

# Freely sharing innovation is the only way to face the future

**A** PATENT lock on genes, technologies and discoveries is creating a log jam in health, agriculture, environment and energy innovations worldwide. Transparency of international patent systems, and fostering “open source” development and sharing of the toolkits of science are the answer, and will be key to Australia’s role in Asia.

Science-based innovations such as vaccines, diagnostics and drugs, or new crop breeds and environmental management tools, all have enormous potential to improve the lives of billions of people and to rescue our fragile environment. They have the potential to forestall deadly pandemics and treat neglected populations.

Our neighbours, including Indonesia, China, Vietnam and India, have critical needs in these fields if they are to halt the downward spiral of their environments, to prevent catastrophic public health crises and to build prosperous economies and societies.

Our future is linked to theirs. Enabling their success ensures ours.

Creating and delivering these innovations requires access to dozens or even hundreds of discoveries and technologies, including genes and proteins — the fabric of life itself.

But the life sciences research tools and platforms traditionally in the public domain are now encumbered by outrageously broad patent rights held by myriad players in obscure ways.

These patents — once only filed in a few wealthy nations — are now being sought wholesale in all the developing nations of Asia, and often by multinational corporations.

Nearly a third of the human genome is already patented — over 10,000 genes, and almost all of the rest has patent claims pending, some piled 20 deep by thousands of claimants. It’s even worse for plant genes, with some patent applications from Monsanto claiming over 460,000 genes — more than 10 times the number in any plant species!

Indeed, biotech promoters will point to some profits coming from the licensing and sale of the components of this innovation pipeline. But we can also see the inefficiency in getting real innovations of value to the public through the market, with escalation of costs of assembling the whole toolkit, and the increasing uncertainty for investors.

The result?

Domination of our food and health industries by large multinationals that, for all their resources, can only target high-margin products and big markets. Innovations that are needed at smaller scale, with engagement of

## RICHARD JEFFERSON



small and medium enterprise, are neglected. And those for poor countries don’t even get on the radar screen.

Patents give a limited monopoly right to inventors in exchange for full disclosure of the invention so society can build on those inventions. It is not, however, a monopoly to practise the invention, nor to benefit from it. It is an exclusive right to stop others from practising the invention. A dog in the manger.

These rights and claimed rights are obscure in their meaning, their scope, and their ownership. They are daunting even to specialists; and such specialists are outrageously expensive. More importantly, if the patents can’t be searched, understood and navigated they can’t be avoided. It would be like clearing a minefield by closing one’s eyes and tip-toeing.

Recently the Government of Indonesia took the unprecedented move of withholding its local virus isolates of the deadly H5N1 avian influenza from the global health community. This sharing is critical if the world is to be prepared for a potential flu pandemic with diagnostics, vaccines and therapeutics. These are not just local impacts, they will hit us all.

But the Indonesian Government was deeply, and understandably, concerned that the virus strains and medicines developed from them would be patented by global corporations in the West and not be shared equitably with Indonesia, or other poor countries hardest hit but which are the providers of the raw materials.

Are they right?

There is a long history of shameful denial of access to poor countries, and now with the TRIPS agreement (Trade-Related Aspects of Intellectual Property Rights), the developing world is putting in place patent systems that are being gamed by outside players. One has only to read the writings of the great Australian IP thinker professor Peter Drahos to see the extent of the inequities. No wonder that Indonesia and other countries are spitting the dummy.

These practices are absurd.

We require a rethink of patent policy, of the norms of patent use, and in how the public sector can pick up the ball and restore sanity, efficiency and confidence for both public and

private sector innovators who seek to create real products to improve lives and our environment.

In much of the developing world the new patent systems are completely unsearchable and opaque. In Indonesia there is no full-text searching of patents available. How will the Indonesian Government even know if multinationals are filing patents on drugs or vaccines in their own country?

In India it’s virtually impossible to search patents, and yet Indian industry has been the lynchpin in providing low cost anti-retroviral drugs to treat HIV/AIDS in poor countries.

Can this continue? In the absence of transparency, many fear not.

But it’s not just poor countries stuffing up balance between disclosure and monopoly.

Until the release last month by CAMBIA’s Patent Lens team ([www.patentlens.net](http://www.patentlens.net)), the full text of Australian patents could not be searched domestically or internationally.

How, then, could either Australian or overseas innovators wishing to serve Australia have any confidence in their potential freedom to operate? How could investors in Australian research have any clarity in the ability to deliver outcomes?

We can and must do much better than this. We need to map and navigate this confusing terrain of patents, to make clear the options.

We need to work with our neighbours to create transparent, harmonised and searchable patent systems that can be explored and if abused, fixed.

We need to explore new ways of developing technology and using intellectual property as the software sector has done in the form of “Open Source”. If we do, we can galvanise international life sciences and stimulate confident investment and powerful low-cost toolkits of innovation.

Australia is taking the world lead through CAMBIA’s Patent Lens and the Biological Open Source (BiOS) Initiative ([www.bios.net](http://www.bios.net)) to explore how practices that gave rise to Linux and Firefox could drive the health, agriculture and environment sectors to new levels of prosperity and innovation.

We must take it much further. We must help our neighbours achieve similar efficiencies and transparency in their innovation systems. And in so doing we will create a valued, trusted and unique role for Australia in the region.

Richard Jefferson, a molecular biologist and chief executive of CAMBIA, is a panelist at the Australian Leadership Retreat.