

# 04 BRIDGES

## BRIDGES AND TENSIONS

One measure of the power of a new idea is whether it is able to displace traditional practice during periods of crisis. At these times, professionals tend to avoid novel approaches that have not yet been tempered by hardship; they instead reach for familiar and trusted ways. This tendency is particularly strong within the international organizations that deploy their personnel to major disasters. Because field staff has learned hard lessons in austere places, they tend to avoid assuming new risks. As a result, humanitarian relief operations often deploy older technologies that—while imperfect—have been adapted to the harsh conditions of the field.

In this light, the emergence of the V&TCs and the extent of their role as part of the Haiti relief effort caught many by surprise. No one predicted that volunteer-run platforms—many running on free-and-open-source software—would not only augment the traditional information systems but also provide data that became essential to the earthquake response.

“ In summary, the work by OpenStreetMap, was phenomenal, I hesitate to understate its importance in our work in the field.”

—Nigel Woof, *MapAction*

“ Haiti has been a revolution. The technology community has engaged for the first time in a very important and permanent manner in a humanitarian operation.” —*Jacobo Quintanilla, Internews*

And yet, for all the power of the new information flows and the opportunities presented by the V&TCs to apply web services and collective intelligence to humanitarian emergencies, the international humanitarian system was not yet tooled to process this information. It does not have the resources necessary to adapt to handle the new inflows from V&TCs and disaster-affected communities. The international humanitarian system is still firmly rooted in a paradigm of documents and data-

# QUESTIONS AND TENSIONS

bases passed through hierarchies. It is not yet ready to exchange knowledge via services, architectures, and communities in a flattened, distributed mesh of partnering organizations. Nor is the system designed to receive individual pleas for assistance from large numbers of an affected population and to act on those requests on an individual level. But this type of information is not going away: even the world's poorest people are beginning to get access to wireless communications, and Haiti showed that many will not hesitate to use this technology to reach out to the international community when lives are at stake. What remains to be seen is how the international community will retool to take advantage of the power of crowds.

The questions therefore emerge: which aspects of current information management practices will remain and which must adapt? Why did certain tools used by V&TCs and the disaster affected community in Haiti integrate successfully with the international humanitarian system? Why did others experience the equivalent of antibody reactions?

“ I don't see these two groups as opposing forces. For me it is just a matter of time, capacity and coordination to find a way to really synchronize our efforts in an effective way. ”

—Jaroslav Varuch, Ushahidi

While the answer to these questions will be debated for years to come, what can be known are important dynamics during the Haiti operation that created bridges and exacerbated tensions between the V&TCs and the international humanitarian system. This report explores the dynamics which interviews exposed, leaving further discovery and discussion of other issues—perhaps those more hidden deeper in values and belief structures—to conversations which will incorporate many more stakeholders. The intent in this chapter is not to criticize but to surface issues that should be approached through the dialogues that Chapters 5 and 6 recommend.

“ And that's why it's really important to have two kinds of people at the table when you're talking about this. You need to have people who know open technology communities, and you also need people who understand crisis management. ”

—Heather Blanchard, Crisis Commons

This chapter starts from the core issue of integration—awareness—and proceeds to explore several more issues that consistently emerged in discussions across both communities as critical managing the flows of information into and out of the international humanitarian system: reliability, trust and brand, professionalization, open standards, and verifiability.

## Awareness

Any analysis of the interactions of the humanitarian system and V&TCs during the early period of the Haiti response operation must begin with the obvious: in the first weeks of the response, most field staff did not even know that new V&TCs were offering to help. Those staff that did was so overloaded that they could not turn their attention away from their immediate responsibilities.

“ I didn't use OpenStreetMap. I didn't know about it. The only rescue team that used it was Fairfax, Virginia on days 8–10. ”

—Gisli Olafsson, Icelandic USAR Team

(NOTE: MapAction was generating maps based on OpenStreetMap data which may have been used by the USAR teams.)

Some organizations devised their own innovative means to deal with the information gap they faced going into Haiti. A good example comes from the experience of the Icelandic Search and Rescue Team:

## MATCHING NEEDS WITH SERVICE-ICE-SAR

“Tell them what it is you want”

At midnight on day 5, the Icelandic Search and Rescue Team (Ice SAR) was tasked to travel to Léogâne by 5am. The team leader reached back to a group of volunteers to help maximize their situational and geographical awareness—what came to be an informal V&TC. Gisli Olafsson, the team leader explained:

“In previous emergencies, we would stay up all night, trying to create a plan of action for the day after. Instead of doing that, we contacted 24/7 home support. We simply told them, ‘Find out anything you can from Léogâne, the best maps you can find, identify potential targets, where are there large building, hospitals, shopping, create lists, and GPS coordinates.’ At 4AM, in my inbox, was a 2MB PDF document. Maps, pictures, school and municipal office locations, contact information of the chief of police, mayor, and GPS locations – all from GoogleEarth and Google searched information. I printed out a 10-page leaflet, with all of that information to squad leaders, they read it on the way over there. The UK team said, ‘Wow, where did you get that!’ There are a lot of tasks like this, which can be outsourced to other groups... Also if you think about it from a cost perspective, we were able to sleep which is valuable. At the same time we were saving money. For a volunteer organization this is important.”

While the V&TCs were producing innovative data and applications, their ad hoc connections with traditional actors in the field limited the integration of new resources—like reports generated by Haitian citizens and software to process these streams—into core planning at the cluster level and at OCHA. In the midst of a major crisis and increased expectations from their bosses, humanitarian staff relied on tools and processes that they trusted, that were familiar to them, and that tied into existing workflows. As one information management officer at UNDAC said,

“Some individuals had a sense of what that [the V&TC’s] capability is, just as a volunteer workforce, not to mention the technical capabilities. But I think most of straight up crew in info management with the traditional ways of doing things did not feel frustration, because they did not even realize what had been missed. It was

more about, ‘How do we execute on tools and processes that we know about and are quite standard?’ It was not about what could have been done quite differently.” —*Nigel Snoad, UNDAC*

Even though some field staff members were tangentially aware of the resources that were available, they were too busy to take advantage of the resources or to consider the changes to workflows and methods that these new information resources would entail. It was a key lesson learned for many V&TCs: the introduction of new technologies during an active operation can be disruptive and ineffective. The right time to make field staff aware of new capabilities is between operations.

“Emergencies are not the best time to experiment with untested initiatives. People work around the clock and have hardly any time to try out new systems they are not familiar with.” —*Jacobo Quintanilla, Internews*

### Reliability

A core tenet of the international humanitarian system is reliability: a demonstrated commitment to responding to any crisis in any place.

“...if you’re jumping into one crisis, then when the crisis happens, there is an expectation: the system has to know if it can predict the availability of your services and that is a requirement.” —*Nicolas Chavent, Humanitarian OpenStreetMap Team*

This expectation is only partly a litmus test about the belief structures behind a newcomer; it is also a practical concern for planning who will perform what role, so that scarce resources can be allocated to tasks which are under-funded.

“[V&TCs] need to be seen as predictable and reliable. In essence, we need to know—whether I’m dealing with Central African Republic in a conflict or I’m dealing with a mega disaster—I’m going to get the same level of support. Because we need to structure; the response system has to be predictable. If you want to play the game you need to be stepping up each and every time as a predictable partner, because people will rely on you.” —*Brendan McDonald, OCHA*

Those V&TCs which have successfully integrated with the UN over the past decade—MapAction and IM-MAP—have sent dedicated, trained staff to extremely difficult places. In one case, a volunteer MapAction GIS analyst had the courage to continue her deployment after the UN facility in she was sleeping in was bombed.

But the newer V&TCs do not yet have the resources to mobilize large numbers of volunteers for extended periods, nor do they have the capacity to send small teams to the field for every disaster. Most do not even have funds to cover travel or communications, let alone deployments of staff on 2–3 week rotations. Some did not have status as a charitable organization until long after the Haiti operation had turned to reconstruction, making it difficult to reach them with grants, contracts, and other formal funding vehicles. Several V&TCs had to instead rely on proxies or individual donations.

“While we appreciate the fact that we were doing something that people found useful, the pressure that came to that was incredibly difficult to deal with.” —Patrick Meier, *CrisisMappers and Ushahidi*

The newer V&TCs have already seen this need to professionalize and create a reliable capability. The Crisis Mappers community is forming a team called the Stand-By Task Force, composed of experts who are willing to train and deploy to emergencies to provide broad support for imagery, mapping, and crowdsourcing. The Standby Volunteer Task Force is a volunteer community of 450+ skilled volunteers from more than 50 countries. The Task Force was launched at the 2010 International Conference on Crisis Mapping. The mission of this online volunteer community is to provide live crisis mapping support to organizations that request help. In March 2011, the head of OCHA's Information Services Section activated the Task Force for live crisis mapping support of Libya. Crisis Commons received a \$1.2M USD grant to explore how to create a crisis crowd that can swarm around problems that require both technical skills and information processing capacity. Members of the OpenStreetMap community formed the Humanitarian OpenStreetMap Team (HOT) to train affected communities how to map their own countries. The HOT team was one of the most successful V&TCs at creating a reliable, consistent operation, despite having almost no funding.



Credit: Mark Turner

## HUMANITARIAN OPENSTREETMAP TEAM

As a community, OpenStreetMap is dedicated to providing a free and open map of the world, which anyone can edit and improve. However, if one lives in a country with poor existing maps, contributing to OpenStreetMap takes some training. One must learn how to use a handheld GPS unit, how to input the waypoints and tracks from that GPS into an editor, and how to prepare that data for addition to ‘the map.’ The Humanitarian OpenStreetMap Team (HOT) was formed to build the capacity of local actors in the developing world to perform this role, handing control of the map back to the people who actually live in a place.

Over six missions to the island (which continued into 2011), the HOT team has trained over 500 Haitians in basic mapping and assessment techniques. When they started in March 2010, they held training sessions for 3–5 Haitians and internationals at a time. By the fall, they were working with mappers from Communaute OpenStreetMap Haiti and were training groups of 30–40. These mappers have adapted to the new challenges of the lifecycle of response and recovery. Working with IOM, they have turned over 100 of the IDP camps from empty bounding boxes (with some statistics about numbers of wells and latrines) into fully-mapped entities which display the pathways and location of services. And they posted the maps in kiosks, where the community could learn what was happening in the camp and edit the map. On request from IOM, these Haitian OpenStreetMappers located and mapped 200 schools in Cite Soleil in a matter of a few hours, assessing them for use as cholera treatment centers. Today, on an ongoing basis, these mappers are performing surveys and data collection at local offices.

Few V&TCs have committed to a long-term presence in Haiti, have successfully collaborated with large traditional UN agencies, and have sustainably engaged local communities. Humanitarian Open Street Map's (H.O.T) activities continue to this day.

“We have transferred most stuff to Haitians... It's far from disaster response at this point, it's more prevention and making sure that data is available.”  
—Kate Chapman

These efforts are still nascent. V&TCs are making great strides in creating reliable services, but like their predecessors MapAction and IMMAP, they will need partnerships within the international humanitarian system to succeed.

### Trust and Brand

In most communities, newcomers must earn the trust of veterans; it is not automatically granted. This dynamic is amplified in a world where individuals deploy to austere locations where societies have been torn apart by crisis, and field staff needs to rely on each other to get things done. In the humanitarian community, trust comes not only from individual actions but also grows from the consistent, reliable, predictable presence of an organization that abides by humanitarian principles. Trust is part of brand.

“If there’s a brand that has trust and recognition across the humanitarian community, then it has a chance of being worked with.... So I think one of the problems working with the volunteer technical community is identifying, building the trusted focal points and the trusted network. Really it’s about building that brand, and some of it is individual to individual, but some of it is being able to say, ‘I’m from this group, here’s how you confirm that, and, I’m working on this and let’s move together.’” —*Nigel Snoad, UNDAC*

Many humanitarian organizations invest a great deal in building their brand and reputation, sometimes sacrificing opportunities for partnerships or rejecting funding to protect the network of associations around their organization. This is particularly the case for organizations that send staff to areas where armed conflicts are ongoing. To protect their staff under a very fragile but critically important aegis of neutrality, these humanitarian organizations tend to reject any affiliation with aligned parties or militaries.

V&TCs are still working out how these humanitarian principles apply to their operations. Many come from communities where core beliefs sprung out of technology initiatives rather than humanitarian missions. OpenStreetMap began because geospatial experts in the UK felt it was unjust that the National Ordnance Survey forced citizens to pay a license fee for access to public GIS data. They set out to build a completely free and open map of the UK, and then of the world. Ushahidi began from Kenyan election violence and the need to ‘give testimony’—which is what ushahidi means

## HUMANITARIAN PRINCIPLES (FROM OCHA ON MESSAGE: HUMANITARIAN PRINCIPLES PAMPHLET)

Humanitarian principles provide the fundamental foundations for humanitarian action. Humanitarian principles are central to establishing and maintaining access to affected populations whether in the context of a natural disaster, an armed conflict or a complex emergency. Promoting compliance with humanitarian principles in humanitarian response is an essential element of effective humanitarian coordination. It is also central to the role of OCHA.

### Humanity

Human suffering must be addressed wherever it is found. The purpose of humanitarian action is to protect life and health and ensure respect for human beings.

### Neutrality

Humanitarian actors must not take sides in hostilities or engage in controversies of a political, racial, religious or ideological nature.

### Impartiality

Humanitarian action must be carried out on the basis of need alone, giving priority to the most urgent cases of distress and making no distinctions on the basis of nationality, race, gender, religious belief, class or political opinions.

### Operational Independence

Humanitarian action must be autonomous from the political, economic, military or other objectives that any actor may hold with regard to areas where humanitarian action is being implemented.

in Swahili; it emerged from the Kenyan blogging community’s efforts to track incidents around the 2007 election violence. It provides a SMS-based platform to facilitate submissions of reports from the field. Crisis Mappers began as a community of practice seeking to understand how to apply new mapping and crowdsourcing technologies to crisis response. None were established as deploying humanitarian organizations seeking to aid communities affected by crises.

Among the new V&TCs, only a few deployed people to the field. Mission 4636 had people on the ground for

the whole emergency phase of the operation. InSTEDD also sent staff for the first week following the earthquake. Ushahidi and the Humanitarian OpenStreetMap Team sent staff in the following weeks.



In all four cases, personal face-to-face relationships fundamentally changed the organization's access to members of the international humanitarian system and host-nation government. This field presence was critical for building initial trust and dealing with one of the hard realities of complex operations: rapid staff turnover.

“When you have an emergency like Haiti where so many lives are at risk, you have a lot of instability on the personnel side and the overall continuity of the effort. You have so much personnel turnover.” —Jeffrey Villaveces, OCHA

Just when a V&TC found entry into an organization, the new champion would rotate out of theatre. This dynamic emphasizes the importance of building relationships between trusted V&TCs before any complex operation.

“...that's why the face-to-face on-the-ground is always more trusted than someone randomly off an email. Particularly, there's the levels: 1) there's the people I know—the people I meet face-to-face, and then 2) there's the people I know remotely already, and then 3) there's the people from organizations I know, and then 4) there's just the random people. And the groups that appear to be the random people are the lowest on the totem.” —Nigel Snoad, UNDAC

“To get any information, you have to be on the ground. You have to walk around and ask people for it.” —Kate Chapman, Humanitarian OpenStreetMap Team

Even V&TCs see rotations of people in and out of their community, especially when a change in life circumstances limits a person's ability to participate in a voluntary organization or to engage in the all-consuming work that accompanies supporting a megadisaster.

“And that then becomes a problem of institutional memory. You could have the greatest volunteers today who move on, leaving the platform that they supported in limbo. This is a challenge for some platforms—particularly if they are very successful—to sustain themselves over the longer term.” —Sanjana Hattotuwa, ICT4Peace Foundation

After Haiti, some groups attained trusted status, or at least built sufficient trust within the international humanitarian system to be invited to discuss further collaboration. That said, this trust—which some field staff referred to as a brand—is still new and fragile. When some V&TCs did not have as strong a showing in their support in the 2010 floods in Pakistan many veteran humanitarians were puzzled. They would have liked to have seen greater mobilization of resources for a difficult response operation.

“The challenge that I have seen, and I have been involved in three different emergencies in less than a year's time, is that it was never guaranteed that the organization or the group that set up a website or a tool in the first one was going to be there for the second and the third. And even NGOs that built fancy tools in Haiti and no matter how great they are, they are not showing up with anything in Pakistan. So it is all great that we can have 15 different who did what where systems out there for one emergency, but then for the next one, you know in Kirgizstan, maybe nobody shows up, or maybe OCHA does, and then in Pakistan it is something different. So for me it is not always just who is authoritative, but also who is consistently there and predictable.” —Andrej Verity, OCHA

There are good reasons why V&TCs had difficulty deploying in support of Pakistan: closed information management systems, lack of imagery, lack of cellular phone adoption in the affected population relative to Haiti, distance, and security of personnel who might be sent to the field. That said, these issues are technical: they relate to the status of V&TCs being on the outside of the international humanitarian system, where they cannot gain access to imagery put under the Disaster Space charter, where they cannot deploy under organizations that can provide security, and where they lack funds necessary for working under far more difficult (and distant) situations than were found in Haiti. With a

formal agreement and the funding that would follow, it may be possible to help V&TCs become more reliable partners to all response operations, large and small.

“ I think the crisis mapping community is successful in what they do because they are who they are. And the UN system brings to crisis a rigor that the crisis mapping community does not have. And importantly, the UN has been there for far longer and far more crises than the crisis community even is interested in. And so it's a mutual respect for each other's work I think that will be the foundation to move forward. And hopefully this will occur.”

—Sanjana Hattotuwa, *ICT4Peace Foundation*



## Professionalization

For members of the international humanitarian system, professionalism is a way of life. It means delivering consistent services when called to perform their role in the cluster system. Some V&TCs have adopted this mentality. MapAction has been a consistent partner in dozens of emergencies and has engaged in monthly training exercises with its volunteers since its inception, certifying the capability of each individual on its team before he or she deploys.

“ David (Spackman) was our operation founder. He had been in an infantry officer in the British army, and he had an absolutely rigorous approach. It was almost a joke, we were so military in the way we went about things. We were so structured and so disciplined. It was important to know that we were never a volunteer network. Rather, we were an organization from day one, and people were hired as volunteers to fill specific roles as a team with jobs to do. It was approached in a totally structured way and it was top down. We had a group that got together to discuss ways and means of doing things. But once we decide how we were going to do it, we

pretty much dictated to the team: This is how we are going to do it.” —Nigel Woof, *MapAction*

Other groups—often those that began in a realm outside crisis response—are just beginning the process of adopting internal procedures that guarantee consistent, reliable operations.

Some newer V&TCs have begun debates between internal factions, often between technologists who wish to provide platforms for general use and crisis responders who wish to support the application of these platforms to specific humanitarian operations. Some have debates between factions who believe one technology or method is being advocated above others. Others worry that the organizations will need to make fundamental changes to their mission and organizational design to chase the resources necessary for transforming a volunteer organization into an institution that performs a critical role during a disaster. These debates are ongoing. There is also a real possibility that competitive dynamics—if taken too far—may start to damage brands which the V&TCs have begun to build within the international humanitarian system.

“ Unlike other V&TCs which can bend rules because they are oriented toward humanitarian operations, OSM is oriented to building a fully open map of the world, and must therefore ensure that data that get input into the map has clear licensing. This perspective makes OSM more purist than other V&TCs.” —Kate Chapman, *Humanitarian OpenStreetMap Team*

The conflict over how entry into humanitarian response is changing the nature of V&TCs is one to watch closely. Like Wikipedia, the software in V&TCs is created by a community and the value is often less in the code than in the knowledge that the code enables thousands of users to co-create. As a result, it can be difficult to separate the platform from the people who build knowledge on top of those software tools. Likewise, software itself regulates what a person can and cannot do within the community. When crisis responders ask for (or themselves build) new features, they are also asking the community to change the range of possible behaviors that users perform in the software, which is roughly analogous to asking for a change to law or policy in a real-world town or city. Whose software code gets used—a crisis responder's or a technologist's who wishes to see the software remain focused on its original, far-more-general mission—is sometimes a matter of choosing which policy is the law of the land.<sup>9</sup>

Some V&TCs believe in the potential of technology to change slower-moving enterprises. Many have lived through the Internet revolution, having built companies that succeeded at changing the way that the general public perceives of problems in imagery, mapping, GIS, and crowdsourcing. For some, this success fuels a belief that technology is itself a driver of change, rather than one of several enabling factors that leaders can channel to transform organizations. Large enterprises move on slower timescales because their solutions generally need to be rolled out to thousands of employees. These institutions need to account for a huge range of organizational requirements and to implement accountability controls to ensure compliance with international agreements and internal processes and policies.

Many V&TCs have little experience with working on megadisasters. V&TCs are instead accustomed to shaping malleable architectures of software code. While some have deployed to the field, they tend to tackle information management challenges that allow for rapid cycle development of software. Most are accustomed to working with data whose accidental release would not put vulnerable populations at risk (though some do have methods for dealing with these issues, especially those V&TCs that work in human rights). While some of their leaders are experienced hands in international development, the organizations are generally too young to be acquainted with how programmatic choices early in the response lead to reconstruction and development outcomes years in the future. The scale of these decisions is many orders of magnitude beyond what V&TCs generally confront.

### Open Standards

The most successful integration of tools and data from V&TCs happened in the areas where the international humanitarian system has adopted the most open standards: geospatial data. Many GIS officers and V&TCs were using applications that supported Open Geospatial Consortium standards like WMS (web mapping service) and WFS (web feature service). As a result, many information systems were able to exchange critical geospatial information using reliable, consistent formats. For instance, an OpenStreetMap GIS analyst could point her application to the output of an IOM analyst's service, integrating traces of the changing outer boundaries of IDP camps (polygons). In turn, a third analyst from WFP could point his tools



to the output of both the IOM and OpenStreetMap and obtain street level data around those IDP camps.

That said, for all the years of hard work that went into making this data exchange possible, this intermeshed network of geospatial applications is still very rough. As mentioned in the previous chapter, there is still no agreement on a data dictionary that specifies how each discrete object in a response—such as a water bladder—should be described within the Common Operational Dataset (capacity, location, etc.). While it is possible to exchange base-level mapping data without a data dictionary, it is not possible to exchange operational data about objects and events—a situation confirmed by the UN CITO office's analysis of applications across the clusters as well as by on-the-ground reports from GIS officers.

The Humanitarian OpenStreetMap Team devised a basic method for making these data available to cluster officials with whom it worked. Dubbed the Humanitarian Data Model, it provides a basic means of mapping concepts across clusters using points of interest in the OpenStreetMap database. It is an initiative worthy of further discussion, especially since the most common GIS analysis tool in the field—ESRI ArcGIS—has begun to support reading and writing to the OpenStreetMap in its new ArcGIS 10 platform, though

additional work would be necessary to also support the Humanitarian Data Model in ESRI software.

While it is true that V&TC solutions are able to interoperate because they use open data standards and public interfaces (APIs), open data is itself a technical solution to the problem of transparency. V&TCs tend to believe that by making both data and decision making processes entirely open, better solutions and governance emerges at all levels.

**Application Programming Interfaces (APIs).** Helping non-technologists to understand this concept of an API usually requires metaphors. To that end, think of APIs as a protocol by which two or more organizations can exchange information. Some organizations only allow certain types of requests to arrive on specified paper forms (like a request for reimbursement of travel costs). Likewise, they only allow certain types of information to leave the organization on specified forms (like a check). APIs perform a similar role for data. Through software that runs on public web sites (called services), APIs handle requests for data. They require these requests to be in specified formats, and then serve data back out in specified formats. Mashups require software that have two attributes: a published data schema that abides by open standards; and an application programming interface (API) by which external organizations can read (and often write) data to/from the service.

“ We ought to agree on architecture, standards, and protocols. It should be possible to say to organizations when they arrive, ‘you are not playing unless you are playing according to this architecture, standards, and protocols. Use any software you want, as long as it conforms to these standards.’ The UN could use its bully pulpit role to enforce that. Otherwise you get the same wonderful people who do the best they can with the electronic equivalent of duct tape. It’s absurd to keep doing it over and over.”

—David Aylward

### Verifiability

Geodata has largely gained the trust of field staff in certain clusters as well as key policy makers and advisors. Geodata tends to be verifiable to the laymen’s eyes, because its accuracy can be ascertained by walking to the place and checking the data by eye. While pro-

cesses around the creation and use of Geodata need to be formalized, it is likely that volunteered geographic information will be used as much as volunteered information on trusted wikis (like Wikipedia). OpenStreetMap will be commonly understood to be the Wikipedia of maps.

“ I would trust OpenStreetMap. Period.” —Sanjana Hattotuwa, *ICT for Peace Foundation*

On the other hand, data submitted by the affected population and processed by crowdsourcing V&TCs is the subject of fierce debate. Among members of organizations involved in traditional survey-based assessments, there is a criticism that the data that some crowdsourcing V&TCs generated from SMS reports were not collected according to tested processes; instead, collection was done from samples which are unlikely to be representative and may have self-selection bias. USAR teams found that a high proportion of SMS reports about entrapments turned out to be false leads. Many were sent by families who wished to recover a body of a person that was known to be dead.

“ Overall 70% of the information that came in about people being trapped was unreliable. Many people fully understand that their family members are dead, but want us [USAR teams] to come to bring out the bodies.” —Ramiro Galvez, *UNDAC*

However, crowdsourcing V&TCs are not claiming that this data is comprehensive or statistically valid; they are pointing to SMS reports as sensors that give testimony—which provide data about where a more traditional survey team might allocate scarce resources for certain types of problems. This tension is unresolved and will require much further dialogue.

### The Need for an Interface

To open their information flows into the international humanitarian system, V&TCs will have to build and demonstrate reliable and consistent capabilities. The international humanitarian system will also need to adapt to different methods of work based on open standards and web services, and will need to establish agreements with V&TCs to aggregate and analyze reports from individual voices that emerge from disaster affected communities.

“ A lot of these NGOs are being created because we have failed as a community to portray the situation on the ground to the rest of the



into the international humanitarian system will require careful consideration not only of tools and practices but also of underlying beliefs, including how those beliefs align and how they conflict.

Some of problems that need to be solved form the subject of the next chapter.

world. These new players feel they need to provide the information. There are a lot of gaps in what we are doing and we should get these new NGOs to focus on these gaps instead of duplicating what we are already doing.” —*Ramiro Galvez, UNDAC*

Information sharing and integration across clusters will require open data exchanged over open interfaces using open data schema. The system has already stepped in this direction. The question is how to foster further work that integrates new voices and new opportunities into the system.

“ I really think that there is no other way than to keep working together in order to improve the way the affected populations share and communicate emergency information. The people will share information no matter if the process will be managed or not. Same as people share information about what they had for lunch, they will share information during crisis. We as a community have a unique opportunity to step in to the process, if not as managers, than definitely as facilitators who can help to translate these conversations into something the responders (no matter if international or local) can understand. I am not saying that we have all the know-how at hand right now, but we started the process, we learned and we have ideas how to make it more solid.”

—*Jaroslav Varuch, Ushahidi*

To this end, it is important to realize that the international humanitarian system and V&TCs have significant differences in culture, mindset, and approach. The two communities also have important overlaps, with key individuals serving as bridges between problems in the field and capabilities in the cloud. Connecting V&TCs

# 05 INTERFACE

## INTERFACE REQUIREMENTS

A partnership between the formal humanitarian community and the informal V&TCs requires an interface between the two systems—a set of protocols not only governing flows of data but also different ways of thinking about decision making, problem solving, and conflict resolution. This interface should be designed to work during a humanitarian emergency as well as during the transitions from preparation to response and response to recovery. To aid adoption, the interface must start and remain lightweight, simple, and adaptable.

Interviewees expressed strong support for integration of technical capabilities to create more efficient information flows. An ‘API for the UN’ was a topic of discussion at the 2010 Crisis Mappers conference in Boston, with the core notion being that the UN should partner with the V&TCs to establish a common set of protocols to connect their people, workflows, and data flows. The ICT4Peace Foundation heard this appeal and integrated the concept into its recommendations for the UN CITO’s Crisis Information Management initiative.<sup>10</sup> What remains, however, is to design the interface itself. These next two chapters offer a first formulation of the idea.

The design is based on a synthesis of previous lessons learned about connecting the V&TCs into formal organizations, including prior work by:

- UN OCHA Columbia
- iHub (Kenya)
- UN Global Pulse
- MapAction
- UNICEF Innovation Unit
- InSTEDD Innovation Lab (Cambodia)
- Strong Angel Disaster Response
- Demonstrations
- Crisis Mappers Stand-By Task Force

# INTERFACE REQUIREMENTS

Many of these initiatives share a common practice: they approach the integration of V&TCs with formal humanitarian organizations as a design problem. That is, they build systems that capture in their designs how each type of user approaches different tasks and plans for how those users interact. They also accept as a core truth that systems must adapt to changing circumstances, including changing patterns of use and new external challenges.

This report seeks to take a similar approach. It has its own set of assumptions, which balance several ideas and keep them in creative tension:

1. To be honest to the practical constraints while also ensuring that the initiative will challenge the status quo.
2. To acknowledge that part of the problem is technical but focus the supermajority of effort on adapting practices and policies to a new emerging set of realities and expectations.
3. To reduce the complexity of the problem into manageable bits without diluting the message and losing its connection to ground truth.

The extent to which this first formulation succeeds is due to the patience and openness of our interviewees. What follows is a proposed framework for an interface between V&TCs and the formal humanitarian community put in two parts:

1. **Chapter 5: Interface Requirements.** A formulation of design problems that need to be solved based on the analysis in Chapter 3; and
2. **Chapter 6: Organizational Design.** A proposed organizational design that meets most of these design challenges from Chapter 4.

It is the hope of the partners in this report—OCHA, the UN Foundation and Vodafone Foundation Technology Partnership, and the Harvard Humanitarian Initiative—that this outline will initiate a conversation with a larger group of stakeholders than could be interviewed in the scoping phase of the project.

## FORMULATING THE DESIGN CHALLENGES

Designs succeed based on the questions they ask and answer. In this case, the first and most important is: what framework will allow multiple communities—each with its own understanding of humanitarian work—to learn from each other, gradually build trust through collaboration on shared problems, and find ways to act in concert? This type of problem—one where communities engage in learning and coordination over multiple cycles—tends to be best met by systems thinking, which uses feedback loops to map out interactions over time.<sup>11</sup>

“So it's more about having appropriate processes that can harness the capacity of ICT, of making sure human resources have the appropriate competencies, that they're aware of how to use technology, and how it can play an important role. And I think if people keep jumping to the tool or the technology as the solution, we will not move forward.”—*Brendan McDonald, OCHA*

Adopting the approach begins by mapping out the key interactions in a system. For the interface between the V&TCs and the formal humanitarian communities, six core tasks are coming into focus:

1. **Identifying common problems:** Key stakeholders in the humanitarian system wish to engage in dialogue to discover areas where values and practices are in alignment and conflict. Participants will need to work through a neutral forum to discuss gaps in the current processes and devise methods to address those gaps, including major rethinking of underlying processes and workflows. This thinking includes ethical

questions about the application of any solution—which will always be a combination of technology, people, and practices—to situations where lives are at risk.

**2. Innovating through field experimentation:** Cross-functional teams composed of experts and technologists from the formal and informal humanitarian community have been collaborating on tangible, simple, practical approaches to close gaps identified by stakeholders and reinvent processes (including work through the relief experiments at Camp Roberts, Strong Angel, and classes at the Parsons School of Design and NYU ITP, like Clay Shirky’s Design for UNICEF class and the humanitarian information design class at the Parsons School of Design). Working with UN and NGO field staff and developers from the developing world, innovation teams co-develop the solutions in the field, partnering with the personnel who need to make more informed decisions. This field-testing alternates with development in an iterative cycle akin to Agile software development techniques.

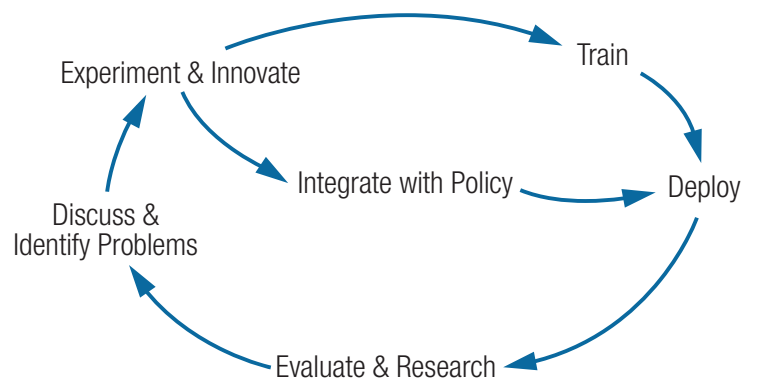
**3. Cross-training personnel in tools and practices from the formal and informal humanitarian systems:** This effort would enlarge a growing consortium of educational institutions that are already training humanitarian personnel. The effort would work with the institutions to offer curricula for 1) V&TCs to learn the practices and history of the formal humanitarian community, and 2) the UN and NGO personnel to learn how to apply new (and newly developed) tools to their work. This work has begun at a crisis mapping program at Tufts University and at the Harvard-Tufts-MIT Humanitarian Studies Initiative.

**4. Deploying a coordination cell.** This activity would pull cross-trained staff from the formal and informal communities into a coordination cell that can deploy to emergencies, providing both field-based support and reach-back support from major centers of activity. The team would focus on synthesizing information from narrative reports, crowdsourcing, and structured data feeds into a composite picture of the emergency for decision makers. They would include translators and (where possible) a coordinator who mobilizes the diaspora community and other civil society organizations from the affected region.

**5. Integrating tools and practices into formal policy:** A policy officer is formally tasked with coordinating the policy aspects of the entire enterprise: forum, field experimentation, coordination cell, training, and evaluation. The officer would work with the experimentation team to identify experts from across the formal and informal humanitarian system with the goals of 1) aligning data standards with the Common Operational Dataset; 2) ensuring that all solutions enable the construction of a common operational picture and facilitate more effective decision making; and 3) ensuring that training is enabling field staff to learn and extend these tools and practices to their own ends. This officer also works to integrate V&TCs into the funding cycles for appeals and build policy to allow for funding vehicles to reach small but high ROI efforts from V&TCs.

**6. Evaluating the results:** A consortium of academics, donors, beneficiaries, and members from the formal and informal humanitarian communities monitors the entire system and reports on areas of success and shortcoming. This consortium establishes a safe forum to discuss failures and the lessons that were learned from the initiative which failed at any stage of its development, from conception to deployment.

These six elements can be placed into a feedback loop, that shows how creating learning opportunities between V&TCs and the formal humanitarian community can lead to a virtuous circle, improving outcomes through all stages of the cycle:



## PROBLEMS TO BE SOLVED

Based on research on the information management challenges in Haiti and on the current tensions between the international humanitarian system and the V&TCs, there are several categories of problems that should be tackled:

- Data Standards and Flows
- Workflows to Support Decisions
- Professionalization
- Experimentation
- Education and Training

### Data Standards and Flows

**Implementation of the Common Operational Dataset (COD).**<sup>12</sup> There are three issues emerging from research on the COD: 1) How to ensure integration of information systems that the clusters and V&TCs are using with the various data standards specified in the COD; 2) How to establish which organizations maintain which data sets, including the specification of a set of tools, practices, and policies that allow for interoperable data flows within the cluster system; and 3) How to describe the specific data objects that are referenced within the COD. The third issue was problematic in Haiti.

“...the common operation data set is something which is very important... but when the operational data set is not encompassing the WATSAN objects, how are you going to describe your water or how are you going to describe your pumps and how are you going to describe each and each of the features that you need to have to describe when you operate in WASH?”—Former UNDP field worker

**Unstructured Data and Structured Data Feeds.** Managing the flow of critical operational data elements by sharing unstructured data such as situation reports, slides, emails, and SMS messages leads to a number of problems, including information overload and difficulties in isolating trends. Critical data elements and indicators of the humanitarian situation can currently only be found if a human reads a document and types an attribute of interest into a database. Work on this problem should focus on characterizing data by location and thereby making them discoverable through maps, spreadsheets, and database reports.

**APIs and Open Data Services.** If the clusters are going to coordinate activity more effectively, they will all need to use published, open data schema to describe activities and assets in the field and to make the under-

lying data available within these schema using open application programming interfaces. These interfaces or APIs will enable field staff to subscribe to services that provide them with status information about WASH, Camp Management, Health, and other sectors for any given location, providing the basis for a shared picture of the problems and needs for any given place. Without an API and open data, the system will continue to struggle to pull together a common operational picture, and managers will continue to be frustrated with how little they know early in an operation.

“As the Secretary-General said at a recent UN Global Pulse event: ‘in order to answer problems of global scale, you need solutions that span the globe as well.’ With an interconnected world, you’ll see an ability to have volunteerism at a scale that didn’t exist before. One of the things that Clay Shirky often says is that ‘the only thing that scales to the number of people in the world is the number of people in the world.’ There is now a chance to really build some strong scaling, open-source solutions.”

—Chris Fabian, UNICEF



**Simplified Early Assessments.** As part of ongoing work to develop global standards for needs assessments<sup>13</sup>, the top 100 indicators might be reduced to an even more lightweight set of simplified metrics for use by V&TCs during the first 72 hours of the response. These simple metrics could be collected by both informal and formal communities through all possible channels, including crowdsourcing. V&TCs might also explore the use of automated statistical methods to determine if the dynamics of the current crisis might match patterns from previous deployments.



### Verification and Validation of Citizen-generated Information (Crowdsourcing):

Some USAR teams found that the accuracy of information generated from crowdsourcing platforms was often low; sometimes less than a third turned out to be accurate. The tendency of citizens to exaggerate under extreme stress should not be underestimated, nor should the potential service that crowdsourcing will serve in future operations as citizens learn how to use social media. For this reason, humanitarian communities need to develop methods for the application of crowdsourcing, including verifying and validating information that has been generated by citizens within the affected area as well as by volunteers from around the world.

“It can be used as a communications channel to give some sort of dialogue between three main actors—the humanizing community, the public authorities, and the population.”—Kurt Jean Charles, *noula.ht*

**Designing the Role of Field Troubleshooter.** Five interviewees performed a critical role during the response: they walked tent to tent, asking cluster staff what their problems and gaps were, and then matched those information needs against resources. In some cases, troubleshooters outsourced the problems to networks of experts in Crisis Mappers or OpenStreet-Map. In others, they asked reach-back teams from their own organizations to perform the work. In one case, the solution generated created a program which exists at IOM to this day. However, research revealed that the departure of these troubleshooters was very disruptive,

sometimes putting a stop to positive dynamics that had only just started. There is a desire to explore how to formalize the role of troubleshooter, so that this function can foster cross-cluster information sharing and enable the gradual construction of a common operational picture.

“To have a fixer wandering around the grasslands with a number of different vocabularies was incredibly valuable. Someone who could walk into a tent and ask: ‘Tell me what it is that you can’t do today.’ I played this role in Haiti. When I went into the hospital, as a physician, I heard that they needed lactated ringers. So I called the hospital ship and got a pallet of what they needed. Having these informal fixers is cheap and easy. They can calm people down, help them see other points of view, get to the root of the problem, and fix it. There is no one who currently has this as an assigned task.”—Eric Rasmussen, MD MDM, *InSTEDD*

### Workflows

#### Fragmentation of Information Flows and Systems.

Interviewees expressed strong worries about the fragmentation of crisis information management systems. In the field and headquarters, it was impossible to synthesize data from diverse workflows for each cluster and sub-cluster into a composite picture that facilitated decision making. That said, division of information into functional silos is not itself the root cause of the fragmentation problem. Rather, it is an expression of the dominant analytical methods of the present age, which divides complex problems into ever smaller parts, in the belief that validity of each well-crafted answer to small puzzles creates—like assembled bricks—a composite edifice of understanding of the whole. In crises, however, there is no mechanism to collate all the bricks into one place, and no information masons whose job it is to build a shared structure.<sup>14</sup> As more information flows through humanitarian operations, the success of the cluster system relies on its ability to synthesize the insights of each stakeholder into a composite view of a dynamic situation. It was a common theme that this process will derive from the application of simple, lightweight frameworks (described further below). Fragmentation is a design challenge of deep importance.

“I’m a firm believer in the ability of the right technologies to enhance our decision making and information sharing abilities. That’s sharing internally and also with affected populations about the situation and about priorities and so forth. That only, only ever works if a) they’re simple enough, and b) that the processes to make them standardized and repeatable exist.”—Nigel Snoad, *UNDAC*

**Shared Situational Awareness:** The aggregation of information from many stakeholders and information types (geospatial, news feeds, structured data feeds, email) is impossible without open data and APIs. However, once these elements are in place, it will be possible to pull data together into a composite information fusion that can be visualized in multiple ways. This fusion also opens another possibility: the analysis of patterns, trends, and problems based on lessons from previous emergencies. Among UN staff, there was a growing interest in exploring the creation of an information management cluster to perform this role, perhaps with an NGO-analogue to MapAction to perform visualization and analysis.



“There is a very good argument for an information management cluster or whatever it gets called. There has been an explosion of actors in that sphere in the last couple of years and I don't think it is realistic to expect a kind of lead dog to emerge from within that sector whom everybody in the sector will agree to be coordinated by. So I think the only way to coordinate is to have a cluster-like approach, for all its probable agonies.” —Nigel Woof, MapAction

**Microtasking with Audit and Task Tracking.** This effort would explore the application of microtasking to outsourcing menial tasks that consume massive amounts of field staff time to offsite locations, where crowds could perform the work and send the results back to the field. Microtasking is a type of crowdsourcing that divides a large effort into discrete, small tasks that generally take only a few minutes each to complete. When spread over a large number of people—often dozens or even hundreds—the task can be completed with many microtasks moving in parallel. This process is akin to parallel supercomputing but using humans as processors. It is particularly suited to tasks like transcribing written contacts lists into spreadsheets, geolocating objects in a spreadsheet, and translating short items like SMS messages. The effort requires some degree of auditing to ensure that each task is accurately performed and some degree of tracking to ensure that no task is performed more times than is necessary to ensure accuracy.

“Microtasking is a great way of addressing large volumes of information on short notice.” —Rob Munro, Mission 4636 and Stanford University

“We heard about people in the field who ended up staying up all night doing data entry, because they did not have back office support in their own organization and they did not have an agreement with someone else to do their work for them. It was incredibly frustrating to be at the other end, knowing that we could have helped. Why is someone staying up to 3AM in Port-au-Prince typing contact lists?” —Mark Prutsalis, Sahana Foundation

**Closing the Decision-Data Cycle:** The integration of data flows into UN decision making processes is itself a work in process. This effort would seek to better link the financial appeals cycle with information collection and analysis and would benefit from close cooperation between donors, V&TCs, and agencies with formal mandates under the IASC Needs Assessment Working Group. One type of success would be to connect all stakeholders into a common information flow: from donor to beneficiary and back.

“It would be great to have some of the feedback loop closed where we could know where to funnel the information of the kinds of information that specific actors on the ground want.” —Jen Ziemke, CrisisMappers

## Professionalization

### Humanitarian Principles and Code of Conduct:

Interviewees expressed deep concern about ensuring that new players in the humanitarian space abide by humanitarian principles, particularly through the protection of information that contains details about specific individuals in the affected population (not to mention personally identifiable information about individual responders). One proposal is the development of a Code of Conduct governing the actions of members of the V&TCs. The formalization of this Code of Conduct is an area in which the UN and Red Cross can provide guidance.



De Tocqueville wrote, “In democratic countries, knowledge of how to combine is the mother of all other forms of knowledge; on its progress depends that of all the others.”<sup>15</sup>

**Capacity Building:** One expectation that the formal humanitarian organizations have of new actors from the V&TCs is that they will conform to existing rules on contracting, accountability, and ethics. New actors must be reliable and consistent. That said, many in the V&TCs admitted that they are still developing their financial and governance structures to enable this reliability. Some are honest about the still uncertain dynamics by which they are able to generate a surge of volunteers. One area of work therefore needs to be building capacity in the V&TCs. It may be prudent to hold a gathering of contracting officers, financial officers, design, monitoring and evaluation (DM&E) staff, and information management officers (IMOs) to work with leaders from the V&TCs. This working group could educate V&TCs about what processes would make it easier to participate in the formal response. It would also help younger V&TCs to find alternative arrangements for funding, such as working underneath another trusted entity. The capacity building can also work in the other direction. Large institutions tend to be unable to adapt quickly to circumstances that are not in their plans and systems. It should be possible to harness the energy and speed of development in the humanitarian free and open source software (HFOSS) communities to create flexible, simple tools for the clusters at relatively low cost. Such work might occur in partnership with existing efforts, including work under UN Global Pulse and the UNICEF Innovation Unit.

“Using incoming social data for real time visualization and situational awareness is a culture shift for organizations like the Red Cross and FEMA. These tools not only allow us to anticipate needs better, they may also increase efficiency. For example, damage assessment is a time-consuming process in every response. We’re now looking at ways we might hand over that responsibility to neighbors with digital cameras and SMS capability.”

—Wendy Harman, American Red Cross

**Service Level Agreements:** In the past, establishing reliable, predictable services from V&TCs has taken the form of service level agreements between large institutions and organizations that rely on volunteers. While such agreements are already in place with NGOs, like MapAction, the application of service level agreements to private volunteer organizations needs further exploration.

“Sustaining a volunteer effort is extremely difficult. This was as big and bad a disaster as you could imagine. But beyond 2–3 weeks, most volunteers need to go back to their jobs, their spouses, and their kids. Sustainability was an issue. Partnership agreements that can guarantee support and service can help address this problem.”

—Mark Prutsalis, Sahana Foundation

It might best be used to guarantee reach back support for menial tasks that are best outsourced from fielded staff. It is important that any service level agreements specify some level of project management and tracking around what the V&TCs are doing.

“ I think the key will be to make sure that a core group is enabled and empowered to pick up the slack when the emergency hits in terms of guaranteeing the service level response—almost like a service agreement. There would be a certain minimal level of response that the practitioners could draw on. I’m not talking about extensive contract documents here, but that there would be fairly clear understandings on both sides about what you could expect from both sides.” —Paul Currión

**Competition and Collaboration.** In the V&TCs, competition has emerged as a disruptive dynamic. Communities that need each other’s strengths are being forced to compete for money in the donor pool, and some are finding the need to compete in areas of overlap or are being asked to tackle issues where other V&TCs are already working. Some competition is good; but coordination of effort needs to be put in place so that scarce resources are not wasted on work which is already complete or better done by other organizations.

**Communicating with Disaster-Affected Communities.** The Communicating with Disaster-Affected Communities network brings together leading relief, development, and media development agencies in a collaboration that recognizes information sharing as a key humanitarian deliverable. The network seeks to identify and promote best practice in communicating with disaster-affected populations, with a view to helping to save lives and reduce vulnerability. CDAC member agencies are collectively working to reach out to aid agencies to help them improve the way they communicate with affected populations. Members document examples of best practice, collect data from monitoring and evaluation exercises, and explore how new technology can improve information exchange. In response to select emergencies, CDAC member agencies work together in-country to improve communication with affected populations. In Haiti, CDAC was funded to provide a coordinated service to disseminate life-saving information. It operated as the “Communications Sub-Group” within the UN Cluster System. Its exploration of the value of new technology was limited; more work needs to be done in this field.

## Education and Training

**Training curriculum.** Ensuring a common approach to IM problems in the field will require some method of training (and cross-training) field staff in the various data collection and analysis methods that various clusters and V&TCs use. OCHA already is having difficulty

finding and hiring such field staff. Other personnel from organizations that are formally part of the international humanitarian system also should receive training in a common set of IM tasks specific to their work as well as in methods that V&TCs are developing to complement cluster-level IM workflows. Training for the informal community would provide volunteers and technologists with a history of humanitarian operations, including why certain policies about clusters, protection, and humanitarian principles have come into being. It would also ensure technology is in the hands of practitioners before the disaster.

“ The humanitarian community has training in logistics, nutrition, water & sanitation, and security procedures. But it has not really developed a curriculum for information management and information & communication technology.” —Dennis King, U.S. Department of State Humanitarian Information Unit

“ These are tools that need to be in the hands of practitioners long before something like this happens. It’s very hard when we know coming into something like Haiti that we should not really advocate dropping what you are doing and trying to learn a new tool. But at the same time, seeing that there are tools that can really do the job better, it is hard to know what is appropriate to inject as a new thing to the folks in the field versus how much do you need to stay out of the picture.” —David Bitner, Sahana Foundation



**Simulations and Complex Field Experiments:** In music, though a performance is the “event”, most of the real work happens in rehearsal; the performance is a process that flows from prior difficult conversations and serious play. Those who expect a practice session to go perfectly are not actually rehearsing; they are just running through a composition and therefore learning only a fraction of what is possible to discover. Musicians who engage in deep inquiry tend to experiment openly and try ideas that they initially dislike. Humanitarian operations lack these types of spaces, where practitioners from different backgrounds and affiliations can practice how information flows between organizations. There are currently few ways to explore how V&TCs can augment the capacities of larger institutions. Simulations can help with this process, but these events tend to incorporate evaluation into their rubrics; it is hard to try new ideas when one is being rated for one’s competency. There must be a place to experiment and fail. There is also a need for a space where practitioners can explore new functionality that they have wanted to create but never get time to pursue. These spaces might well take the form of existing field experiments that were pioneered through the Strong Angel series.

“The threats from these new technologies are what you would find with any new technology or new intervention. The biggest threat is not being open about failure and not being open about what works and what doesn’t. A second threat is the siloing of work and the development of parallel systems to perform similar tasks in different verticals. Both of these problems can be addressed through open source technology, open communities and clear and honest communication, but is always a danger of falling into familiar patterns.”  
—Chris Fabian, UNICEF

**Finding Balance between Science and the Art of Humanitarianism.** There is a tension in the humanitarian community on what should drive decision making: compelling narratives or trending numbers. Traditional views of the scientific method are largely predicated on a notion that one can only know what one can measure. As a result, a tendency to rely on hard data is deeply embedded in humanitarian practice, especially evidence-based assessments. That said, there is worry that in the numbers, there is a loss of focus on the people and the parts of humanitarian emergencies which cannot be measured. As Paul Currion put it,

“I am a big fan of making decisions based on data. And I still am, but the problem is the more that you emphasize evidence as

being the primary vector—the primary factor in your thinking—the less it becomes about the people and the more it becomes about the numbers.” —Paul Currion

With the rise of powerful ways for affected communities to voice their stories, and with the advent of new tools to turn these stories into statistics, the balance between the two sides requires further exploration.

**Identifying interface problems at each level of interconnection.** While all stakeholders wish to change the realities for affected populations, the traditional humanitarian communities and V&TCs each have different visions for how this work should happen. One will tend to work as an enterprise: slowly towards consensus of many agencies. The other will progress with many experiments, most of which will fail before they reach the field. Efforts toward some synthesis must start by exploring the perspectives of all stakeholders, accounting for the ways that everyone from senior leaders to illiterate farmers will use information flows to make decisions. There may be multiple answers, which need not be reduced to lowest common denominators, but each explored in parallel and held in creative tension.



## Experimentation

**The exploration of tangible collaborations across clusters.** Humanitarians need to explore how integrated information systems could provide decision makers with a composite picture of the unfolding emergency. If information could flow across clusters and V&TCs, it might be possible to understand how to plan for mass movements of refugees as a collaborative endeavor, capturing the links between logistics, water, sanitation, health, and shelters and connecting to leaders in the affected population.



**Establishing a framework for performing field experiments.** Mimicking the success of the work of InSTEDD's Innovation Labs and the plans for similar sites for UN Global Pulse, a working group would find ways to engage local actors from field offices in the identification of problems and development of solutions *in situ*. This endeavor would take developers out of the office and bring them into the field, where the challenges of austere conditions will drive them to adopt simplified solutions that work in real-world environments.

**Simple, Lightweight Processes that Enable Learning in Real Time:** Large institutions tend to be unable to adapt their processes in real time to meet the challenges of each unique disaster. Instead, big organizations try to develop comprehensive processes that cover most known contingencies. This approach may be accurate and low risk, but it is slow and sometimes cannot adapt to new dynamics that challenge the underlying assumptions of the processes. Humanitarians should work on developing design protocols that are

aligned with systems that V&TCs are using, which tend to be relatively simple to implement, at least compared to most traditional technologies for coordination and electronic data exchange, and have comparatively lightweight requirements around data standards. Simpler is faster and more accurate in the chaos of the disaster; it is also more adaptable. That said, new methods around iterative learning would need to be adapted for larger organizations, which would entail working with significant cultural challenges.

## SUMMARY

These design challenges are but a subset of the issues to be confronted by the community. The authors hope that they provide a useful starting point for discussions, and that they spark considerable debate. The organizational design for this ongoing dialogue is the subject of the next chapter.