

# Crowdsourcing as collaborative participation in international development

Essay, ICT4D course 2020

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## ABSTRACT

Crowdsourcing, or the collection and organization of audience-reported data, has received wide support in the international development community. Despite its benefits, a range of risks and challenges must be addressed to fulfill its promises without losing sight of overarching issues, for example including the excluded. This critical essay argues that crowdsourcing can be a helpful tool to increase the scope and quality of participatory approaches when considering it as a collaborative mechanism within an agent-based network. This consideration assumes that the feedback loop with the crowd must be closed in order to further enable participation. In light of the recent pervasiveness of digital platforms and processes in international development, the emerging paradigms contain potential to address these issues but must be critically researched in the forthcoming years.

## KEYWORDS

crowdsourcing, ICT4D, international development

## 1 INTRODUCTION

Initiating positive change in international development is increasingly tied to usage of Information and Communication Technology (ICT), which is the topic of interest in the academic field of ICT4D (ICT for development). The discipline understands and advocates that simple technology and knowledge transfer from the “developed” world to low- and middle-income countries does not equate to direct positive change in low-resource environments. Besides sole economical conditions it is imperative to also consider the often complex sociological and historical contexts when designing and implementing ICT-enabled initiatives. In a retro- and prospective outlook on the field of ICT4D, Walsham suggested investing in substantial research on “new ICT-enabled models that can transform the processes and structures of development” [16]. Examples of such transformative ICT-based processes are based on inclusion of the disconnected poor and include those as active producers and source of innovation [6]. One approach to actively include a large and diverse group is to capture and disseminate shared and individual knowledge by designing and implementing crowdsourcing initiatives. Crowdsourcing models in international development are a broad and complex matter in need of further research: despite increased and widespread support for implementation, academic investigations have been sparse [8]. Crowdsourcing has been utilized in election monitoring, natural disaster response, initiatives tackling anti-corruption, violence and human rights abuses, and

aid constitutions [8]. Specific examples in the literature have discussed or analyzed certain platforms that popularized the concept in the international development community, such as Ushahidi [2, 4, 8, 11–13, 16] or Harassmap [14].

## 2 CROWDSOURCING

In an analysis of 40 original crowdsourcing definitions, Estellés-Arolas and González-Ladrón-de-Guevara found three key elements to the concept. The *crowd* is a large group of individuals of varied size, heterogeneity, knowledge and skills whose individuals resolve tasks of a clear objective in order to participate in the resolution of a problem. Through participation, individuals of a crowd satisfy individual needs as a *quid pro quo*, which can be a financial reward, social recognition, increased self esteem or self development. The *initiator* is any entity able to carry out the desired initiative in order to move towards a solution of the stated problem. The *process* is defined as an online distributed process involving the initiator and the crowd to resolve the problem. The call can be open, limited (or bound) to a community with specific knowledge or expertise, or a (controlled) combination of both [3]. One one hand, open calls are susceptible to manipulation and are less reliable, on the other hand, bounded crowdsourcing is more structured but does not have the same reach [8]. Four primary types of crowdsourcing (and combinations thereof) are in use: crowd wisdom, crowd creation, crowd voting and crowd funding [9]. Technologies employ abilities to cross-share (to and by citizens), allow semi-structured submissions, operate in real-time, are open to large audiences, have geo-awareness and are accessible (with simple technology) [10]. The main success factor of crowdsourcing is motive alignment of the crowd—how well the crowd associates with the long-term objective—whereas peripheral factors include vision and strategy of the initiative, human capital (skills and abilities of the crowd), trust and linkages, infrastructure (accessibility, reliability and quality of communication technology) and external environment (such as macroeconomic and living environment) [12]. Especially in developing countries with limited existing infrastructure, the mobile phone is leveraged, as seen in many other ICT4D initiatives.

## 3 BENEFITS, RISKS AND CHALLENGES

Without perceived and actual benefits the support for crowdsourcing initiatives would not be as widespread in the international development community. It can be a cost-effective way to reach rural and urban communities, can improve public relations and can lead to greater accountability and aid transparency [2]. Interactive

mappings of crowdsourced data—geospatial and non-geospatial—emerged as a key instrument in humanitarian crisis responses [11]. Crowdsourcing for monitoring and evaluation can challenge existing power dynamics, potentially close the (usually non-existent) link to initiative beneficiaries, and are means to implement a direct feedback loop to them [2].

However, crowdsourcing is not a panacea and should be seen as complementary to other efforts in international development [8]. A wide range of challenges and risks exist and most of those are not of technical nature. There is a considerable potential for a lack of trust, threats to citizen’s privacy [8, 10], information overload [8, 10, 11], misinformation, misuse for propaganda, or manipulation [10, 11, 13]. Local knowledge might get altered along the process chain of verbalization, translation, processing and analysis [11].

Besides addressing these risks, appropriate representation of the affected communities is imperative through mitigation of demographic biases, without these measures the inequality is entrenched further. As an example, in the crowdsourcing initiative of the Nepal earthquake disaster response, results were biased towards young, urban and educated males [11], a notion also seen in other initiatives [2]. To alleviate those, a few requirements must be considered. Firstly, barriers to participation must be as low as possible by allowing all relevant media and channels for crowd submissions: feature phones (for voice and SMS) must be accounted for, not only smartphones or other Internet-enabled devices [2, 8, 11], but also costs inhibit participation [8]. Secondly, as ICT literacy is widely varying, capacity building, mediators and transcription tools must be in place [2]. Thirdly, appropriate incentives for participants must be designed and maintained throughout the initiative’s life cycle [2, 8]. Fuger, Schimpf, Füller and Hutter identified four distinct user roles in crowdsourcing initiatives in international development, which must be addressed and engaged differently. For example, as passive users are outnumbering all other user roles in terms of population size, it is critical to reward them appropriately to reach critical mass [4]. In fragile contexts it is also important to ensure the physical and virtual security of personally identifiable information as the linked citizens can become targets by governments, rebels or terrorists [8, 10]. Especially in big data implementations, citizens might become persons of interest when they are analyzed based on algorithmical categorization into groups, subsequently circumventing other protection measures [15].

## 4 CLOSING THE LOOP

Among ICT4D researchers a gradual shift has been occurring in the last decades: replicating success stories from well-resourced countries and “interventions” often do not yield sustainable results due to a multitude of reasons [1]. A more inclusive, participatory and collaborative approach, involving the final beneficiaries, has been emerging—in that sense, the development efforts transform from top-down structures into bottom-up dynamics. This shift has not equally materialized among implementers and policy makers in international development. Disaster response mapping initiatives may take a top-down approach or bottom-up developments—in crisis situations both approaches should be merged in a hybrid fashion to allow for comprehensive view on the situation with both official (national, international, non-governmental) data and

crowd-sourced data [2]. This is the ideal and not all crowdsourcing initiatives are that integral. Singh and Flyverbom identified four types of discourse in participatory approaches of international development: the dimension of *structured/hierarchical* versus *agentic/horizontal*, and the dimension of *consensual* (state-dominated) and *conflictual* (emerging from societal pressures) [13]. Many participatory approaches are still top-down and hierarchically driven, based on consensus of donors and stakeholders from the public, private and civil society sectors, whereas non-governmental or local grassroots organizations are embedded with a consultative status or less [13]. Crowdsourcing, as Singh and Flyverbom argue, is thus an example of a structured but horizontal approach, driven by common interests on the local levels, or intra-state actors [13]. Concerning crowdsourcing initiatives, this implies a need for two-way interaction and information flow, and not seeing the crowd as sole data source for knowledge harvesting but rather allowing a close of the feedback loop, for example by allowing access to aggregated data. Local people who supply data and knowledge are currently often excluded from any later valuable insights based on their submissions [11, 16]. Coupled with the requirement for valuable incentives and ability of secure interaction between peers of the crowd [8], some level of power can be given back to the crowd who often are the problem-affected themselves. The permeation of the mobile phone in low- and middle-income countries opens up a field of participatory interaction. New areas of study emerge as the horizontal and bottom-up approaches are manifested in open models of development embedded within a network society, challenging the old ways of operation [14]. This is manifested also in the notion that externally driven initiatives only work in emergencies, crisis or other short-term contexts [2]. Here, complexity theory offers a helpful lens—in ICT4D in general [1] and in the application of crowdsourcing in particular—as it considers local citizens as self-organizing agents within their own context [1] but not as sole eventual recipients of a linear knowledge and technology transfer. Networked discourse does not preclude the nation-state but the actors drive the approach through horizontal agency and collaboration [13].

## 5 DIGITAL DEVELOPMENT AND PLATFORMIZATION

Heeks describes a paradigm shift in international development towards a “digital nervous system” permeating most development organizations [7]. Others have termed it digitalization, a socio-technical process of digitization of content and processes leading to reconfiguration of roles, relationships, practices and organizational structures, which in international development is further characterized by diversity, complexity and significance [5]. Both identified a “platformization” as one of the key trends in international development, among others, which are out of scope for this essay. Complex platforms—a set of digital resources such as services and content that enable value-creating interactions [5], often deployed in data centers connected to the Internet—rely on business models to operate. These new business models feature key novelties that are more virtual (untying of physical restrictions); more open (greater transparency); more shared (sharing of resources beyond the original owner) and more crowd-based (value-chain activities)

[7]. Although Internet penetration is rising in low- and middle-income countries, there will still be gaps for the rural poor, not only regarding network infrastructure but also ICT literacy. Addressing these gaps requires a change from top-down to a more horizontal approach—its collaborativeness should not only be utilized in the implementation process but also in the agenda and goal construction [1]. In general, this shift—“digital development”—of the nexus between ICT and international development organizations is yet to be further critically researched in the coming years. If such systematic changes occur, ICT4D research should advise so that the international development agenda includes those currently excluded *and* does not disconnect those just connected.

## 6 CONCLUSION

This essay has given a brief insight into a new ICT-enabled model in international development. It has described crowdsourcing as a tool and characterized not just its promised benefits but also highlighted the risks and challenges. Among them is a need to close the feedback loop, an important manifestation of concepts in participatory approaches. It submitted that a shift towards more collaborative formulations of international development is required. As ICT is accelerating not only in the developed world but also in low- and middle-income countries in different flavors, the international development agenda must address the issues present in current approaches and not enhance them even further when reaping the benefits of the increased usage of digital technologies.

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