs. Soenke Zehle considers how FLOSS fares in the competition to be the fittest 'tropical' technology, assesses different visions of continent-wide development, and examines FLOSS's own ambiguous economics

With a host of corporations, foundations, and organisations active in the fields of advocacy and assistance, free and open source software (FLOSS) has become a dynamic area of info-developmental cooperation. In the eminently pragmatic approach adopted by many of these efforts, the intense controversy over free vs. open source software and the extent to which advocacy should stress freedom over commercial applicability somehow seems a thing of the past. At the same time, the focus on FLOSS as an economic strategy of autonomous development within a global network capitalism rather than a post-capitalist practice of collaborative creation recalls some of the general ambivalences at the heart of software-political struggles.¹

FOSSFA

In many African countries where computer users are not necessarily owners, important choices are often made by those in charge of establishing public ICT infrastructures. While many companies and organisations have chosen to adopt FLOSS on their own, the status of governments as the largest procurers of Information and Communication Technology (ICT) means that government action is bound to stimulate industry in various ways, including the provision of FLOSS training and support. The recently founded Free Software and Open Source Foundation for Africa (FOSSFA), currently headquartered in Nairobi, Kenya, has therefore identified national ICT policy and procurement procedures as major advocacy targets.² For Bidad Kagai, co-founder and one of its secretaries, the licensing, localisation, and local skill building advantages of FLOSS, coupled with 'leapfrogging' technologies like wireless that help skip an entire generation of expensive infrastructural investments, offer an alternative to the technological dependency and resource drain associated with an exclusive reliance on mainstream proprietary software.

Given the many problems that beset the ICT sector in Africa, FLOSS advocacy is inevitably tied to political reforms in contracting, public services, and competition policy, as well as the creation of FLOSS related employment and business opportunities. Taking advantage of the organisational dynamic of WSIS and working closely with civil society organisations, corporations, and international donors, FOSSFA has created an effective advocacy coalition: Kenya's ICT policy now gives preference to open source (and open standards) over proprietary solutions, and FOSSFA also convinced the Committee on Development Information of the Economic Commission for Africa (CODI) to adopt a policy that prioritises FLOSS.

This is no small feat, given that many African states have yet to articulate any ICT policy whatsoever, and FOSSFA is also educating policy makers across the continent about FLOSS.³ The 2004 Idlelo meeting in Capetown, co-organised by FOSSFA and the African Virtual Open Initiatives and Resources Project (AVOIR) at Western Cape University, was the 'First African Conference on the Digital Commons'.⁴ Bringing some 200 FLOSS activists and developers from across the continent together with international researchers, Idlelo emphasised the need to shift from the mere adoption of FLOSS to the local development of FLOSS applications, the use of FLOSS in education, and the development of non-proprietary open content alternatives. Hoping to be able to recruit government

representatives from all 53 African states, Idlelo 2 has already been scheduled for 2006.⁵

South Africa Goes Open Source

The breakdown of Idlelo participants by country reveals the uneven geography of IT development in Africa: by far the largest contingent came from South Africa, followed by Nigeria and Kenya.⁶ South Africa's influence in the African FLOSS movement is related to its dominance of the African IT sector at large. But there are other reasons, one of which is the impact of projects sponsored by Mark Shuttleworth.⁷ Shuttleworth, a South African celebrity entrepreneur known for his space travel – Shuttleworth was the first 'afonaut' – as well as his philanthropic ambition, has overseen the development of Ubuntu (an already-popular Debian-and-GNOME based linux distribution updated in regular release cycles) and his Shuttleworth Foundation has co-launched a nation wide 'Go Open Source' campaign.⁸

Supported by the Meraka Institute of the South African Council for Scientific and Industrial Research (CSIR) as well as HP and Canonical, the campaign has included the production of the first ever television series on open source – broadcast on public television and available for download – and the installation of 'Freedom Toasters', stand alone CD/DVD burners loaded with the latest FLOSS operating systems and applications, across South Africa.⁹ In addition to working on an 'edubuntu' classroom version of its linux distribution, the Shuttleworth Foundation also works with South African schools to set up FLOSS-based thin client networks through its 'tuXlabs' initiative.¹⁰ And following the 2005 'Go Open Source Task Team' conference, South Africa's national policy on free/open source software and open content is now being turned into an ambitious action plan.¹¹

But is South Africa 'really' Africa? FOSSFA's Kagai notes that ICT developments in South Africa are not representative of Africa at large, and some see in the ideas of an 'African Renaissance' less a new Pan-Africanism than a mere culturalisation of South Africa's own economic and geopolitical ambition.¹² Yet it would be a mistake to associate less well off areas of the continent with a lack of interest in digital and network technologies – a point made years ago by none other than John Perry Barlow (ex-Grateful Dead and Electronic Frontier co-founder).¹³ Barlow had concluded from his own experience of country life that Africans might have preserved a pre-industrial sense of connectedness and would want to bypass the crippling effects of an individualist industrialism to embrace the digital technologies of the network society. Even after the dotcom crash, his occasionally, albeit ironically, exoticist travelogue is still worth a read, in part because much of his 'let's wire Africa' enthusiasm was shared by the initial wave of international ICT task forces that were to turn the new economy experience into a fully fledged paradigm of info-development. And it encouraged Russell Southwood, a former UK management consultant, to start Balancing Act Africa, already one of the most important information services on ICT related developments across Africa, including the failures and successes of FLOSS advocacy.¹⁴

Perhaps somewhat surprisingly, FLOSS has not been an easy sell. One reason, suggests Ethan Zukerman, might be the overemphasis on free beer at the expense of free speech; a reference to Richard Stallman's famous definition of free software.¹⁵ Zukerman, a co-founder of GeekCorps – 'an international non-profit organisation that transfers tech skills from geeks in developed nations to geeks in emerging nations' – and initiator of 'BlogAfrica', believes that many African users continue to associate 'inexpensive' with 'inferior', a legacy of technology transfer and appropriate technology projects that sometimes amounted to little more than the dumping of obsolete technology.¹⁶ And in areas where non-licensed copies of proprietary software are widely available as well as a great deal of corresponding 'street' expertise, comparatively expensive manuals and a lack of bandwidth for accessing online support can easily increase the total cost of ownership of non-proprietary alternatives generally assumed to be 'free'. FLOSS advocates should stress the expandability, transparency and

resulting high performance of their software instead.

While a growing number of studies make an empirically based case for FLOSS in general, less is known about the experiences of FLOSS adoption across Africa.¹⁷ One such report has been published by Bridges.org, an international NGO with offices in South Africa and the US.¹⁸ According to Bridges.org, the availability of the source code is an advantage actually rarely exploited at the computer lab level, whereas the cost of software licenses – the ‘free beer’ argument – remains a key concern, especially evident when these costs are expressed in terms of GDP share. Among the factors that lower software costs, piracy is the most important, followed by donations and so called thin-client configurations that bring back to life hardware generally considered obsolete. FLOSS, concludes the report, has become a mainstream alternative. Yet because of the level of expertise required to establish and maintain a FLOSS based computer lab, it tends to work better in large projects that have the resources to address the practical problems of migration, training, and support, in contrast to individual labs that can simply take advantage of proprietary solutions that are already in place.

Info-Political Visions

Beyond the issue of appropriate means, how do the local politics of software relate to competing visions of what ‘info-development’ is and should be about? In the larger info-political vision that frames local decisions over software and standards, questions of autonomy are central, frequently articulated in response to the hegemonic presence of corporate software and IT giants. FLOSS advocates have criticised the most recent wave of international public private partnerships in this area, for example, because they involve only the usual transnational suspects. Microsoft, HP, and Cisco are all well represented in the activities of major development agencies, advertising themselves as ‘partners in development’ to promote ICTs as the vehicles for ‘good governance’ and ‘effective service delivery’, but also to stake out their own commercial claims, crowd out grassroots or public sector alternatives, and subvert South-South cooperation.

Take SchoolNet Namibia.¹⁹ Having to work with substantially fewer resources than the Shuttleworth Foundation, SchoolNet has nevertheless set up FLOSS-based thin client networks in over a hundred schools, launched an ISP to offer subsidised internet service, and is exploring the set up of wireless access in rural areas. Once they had found that students were a lot more likely to embrace FLOSS than their teachers, and standard advocacy tools were not doing much to change that, SchoolNet launched Hai Ti (‘Listen Up!’), a comic strip that features real life FLOSS users.²⁰ Its contractual agreement with schools specifies that the teams who manage the local computer lab include students as well as teachers. Yet occasionally, SchoolNet finds that their FLOSS-LANs remain unmaintained while students use equipment donated by Microsoft and administered with support from MS certified engineers. Executive director Joris Komen is convinced that Microsoft has targeted Namibian schools specifically because SchoolNet Namibia has become an outspoken critic of the company and its philosophy.²¹

Commenting on recent agreements between Microsoft and the New Partnership for African Development (NEPAD), the United Nations Development Programme (UNDP), and the United Nations High Commissioner for Refugees (UNHCR), Bildad Kaigai of FOSSFA agrees that such deals work to confine the software choices these agencies can make and effectively transfer wealth away from an emergent local software industry. Kagai calls on African leaders to emulate the successful development strategies of Asian countries instead.²²

Other ICT analysts note, however, that African countries will have to do so under dramatically different circumstances. Yash Tandon of SEATINI stresses that ‘most of the so-called “technology transfers” ... are essentially excuses for transnational corporations (TNCs) to take over local

companies, or to carve out a share of the domestic markets.’²³ Rather than ‘stripping naked’ to attract foreign direct investment (FDI) from the North, Tandon also makes the case for the ‘creation of a home based Domestic Scientific and Technology Capacity (DSTC), including capacity to undertake relevant research and development, the actual purchase (as opposed to transfer) of appropriate technology from the open market, and a transfer of technology, preferably between South-South, only under certain conditions.’ But Tandon also notes that options exploited by the ‘Asian Tigers’ are no longer available to Africa: ‘Countries such as Korea and Taiwan, as all other now advanced economies in history, were able to do it because they disembedded the technology from its capital base (by, for example, copying intellectual property, and through reverse engineering), and by creating a ‘national’ base for capital. Some countries were able to do this during the cold war years when the West needed them to fight against the Communist threat coming from China and Vietnam. ... Since the end of the cold war, this option is no longer available. ... Now, with intellectual property rights embedded in the World Trade Organisation (WTO) under the Trade Related Aspects of Intellectual Property Rights (TRIPS), scientific knowledge has become monopolised in the hands of a few thousand multinational corporations that use this knowledge to control the economies of the third world.’ For Tandon, Africa has only so many options: ‘It is in this context that Africa must develop its own DSTC, including a policy on relevant research and development. The R&D policy must be based on the production conditions in the region, the need first to produce for the domestic/regional market (only secondarily for the export market), and Africa’s location within the global value chain.’

It seems that third worldist strategies sustained by a generalised critique of neocolonialism have been replaced by the exhausting creation of advocacy networks that hold local governments just as accountable as transnational corporations.²⁴ Yet while visions of Africa’s future have sobered significantly, the emergent dynamic of South-South cooperation still echoes a tricontinentalist spirit. Brazil’s official commitment to what its minister of culture, Gilberto Gil, has referred to as a ‘tropicalisation’ of open source has been a major push for FLOSS advocacy in Africa. One such example of a South-South technology transfer was Brazil’s support for the adoption and implementation of open source software for the management of Top Level Domain (TLD) registries in a number of African countries, a process that will eventually automate TLD registries.²⁵

An increasing ‘post-third worldist’ cooperation is visible in other international info-political fora as well. One example is the campaign for a ‘WIPO Development Agenda’ and a Treaty for Access to Knowledge, supported by a broad coalition of southern governments as well as grassroots organisations.²⁶ The World Intellectual Property Organisation is a UN agency whose current mandate is ‘the maintenance and further development of the respect for intellectual property throughout the world.’ In the eyes of its critics, this mandate limits WIPO to the role of an enforcer of Euro-American positions on intellectual property, supporting the WTO’s Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) as well as at least condoning the aggressive ‘TRIPS-Plus’ bilateralism both the US and the EU have engaged in to effectively bypass the ongoing review process of key TRIPS provisions.²⁷ The access-to-knowledge campaign puts the question of FLOSS and the struggle over open standards in a much broader context. WIPO defines creativity in relation to the prospect of proprietisation, as culture is defined as the creation of private property. The FLOSS controversy, on the other hand, is not just about reducing the cost of running a computer lab, but over the implications of its approach to ‘commons-based peer production’ (Yochai Benkler): i.e. processes of collaborative creation and an information and knowledge commons actively enlarged in opposition to the ‘second enclosure’ (James Boyle) associated with an ever expanding IPR regime.²⁸ Take the role of FLOSS developers. Rishab Ghosh, FLOSS Program Leader at the Maastricht Economic Research Institute on Innovation and Technology (MERIT), stresses that licensing costs do matter, especially when GDP is taken into account.²⁹ But another key emphasis in his studies on FLOSS in developing countries is on the skills-building in FLOSS networks. In addition to standard developer skills, open source communities address, almost by default, questions of copyright law and

licensing, and introduce users to new forms of collaborative creation. Ghosh calls these ‘informal apprenticeships’ whose social cost is, of course, borne by individual users, but it is done so voluntarily, and he even considers the free sharing of developer expertise (often based on expensive degrees) a form of technology transfer. Most definitely exploited by employers who often encourage their employees to participate in FLOSS fora on the job, this voluntarist dynamic is also the basis of networks of ‘roving technology consultants’ like GeekCorps or E-Riders, as well as the collaborative practices of the FLOSS community at large.³⁰

Info-Political Pragmatism

Ghosh has been a major global FLOSS advocate, and his projects specifically address the use of FLOSS outside Europe. Yet some of his economic arguments are based on the assumption that proprietary alternatives are not locally produced. What Ghosh describes as the benefits of ‘deep access’ offered by locally developed FLOSS applications – customisation, quick bug fixing, as well as the re-use of code in other applications – is exactly how Herman Chinery-Hesse, CEO of Ghana’s successful Soft Tribe, describes his own approach.³¹ All of Soft’s software is based on ‘tropically relevant’ code, Chinery-Hesse’s reference to the full spectrum of constraints he associates with local computer use: frequent savings to disk help deal with power failures and work offline lowers costs for online access. In the case of Soft’s document management software for the Ghana Human Rights Commission, storage on remote servers addresses possible interruptions caused by a change in government. And unlike Ubuntu, Soft’s applications are optimised for the low-end hardware that dominates Ghana’s offices and cybercafés.

Soft trains the majority of Ghana’s programmers, often left to their own devices in poorly equipped computer science departments. Yet Chinery-Hesse thinks that FLOSS would impede the development of a local software industry, as developers would, he worries, be reduced to installers of pre-existing applications. His main concern, however, seems to be possible tampering with the code both by users and competitors – Chinery-Hesse fears internal mismanagement and has no interest in interoperability that could threaten Soft’s pole position in the local software market. Soft rarely releases beta versions, software does not have an autoinstall function, and bug fixes are not generally released. Evidence of Chinery-Hesse’s entrepreneurial pragmatism, he has also entered into a cooperation agreement with Microsoft, hoping to take advantage of its global distribution channels to bring an add on from Ghana to desktops around the world.

For Guido Sohne, a former Soft employee and vocal FLOSS advocate, Soft’s deal with Microsoft is a form of technology transfer rather than a simple sell-out, prompted by the departure of some of its key developers without whom their previous portfolio of applications could no longer be maintained.³² Sohne left in part because Soft did not want to explore FLOSS-based alternatives to address this development impasse. Microsoft is there to stay (the new Kofi Annan International Peacekeeping Centre in Ghana also entered into a deal with Microsoft), but it looks like Soft’s emergent competitors are already relying on FLOSS. So while Ghana’s developer community as a whole has not yet embraced FLOSS, this is likely to change.

In the current ‘Africanisation’ of the politics of software, the proprietary/non-proprietary divide is but one of several vectors. Perhaps this should not come as a surprise, given the hybrid dynamic of FLOSS itself. In her analyses of the cooperation between corporations and the FLOSS community, techno-feminist Yuwei Lin describes this process as ‘hybrid innovation’, marked as much by a sense of interdependence and mutuality as by unease over the irresolvable tension between commercial and community-oriented practices.³³

The dependence on corporate support illustrates the paradoxes of immaterial labour and suggests that common assumptions regarding the relationship between FLOSS and visions of a post-capitalist future be revisited. Often understood in terms of an anti-monopolistic practice, FLOSS is not, as such, anti-capitalist (GPL-founder Richard Stallman describes himself as anti-fascist instead). One of the reasons for the popularity of the FLOSS paradigm is that it appears to be able to accommodate a wide range of visions of cultural, economic, and social transformation, from cyberlibertarian views of natural capitalism to the post-autonomist vision of a coming communism, actively anticipated by way of multitudinal self-organisation. Countercultural cachet notwithstanding, the high visibility of FLOSS as a mainstream alternative to proprietary software is due in large part to the support from corporations like IBM or Sun Microsystems, and the commitment to openness reverberates with an info-capitalism attempting to reinvent itself around concepts of trust and transparency.

And while the controversies over software licenses are so intense because their clauses redefine what property means in the network society, not all of FLOSS is geared toward an enlargement of the information commons. Following the popularity of user-defined license provisions like Creative Commons, Sun Microsystems has announced its own 'Open Media Commons' initiative to develop FLOSS based digital rights management tools.³⁴ FLOSS, already adopted by cost cutting governments across the world, is also easily aligned with state power – South Africa's FLOSS and open content strategy includes, after all, the migration to FLOSS of its prison management systems.³⁵ This makes one-size-fits-all approaches to the politics of software almost impossible, even more so in the context of African ICT controversies.

Yet what is certain is that an African info-politics is already emerging along key faultlines of network-economical conflict, challenging images of an Africa forever mired in 'tribal rampages' and natural disasters. And while it is too soon to say what transformative impact FLOSS efforts may already have had, examples like FOSSFA or SchoolNet show that FLOSS is not reducible to an imperial voluntarism out of sync with the 'real' Africa. FLOSS's collaborative ethic is not a post-materialist luxury limited to those on the sunny side of the digital divide. Instead, the Africanisation of FLOSS in terms of an 'ubuntu' philosophy of sharing may soon connect to other collective efforts in a larger Pan-African vision of renewal. This project driven mainly from below is rarely included in the sovereign perspective of afro-pessimist prophecies accompanying the current wave of imperial nostalgia.³⁶ In his documentary *afro@digital*, Congolese director Balufu Bakupa-Kanyinda retrieves the story of the Ishango Bone, the oldest known table of prime numbers, to suggest that mathematics, and by implication the network society as a whole, needs to be given a new, Afrocentric genealogy. FLOSS advocacy may not have to go that far. Yet perhaps a discussion of software politics in Africa should not begin with the question of software, but with the contradictory images of Africa that linger in the collective post-colonial imagination.

FOOTNOTES

¹ For an account of free software vs open source software in terms of a struggle over discursive hegemony, see David Berry, 'The Contestation of Code: A preliminary investigation into the discourse of the free/libre and open source movements', *Critical Discourse Studies* 1.1 (April 2004), 65–89, <http://opensource.mit.edu/papers/berry1.pdf>

² <http://FOSSFA.net>

³ Bildad Kagai and Nicolas Kimolo, 'FOSSFA in Africa: Opening the Door to State ICT Development Agendas – A Kenya Case Study', *SSRC The Politics of Open Source Adoption* (2005), <http://www.ssrc.org/wiki/POSA>; CODI, 'Resolutions of the Fourth Meeting of the Committee on Development Information (CODI-IV)', *UNECA Commission on Development Information* (23-28

April 2005), http://www.uneca.org/codi/codi4/codi_iv_report.pdf. See the country policy tables at: <http://www.bridges.org/FLOSS/index.html>

⁴ <http://avoir.uwc.ac.za/>

⁵ <http://www.FOSSFA.net/idlelo2>

⁶ Derek Keats, 'Idlelo: First African Conference on the Digital Commons', Final Report to Department of Science & Technology South Africa (2004), <http://www.catia.ws/Documents/Indexpage/IdleloFinalReport.pdf>

⁷ <http://www.markshuttleworth.com>

⁸ <http://www.ubuntulinux.org>, <http://www.go-opensource.org/>

⁹ <http://www.freedomtoaster.org/>, http://www.go-opensource.org/go_open

¹⁰ <http://www.edubuntu.org/>, <http://www.tuxlab.org.za/>

A thin client is a computer (client) in client-server architecture networks which have very few resources, so it has to depend primarily on the central server for processing activities. A thin client network centralises maintenance tasks on a (remote) server

¹¹ <http://wiki.go-opensource.org/taskforce>

¹² For a middle of the road assessment of the African Renaissance, see Elias K. Bongmba, 'Reflections on Thabo Mbeki's African Renaissance', *Journal of Southern African Studies* 30.2 (June 2004). For more critical views, see Neil Lazarus, 'The South African Ideology: The Myth of Exceptionalism, the Idea of Renaissance,' *South Atlantic Quarterly* 103.4 (Fall 2004), 607-28, and Neville Alexander, 'South Africa – Example or Illusion?' *An Ordinary Country: Issues in the Transition from Apartheid to Democracy in South Africa*, New York: Berghahn Books, 2003, 137-73, 188-90

¹³ John Perry Barlow, 'Africa Rising,' *Wired* 6.01 (1998) http://www.wired.com/wired/archive/6.01/barlow_pr.html

¹⁴ <http://www.balancingact-africa.com/>

¹⁵ Ethan Zukerman, 'Free Beer Doesn't Sell', *Linux Journal* 111 (July 2003) <http://www.linuxjournal.com/article/6785>

¹⁶ <http://www.geekcorps.org/>, <http://www.ethanzukerman.com/blog/>

¹⁷ David Wheeler, 'Why Open Source Software / Free Software (OSS/FS, FLOSS, or FLOSS)? Look at the Numbers!', (May 2005) http://www.dwheeler.com/oss_fs_why.html

¹⁸ Bridges.org, 'Comparison study of Free/Open Source and Proprietary Software in an African context: implementation and policy-making to optimise community access to ICT' (May 2005) http://www.bridges.org/software_comparison/index.html

¹⁹ <http://www.schoolnet.na/>

- ²⁰ <http://www.schoolnet.na/haiti>
- ²¹ <http://tatejoris.blogspot.com>
- ²² Bidad Kagai, 'FOSSFA responds to Microsoft-UNDP Deal' (Feb 2004), <http://FOSSFA.net>
- ²³ Yash Tandon, 'An Alternative View on Technology', SEATINI (Sept 2004), <http://www.seatini.org/publications/factsheets/technology.htm>
- ²⁴ Thandika Mkandawire, 'Good Governance: The Itinerary of an Idea', D + C Development and Cooperation 31.10 (01 Oct 2004) http://www.inwent.org/E+Z/content/archive-eng/10-2004/tribune_art1.html
- ²⁵ Rebecca Wanjiku, 'Brazil opens its arms to Africa', Highway Africa News Agency (05 April 2005) http://www.highwayafrica.ru.ac.za/hana/textviewer.asp?item_id=339
- ²⁶ <http://www.cptech.org/a2k/>, http://www.eff.org/IP/WIPO/dev_agenda/, <http://www.access2knowledge.org/cs/>
- ²⁷ Peter Drahos and John Braithwaite, 'Who Owns the Knowledge Economy? Political Organising Behind TRIPS', Corner House Briefings (Sept 2004), <http://www.thecornerhouse.org.uk/pdf/briefing/32trips.pdf>, also see <http://www.bilaterals.org/>
- ²⁸ Yochai Benkler, 'Coase's Penguin, or Linux and the Nature of the Firm' (2002) <http://www.benkler.org/CoasesPenguin.html>; James Boyle, 'A Politics of Intellectual Property: Environmentalism For the Net?' (1997) <http://www.law.duke.edu/boylesite/intprop.htm>
- ²⁹ Rishab Ghosh, 'Free/Libre/Open Source Software for developing countries: skills, employment and costs', 2nd National Congress on Software Libre, Buenos Aires, Argentina (07 June 2005), <http://www.flossproject.org/papers.htm>
- ³⁰ <http://www.eriders.net>
- ³¹ G. Pascal Zachary, 'The African Hacker,' IEEE Spectrum Online (Aug 2005), <http://www.spectrum.ieee.org/WEBONLY/publicfeature/aug05/0805ahac.html>
- ³² My assessment of Soft is based on an email exchange with Guido Sohne (Sept 2005). Also see <http://sohne.net>.
- ³³ Yuwei Lin, 'Hybrid Innovation: How Does the Collaboration Between the FLOSS Community and Corporations Happen?' Knowledge, Technology and Policy 18.2 (Summer 2005), http://opensource.mit.edu/papers/lin4_hybrid.pdf
- ³⁴ <http://www.openmediacommons.org/>. As the history of commons-based resource management systems shows, 'commons' doesn't necessarily imply the free-for-all often associated with it, and it is not necessarily obvious – a point made frequently by advocates of indigenous and traditional knowledge databases, for example – that 'commons' and 'access restrictions' are mutually exclusive; what emerges instead are 'hybridised' commons that take the information needs of specific communities into account.
- ³⁵ <http://wiki.go-opensource.org/taskforce/CorrectProj>

³⁶ Martin Meredith, *The State of Africa: A History of Fifty Years of Independence*, London: Free Press, 2005; Seumas Milne, 'Britain: imperial nostalgia', *Le Monde Diplomatique* (May 2005). Also see Chris Landsberg and Shaun Mckay, 'Engaging the new Pan-Africanism', Centre for Policy Studies (Sept 2005) http://www.sarpn.org.za/documents/d0001537/CSO-Guide_pan-africanism_2005.pdf

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