

Why an academic and humanitarian technology innovation partnership can become an unhappy marriage.

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Abstract

Increasing numbers of collaborations between the humanitarian and academic sector should have led to a significant increase in the amount of quality technology reaching the field and having a scaled impact. It has not. Following on from research with key stakeholders in these collaborations, we lay out the key reasons why there is often such a disconnect between high-level strategic intentions, and practical implementation. These are broken down into misunderstandings over: resources; deployment strategies; and roles and responsibilities. Through articulating such pitfalls, it is hoped that this commentary can contribute to smoother collaborations and greater impact.

Introduction

Working together seems like a good idea — especially when working towards a ‘noble’ goal. This logic has meant partnerships between the humanitarian and academic sector have become common in recent years. However, little has been reported to date about the success and efficiency of such partnerships on a practical level. There is also a tendency to resist critical self-evaluation of how successful such collaborations actually are.^{1 2} In particular, as to when a project be considered a waste of finite resources. The reasons are easily deducible: neither the NGOs want to show a waste of resources to donors, nor academia want to show a lack of real-world impact which could affect the perceived quality of the research and future funding.³ As a result, such partnerships can often continue without adequate understanding of what will make them successful.⁴

Having witnessed many of these collaborations produce sub-par results, we have critically analysed these partnerships and found numerous pitfalls that may — if known upfront — have led to improving the partnership or to avoiding it all together. In addition to our experience, we held extensive workshops and wider discussions with both academics and those working in NGOs and were able to narrow the misconceptions to three main categories that reappear along the technology development timeline: resources, deployment strategies, and roles and responsibilities. Within these three categories, we have identified where there is a tendency for partnerships to hit difficulties.

¹ Sandvik, K., Gabrielsen Jumbert, M., Karlsrud, J., & Kaufmann, M. (2014), ‘Humanitarian technology: A critical research agenda’, *International Review of the Red Cross*, 96(893), 219-242, p. 220.

² Akl EA, El-Jardali F, Bou Karroum L, El-Eid J, Brax H, et al. (2015), ‘Effectiveness of Mechanisms and Models of Coordination between Organizations, Agencies and Bodies Providing or Financing Health Services in Humanitarian Crises: A Systematic Review’, *PLOS ONE* 10(9), p3.

³ Besley JC, McCright AM, Zahry NR, Elliott KC, Kaminski NE, et al. (2017), ‘Perceived conflict of interest in health science partnerships’, *PLOS ONE* 12(4), p.13.

⁴ Aly, H., ‘What future for private sector involvement in humanitarianism?’, *The New Humanitarian*, accessed on 23 November 2019 at: <http://www.thenewhumanitarian.org/analysis/2013/08/26/what-future-private-sector-involvement-humanitarianism>

The aim of this article is to highlight the practical difficulties facing the implementation of technology development partnerships between the academic and humanitarian sector. We believe the high-level strategy of cross-sector collaboration is a positive thing and should be encouraged to operate in an efficient way to avoid a similar fate as recent cross-sector initiatives.⁵



Waat, Jonglei State South Sudan (©Jacob Zocherman, ICRC, 2014). An ICRC mobile surgical team performs a skin-graft on a patient severely burnt on the leg. Well-equipped medical facilities are often unavailable or damaged, so ICRC surgical teams work in basic care facilities or in vacant buildings with simple rooms converted into operating theatres. Appropriate technologies are very important for such contexts: traditionally surgical equipment is not designed for harsh environments, and are too fragile. Developing new technologies adapted to such environments is essential save more lives. This is an example of an unmet need which can potentially be addressed via a collaboration with a research institute.

Resources

As with so many things, adequate funding is a prerequisite for success, yet it is often undervalued in technology partnerships at all stages. At the beginning of the work, both sides either tend to believe that the other will fund it, or not plan a fundraising strategy. A common view within the non-profit sector is that the academic world is slow moving, yet able to access funding for 'experimental projects' that rarely fall within the scope of impactful humanitarian work. Academic funding also tends to be linked to specific projects, so is usually not usable for the early exploratory stages of projects.⁶ The involvement of students during this stage (even if not involving financial

⁵ Parker, B. (2019), 'Humanitarian innovation faces rethink as innovators take stock', The New Humanitarian, accessed on 22 January 2020 at: <https://www.thenewhumanitarian.org/analysis/2019/03/20/humanitarian-innovation-faces-rethink-innovators-take-stock>

⁶ Gooding K, Newell JN, Emmel N (2018), 'Capacity to conduct health research among NGOs in Malawi: Diverse strengths, needs and opportunities for development', *PLOS ONE* 13(7), p. 8.

costs) often does not generate a directly 'usable' outcome.⁷ The academic sector, meanwhile, perceive the financial autonomy of NGOs as an opportunity to extend funding to projects, particularly in the initial exploratory stages. Again, this is not normally the case, given that NGO resource use requires high level buy-in and a detailed reporting plan. Indeed, the humanitarian sector was identified as particularly bad at spending to the level required for successful R&D by Deloitte in 2015.⁸

Since 2015, a number of funding mechanisms have been put in place to deal with this issue, with varying degrees of success.^{9 10 11 12} The Humanitarian Innovation Fund, Transformational Investment Capacity at MSF and the Humanitarian Grand Challenge are some examples. Despite these important steps, securing funding remains a significant challenge.¹³

Unsurprisingly, the non-profit sector suffers a knowledge gap when it comes to technology development. After all, for most, such projects fall outside their 'core business'. This means that when a technology has the potential to reach the wider market, questions of ownership and pricing can become a major cause for concern. Inevitably, this can lead to friction in the partnership which in turn might seriously damage the chance of impact and sustainable scale-up.¹⁴ Many projects arise as a result of chance encounters or are pushed by academics keen to show an impact with their work. Non-profits then tend not to take a moment to reflect who the best partner would be — when adapting an existing technology solution from a commercial player might actually be the best option.

The inability to commit human resources to projects from each side are a serious limiting factor of success and this occurs throughout the technology innovation/development process. At the start of projects, this lack of commitment can make it very hard to turn an idea into a project. Writing project plans, funding applications and detailed briefs take a lot of resources and, with no seed funding available, partners (especially NGO staff) find it difficult to carve out an appropriate amount of time for this.

Even once funding has been secured, sustaining NGO staff involvement can be hard. We think this is due to a range of factors, but in particular, the slower timeline that academics work to. Most NGOs work to yearly budget cycles and have a high turnover of staff. Their reporting cycles are also often annual; thus, any use of resources will have to show results within a short period and align with the NGO's strategic goals (of which technology innovation is rarely a part). For technology innovation aimed at solving complex problems, this can prove difficult. Industrial partners have a tendency to work quickly towards prototypes. Academics do not. As the timeline for actual impact extends, so too the motivation of the NGO to be involved decreases.

⁷ Hobbins MA et al., (2015), 'How to overcome inherent gaps between NGOs and research institutions', *MMS Bulletin* #135.

⁸ Deloitte (2015), *The Humanitarian R&D Imperative: How other sectors overcame impediments to innovation*, p.1.

⁹ Deloitte (2015), *The Humanitarian R&D Imperative: How other sectors overcame impediments to innovation*, p.1.

¹⁰ ELRHA, *Humanitarian Innovation Fund*, accessed on 23 November 2019 at: <https://www.elrha.org/programme/hif/>

¹¹ MSF, *Transformational Investment Capacity*, accessed on 23 November 2019 at: <http://msf-transformation.org/>

¹² Grand Challenges Canada, *Creating Hope in Conflict*, accessed on 23 November 2019 at: <https://www.grandchallenges.ca/programs/creating-hope-conflict/>

¹³ Quaglio, Gian, Luca et al., 'Calling on Europe to support operational research in low-income and middle-income countries', *The Lancet Global Health*, Volume 2, Issue 6, e308 - e310, p. 308.

¹⁴ Nuria Molina-Gallart (2014) 'Strange bedfellows? NGO–corporate relations in international development: an NGO perspective', *Development Studies Research*, 1:1, 42-53, p. 42.

Deployment

A technology can only really be considered successful if it is deployed: ideally at scale. Yet this is a rare occurrence, particularly for academic/NGO partnerships.¹⁵ These partnerships inherently lack a profit-motivation to succeed. While arguably a good thing from an ethical standpoint, technologies require maintenance, improvement and training; which is a point all-too-often neglected for these types of projects. Commercially, these would be covered by the income from selling a technology. However, for 'humanitarian technology' projects, this is not necessarily a given. Indeed, in some cases, a company will spin out of a project, but for this company to be able to generate enough revenue to survive and grow, it needs to sell a sufficiently large amount of goods or services. Often, the volumes needed by just one NGO (e.g. the partner) are not sufficient and the company is required to explore different market segments for deploying the new technology. If other market segments are incorporated in the strategy, there is a risk of 'mission creep', where the company starts adapting the technology to the most profitable 'customer' — which might not be the NGO. It is essential to reflect on these questions early, as they play a crucial role in striking the right balance between the spin-off's financial sustainability and its ability to deliver the technology sought by the NGO for a specific target group. Of course, a deployment via a spin-off company is not the only way to achieve impact. There can be blended approaches where established companies also play a role (for example through manufacturing or distribution), which will add further complexity. This makes an early strategic analysis all the more important.

It is also here that the divergent goals of scientific excellence (for academia) and humanitarian impact (for non-profits) can become more apparent. Academics are often too keen to pursue the tangential 'scientifically interesting' findings rather than the scaled-up implementation of technology for impact. For technology to be successfully scaled-up in low-income contexts, it needs to be affordable, robust and simple to use — something that does not necessarily overlap with 'cutting edge' research. The requirement for tried and tested technology in the aid sector is often overlooked at the early stages of collaborations, again showing the need for a critical partner selection process.

Additionally, if the project results in published academic papers — very often linked to a specific PhD candidate — there is a temptation to see a single implementation (pilot study) as 'mission accomplished'. Again, from the NGO perspective, roll-out in a single context would rarely be considered a resounding success.

Roles and responsibilities

Expectations play a massive role in determining if partnerships are perceived as a success. Therefore, defining roles and responsibilities clearly and early on in partnership is essential.

Many partnerships are effectively opportunistic and based on an individual's drive and contacts.¹⁶ ¹⁷ This means that academics and NGOs will often too quickly start a partnership without truly mapping out their: needs, expectations and required deliverables within a certain timeline. We would argue that the instances where both the classic academic approach to technology

¹⁵ Deb Niemeier, Harry Gombachika, Rebecca Richards-Kortum (2014), 'How to transform the practice of engineering to meet global health needs', *Science*, Vol. 345, Issue 6202, pp. 1287-1290, p.1287.

¹⁶ Haynes AS, Derrick GE, Redman S, Hall WD, Gillespie JA, et al. (2012), 'Identifying Trustworthy Experts: How Do Policymakers Find and Assess Public Health Researchers Worth Consulting or Collaborating With?', *PLOS ONE* 7(3), p. 1.

¹⁷ *The New Humanitarian*, 'Matchmaking for medical research', 5 July 2013, <http://www.thenewhumanitarian.org/news/2013/07/05/matchmaking-medical-research>

development and NGO requirements overlap perfectly is relatively rare, yet there are many such cross-sector partnerships. We can speculate that this might in part be down to the NGO's historically negative view of the private sector which has traditionally limited exploring closer partnership arrangements with them. Yet, universities have become keen to spin-out their research into practical applications — most now funding their own innovation and business parks and litigating over intellectual property. The common NGO view that academia is neutral in this perspective, is outdated and introduces another flaw in the reasoning of the partner selection process.

In an ideal project, the entire process (from initiation to deployment, with roles and responsibilities), would be mapped out and formalised from the earliest stage. This would avoid many of the accountability issues that tend to arise later on. This, with clear deliverables for both parties, force the partnership to reflect and debate over ownership and how to implement an effective technological solution sustainably over time, avoiding unnecessary frustrations.

The NGO view in these discussions can fall foul of the basic view that 'profitability' is bad, rather than reading it as a means for a solution to become 'self-sustaining' which is a desirable outcome. What is needed is a literacy in technology innovation/development and its associated aspects (intellectual property, the value chain and distribution models etc.), for NGOs to know: what they are getting themselves into; with who; and for how long.

Conclusion

In conclusion, partnerships between the humanitarian and academic sector will often *seem* like a natural match, but the reality is more complex. A lack of knowledge of the motivations and realities of the other organisation will often result in frustrations and a fractious working relationship.

Some of these can be addressed through better joint planning early on and clearer resource management. However, if NGOs wish to develop innovative technology solutions, it is crucial that a coherent strategy is put in place by both partners from the start. This can ensure high-level buy-in and stronger management processes. A critical partner selection process, by NGOs as 'problem owner', is also crucial to question whether an academic or commercial partner is more appropriate for delivering results to their required timeline. This requires a literacy in the technology innovation/development and scaling processes often lacking in non-profit organisations focused on tangible deliverables and impact for their target populations.

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