
the

Humanitarian Leader

**Humanitarian innovation:
The next step for greater impact**

JENNIFER WILDE AND DAN MCCLURE



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Humanitarian innovation: The next step for greater impact

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Author Details

Jennifer Wilde

Jenniferwilde@innovationecosystem.com

Jenny Wilde has over 15 years of hands-on experience as a senior manager in humanitarian response and as an innovation expert. She has supported innovative organisations and initiatives in countries as diverse as the USA, South Sudan and Nepal. She has pioneered initiatives that break from conventional innovation models and enable global scale.

Dan McClure

Danmcclure@innovationecosystem.com

Dan McClure acts as a senior innovation strategist for commercial, non-profit and governmental organisations, specialising in complex system innovation challenges. He has authored a number of papers on system innovation methodologies and agile enterprises. McClure is the former chair of the Humanitarian Innovation Fund's Advisory Board and is actively engaged with aid sector programs addressing cutting-edge issues such as scaling, localisation and dynamic collaboration-building. This work builds on decades of experience as a system innovation strategist working with global firms in fields spanning finance, retail, media, communications, education, energy and health.

Editorial Office

The Centre For Humanitarian Leadership
Deakin University
221 Burwood Highway
Burwood 3125 VIC
Australia

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Cover image: TEAM Kaist robot during the DARPA Rescue Robot Showdown at Fairplex Fairground in Pomona, California, 5 June, 2015. The DARPA event challenges teams to design robots that will conduct humanitarian, disaster relief and related operations / Alamy Stock Photo.

Abstract

Since 2010, the aid sector has invested significant funds in innovation practice, implementing pilots and other practices borrowed from Silicon Valley. While this has supported some impact, the aid sector has now hit a plateau with innovation, struggling to scale what works, frustrated by ‘digital litter’ (unsustainable technology projects), trying to overcome the small innovation trap, and ‘pilotitis’ (fatigue from implementing small-scale projects that never scale up). Many innovation leaders in the social and development sectors are realising that the ‘lean’ innovation approaches commonly used do not work well for the complex challenges in their sector.

To create the change and impact that our work demands, organisations must be able to work with real and messy challenges, and create large-scale innovative solutions. The sector is beginning to use system innovation to move past simplifying challenges in lean experiments and hackathons. This paper discusses how system innovation can support humanitarians to take the next step to innovation effectiveness, to create real impact in communities.

Introduction

When the team at ALNAP released its final review recommending a systematic approach to humanitarian innovation (Ramalingam et al., 2009), it was overwhelmed by the response that followed. Just ten years later, most aid agencies have declared innovation to be a core element of their work and organisational strategies (Dette, 2016). From the Humanitarian Innovation Fund (HIF) and Global Alliance for Humanitarian Innovation (GAHI) to humanitarian labs, funding and studies have proliferated around the world (McClure & Gray, 2015). However, despite a few notable successes, innovation work in the sector remains relatively superficial (Parker, 2019). It has failed to transform the humanitarian sector and has met an ‘impact plateau’ (McClure, 2018). With a few exceptions, successful humanitarian innovation has worked within existing paradigms, along clear, well-established trajectories, seeking to “do what we do but better” (Rush et al., 2021), without seriously challenging existing structures and processes (Aleinikoff, 2014). Too many promising pilots have proved unable to scale, and little progress has been made towards addressing some of the important large-scale problems.

While there are many reasons for this failure, one of the hidden causes is that humanitarian innovators have borrowed innovation practices from Silicon Valley that don’t suit most of the challenges they are applied to. Many of the innovation practices that are currently used in the sector come from the methods of ‘fail fast’ or ‘lean start-up’. While this has supported some impact, the challenge is that the innovation methods taken from Silicon Valley were made to create small-scale ‘fast tests’ or pilots that could be thrown away until an idea technically worked and someone would pay for it. While this is a powerful technique for innovating small-scale products and technology, it doesn’t work well for the complex challenges in the humanitarian sector.

Humanitarian innovators have borrowed innovation practices from Silicon Valley that don’t suit most of the challenges they are applied to.

Humanitarian innovation practices are dominated by business approaches focused on management and markets (Bloom & Betts, 2013). But humanitarian innovation often works in fundamentally different contexts (volatile, changing contexts) and with complex problems (for example, providing portable water at a low cost in the desert for six months). In Silicon Valley, innovation is “all about making new stuff, agility, and adaptability, and knowing what’s next. It’s fast. It’s cool. It wears a hoodie” (Fabian & Fabricant, 2014). Working out how to deal with faecal sludge is ... not that. In fact, if solving world hunger was fast and cool, someone would

probably have already done it. Moreover, the notion that innovators should “move fast and break things” seems somewhat inconsistent with the work of a sector focused on finding effective ways to fix things (Currion, 2019).

For the last decade, humanitarian innovators have mostly focused on lean innovation practices. Ten years on, many of these same innovators have already felt the limits of what lean and experimental innovation practices can provide. They have seen the complexity of many of the challenges that humanitarians face and how poorly it fits into narrow, short pilots with tools that allow for one type of user or beneficiary. So, what do we mean by lean innovation?

Experimental lean innovation

Experimental innovators use lean methods and run hackathons, utilise user-centred designs, and pursue pilot projects to fulfil specific needs. Once proven successful, the concepts tested in pilot programs are scaled up and deployed to support humanitarian operations around the world (McClure, 2018). This kind of innovation can be highly effective for small-scale ideas that can be tested, developed and mass-produced for a functioning market, such as a new mobile app.

Experimental innovation tends to work on the assumption that a successful pilot will somehow move to scale through a high-resource model such as an acquisition or ‘go-to-market’ process of a large company. However, working pilots are not miniature versions of scaled-up programs. Focused on quickly testing a basic concept, they are intentionally short-term, simplified and isolated from real-world processes (McClure & Gray, 2015). A pilot program is not concerned with managing local politics, training local businesses, setting up ongoing maintenance programs or changing behavioural norms (McClure & Gray, 2015). In the real world, of course, effective implementation will require attention to all of these things.

In a humanitarian context, the lean start-up approach cannot continue experimenting with combinations of product and market until they achieve ‘product-market fit’ (Mollick, 2019). Nor can innovators rely on receiving rapid user feedback to inform their work. The potential for direct feedback from disaster-affected populations to donors and humanitarian agencies is very limited and, having few choices, “beneficiaries ... frequently accept a flawed intervention rather than no help at all” (Twersky et al., 2013). There are also serious ethical problems associated with the notion of simply experimenting on vulnerable populations and accepting a large number of failures in order to develop the best solutions in the long run (Babineaux & Krumboltz, 2014). Experimental pilot projects that lack careful consideration of existing systems may exacerbate or stimulate conflicts within a community, or further marginalise particularly vulnerable groups (Betts & Bloom 2014).

Three major areas where things go wrong using lean innovation

1. The innovation is too small

Lean innovation methods used most by humanitarians are designed to produce narrowly focused innovations for well-understood problems. These are powerful tools for developing something small such as a mobile app. Unfortunately, the sector has very few challenges that only need a specific piece of technology by itself to tackle them. Responding effectively to refugee health or addressing challenges of child protection needs more than a lone piece of technology. For example, by using a lean innovation method, we may get a better toilet, but communities may not use it, it may be too expensive, or it may not be possible to maintain it. The methods work with a small part of the challenge, but not the whole contextual challenge. So, when these 'lean' techniques are used on broader complex challenges that we have in the aid sector, they struggle to create complete, sustainable solutions.

As Hans Rosling, physician and public health strategist, said about new mobile app technologies:

We had hundreds of healthcare workers from across the world flying in to take action, and software developers constantly coming up with new pointless Ebola apps. Apps were their hammers and they were desperate for Ebola to be their nail (2020).

2. The pilot is not sustainable impact

Often innovation promises quick results from modest investments—this is attractive to humanitarians. An innovation project can be conceived and run within a few months. This works well with small ideas that can

be mass-produced into a functioning market. It fails badly in a humanitarian setting with bigger problems, different markets and financing structures. Humanitarian challenges require much more than an initial working pilot to create sustainable impact.

Consider a new tablet that might be used to enhance both classroom and at-home learning. This tablet might leverage cutting-edge technology, but all by itself it can't do much at all. To create a new learning experience, an education system will be needed to support the technology; teachers will need to incorporate the new tool into their instruction; and school administrators will need to evaluate and choose the new products and convince parents of its value. Looking further afield, a teaching revolution is likely to require new forms of content which will draw in educational experts, content designers and publishers. All this change needs to be endorsed by regulators. Success depends on the whole system working together, not just the clever new technology.

3. The real world is messy and complex

There is a common assumption that once an innovation has proven its effectiveness, it can be 'scaled' across many different contexts. This is seldom the case in practice.

Humanitarian challenges have diverse actors (from a ministry of health to mothers, for example), volatile contexts, and are just generally difficult to address. There are also a range of different ways the sector grows innovations, for example through coalitions, global process changes, or new funding practices. The methods we have taken from Silicon Valley do not well support how humanitarians create impact at scale.

Simple Problem Ecosystem for Student Education

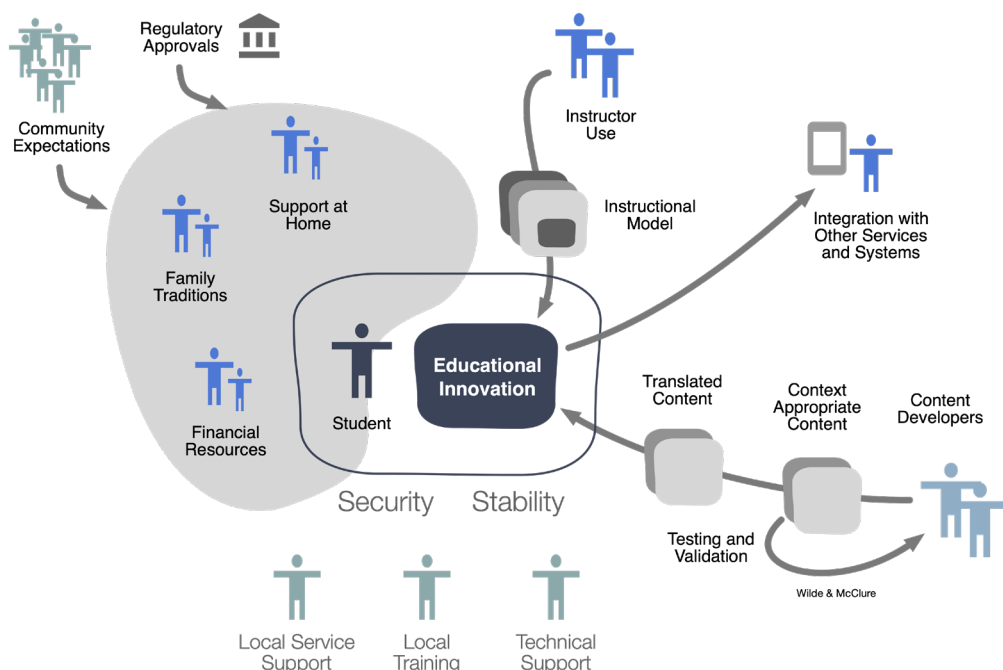


Figure 1: Education innovation: a whole-system approach (McClure and Wilde)

Real World Messiness

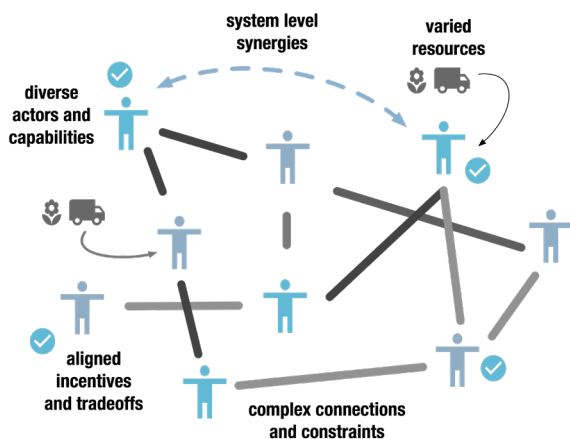


Figure 2: Real-world messiness framework (Wilde & McClure).

So, while lean innovation can work for some challenges, it doesn't work for many of the challenges in the humanitarian sector. At this point, some humanitarians then fall back on the common project management practices the sector (and world) have used for many decades to make broad change. Boardrooms of executives or senior leadership teams in-country will say, "Can't we just use the processes that work for our regular projects?"; and so lean/experimental innovation is silenced and long-term research projects or multi-year project roadmaps take over again. We term this 'engineered innovation' because it grew out of engineering processes that brought the world a diversity of innovations that we take for granted today, from mass-produced cars to towering buildings. It is easy to see why the sector comes back to what it knows well when it is not seeing successful innovation scaling using lean methodology.

Let's further consider engineered innovation and what outcomes it can create for those affected by crisis.

Engineered innovation

Engineered innovation created success for larger, well-known problems with low-level complexity. This may include problems such as creating a better prosthetic foot with the International Committee of the Red Cross (ICRC); working on a highly defined project which must meet specific standards over a two-year research project; or working on big projects that are divided into smaller parts, which can be delivered separately according to rigid schedules and plans. It includes well-understood, repeatable engineering projects such as building a road or a school (McClure, 2018), as well as a range of incremental improvements to existing products and processes. It can be highly successful for the right kinds of problems. For example, the International Federation of Red Cross (IFRC) shelter kit provides a selection of tools, fixings and tarpaulin sheets to assist with repairing and constructing emergency temporary shelters and other structures. This was not a new idea; it simply replaced the existing diverse range of shelter kits with a standardised version which had defined and tested specifications (Gray & Bayley, 2015).

Like all engineering projects, the IFRC shelter kit was successful because those involved had a precise and accurate understanding of exactly what it would involve and how it would work in practice (McClure, 2018). In general, however, humanitarian aid is delivered in such diverse, shifting contexts that it is almost impossible to predict and plan for every possible scenario. Moreover, few humanitarian challenges can be resolved by simply building a new structure or introducing a new widget. As Sasha Kramer, co-founder and executive director of SOIL, observed:

Building the toilet is the easy part. The most challenging step is making it work on the ground. The true challenge is not technology, it's really an issue of access, social mobilisation, and ongoing maintenance of the toilet (Costanza-Chock, 2020).

Few humanitarian challenges can be resolved by simply building a new structure or introducing a new widget.

In a similar way, while engineering practices may fit some innovation challenges in the humanitarian sector, they are not appropriate for most of the challenges for which the sector chooses to use innovation.

Once leaders and teams have struggled through solving complex innovation challenges using both lean and engineering methods, many innovators sense that something does not fit but are unsure what other approaches to use. Just because the sector has complex challenges, it does not mean that we should abandon the whole innovation endeavour. Rather, we need to utilise innovation techniques and methodologies that account for the diverse and complex challenges in which humanitarian work occurs. It is time for the humanitarian sector to utilise system innovation.

System innovation

System innovation is now growing across the social innovation sector and being implemented by some leaders in humanitarian innovation such as United Nations Development Program (UNDP), Norwegian Refugee Council (NRC) or USAID. It is being utilised as a useful approach to innovate in complex contexts where both large-scale innovation is needed, and in contexts where the challenge or opportunity is not well known. In the humanitarian sector, complex challenges are unavoidable. Big, systemic problems simply cannot be addressed by building a new kind of toilet or designing a new mobile app, but rather an innovator needs to take in the whole problem and consider all the actors, resources and parts of the problem to make real, sustainable change. A powerful way to consider a whole problem and how a solution can create sustainable change with those it affects is by taking a systems approach.

Systems are all around us. There are easy systems to identify such as an educational system or a healthcare system. There are large systems such as the global food system, which shows how food growers are linked to food companies and to those who eventually buy and eat the food, the various policies, products and flow of capability, resources, infrastructure and more that sits around how food is created, moved and used globally. There are also small (but complex) systems, such as the cultural and behavioural systems that produce gender-based violence in Dadaab Refugee Camp, Kenya.

Even seemingly small innovations sit within broader economic, social, physical and political systems. For example, following Hurricane Mitch in Central America in 1998, Potters for Peace created a ceramic water filter production workshop in Nicaragua, distributing more than 5000 filters within six months through various NGOs. Similar workshops have since been established in more than 15 countries around the world, and tens of thousands of filters have been distributed by humanitarian organisations (Betts & Bloom, 2014). While this may appear to be a solid example of experimental innovation, the success of Potters for Peace actually relied on the ability of their innovation to fit into existing systems. For example, the relevant raw materials are readily available and affordable in rural areas around the world. Local people are accustomed to working with them and already store water in similar receptacles, so training is relatively straightforward and little behavioural change is required. The manufacturing process itself requires a relatively small investment and

is therefore readily accessible and replicable. Potters for Peace had already established good relationships with local subsistence potters, who were keen to cooperate in establishing new workshops and small factories. As local manufacture is particularly sought after in humanitarian procurement, the filters quickly drew support from existing humanitarian organisations. Finally, the endorsement of point-of-use water filtration by the UN and WHO provided legitimacy to the concept itself (Betts & Bloom, 2014).

Given the number of moving pieces involved in getting a ceramic water filter to work at scale, it should be clear that humanitarian innovators cannot begin to address the really big problems without a far more sophisticated approach to innovation. There are many great water filters in the humanitarian space that don't address the systems they will be deployed into and never make it past a pilot phase.

System innovation represents a new area of innovation practice for the humanitarian sector.

System innovation represents a new area of innovation practice for the humanitarian sector. It starts by acknowledging that innovation has to operate in complex, dynamic, multi-actor systems in which

Building an Ecosystem around a Cookstove

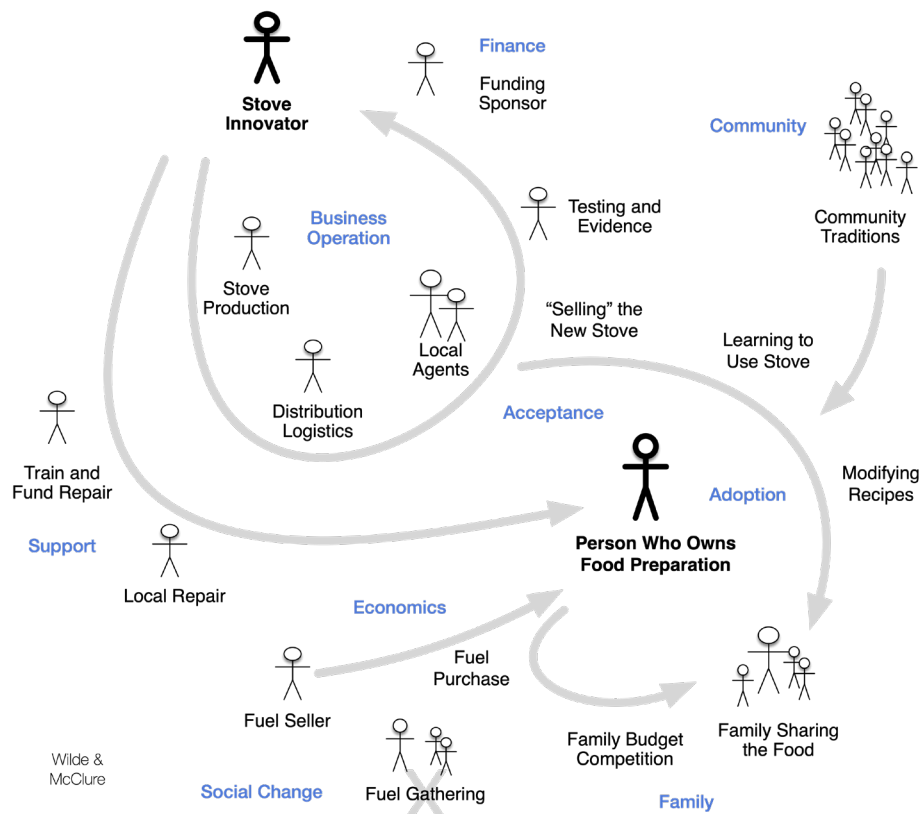


Figure 3: Building an ecosystem around a cookstove (McClure and Wilde).

participants cooperate, compete and conflict with one another depending on their current alignment of interests (Adner, 2017). People, processes and institutions within these systems are interdependent, so small changes can have unpredictable, cascading effects throughout (Rush et al., 2021). Systems innovators do not attempt to ignore or avoid complexity by focusing on specific individuals. Rather, they look at the big picture, mapping the whole complex web of people, resources and activities that constitute the problem (McClure, 2018). Then, they look for the point in the system at which innovation could have the greatest impact. Rather than managing risks through exhaustive planning, systems innovators deal with project risks through continuous learning and adjustment (McClure, 2018).

For example, when an innovator is building an improved cookstove, rather than using lean methods to focus on improving the stove for one type of ‘user’, or using engineered techniques of a two-year project to build and deploy a stove through a logframe strategy, a system methodology would start with understanding the many parts of the problem that the cookstove is addressing and the system it needs to succeed. The below model outlines the many parts of the problem that need to change for the cookstove to sustainably scale. It considers issues as diverse as testing and evidence (part of innovation management), learning to use the stove (family and community behavioural change), modifying recipes (cultural change), local repair and distribution (infrastructure changes), fuel purchase (economic and resource change) and many other parts to the problem that have nothing to do with how well the stove itself works, but everything to do with the stove’s positive outcome on families and its ability to scale.

The practice of system innovation is made up of a number of tools such as creating systems maps and seeing the bigger picture of that challenge and solution, and using practices such as ‘thin slicing’ (an approach to implementing innovation that takes multiple parts of a solution to test at the same time) to make change. It uses different approaches such as the one pictured below, which develops a systems map of the challenge, so the innovator understands what the world looks like now, then building a map of what the world looks like in the future when the innovation or solution is scaled. Lastly, by taking thin slices of change, learning and pivoting, an innovator can create a sustainable, scalable innovation that works on a complex, real-world challenge.

Simple Problem Ecosystem for Student Education

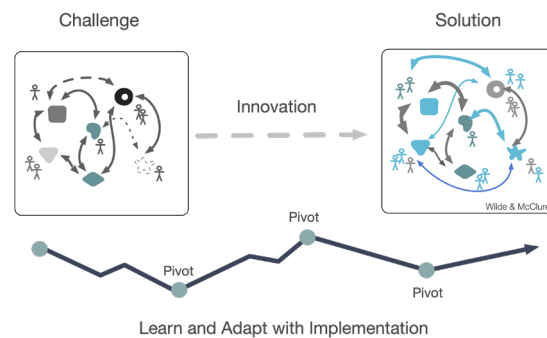


Figure 4: An evolving innovation journey (McClure and Wilde).

System innovation enables humanitarian innovators to advance truly impactful and ambitious forms of change in the real world. It allows promising solutions forged in the “crisis laboratory” (Bessant et al., 2016) to be developed and tailored to suit the needs of different local contexts. System innovation is not necessarily ‘cool’ and it does not wear a hoodie. It does, however, offer the tools and techniques we need to achieve transformative humanitarian innovation in a complex, messy world.

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