Open A.I.R. Briefing Note 2014

Optimising benefits from publicly funded research

Securing Africa's place in global "open science"

Patents are rarely the best way to develop, commercialise and disseminate innovation from publicly funded research in African countries

The Ethiopian Government's Science, Technology and Innovation (STI) Policy of 2012 is an ambitious document. Among other things, the Policy calls for increased innovation transfers between the country's public universities and industry players, and for universities to pursue patents on inventions generated by their publicly funded research.

But according to Open A.I.R. Ethiopian researcher Wondwossen Belete, "the STI Policy puts the cart before the horse," because "in the Ethiopian context the major problem is the weak research capacity of the universities, not research outputs which are piling up in university laboratories because of some sort of lack of incentive to be transferred to industry."

Belete, an intellectual property (IP) expert with the Society for Technology Studies (STS) in Addis Ababa, conducted an Open A.I.R. case study via policy analysis and interviews with university, industry and government representatives. He found a dearth of research at Ethiopia's universities, and scant private-sector capacity to absorb and commercialise innovations. Thus, Belete concluded, the Ethiopian Government needs to focus policy not on downstream IP rights but rather on building the upstream capacities of university research departments. And, Belete argues, a key element of this support should be ensuring Ethiopian researcher participation in international online sharing of research data on an "open science" basis.

KNOWLEDGE TRANSFER

Another African country placing policy emphasis on institutional patenting of publicly funded research outputs is South Africa, via its Intellectual Property Rights from Publicly Financed Research and Development (IPR-PFRD) Act of 2008 and Regulations of 2010. The Act encourages publicly funded research institutions to prioritise protection and patenting of their findings. Open A.I.R. South African researchers Prof. Caroline Ncube and Luci Abrahams conducted a case study of research management practices at two universities – the University of Cape Town (UCT) and University of the Witwatersrand (Wits) – and found that the Act's patent focus was sub-optimal. "It calls itself an IPR Act, but it's a patent Act," says Abrahams, who is Director of the Wits LINK Centre. "And it neglects issues of how to transfer knowledge, and socialise knowledge, in line with development of a knowledge-intensive economy."

According to Ncube, who is Head of UCT's Department of Commercial Law, the Act is to some extent misdirecting university resources. "The danger is encouraging mindless filing of patent applications. Because of the legislation, there is a tendency to disclose any and everything, and the technology transfer office staff at UCT now spend a lot of time trolling through reams of paper."

Ncube and Abrahams found that many researchers at UCT and Wits are adopting workaround solutions to ensure that, as well as complying with the IPR-PFRD Act, they can disseminate their innovative research findings quickly and widely, on an online open science basis, via open access (OA) self-archiving and OA journals.

SPIN-OFF BUSINESSES

Open innovation strategies are not mere charity, but rather are cutting-edge commercialisation techniques that build platforms for spin-off business opportunities, good jobs, economic growth, and social benefits. Collaborative models help to build the trust essential for productive partnerships.

Open A.I.R. research findings suggest that policies blindly encouraging more patenting of African publicly funded research outputs are largely misguided. An Open A.I.R. study in Botswana, conducted by Prof. Njoku Ola Ama, found that patents are largely irrelevant to the priorities of the country's researchers. And Prof. Ikechi Mgbeoji's survey of dozens of African national patent offices shows that even if researchers wanted to prioritise patenting, most patent authorities on the continent lack the institutional capacity to optimally regulate the granting and enforcement of such rights. Given these realities, it is open and collaborative innovation approaches that are often the most practical business models in African settings.

Both the Ethiopian and South African policy approaches mirror elements of the US Bayh-Dole Act of 1980 – an Act that encourages US public research bodies to pursue IP protection of their research outputs. According to the findings of Belete in Ethiopia and Ncube and Abrahams in South Africa, Bayh-Dole-style policies do not appear to be directly transferable to current African national research contexts.

All four of the aforementioned studies are detailed in the Open A.I.R. book *Innovation and Intellectual Property: Collaborative Dynamics in Africa*, available for free download at www.openair.org.za/content/open-air-publications.

RECOMMENDATIONS

To African publicly funded researchers	To African national policymakers
■ make yourself aware of national and institutional policies governing intellectual property (IP) emerging from your research ■ encourage your institution to sign the Berlin Open Access Declaration, http://openaccess.mpg.de/Berlin-Declaration ■ adopt "open science" approaches to your research outputs, e.g. disseminate your findings via online open access (OA) journals and self-archiving OA institutional repositories ■ encourage government funding support for innovative research and for OA distribution of research findings	■ ensure adequate funding of public research institutions, including centres of excellence focusing on priority science, technology and innovation (STI) sectors ■ craft policy measures that promote international "open science" collaborations by your country's publicly funded researchers, e.g. via support for online open access (OA) publishing of research ■ avoid replication of developed-world policy models not suited to African national STI settings, e.g. the US Bayh-Dole model

ABOUT OPEN A.I.R.

Managed by the IP Unit in the University of Cape Town Faculty of Law and by the University of Ottawa Faculty of Law, with additional hubs in Egypt, Nigeria and Kenya and teams in 14 African countries, the **Open African Innovation Research and Training Project (Open A.I.R.)** is investigating ways in which innovation and intellectual property (IP) can combine in African settings in ways that (1) maximise networked, collaborative knowledge governance; (2) balance objectives of openness and protection; and 3) enhance the livelihoods of small-scale entrepreneurs.

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"OPEN SCIENCE" AND OPEN ACCESS (OA)

Scientific researchers participating in international "open science" make their data widely and publicly accessible in order to maximise development of knowledge. Though the idea has existed for centuries, open science gained significant momentum with the advent of the internet, through which scientists can now provide rapid, global open access (OA) to their research findings. In the words of the Berlin Open Access Declaration of 2001,

"An old tradition and a new technology have converged to make possible an unprecedented public good."

OPEN A.I.R. HUBS

Cairo: Access to Knowledge for Development Center (A2K4D), The American University in Cairo

Lagos: Nigerian Institute of Advanced Legal Studies (NIALS), University of Lagos

Nairobi: Centre for IP and IT Law (CIPIT), Strathmore University

Cape Town: IP Unit, Faculty of Law, University of Cape Town

Ottawa: Faculty of Law, University of Ottawa

Contact information for Hub Coordinators is available at www.openair.org.za.

FURTHER READING

From the Open A.I.R. book, *Innovation and Intellectual Property: Collaborative Dynamics in Africa* (UCT Press, 2014), edited by Jeremy de Beer, Chris Armstrong, Chidi Oguamanam and Tobias Schonwetter, available for free download at www.openair.org.za/content/open-air-publications:

Belete, W. (2014), "Towards University-Industry Innovation Linkages in Ethiopia".

Ncube, C., Abrahams, L. and Akinsanmi, T. (2014), "Effects of the South African IP Regime on Generating Value from Publicly Funded Research: An Exploratory Study of Two Universities".

Ama, N.O. (2014), "Perspectives on Intellectual Property from Botswana's Publicly Funded Researchers".

Mgbeoji, I. (2014), "African Patent Offices Not Fit for Purpose".

Kawooya, D. (2014), "Informal-Formal Sector Interactions in Automotive Engineering, Kampala".