

OPEN INNOVATION FOR FINANCE RESEARCH

by Jason Potts | RMIT Blockchain Innovation Hub, RMIT University

Overlap.Finance is the first open innovation platform for finance research to produce alpha.

INTRODUCTION

The institutional architecture of finance research and innovation in discovering alpha has traditionally been organised as a specialist function within each financial firm. This closed-form organizational architecture is a mechanism to manufacture and protect competitive advantage. But it is also wasteful and inefficient from a population perspective, as a great amount of duplication occurs.

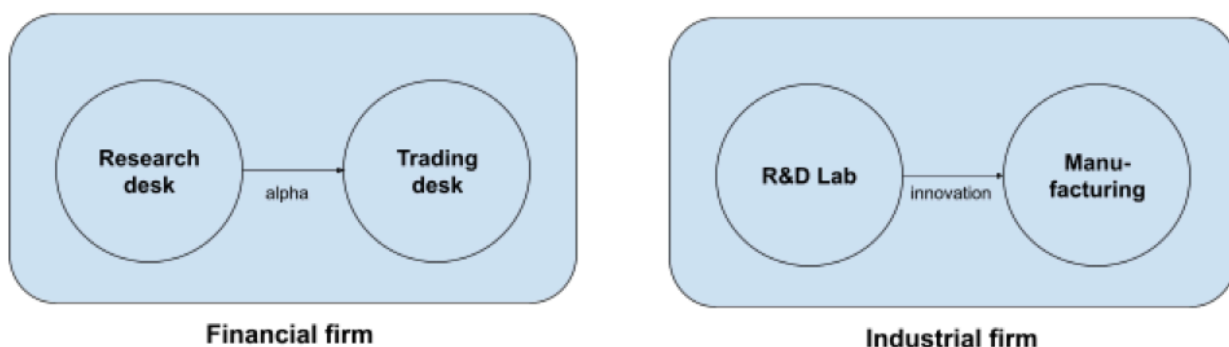
Open innovation, sometimes called user innovation (von Hippel 1988, 2005), is a new organizational architecture for innovation which addresses the main weakness of the closed innovation model, namely that it fails to exploit either specialization (i.e. cooperation under the division of labour) or local and tacit knowledge (which is held by users of a technology or product). Open innovation continues to grow in importance as the industrial and consumer economy embraces digital technologies that lower the cost of pooling and sharing data, know-how and tools (Benkler 2006, von Hippel 2017, Potts 2019, Potts et al 2021). In this paper we argue that financial research can also benefit from open innovation by building a platform economy to support an innovation commons of financial data and toolkits for analysis.

WHY CLOSED INNOVATION

The production of finance research has traditionally been undertaken within a trading enterprise. For instance, a research desk internally produces and then feeds analysis to a proprietary trading desk, all within the same organization. We identify this as an input into alpha, as the insight and analysis that forms the basis of, or is the crucial input to, a successful trading strategy, and which is manufactured from data and information using analytic tools, and which enables excess returns over a risk-adjusted benchmark index.

In a competitive trading environment, each trading enterprise will have its own in-house research operation (as in the Figure below). This is much the same way that in the industrial economy, each large manufacturing firm, whether in chemicals, automotive engineering or consumer electronics, would operate an R&D lab that would supply research and lead new product development for the manufacturing operation.

closed innovation



These industrial R&D labs would sometimes do more basic research, and sometimes seek to publish that work in scholarly journals, but largely they provide a critical input, which is a major source of competitive advantage, into the business, irrespective of whether it is finance or manufacturing. Typically, the outlets of R&D labs would seek to be protected through intellectual property protections, or other models such as long term research contracting or secrecy. But the basic problem that created is scale and specialization: to be effective, the R&D lab needed to do most things in-house, which meant that there were economies of scale in the R&D labs, and therefore in the scale of firms they supported. The closed innovation R&D lab is thus typical of oligopolistic industrial Schumpeterian competition, in which a small number of large firms compete on innovation, increasingly on a global scale, powered by high quality but closed-form R&D operations (e.g. the Bell Labs at General Electric, or the research labs at Rolls Royce, Siemens, DuPont, Ford Motor Company, 3M, etc).

This same research model has long dominated the corporate form of large financial organizations. Each major banking and financial corporation does its own research and keeps it firmly in-house, although general data services (i.e. feeds) are often contracted in. The reason for this is obvious, but worth noting: analysis is an input for the company's own (proprietary) trades, as well as advice to clients. It is a key source of competitive advantage. But unlike industrial research, financial research is much harder to protect using intellectual property, and it often decays very quickly (it has value only when executed before some other party discovers it). For this reason financial research is done in house - for secrecy and executed within the organization, for trust, control and speed.

WHY OPEN INNOVATION

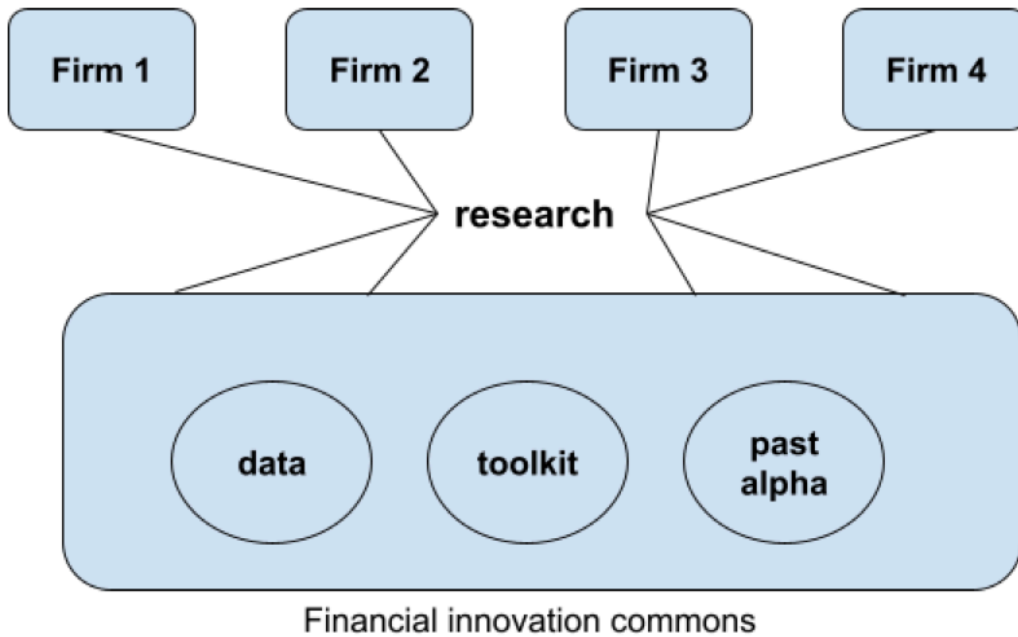
Open innovation has grown in importance and significance in recent decades (Harhoff and Lakani 2016), largely due to increasing digitisation lowering costs of cooperation and pooling, and with the powerful tail winds of open source software. But open innovation has been around for a long time (Allen 1983), particularly in domains where users have very specific needs and capabilities (von Hippel 1988), or where technological uncertainty is high and entrepreneurial discovery of opportunities requires assembling distributed information (Potts 2019).

Open innovation means not using intellectual property or other institutional ways of constraining disclosure of innovation outputs, but instead placing innovation inputs and outputs in the commons. Open innovation is not 'giving away' innovation, it is not 'innovating as a public good'. For-profit businesses engage in open innovation for a variety of reasons, including to create demand for downstream products, to pool resources to create a common input and exploit economies of scale (e.g. patent pools), or to deny competitors an advantage (Jacobides et al 2006, Potts et al 2021).

OPEN INNOVATION FOR FINANCE

Can alpha be produced in the innovation commons? On the face of it it seems unlikely, given that financial research is a primary and exclusive input, and that is a non-rival good. But finance research in search of alpha has many similar features to industrial R&D that make it conducive to open innovation. Specifically, it benefits from increased scale in creating input resources for research, especially data and tools. Whether this data, for instance, is in an open commons, or a trust (Coyle et al 2020), or an open access platform is an institutional design consideration. In principle, it is possible to conceptualise a research infrastructure, as a platform that is relatively open, such that some access control and internal governance will be needed to ensure that rules are followed, and to remove deliberately bad actors from the system, yet can provide a deep and rich pool of input resources to financial research for mining and discovery, i.e. an innovation commons for finance research.

Open innovation



But so far there has been very little development of open innovation platforms for finance (Oliveira and von Hippel 2011). We argue that this is in part because a well incentivised and well governed platform has never been built. That is the opportunity for Overlap.

PLATFORM, COMMONS, MARKET

The Overlap research platform is not an open public resource, but an access controlled and managed commons. It has governance, in order to ensure that rules are followed (and can be changed where necessary), and that participants are well-treated. The Overlap research commons is a repository of data and tools and other inputs into finance research, and a space to post and upload research outputs. But in providing this platform, the Overlap research platform is also a search engine and matching market, enabling researchers to showcase their skills and abilities to interested counterparties. It is also a space for information exchange, from official information to rumours and trade gossip, all of which is valuable for colouring and contextualising research and other information. Fundamentally, Overlap research platform, as a new form of open innovation, is a financial research ecology.

References

- Benkler Y (2006) *The Wealth of Networks* (Yale University Press: New Haven)
- Cockburn I, Henderson R, Stern S (2018) The impact of artificial intelligence on innovation. NBER working paper 24449.
- Coyle D, Diepeveen, Wdowin J, Tennison J, Kay L (2020) *The Value of Data*. (Bennett Institute for Public Policy, Cambridge)
- Jacobides M, Knudsen T, Augier M (2006) Benefiting from innovation: Value creation, value appropriation and the role of industry architectures. *Research Policy* 35:1200–1221.
- Harhoff, D., Lakhani, K. (Eds.). (2016). *Revolutionizing innovation: Users, communities, and open innovation*. Mit Press
- Mention, A.-L., Martovoy, A. (2013) *Open and collaborative innovation in banking services: Evidence from Luxembourg*. Luxembourg-Kirchberg: Public Research Centre Henri Tudor
- Potts J (2019) *Innovation Commons: The Origin of Economic Growth* (Oxford University Press, Oxford)
- Potts J, Harhoff D, Torrance A, von Hippel E (2021) 'Social welfare gains from innovation commons: Theory, evidence, and policy implications
- Schueffel P, Vadana I (2015) 'Open Innovation in the Financial Services Sector - A global literature review' *Journal of Innovation Management*, 3(1): 25-48
- Oliveira, P., von Hippel, E. (2011). Users as service innovators: The case of banking services. *Research Policy*, 40(6), 806-818
- von Hippel E (1988) *The Sources of Innovation*. (Oxford University Press, New York)
- von Hippel E (2005) *Democratizing Innovation: The Evolving Phenomenon of User Innovation* (MIT Press, Cambridge, MA).
- von Hippel E (2017) *Free Innovation* (MIT Press, Cambridge, MA).