

Open innovation or open slather?

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In the past twelve months, perhaps encouraged by a couple of recommendations in the National Review of Australia's innovation system, there have been growing calls from some quarters to open up to the public all research or intellectual property (IP) developed using public funds. The theory goes that it is lack of access to information and new knowledge, and particularly valuable IP, which prevents many of society's problems from being solved. After all, if Australian taxpayer money has been used to fund research, the public should have free access to the results of this research, right?

Wrong! Apart from the quite erroneous assumption that public value will always be maximised simply by providing easy access at no cost to this research, it also assumes that the "public" in other countries will not use that information for their own commercial gain and end up charging back the Australian public to appreciate the benefits.

Where does the idea of so-called "open access" to IP come from in the first place? The debate tends to be fierce in education circles, particularly when it relates to sharing of curricula and course content. Proponents also frequently cite the open source software movement, now embraced by IBM and even more recently by Apple in its new iPhone, to illustrate the advantages of widespread community collaboration in the development of new standards and software, and that such "free" software can still result in widespread commercial application. User-led innovation and community collaboration, as demonstrated in the multiplicity of iPhone applications, certainly has its place, provided mechanisms exist for contributors to receive their fair share of the benefits or rewards. However, it is quite wrong to suggest that this is the best, indeed *only*, form of collaboration that brings triple bottom line benefits to the public.

There are many other forms of collaboration when innovating, and many require constraints on access to IP and ensuing developmental outputs in order to fund ongoing development. "Open innovation" is a broad term that is used to describe the collaborative exchange of IP along the value chain in order to develop new products or services that will deliver value to customers. Procter and Gamble is the most frequently cited exemplar of the open innovation process, with over 50% of their products the result of deep collaborations with multiple partner organisations that undertake research, development, and cross licensing of IP.

Collaboration is nothing new, but it does vary in intensity and form¹. The AIC has characterised four different modes of collaboration involved in the innovation process, and these are shown in the figure below.

¹ "Which kind of collaboration is right for you", G. Pisano and R. Verganiti, Harvard Business Review, pp 78-86 December 2008

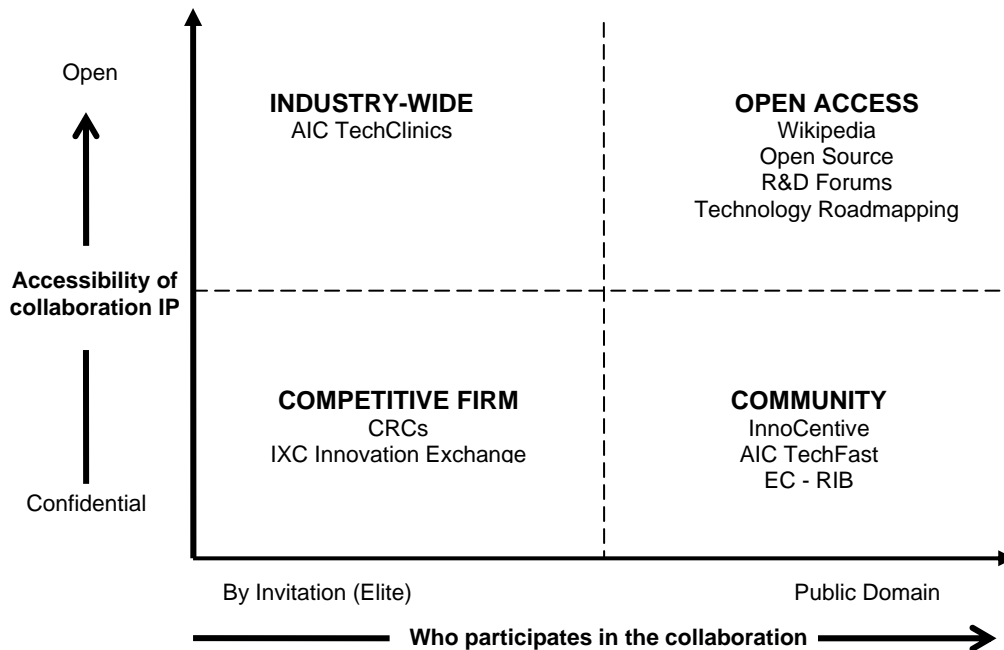


Figure 1. Modes of Open Innovation

Open innovation involves collaboration in which new knowledge is generated and exchanged between at least two collaborating parties, and will involve varying degrees of access to this IP, depending on its ultimate use. The horizontal axis in Figure 1 shows who might participate in the collaboration, whether the collaboration itself is essentially limited or private (perhaps an elite group of invited collaborators), or open to public contribution. The vertical axis in the figure shows the degree of resulting access to the IP generated by the collaboration, ranging from keeping the IP confidential or private up to publicly available IP.

The figure makes it clear that open access is just one form of open innovation. The “Open Access” quadrant discussed above implies that not only is participation open to everyone in the public, but that the outcomes of the collaboration are also made public. For this model to result in sustainable innovation, it requires organisations with distribution channels (and perhaps manufacturing) to reach the customer, and forms of business models where those involved can reap a sustainable return. In the case of open source software for instance, these returns will often come from use of the IP for subsequent closed innovation that might entail proprietary enhancements, customisation, or specialist services such as documentation, maintenance and support. It is worthwhile noting that even in open source, IP is given freely but nevertheless controlled through copyright and trademarks.

The community can still be involved in collaboration even where the IP is retained for private use, as in the “Community” quadrant. The website InnoCentive, for example, allows companies to post problems and offer rewards to anyone with the best solution, but does not disclose the solution since the company wants to offer a proprietary product based on that solution.

The AIC's TechFast program also falls into this type of open innovation quadrant, because it seeks a solution for a single company's challenge from across the entire innovation sector (in this case, defined to be all types of research organisations).

However, collaborations such as these which potentially call on an infinite number of parties to provide a solution can be difficult to manage, and can be slow and labour intensive to sort through and find the best solutions. Collaborations involving a more restricted group of participants can be a more efficient way to find solutions, and can be of higher quality if the participants are carefully selected from a more elite group up front. The "Competitive Firm" quadrant is a form of open innovation involving a limited group of collaborators, where the resulting IP might be shared among the elite group or perhaps utilised by a single firm. Cooperative Research Centres (CRCs) are a good example of this type of collaboration, in the case where IP is owned by the collaborators who undertake the work. The final quadrant, "Industry Wide", allows the IP generated to be made available much more widely for industry benefit. A good example of activity in this quadrant is the AIC's TechClinic™, in which several collaborators from various stages of the value chain collaborate to generate IP that is of benefit to the entire industry.

All four quadrants are valid and useful mechanisms for building new value. Open innovation, by involving the consumer in the collaboration, can create not just new products or services, but indeed new markets where none existed before. Value arises not just from the inputs alone, but also from the involvement of end users themselves. By casting a broad net to collect and evaluate ideas, the risks of development can be shared, and breakthrough innovation can be the result. However, any subsequent exchange of developed IP does not have to involve the entire public, nor need it be at zero cost.

In the case of solving broad problems facing society, such as reducing the impact of climate change, it may be necessary to utilise all four collaborative quadrants to simultaneously create value by both solving the problem and generating new industries. In climate change innovation for example, the "Open Access" quadrant is the most appropriate for broad sharing of energy saving measures; the development and deployment of measures such as smart metering by an electricity company may involve the "Community Quadrant"; an AIC TechClinic in bio-algae in the "Industry Wide" quadrant can help spur the development of new initiatives along the bio-fuel value chain; and the commercialisation of IP from the CRC for Greenhouse Gas Technology in the "Competitive Firm" quadrant can help a company that commercially captures carbon to develop better products.

Likewise, products and services that start their development in one quadrant may eventually move to other quadrants. Although Apple's iPhone model is well known for its open source software add-ons, its associated iTunes service involves industry wide collaboration and proprietary digital rights software that belong outside the "Open Access" quadrant.

Too many people who should know better confuse open innovation with open access. Why does it matter? Because almost everyone agrees that open innovation, involving deep and trusted collaboration, is essential for companies to grow and economies to thrive. Open access is another matter entirely. Proctor and Gamble are fine practitioners of open innovation but certainly do not provide open access to their IP. Is open innovation being used as a Trojan horse so open access becomes the norm?

Proponents of open access often denigrate the commercialisation of publicly funded research. However, just as open innovation is not so simple, commercialisation also involves many complex issues and needs careful unpacking, rather than alternative solutions that promise a silver bullet. Most publicly funded research *already* exists in the public domain by virtue of the fact that most scientists both want to and need to publish. That is the right thing to do, so the frontiers of knowledge continue to advance.

But let us not throw the baby out with the bathwater. There is also much IP that should be directly commercialised to bring benefits to society, and that frequently requires IP to be kept confidential. The commercialisation of Gardasil would never have proceeded in an open access regime, because no company could have afforded the clinical trials and development pathway required to bring the drug to the masses without exclusive rights.

Optimising public value from publicly funded research will require multiple pathways to usage – pathways that find expression in all four quadrants. That public good and commercialisation are not at opposite ends of a one-dimensional spectrum is described in a separate paper². Direct commercialisation of university research rarely yields more than 3-5% of total university income, but this does not invalidate it as one such pathway. Would 0% be more optimal, as the proponents of open access would have it? In fact, the correct expression of value may not even be economic at all, but could be an environmental or societal measure instead. Direct commercialisation of university IP can often achieve all three, even if a Proctor and Gamble or a Merck commercially benefit in the process. Thousands of women who would otherwise suffer from cervical cancer will doubtless support me on this one.

²R. Gilmore, “ Commercialisation or public good – falling into the philosopher’s trap of binary choice”, AIC