What can the social and public sector learn about effective innovation from science, business and biscuits?

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Draft v2.3, 5 April 2016

Purpose

This paper aims to provide some practical points of inspirations for senior leaders of NGOs, governments and philanthropic organisations who are interested in becoming more effective at innovation for social purposes.

The imperative for effective social innovation

There is increasing pressure on social and public sector organisations to search for more effective and financially sustainable ways to create outcomes for people.

In a recent series of workshops that TACSI held with financial officers of NGOs, over half said their only alternative to transforming their business and service models was significant downsizing or closure. In Australia we're seeing the disability sector disrupted by the National Disability Insurance Scheme, aged care by de-regulation and consumer directed care whilst other NGOs are planning for a less predictable future, with increased level of competition from for-profit organisations, and decreased levels of government funding. It's becoming clear that good intentions are no longer enough for NGOs to sustain their organisations. At the same time, consumer directed models and pay-for-performance commissioning create a direct link between more effective models and financial reward. For the first time, for many NGOs, there is now a financial incentive to innovate, albeit one that is starting to attract new kinds of competition.

The imperatives for government to innovate effectively have been building for some time. There are longstanding social problems, such as child abuse and neglect, that conventional models of top-down policy driven innovation have failed to shift. There are a series of new challenges such as an ageing population, extremism and global warming that existing institutions feel ill equipped to address. And there are the challenges government has created for itself – to re-define its role in the sectors it is actively disrupting such as disability and aged care. This is happening alongside an increasing recognition that government needs to better connect with citizens, to better understand problems and to be more nimble in response.

In his report 'Learning from Failure: why large government policy initiatives have gone so badly wrong in the past and how the chances of success in the future can be improved'[1] Peter Shergold makes a strong case for government becoming more adaptive. "*The default position that new policies proceed straight to large-scale roll-out should be reversed and instead new policy proposals should include a trial or demonstration stage, allowing new approaches to be developed fast and evaluated early".* There is a small and growing international network of government based innovation labs, such as MindLab in Denmark and Policy Lab UK that have been leading this practice.

Philanthropic organisations also have an increasing interest in effective innovation. Several foundations in Australia are

[1] http://www.apsc.gov.au/publications-and-media/current-publications/learning-from-failure

setting out to fund breakthrough innovation rather than business-as-usual activities.

Eight factors for effective innovation

"Governments have always innovated. The Internet and World Wide Web both originated in public organizations, and governments are constantly developing new ideas, from public health systems to carbon trading schemes, online tax filing to high speed rail networks. But they're much less systematic at innovation than the best in business and science. There are very few job roles, especially at senior levels, few budgets, and few teams or units. So although there are plenty of creative individuals in the public sector, they succeed despite, not because of the systems around them. Risk-taking is punished not rewarded. Over the last century, by contrast, the best businesses have learned how to run R&D departments, product development teams, open innovation processes and reasonably sophisticated ways of tracking investments and returns". – Geoff Mulgan[2]

So what can the social and public sector learn from science and business about becoming more systematic innovators?

We've noticed a number of practices commonly embraced by the best innovators in business and science which we've rarely seen in our work with NGOs, government and philanthropic organisations in Australia:

1. Rigour: Using evidence to drive innovation

2. Process: Using an explicit staged and gated process to manage risk and control funding

3. Methodology: Using a proven and explicit methodology to build evidence that innovations work for people and are financially viable

4. Ambition: Spreading investment in innovation between incrementally improving existing solutions, developing near future solutions and developing more radical future solutions

5. Teams: Creating small dedicated teams to improve the efficiency and effectiveness of near-future and radical innovation

6. People: Staffing dedicated teams with people with specialist capabilities for leading, managing and doing innovation

7. Business models: Creating a financial model that makes innovation an ongoing part of operations

8. Obsession: A commitment to create value for people

This is not to say that business and science have all the answers when it comes to innovation – in fact, Vijay Govindarajan, Professor of International Business at Dartmouth College, claims that even Apple, one of his clients, says it does not understand how to do innovation perfectly.[3] Nor is this to say that NGOs and the government should operate exactly how business and science operate; they are very different. For example, the social and public sector typically deal with much more complex problems and work with more systemic interventions. However, innovation work in science and business, because it is so much more mature, does seem like it can offer the social and public sector some practical points of inspiration and also provide some challenge to the default approach of innovation taken by government and NGOs.

1 Rigour

Let's start our exploration not in business and science but with a counter-example from the world of international development. Playpumps is an innovation designed to make clean drinking water more easily accessible in the developing world by utilising the motion of children playing on a roundabout to pump water. In a presentation at the 2010 PopTech conference, philanthropist Kevin Starr provided a sharp analysis of the effectiveness of the innovation: 'Deep bore hole down into an aquifer. Joyful kids pushing a merry-go-round. Pump water up into a tower and everyone in the community has water. It's so seductive... and it's so wrong.'[4]

Playpumps was an alluring enough idea to attract $20,000,000 of philanthropic funding to roll out across Malawi. Jay Z held concerts to raise money, Barbara Bush and Bill Clinton both supported it. However, Playpumps was based on a number of untested, un-evidenced assumptions that ultimately led to its very public failure. The most striking element was a failure to test how children would actually use it. The roundabout requires fairly persistent play to pump enough water but once the pumps were installed, kids would play exactly like children in any playground. They would use the roundabout for a short period of time before getting bored and moving to the next activity – rarely long enough to pump a useful amount of water. Often this led to women having to push the roundabout and in some

[2] http://news.trust.org//item/20140725174408-phj96/

[3] *Video: The Other Side of Innovation: Solving the Execution Challenge*, Vijay Govindarajan, 2011, https://www.youtube.com/watch?v=6pl1KTNA1G0

[4] Lasting Impact, video of conference presentation by Kevin Starr featuring Playpumps, PopTech conference, 2010, https://www.youtube.com/watch?v=UMEpvxGBkFU

instances the community replaced the Playpump with a reliable hand-pump.

Most social and public sector organisations have had their Playpump moments – an idea that sounded 'innovative', was funded but ultimately didn't work because it was based on a set of assumptions that turned out to be false. Spreading innovations without first testing out the assumptions on which they are based is a high-risk approach to innovation – it's also the default approach of government and NGOs. Senior leaders, ministers and CEOs regularly dictate ideas that become organisational or national policy without testing. There's no shortage of failed innovations based on senior decision makers' guesses about what people want and need, rather than evidence from real life.

When it comes to innovation, business is rarely willing to engage in the levels of risk taking that are widespread in the public and social sectors. In most areas of science, we've gone so far as to outlaw spreading innovations without appropriate evidence. To bring a new cancer treatment to market entirely based on your own guesses about what will work is simply illegal. The regulatory bodies demand to see very specific evidence that the drug works as intended, with minimal adverse effects. Innovation in pharmaceuticals starts with explorations of basic questions of safety and effectiveness, and continues through a staged process that aims to reduce risk even further.

It's common to hear about evidence-based policy and programmes in the social and public sector, but rare to see evidence-based innovation. For example, research suggests that less than 50% and possibly closer to 1% of all US government programmes are based on evidence.[5]

2 Process

To develop a new pharmaceutical product in Australia is a multi-stage process that starts in the laboratory. When there is enough evidence that a new drug works in the test tube, testing can start on small animals first and, if successful, on larger animals. Only with a substantial positive evidence base can testing start on humans, and that might take years. Each stage is designed to reduce risk, increase the chances of success and reduce costs.

Developing new drugs is a particularly long and rigorous process, a decade between test tube and market is not uncommon, but much quicker variants of this kind of evidence driven staged processes are common – e.g. the innovation processes used by snack food companies, the process Starbucks follows to design new coffee cups, and the process NASA developed to manage the vast amount of engineering innovation required to get to the moon.

These organisations operationalise rigour by taking an extremely disciplined approach to maturing innovations over time through a series of 'gates'. At each 'gate', a certain kind of evidence is required to pass to the next stage. If the evidence is not up to scratch, a project may be required to repeat a stage or be stopped altogether. This way, only projects with the strongest levels of evidence receive ongoing funding. Weak projects are stopped early and strong projects reach maturity.

Whilst some might consider innovation to be a wild or even unmanageable process, business and science organisations that are effective users of innovation mostly seem to embrace a very disciplined management process for innovation, one that limits cost, reduces risk and maximises benefits.

3 Methodology

Outside of Chicago, in a large hangar-like building, is McDonald's prototyping facility. Here the company tests out new food product and store concepts using rough and ready approximations of stores built from cheap materials, and 'customers' co-opted from the street to buy burgers whilst their every move is analysed by researchers determining if a particular innovation is working or not, and how it can be improved.

McDonalds, like an increasing number of service-based organisations, has embraced a version of User Centred Design (also known as Human Centred Design or Co-design or Service Design) as a methodology to develop and evaluate innovations in their early stages. User Centred Design provides a practical set of methods for businesses to 'put the customer first'. *Prototyping* is a user centred design method that accelerates learning by building small 'fake' versions of final products and services, e.g. a new store concept made of cardboard, so they can be evaluated for their potential before investing in a whole store pilot, national or international rollout. It's a sophisticated version of trial and error that can spot and fix potentially expensive flaws in thinking early and cost effectively.

Another core user centred design method is *contextual user research*, a kind of rigorous hanging out – that aims to deeply understand users, their contexts, and wants and needs. To inform the design of a new razor for men, for example, a razor company would commission researchers to observe men in their bathrooms (or wherever else they

[5] It has also been estimated that between 50% and 90% of health and children's service systems in the US do not use evidence-based practice. Arney, F., Lewig, K., Bromfield, L., Holzer, P. (2010). Using evidence-informed practice to support vulnerable families In Arney, F. and Scott, D., Eds. Working with Vulnerable Families - A Partnership Approach (pp.247-274). Melbourne: Cambridge University Press. Westfall, J., Mold, J., Fagnan, L. (2007). Practice based research – "Blue Highways" on the NIH roadmap. JAMA, 297(4), 403-406. This book suggests less than 1% http://www.thedailybeast.com/articles/2014/12/23/can-the-u-s-government-go-moneyball.html.

shave) to deeply understand their shaving habits and the related opportunities for the company. To drive innovation in tea bags, a tea bag company commissioned one researcher to live in 10 different households, for 10 days at a time, observing and noting tea bag usage. We rarely see this level of commitment to genuinely understanding users in their context in the much more challenging work of designing social programmes or policy.

User centred design generates qualitative evidence from small sample research and investigation, but in the early stages of innovation that can be enough to decide if a particular project 'gets through the gate' and is deserving of further funding, or should be stopped.

User centred design is far from being the only innovation methodology in use in science and business, but it is perhaps the most applicable to the social sector given its focus on putting people first – something many social organisations aspire to do in their innovation work.

User centred design emerged as a discipline to design products and technology, but has since been extended to the design of services, systems, strategy and policy. TACSI has been working on developing a co-design approach particularly suited to working with vulnerable groups to create social innovation; it blends user research and prototyping with existing evidence and theory.

4 Ambition

Some time ago, a little-known company called Google did just two things: online search and advertising. At the same time, Google was investing in developing new products that it could bring to market in two to three years' time, products like Gmail, Google Apps and Google Maps, which are now part of its core offering. Google invests 70% of its research and development budget in improving current products, 20% in adjacent innovations that either use existing technologies or are for existing customers, and 10% in new products or services for new customers that could reach the market in 5-10 years' time. Currently, this future-focused part of Google's portfolio includes investment in self-driving cars and robotics.

To stay ahead of the competition, businesses like Google often fund three different kinds of research and development activities, each with appropriate processes and methodologies. They concurrently fund improving current services, developing new services for the immediate future and exploring more radical innovations for the further future.

The social and public sector rarely shows this breadth of investment. Most social innovation usually aims to develop something new for the immediate future.

Where services are to some degree 'working', investment in improvement could bring about significant benefit. Where existing solutions are failing to make progress on longstanding social issues such as child abuse and neglect, NGOs and the government will need to invest in a more ambitious agenda for innovation. Perhaps even more so than Google.

5 Teams

Who does the work of innovation in organisations depends on the kind of innovation. To continually improve its products and processes, Indian car company, Tata Motors, like many manufacturers, invests in the kind of continuous improvement first developed on the Toyota production line. Everyone on the production line has innovation as part of his or her job. Improvement is part of the culture. However, when Tata decided to challenge itself to create a $2,000 car – the Nano – it created a dedicated team to do the job with a dedicated budget that would focus solely on this considerable challenge. It didn't assign the challenge to people who were already working on the production line building $20,000 cars, nor did it give the challenge to the whole company to solve through its collective creativity. Now that the $2,000 Nano is on the production line, it's subject to ongoing improvement work by the production line staff.

Over ten years, Vijay Govindarajan studied companies, like Tata Motors, that have successfully embraced innovation and those that failed to do so. He found that companies that created innovations that disrupted existing markets regularly put together dedicated innovation teams – separate from the main 'performance' businesses but connected through a small number of shared staff. This allowed the majority of the business to focus on efficiency, whilst a relatively small team, with specialist capabilities, worked on more radical, less efficient innovation projects.

Govindarajan makes the point that more radical innovation will always be at odds with performance work and that the two need to be separate to be conducted effectively. This conflicts with the common practice in the social and public sectors of expecting staff already busy delivering current services to also develop radical innovations.

6 People

Successful innovators in business and science recognise that innovation is a specialist activity which requires specialist capabilities that can be acquired through training or hiring, and needs to be nurtured through coaching and incentives.

Even when organisations engage in incremental continuous improvement, they specifically train and coach staff in continuous improvement attitudes and methods.

Organisations carrying out more radical innovation work through dedicated teams. These teams consist of people who have specialist capabilities in leading, managing and delivering innovation.

People to lead innovation

The innovation director of a major French manufacturer and retailer of low-cost sportswear regularly created internal publicity materials to show the benefits of innovation in cents saved per product. The organisation holds low cost as one of its core values – so demonstrating cost saving is how he publicises the benefit of his team to the rest of the organisation.

Innovation work is intentionally disruptive, it makes organisations work harder to the future benefit of their customers and business, but these benefits are not always immediately clear to the core business and are easily perceived as an expensive distraction. Skilled leaders of innovation need to work hard to protect the space for innovation, in part by translating the benefits of innovation activities to the majority of the organisations in a compelling way. Good innovation leaders speak not only the language of innovation but also the language of business-as-usual. Leaders that make frequent use of innovation jargon can quickly find their units dismissed as irrelevant. If this is true in businesses that are somewhat predisposed to innovation, it's critical in organisations new to innovation where the core business might be actively hostile.

People to manage innovation

Managers of more radical innovation need to be comfortable in following a staged process without knowing the outcomes in advance. They need to be creative with getting the most from deliberately small budgets, and agile enough to move projects quickly through a gated process, each with different standards of evidence and methodological requirements. Govindarajan found that innovation teams are strongest when they are diverse – blending people from outside and inside the organisation and dedicated innovation staff with part time performance staff. Whilst a diversity of perspectives enhances innovation activities by providing a wider possible set of solutions, a team of individuals, each with different reference points, standards and norms of working brings its own management challenges.

People to do innovation

Those doing the hands-on work of innovation need to be skilled in the appropriate methodologies as innovation is such a new discipline and innovators, especially social innovators, rarely come fully trained, e.g. in user centred design. This often means hiring some team members who can build capability in others. Innovation consultancy, IDEO, talks about hiring 'T-shaped people' – capable generalists with a deep specialism, e.g. service design or ethnography.

Like managers, team members need to be comfortable in uncertainty, able to work in a time and resource limited environment and able to cycle through an ongoing loop of observing, learning , building, testing, critiquing, re-designing and re-testing.

7 Business models

This paper draws on examples from some of the world's largest and richest companies who lead their field in part because they have successfully made innovation an ongoing part of operations. Hardly any of the above six factors can happen without time and money dedicated to innovation. Whilst the social and public sector often see innovation as an occasional activity, important but not urgent, the businesses explored here derive significant value from innovation by making it an ongoing part of operations.

Innovation in NGOs

Most NGOs do not have the research and development budget of Google, nor do most government departments and companies. It's worth remembering that most companies are not lead innovators in their field, for every Apple and Google there are many 'fast-followers' who ride the coat-tails of their R&D budgets, creating products and services that are perfectly functional but often to a lower specification and a lower price. There is a strong case for most government departments and NGOs to become 'fast followers', adopting and adapting innovations from lead innovators in their sector or from other jurisdictions, but even this still takes some discipline of process.

NGOs that do want to be lead innovators will need to find business models that support ongoing innovation. TACSI gave this challenge to the financial officers of NGOs that had said in a TACSI workshop that it needed to innovate or go out of business. The financial officers proposed that their organisations could fund innovation by: liquidating assets, developing profit-making ventures based on core capabilities, shifting investment from research to innovation or collaborating with organisations who share the same client group to reduce the costs of innovation work. TACSI has worked with NGOs in Australia that are doing all of these things.

Funding innovation in government

For governments who aspire to be lead innovators, or have little choice in the matter, effective innovation could be funded by redirecting what is currently spent on high-risk, non-evidence-based innovation to the more disciplined, efficient and lower-risk approaches of the type used by the best of science and business.

The government could also redirect funding from isolated research-only activities such as Royal Commissions and Inquiries which generate significant insight into problems

and opportunities without developing, testing and spreading new solutions. For example, in the last decade in Australia, there have been 39 inquiries and Royal Commissions into child protection, costing billions of dollars. Most have concluded that radical change is required but in the same period, incidents of child abuse and neglect in Australia have more than doubled. Recommendations haven't led to the investment in exploring genuine future alternatives to the 'wrong system'[6] nor is there a staged process to turn insightful recommendations into practical innovations.

Collaboration with other governments could also be a viable way to reduce costs – few governments face challenges that are truly unique, though most act as if they do.

The government also plays a significant role as the almost exclusive commissioner of the NGO sector. This is a very powerful lever, but is often used poorly. Creating the funding conditions for innovation, e.g. by adopting a stage and gated process for commissioning, and providing capability building to NGOs could be one way to support the development of better social innovations.

Funding innovation through philanthropy

Philanthropy already has the financial model to catalyse innovation through granting. Enabling more effective innovation practice in grantees could mean shifting to more staged and gated processes, where smaller amounts of money are provided for shorter time periods according to certain criteria. The norm of providing an annual grant funding and expecting an evaluation and acquittal at the end of the year could actively promote inefficient, high-risk assumptions-based innovation.

8 Obsession

Perhaps the most important practice shared by the organisations explored here is an obsession – not with innovation – but with creating value for their customers or patients.

The businesses explored here want to create the tastiest biscuit, the best razor, the cheapest car, the best tea bag, the best online search. The topics these organisations obsess over may seem minor to the social and public sector but without this organisational and individual obsession, and the accompanying financial rewards, there would be little reason to engage with the rigmarole of innovation.

Innovation work is intentionally disruptive; it makes organisations work harder to the future benefit of their customers and business, but these benefits are not always immediately clear. Only obsession makes the inconvenience of innovation worth it.

Doing it yourself

So what can your organisation learn about effective innovation from science, business and biscuits? The evidence here would seem to challenge some widely held assumptions: that effective innovations result from unstructured activities, that innovation is driven by ideas and creativity, and that embracing a culture of innovation across the organisation will get results. More often than not, the organisations featured here get results by treating innovation as an ongoing and highly structured activity, driven by proven methodology, powered by specialist teams and an obsession to create value for customers or patients.

Table 1: Innovation assumption and practices

Common assumptions in NGOs & the government	Common practices in science and business
Effective innovations result from good ideas and creative processes.	Effective innovations result from a rigorous process of testing assumptions and generating evidence.
Innovation is a high-risk activity.	Innovation activities reduce the risk of failure and increase chances of success.
Innovation is an unstructured activity.	Innovation is a highly disciplined activity.
Innovation activities develop solutions for the immediate future.	Innovation activities concurrently improve existing solutions, develop new solutions and explore future possibilities.
Developing effective innovation requires a culture of innovation across the organisation.	Developing effective innovation requires a commitment to creating value for people. Continuous improvement requires a culture of improvement, but more radical innovation requires small, dedicated teams.
Innovation can be done with our existing capability.	Effective innovation requires specialist capabilities in leadership, management and delivery developed through training or hiring.
Innovation is an occasional activity.	Innovation is an ongoing part of operations.

[6] Roseby, Dr R, 2010, Media Release for Inquiry into the Child Protection System in the Northern Territory, 2010, pg. 3

Some social organisations will need to make a significant shift in their assumptions about innovation if they are to take on practical lessons from the best of business and science. The task may seem daunting but this paper tells a story of mature users of innovation – it's worth remembering that not one of these organisations would have started with teams, methodology and processes fully formed. Indeed, readers should take some comfort in Vijay Govindarajan's assertion that no company, not even Apple, knows how to do innovation perfectly.

Creating the conditions for innovation in NGOs and governments needs to be treated as an act of innovation in itself. Whilst the challenge might seem big, we could learn from the approach of the Mayo Center for Innovation (one of the leading examples of an effective not-for-profit innovation team) that works to the mantra 'Think Big, Act Small, Move Quickly'. Ask yourself, what are the small actions your organisation could take to quickly move towards being more effective at innovation? Maybe sharing this paper could be one of them, another could be discussing the questions that follow.

Questions

1. How strong are the practices for effective innovation in your organisation? Rate them in the table below. What practices would you prioritise for improvement?

Table 2: Self-assessment of practices for effective innovation

Practice for effective innovation	Strength of practice				
	1	2	3	4	5
	Weak				Strong
We test assumptions and use evidence to drive innovation and decision making.					
We using an explicit staged and gated process to control projects and funding.					
We use a proven and explicit methodology at each stage of innovation.					
We intentionally spread our investment in innovation between improvement, developing solutions for the immediate future and exploring future solutions.					
We create dedicated teams to carry out innovation for the immediate future and to explore future possibilities.					
We train or hire to build specialist capability in managing, leading and doing innovation.					
We have a financial model that makes innovation an ongoing part of operations					
Our organisation is obsessed with creating value for the citizens we serve.					

2. Would a more evidence-based approach to innovation be of benefit to your organisation?

3. Would there be any benefit in your organisation taking a more structured approach to managing and controlling innovation projects, e.g. a stage-gate model? What evidence would you look for in the project to move through a gate from one stage to another?

4. What innovation methodology would work for the challenges your organisation faces? Could a user centred design (Or co-design) methodology help you create greater value for the people you serve?

5. How should you spread your investment in innovation between improving existing solutions, developing solutions for the immediate future and exploring future solutions?

6. Do you work in an area where radical alternatives need to be explored because existing solutions are not achieving optimum results?

7. What are your experience and capabilities in leading, managing and doing innovation? How might you improve them?

8. How would you ideally structure, train or hire teams with appropriate innovation capabilities?

9. How could you develop your business model or create a new one to fund ongoing innovation? How important is ongoing innovation to the future of your organisation?

10. Do you need to create an increased commitment to creating value for people in your organisation? How could you do that?

11. Could your organisation be a lead innovator or should you be a 'fast follower'? Does market transformation require you to innovate quickly?

What can the social and public sector learn from business and science?

Increasingly, it's not only business and government that the social and public sector can learn from but the experiments with innovation that are happening within the sectors, globally and on our own doorstep.

In Australia, TACSI is working with many social and public sector organisations learning to become effective innovators. This paper is informed by many of the challenges we have seen them face, the support that we've been asked to provide and the advice we wish we could have given.

TACSI is currently working with state governments and philanthropic organisations that are developing alternative approaches to child protection and state child protection departments actively building internal innovation teams. We're working with NDIA to shape how it enables choice and control and disability NGOs looking to transform their business model for the new funding environment. We're working with state governments and philanthropic organisations that are changing their model of commissioning to encourage disciplined innovation and aged care organisations that are making use of assets and profits to capitalise investment in innovation.

These organisations are a small part of a small and growing movement of government, NGO and philanthropic organisations that are taking a more disciplined approach to social innovation, often using approaches that have originated in science and business and increasingly adapted for the social innovation.

Thanks

Thanks to all who have shared their stories, references and thinking to contribute to this: Carolyn Curtis, Nicholas Gruen, Martin Stewart-Weeks, Rob DiMonte, Sarah Pearson, Andrew Young, Ryan Hubbard, Suhit Anantula, Jennie Winhall, Richard Linington, Sebastian Geers and the attendees at TACSI's workshops at the 2016 CPA not-for-profit conference in Melbourne, Sydney and Brisbane.

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TACSI is The Australian Centre for Social Innovation - an independent not-for-profit dedicated to helping government, NGOs and philanthropy develop, test and spread innovations that change lives. www.tacsi.org.au

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Chris Vanstone started his career designing biscuits for the UK's largest biscuit company, cameras for Kodak and razors for Gillette. Over the last 16 years, he's been working to bring the rigour of product development to social problem solving in the UK and Australia – as a member of the Design Against Crime Unit at Central Saint Martins, The RED unit at the UK Design Council, Participle and TACSI.

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Examples in NGOs

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