

# Open Innovation in the Real World

**By Shane Coughlan**

*“Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology”*

Professor Henry Chesbrough

Open Innovation is one of the most frequently cited terms in Information Technology. It is applied to software, to data, and to hardware. It manifests itself in practically all discussions around standards and access to information. Whenever an argument can be made for increased collaboration or sharing, Open Innovation is invariably proposed as an approach that offers an equitable solution for the majority of stakeholders involved. But what is it, and how does it work in the real world?

A quick visit to Wikipedia suggests that Open Innovation was invented by Professor Chesbrough and is essentially about reducing the cost of research and development. This is accomplished by looking outside of the closed world of a single company from an Intellectual Property perspective, and buying or licensing third-party innovation to get a competitive advantage. Under this reading it offers the potential for improved productivity, it allows the inclusion of customers early in the development process, increased accuracy in targeting and better marketing. Procter & Gamble's "Connect and Develop" (C&D) is cited as a success for this form of Open Innovation, allowing the company to improve research productivity through global collaboration.

In this context Open Innovation is the opposite of what can be termed Closed Innovation, which advocates the strict control and ownership of Intellectual Property. The underlying concept of Closed Innovation is that a company can benefit from having complete control of the new product development cycle, and it assumes that one party can obtain the necessary economic resources to accomplish this goal. Closed Innovation, though only explicitly named after Open Innovation gained traction as a concept, was the dominant form of innovation observed in the 20th century. It explicitly address what are identified as potential disadvantages in Open Innovation. Namely, revealing information not intended for sharing, the loss of competitive advantage due to such revelations, and increased complexity to control innovation due the requirement to engage with third parties.

While neat, this reading of Open Innovation and Closed Innovation as opposite Intellectual Property management techniques is somewhat limited, and hardly describes the wealth of “openness” we are observing today in technology, art and manufacturing. This paper proposes that there is value in observing the broader picture rather than myopically focusing on IPR strategy. It therefore contextualises Open Innovation as an umbrella term for approaches to openness in individual fields. The unifying concept is to share ideas in a way that helps stakeholders obtain useful solutions today and a fertile ground for developing solutions tomorrow. It accomplishes this by providing a method to bring many minds to bear in the consideration of issues. From this perspective the roots of Open Innovation lie more with the Greek schools of philosophy than with business courses. It can be understood as emerging during the Middle Ages, when scientific method became common, and peer review or the discussion of results became the norm in advancing knowledge.

*"The best way to have a good idea is to have a lot of ideas."*

Dr. Linus Pauling

With the advent of computers and the Internet, sharing ideas became easier due to decreases in relative distance between and increases in absolute scale around common interest groups. This was especially observable in the area of computer science itself. Programmers often asserted that they could make better code by sharing algorithms with other developers to check for errors and refine the mathematics. Over the past thirty years this process of sharing was formalised into what are commonly called the rules of "Free Software." The underlying concept is that everyone collaborating on a problem agrees to provide the ability to use, study, share and improve the applicable code, and this results in increased potential value for all parties concerned. In recent times this concept has been marketed as a development approach to companies under the name "Open Source."

The precise value delivered by open collaborative approaches has yet to be fully defined, though some of the numbers currently in circulation make it clear that Open Source is a powerful economic driver. Research from Gartner and IDC shows that Open Source is present in up to 90% of commercial code and that it directly underwrites a 50 billion USD economy based on collaboration. It powers phones, TVs and appliances across the world, and is rapidly entering areas like automation and automotive production. But these hard numbers and facts may not be the most interesting aspect of Open Innovation. The simple rules of Free Software that allow for programmers to use, study, share and improve software have been gradually expanded and reapplied to many other fields.

We can find Open Innovation applied to books, pictures, and music through the umbrella of the Creative Commons. This is a massive wealth of creative works that offer more flexibility and international applicability than Public Domain while maintaining a low barrier to entry for new participants. We can also find Open Innovation applied to raw information through projects like Wikipedia and OpenStreetMap. These act as global showcases for how broad participation can profoundly impact our ability to access local and global knowledge. We even see Open Innovation in hardware, a field not normally considered to fall within the remit of creative works. There are now Open Hardware printers, computer processors, cars and robots. Today Open Innovation allows everyone to share virtually anything with anyone else, anywhere in the world.

*"The world is but a canvas to our imaginations."*

Henry David Thoreau

Allowing people to use, study, share and improve creative works provides value for the stakeholders involved. This implies a “network effect” of collaboration, based on the underlying understanding that no company can employ all the minds that can potentially contribute to solving a problem. Indeed, no single entity can bring more than a fraction of the potential minds to bear. Collaboration addresses this by tapping into a much broader pool. In theory at least it leads to better, quicker and more effective solutions. The proviso is that broad collaboration needs to be kept simple and it needs to be kept fair to operate, and it needs to do so in the context of complex markets. This introduces two substantial challenges to realising effective solutions.

The first is that different stakeholders will have different motivations for participation, especially when some originate

from different industries, countries or cultures. Everyone needs to agree on the same rules or the value of participation will be undermined for all parties concerned. Yet the larger the group gathered to address a challenge, the greater the chance that someone will not understand or support all of those rules. The second is that the collaborative stakeholders are only one part of a puzzle. No matter how broad the collaboration observed in a market segment, it will never be uniform. Third parties - who may be completely uninterested in collaboration with the aforementioned stakeholders - can also have a profound impact on the collaborative endeavour in question. Therefore collaboration will inherently be subject to disruption from disinterested (or openly hostile) third parties.

The first situation can be illustrated by considering a single supply chain where companies are competing to develop components, companies are competing to build products, and companies are competing to put their badge on products and sell them. In areas like software or consumer electronics, the companies may have a development as well as purchasing relationships, and therefore collectively contribute to certain shared platforms that enable the deployed products. Each collaborative stakeholder has subtly different motivations for participation. If a single company tries to gain an advantage by bending the rules around collaborative development, then all the other companies will have a good reason to rethink future sharing.

The second situation can be illustrated by considering a market area which contains both collaborative stakeholders and third parties who can impact interaction but have no investment in its continuation. For example, if some companies choose to collaborate on software to reduce Research and Development costs, there is a motivation for a third party to interrupt or halt that collaboration as a competitive measure. The intervention may be

the form of enticing individual companies into rival initiatives or it may be in the form of aggressive intervention through patent litigation or similar measures. Regardless, causing collaborators to dissolve or reduce their interaction will provide relief to a competitor, and is therefore ample motivation for such actions. Of course, it also introduces the question of whether the actions are motivated by true competitiveness or attempting to obtain a form of market stasis, but that is largely a discussion for another time.

*"There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things."*

Niccolo Machiavelli

Open Innovation has a long history, a high rate of adoption, and is accompanied by compelling economic figures. It clearly offers a lot of potential to solve important challenges in the context of increased globalisation and competitiveness, particularly with regards to advancing research and the application of existing solutions to new areas. However, it is also somewhat fragile, and depends on a certain amount of goodwill between stakeholders, a certain degree of fairness in markets, and a certain amount of recourse for injured parties when either goodwill or fairness is found to be lacking. While critics may object at this point and suggest that special exceptions cannot be made for one approach to technology or creativity, it can equally be proposed that a certain expectation of goodwill and market fairness is a long-established precedent in the use of Intellectual Property. The real question is really whether the existing measures, largely born of a time when what is now termed Closed

Innovation was dominant, are still equitable in the context of the expanded marketplace we see today.

The adoption of Open Innovation by so many parties is not based on potential alone, but rather is informed by a series of social, economic and creative imperatives. In this context the discourse naturally transfers away from innovation per se, and instead towards the observable evolution of markets facing increased complexity, competition, and commodification. In such a situation, the value added by each individual company and each individual product is inherently smaller and less exclusive than in simpler economic times, but simultaneously the pooling of knowledge and the development of common platforms allows for sophisticated solutions to be introduced faster than before. The question is how do modern societies address the challenge of ensuring that Open and Closed approaches to innovation are allowed free, fair and complete competition in this context. Answering this question is the challenge of this coming decade, and it inevitably means that our understandings of “openness”, “innovation”, “competition” and “fairness” will be challenged, redefined, and reapplied. So they should be.

*"The greatest danger in times of turbulence is not the turbulence; it is to act with yesterday's logic."*

Peter Drucker

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