



Recent Research on the Impact of Increased Openness and How to Benefit from It

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Four Recent Papers Examine the Impact of Increased Openness

- Of Mice and Academics: Examining the Effects of Openness on Innovation
- Climbing Stop the Shoulders of Giants: The Impact of Institutions on Cumulative Research
- Intellectual Property Rights and Innovation: Evidence from the Human Genome
- Scientific Problem Solving through Broadcast Search: InnoCentive.com

[Of Mice and Academics]

- By Fiona Murray, Phillippe Aghion, Mathias Dewatripont, Julian Kolev and Scott Stern
- Compares citations in follow-on research to research on “open” vs “IP-protected” mice
- “may increase the overall flow of research output”
- “closely associated with the...exploration of entirely new research lines.” IP reduces the “diversity of experimentation that follows from a single idea,” key as progress in science is not “linear”
- Citations more likely to be found in applied research journals

Climbing atop the Shoulders of Giants

- By Jeffrey L. Furman and Scott Stern
- Compares citations in follow-on research to research using materials from Biological Resource Centers vs closed archives
- Articles based on BRC materials got 220 percent more citations
- Citation rates increased by 50-125 percent for materials transferred to open archives
- 3 to 10 times more cost effective to increase funding of BRCs than funding new research

Intellectual Property Rights and Innovation

- By Heidi Williams
- Compares publications and commercial developments resulting from Celera's IP protected sequencing vs Human Genome Project's findings
- IP reduces the diversity of scientific experimentation.
- Reductions on the order of 30% in subsequent gene-level scientific research and product development (gene based diagnostic tests)
- Celera's short-term IP appears to have had persistent negative effects on subsequent research and product development compared with HGP data that was always in the public domain

Scientific Problem Solving Through Broadcast Search

- By Karim Lakhani
- InnoCentive “broadcast” problems to 80K self-selected “solvers” and paid them for best solutions
- Many winning solvers came from outside the problem’s field. “Local search” limited solution set; alternative approaches ignored—or not perceived

The Impact of Increased Openness

- Leads to increased citations in follow-on research
- Promotes diversity in follow-on research and pursuit of new research pathways
- Encourages intensity of research and movement toward applied research
- Speeds commercialization of research results
- Demonstrates value of unforeseen contributors
- ***Together these papers show that increased openness has clear and demonstrable benefits***

Some Thoughts on Adding Value

- Intellectual property protection and openness/sharing offer mirror images
- IP theory: incentives for innovation come from ability to monetize which requires control over the creation
- Sharing based on the ability of anyone to add value. The broadest possible distribution increases the likelihood of gains: “With enough eyes all bugs are shallow.”
- Sharing is not incompatible with someone in control e.g. Linux

How To Compete If Access is Free: Some Lessons From IT

- Get your technology in the open standard because you know the technology better than anyone else
- Make your money by innovating on top of the new standard
- What is freely accessible is always changing; help customers keep up and maximize their benefit
- Provide new and improved tools to increase the value that they can gain from what is accessible
- Focus on what it is that your customers do best; do for them what you can do better.

COMING SOON AT AN INTERNET NEAR YOU!

- An analysis of the impact of the NIH public access policy
- The arguments for and against the policy and its extension to other federal funding agencies

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