

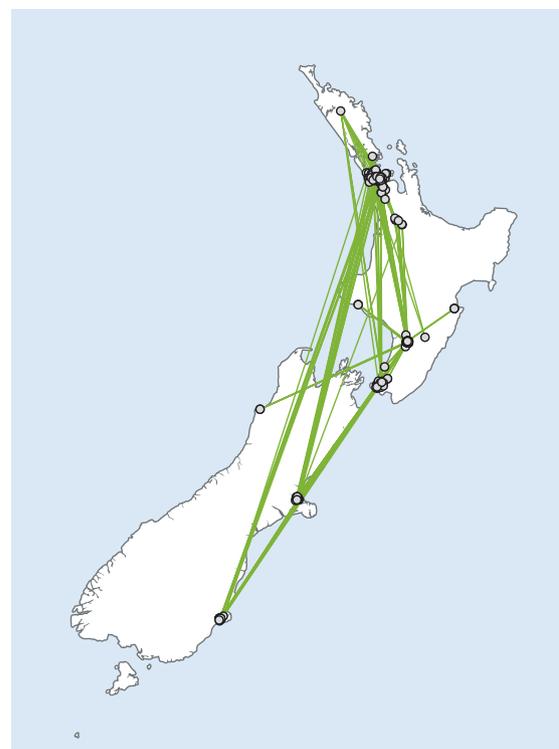
A DATING SERVICE FOR TALENT

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In a city, valuable networks exist naturally without the need for high-level government intervention or special funding. Yet it is not feasible or desirable to move all our researchers to Auckland. Are there other things that can be done that would encourage collaboration?

In 2012, New Zealand's government asked what a high performing innovation ecosystem would look like. It concluded that 'A high-performing ecosystem would operate like a large innovative firm ... A large firm works towards a common goal, connects user needs to research and can align incentives within the organisation to turn ideas into value'. Unfortunately, studies show that firms are only able to do this when they focus on core technologies. Research by a number of economists finds that large firms struggle to manage diverse research portfolios. For instance, Josh Lerner at the Harvard Business School and his colleagues found that innovation improved at large firms after one division was separated from the others. Amit Seru, as part of his PhD thesis at University of Michigan, found that when firms take over other firms from another industry, the innovation performance of the conglomerate worsens.

These studies suggest that the set of diverse research activities that make up an innovation ecosystem are not best managed by a centralised authority, whether that authority is a government or a corporate executive team. While bureaucrats would no doubt prefer that the innovation ecosystem could be operated this way, the reality is that a high-performing ecosystem look nothing like a single centrally managed firm. Innovation ecosystems consist of a complex collection of separate yet interdependent organisations, firms and individuals. A successful innovation ecosystem will not have a Chief Executive or a Board of Directors, let alone a senior management team. Rather, a functioning innovation ecosystem will consist of a complex web of interacting and interdependent firms, entrepreneurs and research institutions. How, then, can we improve the performance of these networks?



A network of 450 inventors, the largest in New Zealand.
Source: *Get off the grass*

In early 2012, the government launched on its website a searchable database of most of the public funding awarded for science and innovation in the last two decades. You can search for grants awarded by organisation or keyword, but you can't find out who did the research or what the outcomes were. As it currently stands, this tool is of very limited utility both in its coverage of

the innovation system and in the information it contains. We challenge the reader to use this tool to discover what publicly funded research the authors of this book have been involved with. The government is investing a large amount of public money in research and development in New Zealand with little transparency.

Innovators in cities benefit by taking advantage of their 'weak' links to a wider network, which allows them to identify complementary sources of information and capability. Yet if you visit the website of one of New Zealand's Crown Research Institutes, you will have a hard time finding out what the names and qualifications of its scientists are, what projects they are working on or even what scientific articles they published in the last year. At the time of writing, the government has struggled without success for almost a year to determine how many young scientists were supported by its funding. Quite simply, neither the government nor any other actor in the innovation ecosystem knows what research is undertaken in New Zealand. We don't know who is doing it. We don't know what their skills are. We don't know what they learned from their research.

This highlights perhaps one of the biggest barriers to collaboration in New Zealand: the innovation system's lack of openness and a consequent absence of self-awareness. We argue that instead of trying to manage the innovation ecosystem, the government should try to better describe and understand it. By mapping our innovation system, and making as much of this map open to innovators and entrepreneurs as possible, government could create a platform on which the rest of the country could build a city of four million people.

The World Wide Web has greatly increased our ability to find and share information with people around the

planet. Unfortunately, much of New Zealand's scientific output is locked behind paywalls. Although the New Zealand government requires its researchers to report the scientific articles they publish, almost no use is made of this information.

Even those with full access to a good selection of scientific journals (a select few at the biggest universities) will find it hard to locate researchers in New Zealand working in complementary areas. A New Zealand firm that needs technical assistance will likely need to talk to several different uni-

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versities or CRIs, with no guarantee of finding the right expertise. Few Crown Research Institutes let staff to maintain up-to-date web pages that detail their research history or achievements. Even in universities, where scientists are encouraged to have web pages, these are typically written for an audience of students or scientists in similar fields.

New Zealand's public scientific and technological capabilities need to be mapped and made searchable by the public, business, entrepreneurs and other researchers around the country. Some initiatives in this mould already

exist. ResearchGate, for example, is a social-networking site that allows scientists to ask and answer questions, share research papers and find collaborators. Google Scholar is another free online resource that builds on Google's database of scientific publications by allowing scientists to create a profile of their scientific publications and to track their influence as they are cited by other scientists. STAR Metrics is an effort by funding agencies in the United States to track the benefits of publicly funded scientific research by following the impacts of that research. It can scrape data from public sources like Google Scholar, using software to work out the research topics on which scientists are working. These tools are very helpful, but none of them do quite enough.

We need a tool or service that is as easy to use, as rapid and as scalable as a Google search. It should make use of information that has been accumulated by government through its funding processes. Confidential information does not have to be disclosed, but should be used behind the scenes to match scientists to firms with common interests. The search tool should also draw on the information contained in the scientific articles our researchers publish and the patents they file. If this tool were smart enough to match researchers not just with other researchers with coincident skills but also with those with complementary ideas and abilities, it could significantly enhance the ability of firms to source the right knowledge and expertise from our public science and innovation system. Building a dating service for innovators and entrepreneurs is a key step in building the city of four million people.

Excerpt from *Get off the Grass*, pages 183–186. See book review on page 111