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# New technologies put to the test of humanitarian ethics

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Innovation is not a new phenomenon for leading actors of international solidarity. A number of historical examples has shown this, such as the creation of bamboo prostheses for Cambodian refugees by Handicap International in the 1980s, the development of Plumpy'Nut® – a nutritional product derived from peanuts – by Nutriset, in collaboration with *Action Contre la Faim*, or the solutions Oxfam developed for emergency water provision. What has changed over the last few years is the rise of innovation as a strategic concern for the humanitarian sector as a whole.

## Innovation in the service of humanitarian aid

During the World Humanitarian Summit in May 2016, "transformation through innovation" was effectively identified as one of the main forces of change. This was reiterated as part of the United Nations' *Agenda for Humanity*[1]. Innovation would allow the humanitarian system to do more, for more people, at a lower cost. This realisation coincided with the advent of a global digital revolution. Over the last decade, the daily lives of humanitarian workers have therefore benefitted from the application of new technologies, and the concept of innovation has become almost synonymous with them[2].

Information and communication technology (ICT) now enable us to better detect, and even anticipate, crises, and improve the speed and efficiency of the responses on a larger scale[3]. The spread of mobile phones in developing countries has had a particularly significant effect in terms of medical care and the management of food crises and epidemics. The use of mobile phones in data collection enables better adaptation to crisis situations and "mobile health" interventions (*mHealth*) are rapidly gaining in popularity in low-income countries, and especially in Africa, by overcoming the problems of access to healthcare and a lack of qualified medical personnel.

ICTs also play an essential role in crisis mapping. In 2008, Kenyan activists launched the concept of *crowdsourcing* to serve social mapping. During the post-election violence, the website ushahidi.com and the open source software of the same name were created to enable citizens to describe and geolocalise the situations they were witnessing, by SMS or online. After the 2010 earthquake in Haiti, the United Nations Office for the Coordination of Humanitarian Affairs (Ocha) used this software to map the affected areas and to facilitate disaster relief. During the military intervention in Libya in 2011, the UN turned to Ushahidi in order to better coordinate

[1] Agenda for Humanity. Annex to the Report of the Secretary-General, "Core Responsibility Four", 2016.
[2] Groupe URD, "L'innovation dans le secteur humanitaire", *Humanitaires en mouvement*, Bibliographical focus, November 2016; see also the "Humanitarian Technology" report, IRIN, March 21st 2018, www.irinnews.org/in-depth/humanitarian-technology
[3] Alexander Betts and Louise Bloom, "Humanitarian Innovation: The State of the Art", OCHA, Policy and Studies Series n°9, November 2014, www.unocha.org/sites/unocha/files/Humanitarian%20Innovation%20The%20State%20of%20the%20Art_0.pdf

humanitarian aid. Recourse to satellite or drone imagery and the analysis of big data by collaborative platforms powered by communities such as OpenStreetMap[4], for mapping vulnerable areas, were essential in the fight against the Ebola virus epidemic in West Africa in 2014 and 2015.

Whilst unmanned aerial vehicles (UAVs), otherwise known as drones, are often used to collect data in the event of disasters or to contribute to research and rescue attempts, as was the case during the earthquake in Nepal or the Haiyan typhoon in the Philippines, they also now deliver goods. In 2016, Rwanda introduced a system of drones used to deliver medicine and blood bags to isolated clinics in under 30 minutes, thanks to Californian start-up Zipline[5] which designed these devices. Finally, a new wave of transformative technologies has been making an appearance in the humanitarian sector, such as 3D printing for replacement parts[6], protheses or braces[7].

**Is innovation a synonym of progress?**

The latest studies show that new technologies add considerable added value to humanitarian action[8], but their uses reveal significant risks. The aim of this issue is to step back in order to analyse the impact of new technologies on the humanitarian sector, by examining their usefulness and misuses, but also the ethical questions they raise, and the ways in which international solidarity organisations can benefit from the digital revolution. We believe it is essential to reflect on the concepts of innovation and progress, which are often used interchangeably. The philosopher and physicist Étienne Klein examined our contemporary vision of progress and remarked that "the term progress is increasingly less used, and has even almost disappeared from public discourse, to be replaced by a term which is not a synonym: innovation"[9].

Whilst the concept of Progress became inextricably linked to an attempt to improve the human condition after the Enlightenment, innovation is more neutral, referring only to the fact of producing something new, be it positive or negative. The practical innovations linked to the rise of consumerist society in the 1950s, followed by those linked to the digital revolution, gave a positive connotation to the term of "innovation". Driven by a number of media successes, innovation has been seen for the last few years as both a necessity and an opportunity for improving performance. It is often presented as the ultimate model to follow, an injunction for survival, a development which must be preempted and mastered whatever the cost, in order to remain competitive in an increasingly competitive environment: in short, we must adapt or die. And yet, innovation is not immediately associated with the idea of progress. The phenomenal increase in the pace of the digital revolution we are currently witnessing represents both a great

[4] Humanitarian OpenStreetMap Team, "Épidémie d'Ebola en Afrique de l'Ouest", www.hotosm.org
[5] www.flyzipline.com
[6] The NGO Field Ready supplies aid to people living in disaster areas by using 3D printing to produce essential tools, such as medical or agricultural equipment, thereby reinventing the emergency humanitarian supply chain, www.fieldready.org
[7] In 2016, Handicap International carried out a pilot project in order to test the added value of 3D printing technology for the production of tibial prostheses in low-income countries (Togo and Madagascar), and in the context of war (Syria). Jérôme Canicave and Danielle Tan, "Pilot Testing of 3D Printing Technology for Transtibial Prosthesis in Complex Contexts (Togo, Madagascar and Syria)", Scientific Summary, *Research and Studies*, n°5, Handicap International, May 2017. In 2017, HI received funding from the Belgian Cooperation ("Innovation" line) to pursue the introduction of 3D printing technology and access to telerehabilitation in West Africa (Togo, Mali, Niger), project IMP&ACTE3D, Newsletter n° 1, Nov-Dec 2017, https://oadcph.org/wp-content/uploads/2018/02/Newsletter-IMPACTE-1-1.pdf
[8] Oxfam, "Les TIC dans les interventions humanitaires. Évaluation des apprentissages tirés d'un programme sur trois ans et dans cinq pays", learning report, April 2017; Alice Obrecht and Alexandra T. Warner, "More than just luck: Innovation in humanitarian action", *Humanitarian Innovation Fund*, ALNAP, April 2016.
[9] Étienne Klein, "Réveiller l'idée de progrès", *La Croix*, 11 February 2016.

opportunity and a powerful destabilising factor, which may, contrary to the United Nations' recent slogan, lead to "leaving people behind"[10].

What does the semantic replacement of "progress" by "innovation" reveal? Has the latter come to compensate for our loss of faith in the former? Is technical sophistication replacing the search for meaning? We are faced with a paradoxical situation: technological innovation, the original purpose of which was to provide tools to improve the human condition, is not necessarily creating the conditions for the Progress which it was intended to accompany. Hence the focus of this issue: do our uses of innovation – and consequently, of new technologies – in the humanitarian field extend the idea of progress, or do they detract from it? Can innovation also be a factor of social progress? From amongst current innovations, which ones can be considered as signs of progress in humanitarian intervention? How can we ensure that these ethical issues be discussed, without renouncing the undeniable added value of certain forms of technological and social progress? From an organisational standpoint, what are the direct or indirect effects of the use of new technologies for actors of international solidarity? These questions seem even more relevant given that the discourse on innovation appears to focus on the results and products derived from the process, whilst withholding reflection on the meaning and driving forces of the dynamic.

**Challenges and discernable limitations**

Digital technology currently represents the greatest opportunity to transform health systems in low and middle-income countries. Yet in spite of the resources and energy devoted to digital health measures in these countries, only a fraction of projects has reached a significant scale. The first article in this issue, co-authored by Enric Jané, Guillaume Foutry and Simon Sanou, focuses on the challenges faced by humanitarian organisations – in the example, *Terre des hommes* – in extending their interventions beyond the pilot stage. Since 2010, IeDA (*Integrated e-Diagnostic Approach*) has been developing in Burkina Faso in order to accompany health personnel in the medical treatment of children. The consultations were carried out with the help of digital tablets and mobile applications, which enabled personnel to follow the clinical protocol developed by the World Health Organisation (WHO), offer diagnoses and treatments which were adapted and therefore, as a result, reduce infant mortality. The significant coverage achieved by the project and the high rate of adoption of the tool by health personnel showed the strong potential of this approach. Collaboration with the Ministry of Health from the very beginning, and its involvement in the project, were essential to the replicability of the programme on a larger scale. Moreover, once deployed, the programme was continually adapted according to users' comments and analysis of different data sources. Efforts must now be concentrated on the reinforcement of the digital ecosystem and actors' management capacities, as well as the development of tools enabling the dissemination and sustainability of the programme.

The article by Karine Le Roch, Nicolas Dennefeld, Caroline Antoine, Melchior de Roquemaurel, Jonathan Bureau and Myriam Ait-Aissa from *Action Contre la Faim* follows up the reflection on the difficulties faced by NGOs in including new technologies in their practices and sectors of intervention. Their use of new technologies in difficult contexts, their sustainability in volatile environments, and their appropriation in different cultural areas raise many challenges. Above all, certain uses of new technologies raise crucial questions concerning the respect of the

[10] UN News, "'No-one left behind' is ethical imperative of new development agenda", 13 January 2016, https://news.un.org/en/story/2016/01/519872-no-one-left-behind-ethical-imperative-new-development-agenda-un-deputy-chief

humanitarian imperative of "doing no harm", especially with regard to the protection of data and people.

Nathaniel A. Raymond and Daniel P. Scarnecchia's article from the Harvard Humanitarian Initiative (HHI) alerts us to the urgency of building a legal and ethical framework to guarantee the safety of populations, if we do not want a disaster to occur. The Red Rose affair, which revealed that a platform used by at least 11 major NGOs and United Nations agencies was relatively easy to pirate, should serve as a sufficient lesson[11]. And yet, according to the researchers, recognising the existence of serious shortcomings in the protection of aid recipients' personal data within humanitarian organisations is an open secret, as is the lack of professionalism surrounding data management and the use of ICTs. The mastery of ICTs should henceforth be considered a key skill within humanitarian organisations, in order for them to benefit from the ongoing digital revolution[12].

And yet, the CartONG association remarks – in the article by Maeve de France and Nina-Flore Eissen – that skills are lacking in NGOs. According to the authors, humanitarian organisations have a tendency to test the latest trending technologies without having first explored the needs of the users. Moreover, the choice of digital tools is extensive and the data collected piles up without humanitarian organisations having the internal capacity to analyse or exploit it or to define an appropriate strategy, though the treatment of this big data is extremely sensitive.

**What future for humanitarian organisations in the digital era?**

Beyond these ethical questions, the humanitarian sector represents considerable potential for economic development for a technological industry in search of partners in order to project the right image. There is the example of the IrisGuard company – based in the Cayman Islands – which "offered" its iris recognition system to the United Nations High Commissioner for Refugees (UNHCR), which accepted. In exchange, the company receives 1% of each payment made by refugees. The journalist Nicolas Autheman, author of an enquiry into this "deal", observed that "for the companies developing these technologies, refugee camps are a godsend. They enable them to associate their image with the humanitarian cause, test their tools on a large scale, and finally to approach Western governments to try to sell them"[13]. It is therefore essential to find an economic model which would allow access to new technologies for the most vulnerable and preserve the independence of action and decision for humanitarian actors in relation to the private sector.

The introduction of new approaches can have unexpected consequences which are important to take into account in any innovation policy. Initially associated with war, drones are now efficiently used for humanitarian ends. Michiel Hofman's article nevertheless warns against the negative effects which they can have in conflict areas, given their "predatory" image for populations, to say nothing of the risks of recovering them on behalf of the soldiers.

Finally, the culture of risk and acceptance of potential failure are strong driving forces in the sector of innovation, which do not adapt well to humanitarian contexts, where the consequences of bad choices can be disastrous. The emergence of blockchain technology reflects these fears. The contrasting perspectives of Julio Alejandro, the founder and CEO of the *Humanitarian*

[11] Nathaniel A. Raymond, Daniel P. Scarnecchia, and Stuart R. Campo, "Humanitarian data breaches: the real scandal is our collective inaction", *IRIN*, December 8th, 2017.
[12] Patrick Meier, *Digital Humanitarians. How Big Data Is Changing the Face of Humanitarian Response*, Taylor & Francis Group, 2015.
[13] Nicolas Autheman, "Payer en un clin d'oeil", *Le Monde Diplomatique*, May 2017, p. 14-15.

*Blockchain* start-up FinTech, and Pierre Gallien, Director of the HI Impact, Information & Innovation division, shed light on the unexplored potential of blockchain for the humanitarian sector, even though it seems that its implementation remains a major challenge given the gap that exists between the two worlds. It is therefore crucial to instigate a dialogue and an ethical, technical and operational reflection between these two worlds, in order to build an integrated vision of innovation which is not only technological but also societal. In this quest, we will need to collaborate more closely with the worlds of research and training, with communities of "makers" through "hackathons"[14], and by investing more in social networks, which have produced new and sometimes controversial methods[15] of raising money. This is the case of Jerôme Jarre, the internationally famous YouTube star whose Twitter campaign, entitled "*Love Army for Somalia*", managed to raise 2.5 million dollars in record time for the fight against famine in the Horn of Africa. The initiative followed in the wake of an equally successful campaign for the cause of the Rohingyas in Bangladesh. One wonders whether the two highly mediatised operations, involving celebrities, prefigure a new form of humanitarian aid or a return to a Band Aid-type rallying of the 1980s.

What is clear is that the development of new technologies is forcing the humanitarian sector to invest in reflection on their uses and make use of the expertise it has acquired. If the sector does not rethink its intervention methods to find sustainable solutions to current humanitarian challenges, it runs the risk of being relegated to the level of a fossil by the heralds of innovation without progress, passively observing the spectacle of high-tech good conscience.

***Translated from the French by Juliet Powys***


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[14] Over the course of a weekend, digital specialists voluntarily place their knowledge in the service of NGOs and social organisations, to reflect on technical solutions in response to practical needs.
[15] "Rohingya : une opération humanitaire controversée dans un camp de réfugiés", *Le Monde*, 28 November 2017.