The Future of Lifesaving Stuff: A Transformational Approach to the Age Old Problem of Broken Supply Chains

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The problem

We’ve all seen it too many times. The empty shelves of a rural health clinic. An expensive piece of donated equipment collecting dust because of one missing part. Activities ground to a halt because of a lack of basic essentials. Across all sectors, massive gaps in efficiency and effectiveness exist because of broke supply chains. Without meeting such fundamental requirements, how can it be expected that more sophisticated innovations are ever realized?

In recent years, there have been important headway in addressing these problems. This includes increased use of information technologies, a focus on coordination and upgrading human resource capacity through training, certifications and the like. Yet, these improvements have been incremental - not transformational.

The answer could be partially derived from technology but even that line of thinking is filled with pitfalls. However, just as much as experienced humanitarians have seen gaps, we have seen the failures of misapplied and inappropriate technological fixes. As Ian Bogost describes it, new fixes and conditions create what is known as precarity where uncertainty is heaped onto end-users which makes them worse off. The answer is not more technology, but instead the right kind, in the right place and in the hands of the right people.

The opportunity

The reality is that there are transformative technologies available that are - and, even more importantly, in the future will be - available to those working to provide humanitarian aid. Any approach however needs to start with a keen understanding of the context and humanitarian principles. In many, but not all cases, those in our sector have a sound understanding of the context in which they work (especially compared to other sectors where those in the commercial sector focus on the bottom line and those in the military can’t go anywhere their GPS doesn’t tell them!). With this understanding, we do not support technologies or approaches that save labor such as “3D printed houses” or fixes that do not address issues of inclusion and vulnerability.

The other key element to understand is the type and place of technology. This can be approached in several ways but two concepts are particularly illuminating. Appropriate technology is one that is local and fitting to the context. This builds on the concept first advanced by Fritz Schumacher in the early 1970s. Such technology suits the socio-economic,
cultural, and environmental contexts in which it is used and promotes the self-sufficiency of those who use it. Examples include small-scale energy generation, various construction methods, different means of collecting and filtering water, and devices to increase mobility for those who have done without in the past.

At the same time, we are now living through an era of rapid technological change which has ramifications that are still being studied and understood. Digital technology has accelerated a range of developments allowing us to do things that would have earlier been viewed as science fiction. The smartphone is the most ubiquitous illustration but examples exist in many other areas: additive manufacturing, artificial intelligence, autonomous vehicles, biotechnology, nanotechnology, the Internet of Things and robotics. Together these form what is known as exponential technology which follows the law of accelerating returns in that its capacity, access, and cost-effectiveness as amounts increase. To be sure, there are negative impacts of these trends such as disruptions to labour and capital markets (including job, business, and intellectual property loss), an increase in anxiety due to rapid change, and an unintended burden on the environment. But the potential upsides are huge.

The evidence

Realizing that there is both a problem and an opportunity, we formed Field Ready six years ago to pioneer a new approach that is firmly grounded in the calls for localization. It combines and harnesses existing and emergent tech and techniques in humanitarian contexts in a variety of ways that addresses the problems discussed above. We follow an approach that is deeply rooted in participatory techniques (and the corresponding equivalents found in the commercial sector in what are known as human-centered design) and start to design and co-create solutions. Any aid agency worth its salt does this but what is special is that instead of relying on a slow, expensive and cumbersome supply chain, we make useful items in the field. We then openly share the objects and knowledge and try to get others to follow our examples. This approach is outlined in the diagram below.
Importantly, our focus is on people and their problems where they experience them. For Field Ready, technology is simply a means to an end; tools that help achieve clear goals. We use exponential technology as well as appropriate technology to carry out local manufacturing in ways that have never been done before in the field. A focus on human-centred problem solving is more important than simple application of technology. Instead of being weighed down by the constraints of traditional mindsets and bureaucratic inertia, we embrace complexity, abundance thinking and ‘skin in the game’. This philosophy is discussed in many places, including our blogs and in the recent book Managing Humanitarian Innovation.

Our non-linear process that enables us to work across sectors whether DRR, search and rescue, health, WASH, livelihoods, education or food security. In following this process, we engage in a number of practices which help us arrive at novel solutions to very difficult problems. These include having a bias toward action, not differentiating between ‘creative’ and ‘non-creative’ team members, and iterating by making lots of prototypes (which means allowing for failure but also for small successes that lead to bigger results).

Our growing list of programs and responses serve as evidence of this transformation. In Syria, our teams have locally made health supplies and a rescue technology that has saved dozens of lives. We’ve made soap in northern Iraq that led to a four-fold increase in handwashing amongst children. In Nepal, we helped a local entrepreneur develop a new cookstove which he turned into a viable business. We have repaired well-digging equipment in South Sudan and made household-level water filters in Colombia. We have even made radio antennas (for a DDR-related activities), hydroponic gardens (in besieged conflict areas) and fixed damaged solar panels (following hurricanes). Each year we train hundreds of people in this approach. The results of this has been aid that is faster and less expensive but also better because it involves end-users. On average, we finding that items made can be done for a fraction of the price. And we are working on even bigger initiatives including distributed manufacturing and mass production.

Now that’s a transformation.

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