NOI PER GENOVA

THE COORDINATION OF VOLUNTEERS

IN THE GENOA FLOOD OF 2014

NOI PER GENOVA

IL COORDINAMENTO DEI VOLONTARI

DURANTE L'ALLUVIONE DI GENOVA DEL 2014

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Abstract

Volunteers represent a valuable asset during emergencies caused by natural phenomena. A recent flurry of contributions has underscored the capabilities of so-called digital volunteers to provide effective contributions by providing useful information, helping mitigate the damage and supporting the recovery in the aftermath of disasters. Social media have been identified as specific enablers of volunteer work, as they provide a bottom-up coordination tool. We contend that albeit useful for broadcasting information and corroborating other sources of information, the use of social media by a vast network of volunteers cannot substitute for the highly contextual knowledge developed locally on the scene. We explore the issue by analyzing volunteer work – both digital and physical – occurring during the Genoa flood of 2014.

Keywords

Coordination, Volunteers, Emergency, Flood, Social media.

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Noi per Genova. The coordination of volunteers in the Genoa flood of 2014

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Introduction[1]

A powerful rainstorm amassed over the Gulf of Genoa in the morning of Thursday, 9th of October 2014. The city was not new to extreme phenomena associated to rain. Three years earlier, it had been flooded by the heavy rains brought by the Mediterranean cyclone Rolf, causing the death of six people. Despite this history, the alert system and the civil protection procedures then in place proved profoundly inadequate.

The flood had a huge resonance at the national level, despite the relative paucity of human lives lost, as apparently only one person died because of the flood. The main reasons that can help explain the perceived magnitude of the event are manifold. First, it hit a city that had been flooded just a few years before, essentially in the same way. Second, the material damages suffered by the inhabitants of the flooded area were remarkably high. Third, the event highlighted the relative inadequacy of the emergency plans set up by the municipality to face such events, even in light of the previous, disastrous precedents. Fourth, the disaster and the apparent immobility of the official civil protection structure, led to a downpour of sympathy for the plight of the city that spurred many young volunteers to head to Genoa – or reach the hardest hit area from within the city – to offer their help. The media, at the time, solidified this sentiment describing this movement as the direct descendant of the so-called "angeli del fango" (mud angels) who convened to Florence from all over Europe to help save a part of the enormous cultural heritage that risked disappearing in

the 1966 flood that hit Florence. Objective similarities between the two events are actually very few; however, the generosity of young volunteers, in both cases, is unquestionable.

A remarkable difference, in the two episodes, has been the role apparently played by social media in the promotion and coordination of volunteer work in Genoa's case. The popular version of the story is more or less the following: volunteers of all sorts started converging on Genoa, spurred by the images of desolation and sorrow broadcasted by TVs. As the volunteers started arriving, or better yet, even before leaving home, they were directed towards the most critical areas by a smart use of social network applications, mainly Facebook pages, that allowed for a much more precise and efficient allocation of volunteer work than had been historically available in previous disasters. Scholars focusing on the interplay of information technologies and volunteers (e.g. Starbird, Palen, 2011) underscore in a similar way the purported capabilities of social media to coordinate work during emergencies.

In contrast with this view, we adopt a view of social media as artifacts that are designed, adopted and used in the coordination processes (Masino, Zamarian, 2003) generating different outcomes as the result of the complex interplays between these choices.

We contend that this description of volunteer work during the disaster is very partial, for several reasons. First, digital and traditional volunteers interact in complex ways. We collected evidence that actual coordination overwhelmingly happened at the "physical" level, requiring face-to-face or at least telephonic interactions. Moreover, the integration of volunteer and professional work in the relief efforts was very problematic. Second, the use of social media had a mixed impact on the relief efforts. On the one hand, social media had a marginal role in the coordination of "emerging volunteers." On the other, they largely substituted for local authorities, which failed to adequately inform the public in most cases.

Examining the interplay between traditional and digital volunteers (Reuter, Heger, Pipek, 2013; Whittaker *et al.*, 2015), this paper offers several theoretical contributions.

Within the debate on emergent versus designed coordination (Beckhy, Chung, 2018; Faraj, Xiao, 2006), we present a case of "surrogate" coordination, that is, a case where volunteer coordination work substitutes the designed coordination work normally undertaken by civil protection authorities. This phenomenon does not happen because of a complete absence of coordination in the relief efforts by the authorities, but because a combination of events and poor choices creates a lull in time- and space-critical activities that is filled by volunteers. As the institutional chain of command finally comes to life, coordination by volunteers is gradually phased out. However, this coordination varies in its nature from partly designed to mostly emerging and decentralized.

A critical element that allows for this form of coordination is the comparative agility of the decision-making process in volunteer organizations (Drabek, McEntire, 2003; Kendra, Wachtendorf, 2007; Majchrzak *et al.*, 2007), specifically those strongly relying on digital technologies to exchange information (Reuter *et al.*, 2013; Whittaker *et al.*, 2015). However, digital communication technologies, *per se*, can be integrated differently in the coordination process. Specifically, comparing the coordination tools adopted by two volunteer organizations – an altogether new player, and a volunteer group that went dormant after helping during a previous emergency – we outline the structural elements that allow the older organization to produce significantly better results. We claim that the different distance of these two organizations from situations that predates structure – synthetic organizations *à la* Thompson (1967) – affects their coordination capabilities. Specifically, the presence of a role system, a shared task knowledge base and common expectations on the flow of tasks (Bechky, Okhuysen, 2011), alongside a specific attitude of volunteers towards improvisation (Kendra, Wachtendorf, 2007) separate the two associations. In turn, these differences, contribute to the ability of the more mature organization to flexibly delegate decisions towards its periphery.

The rest of this paper is organized as follows. The next section introduces the theme of coordination and the role of volunteer organizations in disaster mitigation and recovery scenarios. Then follows a short methodological section. We then present, in two related sections, an overview of the case of volunteers in the Genoa flood of 2014 and a brief analysis. Final remarks conclude the paper.

Coordination in extreme contexts and (digital) emergent volunteers in disaster relief

Coordination is a defining object of inquiry within organization theory, functioning as the pivot for the most important theoretical constructions since at least March and Simon's masterpiece (1958). Coordination is often described in terms of integration of the results of interdependent tasks generated by some form of division of labor (Argote, 1982). Coordination processes have been characterized by their information-processing features, specifically in terms of uncertainty (March, Simon, 1958), and by their interactions with the interdependencies they aim at solving (Thompson, 1967).

Extreme contexts – such as relief efforts during emergencies – provide a challenging environment for coordination efforts, as uncertainty is prevalent and the definition of the conditions for integration are seldom met (Faraj & Xiao, 2006). In fact, extreme events can present unique challenges that need to be met with new ideas and solutions (Frigotto et al, 2021), while preserving – as much as possible – the precision and the effectiveness typically ascribed to formal coordination mechanisms (Bigley, Roberts, 2001). Therefore, coordination features of specialized organizational forms have become prominent in the literature on High Reliability Organizations (HROs) (Perrow, 1999; La Porte, 1996). These difficult conditions are often compounded by the activation of temporary, volunteer organizations alongside professional ones (Majchrzak *et al.*, 2007). These organizations typically lack the structural elements of highly specialized organizations (Faraj, Xiao, 2006). However, emerging volunteer

organizations present a few interesting features (see Whittaker *et al.* 2015 for a recent comprehensive review).

Volunteer work in disaster relief

Volunteer work as part of disaster relief aimed at easing the consequences of a natural, or man-made disasters, has been studied extensively (Atsumi, Goltz, 2014; Helsloot, Ruitenberg, 2004; Whittaker *et al.* 2015).

Most of the literature distinguishes between "spontaneous", or emerging (Majchrzak et al. 2007), or informal volunteers, and volunteers affiliated with emergency management agencies or organizations (e.g. Red Cross/Crescent, volunteer firefighting corps in the Alps region) (Alexander, 2010). Spontaneous volunteers are of specific interest for the scope of this paper, as most of the volunteers that converged on Genoa to help were in fact spontaneous. This kind of volunteers share a few distinct features. Spontaneous volunteers act because of a real or perceived lack of response from authorities in a time of need for the population (Cottrell, 2010). Emergent volunteerism is frequently open to innovation and improvisation (Kendra, Wachtendorf, 2007). In fact, in many cases, extreme events present unique challenges that need to be met with new ideas and solutions (Frigotto *et al.*, 2022). Spontaneous volunteers are particularly apt at the introduction of new methods and solutions precisely because they lack a professional training. From an organizational standpoint, emergent volunteers often have 'real-time,' 'on-the-ground' perspectives of the problems that affected people face, and can configure themselves and their responses to meet local needs. Unlike other formal response organizations, they are rarely constrained by rules, strategies and technologies that may inhibit effective local response (Fernandez *et al.*, 2006). The risk and the dangers associated with producing inadequate responses are, in these cases, counterbalanced by the perceived need to do something (Kendra, Wachtendorf, 2007). The main risks associated to emergent volunteers are the failure by emergency managers to make good (or, in fact, any) use of them, and the inherent incompetence of their actions in case they are deployed (Fernandez *et al.* 2006). A specific risk, which volunteers present, is

the highly traumatic environment that they have to face: if not properly trained they can become victims because of the high emotional impact of the situations (Quevillon *et al.*, 2004). In many cases, emergent volunteers and groups last for the short duration of the effort (Stallings, Quarantelli, 1985), but there have been a few cases of institutionalization of such groups (Atzumi, Golz, 2014). For instance, the extension of normal operations to disaster relief is becoming a trend for many companies (Chong, 2009). In many of these cases, the company itself gives structure to its internal volunteers.

Looking at the set of features that the literature attributes to emergent volunteers, it is rather simple to understand their interventions in case of disasters as akin to the functioning of a synthetic organization (Thompson, Hawkes, 1962). In particular, their actions represent a significant part of the first stage in the formation of a synthetic organization, that is, the set of immediate, self-regulated, actions that survivors and other actors who are co-located with the disaster perform to help recover and mitigate its consequences.

Digital volunteers and social media

The availability of new tools of communication has allowed for new ways of participation to disaster relief and recovery efforts. This is why we can talk of the emergence of a new kind of spontaneous volunteers: digital volunteers (Starbird, Palen 2011; Reuter *et al.*, 2013; Whittaker *et al.*, 2015). As tools have evolved, so has digital participation. We can look more closely at the phenomenon mapping flows of information and their instrumentality.

Digital volunteers help produce and disseminate information through social media (Lindsay, 2011), specifically when the public authority uses them. This happens at least because of two separate needs. One the one hand, oftentimes, institutional communication channels breakdown due to the disaster itself, authorities then use social media to reach and alert citizens. On the other, volunteers start generating information on the disaster they witness first-hand, supplementing the information supplied by authorities. Different media are used for different purposes. Twitter, for instance, can serve as a tool to convey time-

critical information to citizens and rescuers alike (Vieweg *et al.* 2010). Skype, however, is more suited for pinpointing and solving discrete coordination problems (Starbird, Palen, 2011).

Digital volunteers have been hailed as a viable solution to problems related to quickly mapping specific critical points in a crises (Meier, 2013), thus helping the dispatching of rescue specialists. However, the integration of information produced and provided by digital volunteers and needed rescue efforts on the ground is still an ongoing issue, because of the uncertainties surrounding the quality of the information, its production and its reliability (Acar, Muraki, 2011).

Another important phenomenon – of particular importance to our case – is that of social digital convergence (Hughes *et al.*, 2008). Once a disaster occurs, people tend to converge to scene, physically, digitally, or both. In these cases, social media can help coordinate this convergence, extending to the online world the idea of social convergence on disaster sites already described by Fritz and Mathewson (1957). In contrast with social convergence, the number of people who can digitally convene on a disaster is practically enormous (Hughes et al., 2008). This means that participation in disaster relief and mitigation can be positive, opposite to the conventional tenet that public activity is something to police and control (Tierney *et al.*, 2001; Palen, Liu, 2007).

Despite these contributions, that have helped clarify the role of the interaction between volunteerism and online presence in emergency management, the literature on the convergence, or co-presence, rather, of traditional and digital volunteers, still presents some theoretical gaps that need further examination. In particular, evidence (and logic) seems to point to two opposite possible outcomes when digital volunteers and on scene volunteers interact. The "optimistic" scenario sees digital and physical volunteers cooperate seamlessly thanks to the coordination-enabling features of social media to convey time-critical information to volunteers on the field (Reuter et al. 2013). Yet, a more "pessimistic" conclusion can be reached, considering that structure as either an

emerging or a designed process is not an inherent property of any communication tool.

Method and data collection

In order to more deeply understand the interactions of physical and digital volunteers in terms of coordination, we chose to reconstruct, *ex-post facto* the complex case of the 2014 Genoa flood, as exemplary of the phenomena under investigation (Yin, 1994). Our analysis of the case required a recursive interaction between data collection and coding (Denzin, Lincoln, 1994). During a preliminary phase, we relied mainly on open format telephonic interviews with two key informants to reconstruct the events, recording and transcribing them. At this stage, we integrated the narrative with press articles and other publicly available written materials. Moreover, we started hand-coding the posts of the relevant Facebook pages of the main organizations of volunteers taking part in the relief efforts. This stage was combined with a second phase in which open codes were matched against the theory driven concepts derived from our reading of the literature presented in the previous section. The concepts and the narratives thus constructed were validated through a set of semi-structured interviews to a larger set of informants, constituted by both digital and physical volunteers and by public officers employed by the municipality of Genoa. These interviews occurred partly orally over the phone, and partly as written answers to direct questions via email. The first set of interviews was again recorded and transcribed. These new interviews largely confirmed the robustness of the constructs. We found that that theoretical saturation (i.e. the convergence of data around common themes) occurred after just a few interviews (Duncan *et al.*, 2001). This method allowed for a reconstruction of the causal relationships between the constructs under examination and, at the same time, preserved its complexity, (Eisenhardt, 1989; Eisenhardt, Graebner, 2007). The triangulation of different data sources (documents, interviews, online sources, social media pages) allowed a cross-validation and verification of the reliability of sources in

terms of accuracy of the data (Yin, 1994). The following Table 1 presents our sources in detail.

Table 1: The list of sources employed in the reconstruction of the case.

Source	Data collected
Facebook posts in the "Stronger than mud" and the "Angels with mud on their t-shirts" pages. Facebook posts on the official page of the local civil protection	About 150 main postings with attached comments and messages
Interviews with civil servants from Municipalities I, III and IV	Three interviews conducted from December 2015 to February 2016
Interviews with two Facebook page administrators (Angels with mud on their t-shirts) and two zone leaders	Four interviews conducted from December 2015 to February, 2016
Newspaper articles published during the emergency by national (La Repubblica, Corriere della Sera, Il Fatto Quotidiano) and local (Il Secolo XIX, several news websites) news outlets	Around 30 articles.
Official communications by the local authorities (Mayor and city council, Municipalities I, III, IV, VII; provincial and regional authorities; local civil protection agency), as collected through social media/short messages sent to Genoese citizens	Around 15 broadcasts.

Analyzing the impact of volunteer efforts in the relief process: a matter of time and space

We present the analysis of our data in two stages. For the sake of clarity, we first present a summary of the main events happening during – and the immediate aftermath of – the thunderstorm that provoked the flood. This summary and accompanying timeline provide the background against which we project our interpretation of volunteer work, specifically as we introduce the two main groups that emerge as the main collectors of volunteer work. In the second subsection we contrast the two groups in terms of their strategies for deploying volunteers, modeling their two approaches in the utilization of Social media.

The storm

In the morning of Thursday 9th October 2014, a heavy rain started falling on the city (for a more thorough sequence of the events, refer to the timeline presented in appendix). The regional agency for environmental protection (ARPAL) produced the first meteorological bulletin at 9 am, correctly forecasting

the thunderstorm, but failing to estimate the strength of a self-reinforcing cyclone forming over the city during the afternoon. The meteorological bulletins, in fact, failed to set any kind of alert level until 11.00 am of October 10th when the second most severe level of alert is set, and broadcasted by the Regional Civil Protection agency (RCP, the agency responsible for managing emergencies). It should be noted that the position of director for the agency was, at the time, vacant. In the meanwhile, two major rivers and dozens of minor streams have flooded about one third of the city. ARPAL, ignoring the chain of command, directly alerts the City Civil Protection Agency, which, however, cannot set off any kind of alert itself, but can start to manage the few resources available. The mayor reaches the City protection agency's operational room by 11.30pm and closes the schools for the next day. At 1am, the Facebook page of the organization "Angels with mud on their t-shirts", created to coordinate volunteers during the 2011 flood, starts operating. The RPC, in the meanwhile, is motionless and does not alert the city authorities, despite receiving disturbing updates from neighboring villages. Finally, at about 4pm on the 10th, the President of the Region asks for special funding to the central government and RPC starts becoming operational. On Saturday morning a new volunteer organization (Stronger than Mud) opens its Facebook page and starts operations. Late Saturday afternoon (October 11th) RPC starts deploying both personnel to organize a canteen service for volunteers and critical equipment (water pumps). At the same time, a specialized battalion of army Engineers starts intervening, as well. On Monday 13th, RPC is finally deploying personnel and equipment at full capacity.

An analysis of volunteer work: the marketplace coordination model

As we mentioned in the previous paragraph, two main groups of volunteers became prominent during the first stages of the emergency. The first group, "Angels with mud on their t-shirts," had been born in 2011 during another disastrous flood that hit Genoa provoking six casualties and enormous material destruction. At the time, local volunteers founded a Facebook page to coordinate the flurry of about 12000 people who flocked to the scene (Razzi, 2011). The page

"Angels with mud on their t-shirts" was activated on November 4th 2011, during the flood, with the intent of functioning as a matching platform between volunteers and affected areas. It encouraged people in need to post their requests on the webpage, and let volunteers respond to each request with an offer committing the needed help. It represented the prototypical tool for digital volunteers, allowing for a bottom up collection of information and its public circulation, with minimal structure. Moreover, it offered a reliable source of information, debunking several false statements and urban legends circulating in the immediate aftermath of the disaster.

The page "Stronger than mud, after the flood" was activated during the 2014 emergency, as a spin-off of a local politician's campaign. Genuinely interested in helping coordinate local and distant volunteers, this group adopted the model previously created by the "Angels with blood on their T-shirts". The page encouraged people in need to post, via private message to the managers of the page, their request and location. The requests were then filtered and published. Volunteers reading the page could then commit to help. Here (Table 1) is an example of request and commitment to respond to it. In this specific example the reaction of volunteers to the request was relatively fast and effective. However, in many other cases the matches could not happen for a variety of reasons (i.e. lack of equipment, locations were difficult to reach, inadequate number of volunteers).

Table 2: An example of "commit" and closure for the page "Stronger than mud".

12/10 11.51	5-6 people needed at pizzeria La Bufala in via Colombo. If you decide to head there, please post it here so we can close the request.		12/10 13.09	Name_Surname	We are 6 people. We are leaving from Sestri, San Fruttuoso and Rivarolo, see you there!

We conceptualized the coordination offered by the "Stronger than mud" Facebook page (and by the 2011 version of the "Angels with mud on their t-shirts" Facebook page) as a "marketplace coordination model" (see Figure 2).

Demand and supply for damage mitigation are freely posted on the platform and matches occur over time.
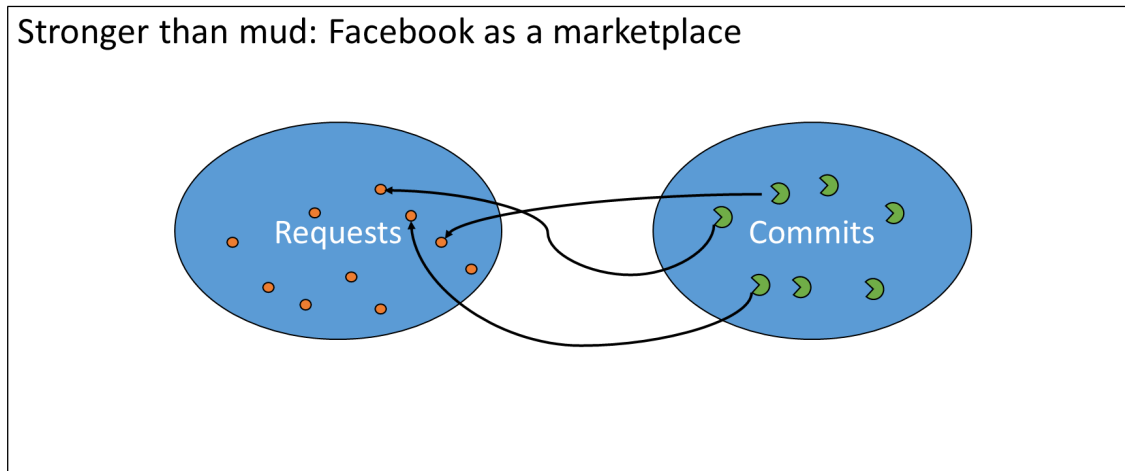
Figure 1: the "Marketplace coordination model": the Facebook page functions as a platform for matching demand and supply of volunteer work.

This model, however, did not produce adequate results, as the flows of requests and offers became quickly unmanageable because of three factors.

First, volunteers (both the digital volunteers managing the page and persons volunteering for the field work) relied mainly on smartphones to keep up with the flow of information. As requests and commits flowed constantly, it became impossible to keep track of what occurred on the field and on the page.

Second, often commits did not immediately translate into action, and keeping track of the progress for each commit proved overwhelming. For this reason, a mounting number of posts on the Facebook page aimed at summarizing the requests for help, or the offers from the volunteers, which were still "unmatched" at the time. This is an example:

Table 3: an example of post summarizing open requests.

12/10 11.54	Summarizing open requests:: - via Antiochia Zone (Foce) - Pizzeria La Bufala in via Colombo (between via Fiume and piazza Colombo) - Valbisagno Zone (via Gualco)

Third, the relative lack of opportunities to become actively involved started frustrating many of the potential volunteers, leading to a rapid decline in commits.

An analysis of volunteer work: the triage coordination model. In the very early stages of the 2014 flood, the Facebook page "Angels with mud on their T-shirts" reactivated after a long dormant period. This group of volunteers, drawing from the experience of the previous disastrous flood, implemented, however, a new mode of operating, based on three elements.

The first element of novelty consisted in the adoption of a new format for the Facebook page. Instead of stimulating both victims and prospective volunteers to use the page a bulletin board for the collection of requests and commitments, the digital volunteers maintaining the page started broadcasting useful information, such as ARPAL forecasts, official communications from the local authorities and so on. Alongside useful information, the Facebook page started giving indications to prospective volunteers on how they could help. The standard message included areas in need of help, general directions and advice on how and under which constraints the given area could be reached, the name and number of a contact person (a volunteer member of the organization) and the address of the local municipality where volunteers were supposed to officially register.

Table 4: A typical post in the "Angels with mud" on their t-shirts Facebook page.

12/10 09.20	FOCE ZONE For safety reasons, please only call if you are already in the area. ABSOLUTELY AVOID USING A CAR. To participate, please call C******* 349 ####### [name and number suppressed for privacy reasons] We remind you that a meteo alert is ongoing until 00.00 hours on Monday. Leave your home heading safety norms and regulations, keep up to date on meteorological conditions and refer to the volunteers of civil protection and municipal officers. ABSOLUTELY AVOID CELLARS and basements more in general (with or without raining conditions). IMPORTANT: IN CASE OF RAIN GO BACK HOME IMMEDIATELY:

The second new element has been the new pattern of communication between the digital volunteers managing the page and prospective volunteers. In contrast with the "marketplace" model, directly connecting people in need and volunteers, the "Angels with mud on their T-shirts" encouraged prospective volunteers to comment their main postings and ask for further information. This online exchange allowed the page administrators to screen potential volunteers and to offer them valuable information, increasing their value once they could reach the field.

One further element of novelty consisted in the introduction of a new kind of volunteer, the so-called "zone leader". This person was both a volunteer acquainted with the webpage and a resident of a specific neighborhood in the city. The requests, collected through the page referring to a specific zone, were forwarded to its "leader" by means of phone calls or short messages. The zone leader had three main tasks. The zone leader would start the day patrolling the zone, trying to appraise the needs of his/her zone and forward them, at least in general terms, to the page administrators. During the day, the administrators would direct the volunteers towards each zone, estimating needs from the report of the zone leader, but always asking them to contact local municipal officers as well, so that they could be properly equipped and insured. The zone leader would then direct the volunteers to the problems in need to be solved. Finally, the zone leader would end the day with a new patrol to assess the progress of the work done during the day and plan, to some extent, the activities of the following morning. The zone leader was also of paramount importance in the interactions between volunteers and local municipalities, as they functioned as an informal spokesperson of sorts. The name and phone number in Table 4 refer to the Zone Leader of the Foce Zone.

We interpret this alternative mode of coordination as a complex two-tier structure akin to the triage system used in health care, specifically in emergency rooms (see Figure 2).
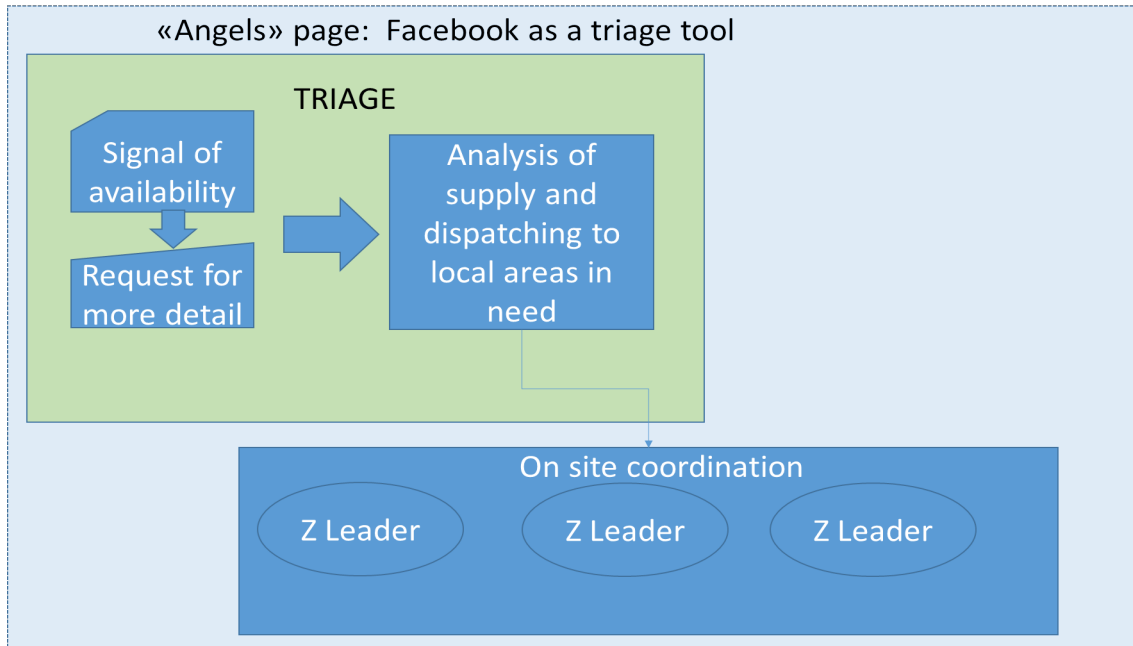
«Angels» page: Facebook as a triage tool

TRIAGE

Signal of availability

Request for more detail

Analysis of supply and dispatching to local areas in need

On site coordination

Z Leader   Z Leader   Z Leader

Figure 1: The "Triage coordination model" proposed by the "Angels with mud on their t-shirts" Facebook page.

The Facebook page functions as a portal to offer general-purpose information and to generate interest on specific areas in need of immediate help. Individuals and groups demonstrating a specific desire to intervene are vetted by the page administrators and directed to the zone leaders, if perceived as useful. Zone leaders, then, provide the actual coordination on the field, directing the work of the squads of volunteers. This new mode of interaction of digital and physical volunteers produced a few interesting effects. First, the amount of information that the administrators had to filter was drastically reduced, when compared to the "marketplace" model, allowing for a better ability to properly interact with prospective volunteers on the Facebook page and to maintain a reliable network of contacts with organization members operating on the field. Second, the volunteers decision-making was simplified, as they could head to a zone, and there a knowledgeable person would direct them to the best job available for their capabilities/equipment. This simplification also allowed them to interact more effectively with the municipal districts where they could find

supplies, if needed, and, most of all, they were officially recognized as volunteers obtaining a clear status and free insurance.

Discussion

This case offers several contributions to the literature on digital/traditional volunteers working on disaster mitigation and coordination in emergency situations.

The relative success/failure of the two volunteer organizations can be ascribed to their ability to infuse direction, à la Thompson (1967) into the work of the volunteers. In fact, comparing the coordination work in the two associations of volunteers, the one behaving as a marketplace is closer to the idea of synthetic organization. Volunteers willingly participate encouraged by a large consensus. Their efforts however are extremely inefficient as they are hindered by a lack of understanding of the real needs of those asking for help, and often lack the equipment or ability to perform. The digital volunteers managing the Facebook page provide a minimal platform for demand and supply of volunteer work to meet. While it is true that, at times, they bring back to the attention of prospective volunteers the still unresolved emergencies, they do not offer much else in terms of coordination.

In the second example, digital volunteers operate in synergy with volunteers operating in the field. While still maintaining the key voluntary aspects of contributions, they offer a few key structural elements making coordination (both internal and towards others, specifically municipal institutions) possible to some extent. The key elements consist of a pre-set form of interaction between the digital administrators of the Facebook page and a group of local volunteers on the ground tasked with relaying reliable information and assessing needs. Previous literature has underscored the need to coordinate digital and traditional volunteers by means of a shared social network platform (Starbird, Palen, 2011) and the value of information geared towards helping victims and volunteers on the ground (Qu *et al.*, 2011). However, it systematically underestimated the importance of explicitly building links between the two

kinds of volunteers to offer direction and structure to prospective volunteers. This drawback is linked to an interpretation of technology as being inherently able to provide coordination to volunteers on the field. By contrast, our view of social media as tools that need a specific kind of adoption and use to become a viable vehicle for coordination (Masino, Zamarian, 2003) allows for a clear disambiguation between the features of the adopted tools, and their use.

A second contribution of this paper pertains to coordination processes in emergency situations. The recent debate on coordination in disaster relief and damage mitigation situations has concentrated on the peculiarities of High Reliability Organizations when compared to other institutions (Bechky, Chung, 2018). Specifically, one of the observed trends is that of abandoning the idea of coordination as integration of work flows which result from a designed division of labor (Okhuysen, Bechky, 2009). Integration, by contrast, can also be born out of an emergent coordination process in which relevant interdependencies are continuously redefined as the coordination process unfolds. This is specifically true for organizations facing the unexpected, as accountability, predictability and common understanding in the performance of tasks are ambiguous and do not lend themselves to design (Kellogg *et al.*, 2006). Pushing this interpretation even further, recent studies have suggested fragmentation, that is letting ambiguities, competing interpretations, ad-hoc arrangements, and separate pockets of control drive the coordination process (Wolbers *et al.*, 2018). Fragmentation, in this view, is a mobilizing principle for coordination that is in stark contrast with integration. In partial contrast with this view, our results suggest that coordination – even in contexts characterized by time pressure and almost chaotic general conditions – occurs as a process (Maggi, 2011; Barbini, 2015). Within the process, the provision of a general architecture helps the fragmented domains and pockets of control negotiate practical solutions to complex problems.

Conclusions

In this essay, we discuss the role of digital volunteers as providers of relief in the immediate aftermath of the Genoa flood of 2014. In our analysis, we

identify two contrasting models of coordination adopted by different organizations of volunteers during the emergency. The first model, closer to the ideal synthetic organization described by Thompson and Hawkes (1962), consists of a platform for the bottom up exchange of information aimed at matching volunteer work supply and demand. The second model introduces a layer of dual volunteers mediating the bottom up flows of information on the Facebook page with the information they directly collect on the ground, and the knowledge they have developed about the rescue operations. Even if the structural tools implemented in this second model are elementary when compared to those of professional organizations, they allow for a better capacity to direct efforts effectively, precisely because resources are managed closer to the points of crisis. This second set of practices represents an example of effective integration between digital and traditional volunteers.

This work is not devoid of limitations. First, we had a relatively limited access both to one of the main organizations involved in coordinating volunteer work, and to some of the institutions involved in the management of the aftermath of the flood. Integrating these sources into our analysis would contribute to define a clearer picture around some of the most controversial decisions undertaken by the authorities during the events. Second, the collection of data started about one year after the events. Facebook pages and newspaper articles represented the main source of data for deriving our models of coordination practices of the organizations of volunteers, and their quality does not deteriorate over time. Interviews, however, might suffer from faulty recollections.

References

ACAR A., MURAKI Y.
2011   Twitter for crisis communication: lessons learned from Japan's tsunami disaster, *International Journal of Web Based Communities*, 7, 3: 392-402.

ALEXANDER D.
2010   The voluntary sector in emergency response and civil protection: review and recommendations, *International Journal of Emergency Management*, 7, 2: 151-166.

ARGOTE L.
1982   Input uncertainty and organizational coordination in hospital emergency units, *Administrative Science Quarterly*, 27, 3: 420-434.

ATSUMI T., GOLTZ J.D.
2014   Fifteen years of disaster volunteers in Japan: a longitudinal fieldwork assessment of a disaster non-profit organization, *International Journal of Mass Emergencies and Disasters* 32, 1: 220-240.

BARBINI F.M.
2015   *Organization in disaster / Organizzazione nei disastri*, http://amsacta.cib.unibo.it, Bologna: TAO Digital Library.

BECHKY B.A., CHUNG D.E.
2018   Latitude or latent control? How occupational embeddedness and control shape emergent coordination, *Administrative Science Quarterly*, 63, 3: 607-636.

BECHKY B.A., OKHUYSEN G.A.
2011   Expecting the unexpected? How SWAT officers and film crews handle surprises, *Academy of Management Journal*, 54, 2: 239-261.

BIGLEY G.A., ROBERTS K.H.
2001   The Incident Command System: high reliability organizing for complex and volatile task environments, *Academy of Management Journal*, 44, 6: 1281-1299.

CHONG M.
2009   Employee participation in CSR and corporate identity: Insights from a disaster-response program in the Asia-Pacific, *Corporate Reputation Review*, 12, 2: 106-119.

COTTRELL A.
2010   Research report: a survey of spontaneous volunteers. Australian Red
        Cross, Carlton.
        http://www.redcross.org.au/files/ES0Research_report.pdf.

DENZIN N.K., LINCOLN Y.S.
1994   *Handbook of qualitative research,* Thousand Oaks: Sage.

DRABEK T.E., McENTIRE D.A.
2003   Emergent phenomena and the sociology of disaster: Lessons, trends and
        opportunities from the research literature, *Disaster Prevention and
        Management,* 12, 2: 97–112.

DUNCAN M., MOULY S., NILAKANT V.
2001   Discontinuous change in the New Zealand police service. A case study,
        Journal of Managerial Psychology, 16, 1: 6-19.

EISENHARDT K.M.
1989   Building theories from case study research, *The Academy of Management
        Review*, 14, 4: 532-550.

EISENHARDT K.M., GRAEBNER, M.E.
2007   Theory building from cases: opportunities and challenges, *Academy of
        Management Journal,* 50, 1: 25-32.

FARAJ S., XIAO Y.
2006   Coordination in fast-response organizations, *Management Science*, 52, 8:
        1155-1169.

FERNANDEZ L.S., BARBERA J.A., vanDORP J.R.
2006   Spontaneous volunteer response to disasters: the benefits and
        consequences of good intentions, *Journal of Emergency Management,* 4, 5:
        57–68.

FRIGOTTO M.L., GAIO L., NARDUZZO A., ZAMARIAN M.
2022   Expecting the unexpectable: Decision premises, learning and
        organizational resilience addressing novel adversities, in Pinheiro R.,
        Frigotto M.L., Young M. (Eds.), *Towards Resilient Organizations and
        Societies*: 43-64. London: Palgrave Macmillan.

FRITZ CH. E., MATHEWSON J.H.
1957   *Convergence behavior in disasters: A problem in social control*, Washington:
        National Academy of Sciences-National Research Council.

HELSLOOT I., RUITENBERG A.
2004   Citizen response to disasters: a survey of literature and some practical implications, *Journal of Contingencies and Crisis Management*, 12, 3: 98-111.

HUGHES A.L., PALEN L., SUTTON J., LIU S.B., VIEWEG S.
2008   "Site-Seeing" in disaster: An examination of on-line social convergence, *Proceedings of Information Systems for Crisis Response and Management Conference (ISCRAM) 2008*: 44-54, Washington.

KELLOGG K., ORLIKOWSKI W., YATES J.
2006   Life in the trading zone: Structuring coordination across boundaries in postbureaucratic organizations, *Organization Science*, 17, 22–44.

KENDRA J., WACHTENDORF T.
2007   Community innovation and disasters, in Rodríguez H., Quarantelli E.L., Dynes R.R. (Eds.), *Handbook of Disaster Research*: 316–334, New York: Springer.

LA PORTE T.R.
1996   High reliability organizations: Unlikely, demanding and at risk, *Journal of Contingencies and Crisis Management*, 4, 2: 60-71.

LINDSAY B.R.
2011   *Social media and disasters: Current uses, future options and policy considerations*, Washington: Congressional Research Service Report R41987.

MAGGI B. (ED.)
2011   *Interpréter l'agir : un défi théorique*, Paris : Presses Universitaires de France; 2011 ed. it., *Interpretare l'agire: una sfida teorica*, Roma: Carocci.

MAJCHRZAK A., JARVENPAA S.L., HOLLINGSHEAD A.B.
2007   Coordinating expertise among emergent groups responding to disasters, *Organization Science*, 18, 1: 147-161.

MARCH J.G., SIMON H.A.
1958   *Organizations*, New York: John Wiley.

MASINO G., ZAMARIAN M.
2003   Information technology artefacts as structuring devices in organizations: design, appropriation and use issues, *Interacting with Computers*, 15, 5: 693-707.

MEIER P.
2013   Human computation for disaster response, in Michelucci P. (Ed.), *Handbook of Human Computation*, 95-104, New York: Springer.

Okhuysen G.A., Bechky B.A.
2009   Coordination in organizations: An integrative perspective, *Academy of Management Annals*, 3, 1: 463–502.

Palen L., Liu S.B.
2007   Citizen communications in crisis: anticipating a future of ICT-supported public participation, *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*: 727-736, New York: Association for Computing Machinery.

Perrow C.
1984/1999   *Normal accidents: Living with high risk technologies*, Princeton: Princeton University Press.

Qu Y., Huang C., Zhang P., Zhang J.
2011   Microblogging after a Major Disaster in China: A Case Study of the 2010 Yushu Earthquake, *Proceedings of the CSCW Conference*: 25–34, New York: Association for Computing Machinery.

Quevillon R.P., Gray B.L., Erickson S.E., Gonzalez E.D., Jacobs G.A.
2016   Helping the helpers: assisting staff and volunteer workers before, during, and after disaster relief operations, *Journal of Clinical Psychology*, 72, 12: 1348-1363.

Razzi M.
2011   Gli "Angeli col fango sulle magliette" in 12mila pronti ad andare a spalare, *La Repubblica*, 6-11-2011.

Reuter C., Heger O., Pipek V.
2013   Combining real and virtual volunteers through social media, in Comes T., Fiedrich F., Fortier S., Geldermann J., Müller T. (Eds.), *Proceedings of the 10th International ISCRAM Conference*, Baden-Baden.

Stallings R.A., Quarantelli E.L.
1985   Emergent citizen groups and emergency management, *Public Administration Review*, 45: 93-100.

Starbird K., Palen L.
2011   "Voluntweeters" self-organizing by digital volunteers in times of crisis, *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*: 1071-1080, New York: Association for Computing Machinery.

Thompson J.D.
1967   *Organizations in action*, New York: McGraw-Hill.

THOMPSON J.D., HAWKES R.W.

1962 Disaster, community organization and administrative process, in Baker G.W., Chapman D.W. (Eds.), *Man and society in disaster*: 268-300, New York: Basic Books.

TIERNEY K.J., LINDELL M.K., PERRY R.W. (EDS.)

2001 *Facing the unexpected: Disaster preparedness and response in the United States*, Washington: Joseph Henry Press.

VIEWEG S., HUGHES A.L., STARBIRD K., PALEN L.

2010 Microblogging during two natural hazards events: what twitter may contribute to situational awareness, in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*: 1079-1088, New York: Association for Computing Machinery.

WHITTAKER J., MCLENNAN B., HANDMER J.

2015 A review of informal volunteerism in emergencies and disasters: Definition, opportunities and challenges, *International Journal of Disaster Risk Reduction*, 13: 358-368.

WOLBERS J., BOERSMA K., GROENEWEGEN P.

2018 Introducing a fragmentation perspective on coordination in crisis management, *Organization Studies*, 39, 11: 1521-1546.

YIN R.K.

1994 *Case study research. Design and methods*, Thousand Oaks: Sage.

Appendix: A detailed timeline of the 2014 Genoa flood.

Timestamp	Main Events/Press	Meteorological bulletins (ARPAL)	Municipality (Comune) executive (mayoral) decisions /official communications	State/Regional authorities/Region-wide Civil protection authority/Red Cross/Ministry of Defense	Volunteer associations/Websites
09/10/2014 08:30	Heavy rains start falling on Genoa				
09/10/2014 08:30		Sector B: from moderate to strong and persistent rainfalls, specifically on Val Polcevera and North-East. (No Alert)			
09/10/2014 09:39			The municipality informs: situation under control		
09/10/2014 10:00		Persisting thunderstorms. Strong rainfalls on Val Polcevera and Val Bisagno. In the next hour the (creeks) tributaries of Bisagno might reach flood level, while the Polcevera River should remain below critical level. (No Alert)			
09/10/2014 11:00		Currently, rains ranging from moderate to heavy (50mm in Val Bisagno). Forecast: more heavy rains for the next hour. Pay attention to the smaller creeks for possible local floods (No Alert).			
09/10/2014 11:00			Executive meeting of the local Civil protection committee: all school principals are alerted.		
09/10/2014 12:00		Winds are moving the thunderstorm eastwards. Creeks have not reached a critical level and are now losing discharge, except Bisagno (river) that could flood within the hour (No Alert).			
09/10/2014 12:00			School principals are re-alerted for possible critical situation at school let out		

09/10/2014 13:00		Rains are weakening and the front is moving. In the next hour it schould concentrate in zones B and C (No Alert)			
09/10/2014 14:55		Creeks are losing strength			
09/10/2014 16:00					The Facebook page "Angeli col fango sulle magliette" created in 2011, is reactivated, reporting some blackouts around the city
09/10/2014 16:40		The self-regenerating front persists on the gulf of Genoa. Western portion of sector C is the most severely hit, but the trajectory is heading back towards downtown.			
09/10/2014 17:30			Four city police patrols are sent out to monitor the situation.		
09/10/2014 18:00		The front is losing strength. 10mm of rain in the last hour. No further deterioration foreseen (No Alert)			
09/10/2014 18:00			Regional delegate to civil protection Paita asks for a report "everything under control, please go home" (No alert)		
09/10/2014 18:30		Further weakening of the front (No Alert)			
09/10/2014 21:00			Municipal delegate to civil protection Crivello, after talking to ARPAL comments on tv: "Situation is improving".		
09/10/2014 22:00			City police is ordered to close the crossroads between corso Montegrappa and via Canevari		
09/10/2014 22:20		The front is gaining strength again on Genoa. 60-70mm of rain fell in the last hour. Many creeks are at risk of flooding (No Alert)			
09/10/2014 22:40			The city authorities are not closing any other streets.		

09/10/2014 23:02			Municipal civil protection send out a message via Facebook/Twitter: "Warning, heavy thunderstorms. Maintain the highest caution in the whole Val Bisagno. 30000 sms are sent to the population with the same content		
09/10/2014 23:25		The self-regenerating front remains over Genoa (80-90 mm of rain per hour). The Bisagno creek is about to overflow. (No Alert)			
09/10/2014 23:30	The Bisagno overflows and breaks the levees (reported from Secolo XIX of the 10th October)				
09/10/2014 23:30			Mayor Marco Doria arrives at the operational center of the civil protection.		
09/10/2014 23:59	Fereggiano and Rio Torbido overflow. The body of the only victim of the flood is found.				
10/10/2014 00:15			The municipality orders to close all schools for the following days		
10/10/2014 01:00		Heavy and persistent rains. Bisagno has overflown. More rains are expected with a possible new flood wave (NO Alert)			
10/10/2014 02:00		The system is circling on the gulf in front of the city, the strong rains are moving eastward. The flood wave of the Bisagno is reaching the city but are within control (No Alert)			
10/10/2014 02:00					The Facebook page reports an ARPAL bulletin, a video of a flooded via Orefici and a picture of via Vernazzola, flooded as well.
10/10/2014 07:00		The level of all creeks in he region are decreasing. Forecast: more heavy rains in the hardest hit areas (No Alert)			

Date/Time					
10/10/2014 08:30			The city council calls for volunteers: People who intend to volunteer in the flooded areas need to contact the five local boroughs (a list with addresses follows).		
10/10/2014 10:00		Heavy rains are persistent in the Bisagno area, which is still at risk of overflow. According to radars rains are not expected to stop.			
10/10/2014 11:00			Second level of alert proclaimed		
10/10/2014 13:30		The Sturla creek breaks its levees. No signs of weakening of the front. All other creeks at flood mark.			
10/10/2014 14:00	Residents of the Fereggiano area insulted and physically attacked policemen and civil protection officers investigating the state of the local creek.				
10/10/2014 14:00					In the afternoon more useful news appear on the Facebook pages: location of flooded areas, ARPAL bulletins, alternative routes for city buses.
10/10/2014 15:30	Heavy rains in western Genoa. The Torbella creek passing through the popular neighborhood of Rivarolo has overflown. Streets and cellars are flooded, water levels reaching first floors. The Polcevera reached its flood mark.				
10/10/2014 15:30		Forecast: heavy rains for the rest of the day and until the following morning.			

10/10/2014 15:30					A few Facebook pages collect requests for help from citizens and retailers, assessing needs in terms of goods to clean and transfer out of the area. They ask volunteers to bring their own gloves and boots ("if you come with no boots or shovels you are worse than useless")
10/10/2014 16:00	Volunteers are self-organizing over Facebook but authorities asked them not to intervene because of the immediate danger. They agree to start on Saturday morning (La Repubblica)				
10/10/2014 17:00	Via Tommaso Invrea still open to traffic, but a group of angry citizens imposes its closure.				
10/10/2014 17:00			Alert prolonged up to 12:00 PM of Saturday morning		
10/10/2014 17:00				The President of the Liguria Region said that Genoa will ask for the proclamation of the state of emergency (accorded by the National Cabinet on 30th October)	
10/10/2014 17:30	Groups of retailers rent trucks and dewatering pumps. The Army is already on site but the authorities have not authorized their intervention yet. Afterwards they start operating but the representative of the government (prefetto) is removed from the emergency coordination center and tensions emerge with the civil protection. (L'Espresso magazine)				

11/10/2014 08:00	Traffic problems in the area	The front is moving eastward. The level of creeks is decreasing. Models forecast a worsening of conditions with new thunderstorms for Sunday afternoon.	Schools to stay closed on Saturday and Monday. Civil protection prolongs the alert to Monday.	
11/10/2014 08:00				Several useful pieces of information reported on Facebook pages, like the interruptions of the Genoa-Ovada railroad, the location of vehicles forcefully moved because of he floods. A hardware store distributes gloves and shovels for free to volunteers.
11/10/2014 09:00	A junior officer of A.S.Ter. guides several dozers to solve the problems in via Tommaso Invrea, which is still paralyzed.			
11/10/2014 10:00	100 soldiers of the Corps of Engineers operate in the Foce neighborhood. 30 of them work in Via Tommaso Invrea.			
11/10/2014 11:00	Most streets are still covered with mud with no civil servants in sight for the cleanup. The local boroughs organize and dispatch volunteers, asking them to bring their own equipment.			
11/10/2014 17:00	Via Bobbio blocked by a barricade of garbage built by protesters, as the municipal service is not collecting garbage since the start of the emergency.			

11/10/2014 17:00		Forecasts maintain the same outlook of the morning. Instability is expected until Sunday morning with further strong thunderstorms. A new front will bring further heavy rains.		
11/10/2014 18:00				The San Fruttuoso area is in need of some help. Volunteers should come only if well equipped.
11/10/2014 22:50		A few storm cells are developing out of Golfo Paradiso, they could bring more rains over Genoa.		
12/10/2014 03:00		More rains over Genoa, Pegli, Val Polcevera and Val Sturla.		
12/10/2014 09:20			The Regional civil protection announced the opening of two food courts for the volunteers. They provide free water and meals. The civil protection has also prepared a dorm with a capacity of 40 beds for the volunteers.	
12/10/2014 09:20				Foce zone: for safety reasons only locals can join as volunteers. Avoid using cars in all cases. The weather alert is on until Monday night. Avoid cellars in all cases. In case of rain return home immediately.
12/10/2014 10:00	The mayor arrives in via Galata. Tension with the locals and the volunteers. Since the morning, the army has provided around 70 dewatering pumps and other utility vehicles.			
12/10/2014 10:00			The Minister of Defense Pinotti claims that around 200 men (engineer corps) are available. But that the	

Date/Time					
				municipality has to request their intervention.	
12/10/2014 10:12					Help requested to remove a landslide in via Gualco.
12/10/2014 10:20					Volunteers ask for water. Many answer the call.
12/10/2014 11:52					The pizzeria La Bufala is asking for help. 6 volunteers head to the place.
12/10/2014 14:00				The president of the region Liguria and the city mayor agree that the mayor will only manage the emergency in the city proper, the region will help the surrounding villages.	
12/10/2014 14:00					More requests for help
12/10/2014 15:00	Hospitals are alerted because a new storm is expected. Doctors are asked to sleep over, avoiding commuting.				
12/10/2014 15:00				80 more police officers have been dispatched to the town.	
12/10/2014 15:00					Several local eateries provide free food for the volunteers.
12/10/2014 16:00			The mayor announces that all local taxes will be suspended for those who suffered damages.		
12/10/2014 16:00				290 volunteers from several regional civil protection units are available.	
12/10/2014 16:00					The local rugby club and the fans of Genoa self-organize to help clear the mud.

12/10/2014 19:40					One of the local Facebook pages asks for volunteer availability for the next day.
12/10/2014 22:50		Latest models forecast heavy rainfalls for the next day, with high total precipitations in the 24 hours for zone BCDE.			
12/10/2014 23:37					The latest ARPAL bulletin is broadcast. Many people answer commenting on the local weather conditions.
13/10/2014 06:50		Heavy rainstorms expected for the afternoon. Water levels are still stable, no flood waves expected			
13/10/2014 07:00			School will stay closed for the day. Aster (a city service company) has deployed from 230 to 320 men in the previous days to face the floods.		
13/10/2014 07:00					Several shops provide free services and goods to the volunteers (dry cleaning, taxis, psychologists, gloves)
13/10/2014 07:30			Municipal institutions (borough, local civil protection) start operating but lack equipment (shovels, gloves)		
13/10/2014 07:30				ANPAS Liguria (a large volunteers association) set up a camp to host volunteers.	
13/10/2014 08:00			The city delegate to civil protection claims that, this fare, around 5700 volunteers help clean the city. This number is difficult to coordinate.		
13/10/2014 10:04					A private citizen donates 1000 pairs of gloves.

13/10/2014 13:00			The mayor asks again the population to avoid using private cars to help improve traffic conditions.	
13/10/2014 14:00		Thunderstorms are present on the whole region.		
13/10/2014 14:00				More news on donations (e.g. drinking water) and on traffic conditions.
13/10/2014 15:00				In via Torino the army is working alongside volunteers.
13/10/2014 16:00	Police is asking volunteers to leave because of the worsening weather conditions. No tension is reported.			
13/10/2014 16:00				A second "water bomb" might fall before night.
13/10/2014 18:39				Volunteers are trying to organize work groups for the following day.
13/10/2014 20:00			The local representative of the central government decrees that schools will stay closed the following day. Buildings will remain open to start the cleaning.	
13/10/2014 20:00				News of the university reopening are spread, creating some confusion.
13/10/2014 23:45		No rains foreseen for the immediate future. Tuesday will still be unstable.		
14/10/2014 00:00			Alert state is revoked. Red cross is fully operational.	
14/10/2014 00:00			The local representative of the central government decrees that schools will stay closed but the university will reopen (classes still suspended)	

14/10/2014 00:00				The union of taxi drivers starts collecting food and water to help the hardest hit citizens
14/10/2014 10:50				Call for help in via Bobbio
14/10/2014 11:50				Gloves needed in the downtown area.
14/10/2014 14:00				A list of contacts useful to volunteers coming from out of town are listed
14/10/2014 15:00				Shop owners complain that volunteers are the only reliable source of help.