Leading Digital Humanitarians:

An Exploratory Study on Establishing and Maintaining Effective Leadership Roles during a Crisis Event in the Standby Task Force Online Community

by

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Abstract

During natural disasters that threaten large communities with loss of life and property, traditional community response and resources are unavoidably stressed and spread thin. The availability of relevant and organized information during these emergencies has life or death implications in the provision of direct assistance and indirect aid. In many recent catastrophes, online volunteers have come forward to help both within and beyond the boundaries of affected areas. The purpose of this study is to ascertain factors affecting the establishment and maintenance of effective leadership roles during a crisis event from the perspective of the Standby Task Force (SBTF). A set of semi-structured, in-depth interviews was conducted using a purposive selection of participants derived from the SBTF leadership. This study provides some insight on how to manage and mobilize this valuable volunteer workforce, by increasing our knowledge about online leadership and how they can be most effective in providing indirect aid or even direct assistance to victims of disasters.

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1   Introduction

During natural disasters that threaten large communities with loss of life and

property, traditional community response and resources are unavoidably stressed and

spread thin. Come hell or high water, digital humanitarians try to help. The two most recent

major disasters in Alberta are: the Fort McMurray Fire of 2016; and the Calgary Flood of

2013. In both cases, people from within the province and half a world away have tried to

help by remotely organizing using the internet and provide assistance in any way they can.

The availability of relevant, organized and actionable information during these emergencies

has life or death implications in the provision of direct assistance or indirect aid. In many

recent catastrophes, online volunteers have come forward to help both from within and

beyond the boundaries of affected areas (Goodchild & Glennon, 2010).

1.1 Purpose of Study

The purpose of this study is to ascertain factors affecting the establishment and

maintenance of effective leadership roles during a crisis event. Leaders play a key role in

providing direction, instructions and guidance to get work done. This study provides some

insight on how to manage and mobilize this valuable volunteer workforce, by increasing our

knowledge about online leadership and how they can be most effective in providing indirect

aid or even direct assistance to victims of disasters. The study focused its scope on the

Standby Task Force (SBTF), an online organization, and its leadership 'during' a crisis. The

SBTF is a network of over 1800 volunteers from more than 85 countries consisting of people

who give up their time to help (the UN and other agencies) understand what is happening in disaster zones.

1.2   Literature on the Digital Humanitarian Field

Leadership, emergency management and communication technologies are vast multi-disciplinary fields. The literature is spread across a wide range of disciplines such as history, geography, information technology, organizational management, political science and even parks and recreation. The task of filtering which of the literature will make it into review was a challenge in itself. However, the work of Patrick Meier, '***Digital Humanitarians: How Big Data Is Changing the Face of Humanitarian Response'*** helped in focusing this research. Meier's book consolidated the topic under the emerging field of digital humanitarianism. As it stands, the final literature review can be divided into two major parts in this research. These are:

- Recent Communications Technologies used in Emergency Management; and
- Leadership and Emergency Management.

1.3 Studying Digital Humanitarian Leadership

The SBTF network trains digital volunteers into a flexible and prepared network that is ready to be deployed in any crisis. The leadership of the SBTF is also run by its core team of volunteers. A set of semi-structured, in-depth interviews was conducted using a purposive selection of participants derived from the SBTF core team members. Participants were comprised of five people from the SBTF core team. They represent the leadership of SBTF and were dispersed globally coming from Italy, Norway, USA, India and the UK.

In trying to ascertain factors affecting the establishment and maintenance of effective leadership roles during a crisis event, in-depth semi-structured interviews enabled

the core team members to self-report their experiences. This methodology also allowed for experiences beyond the research questions, such as organizational challenges to come out and be discussed.

A survey of general membership was considered and rejected because it was determined that survey questions will reach volunteers who may have only had specific task-based contributions to the SBTF. They will not be fully cognizant of the operations of SBTF behind the scenes. Compared to the use of in-depth interviews, surveys will not allow exhaustive discussions to arise and more interesting qualitative information to be gathered and considered.

1.4 Summary

In studying factors affecting the establishment and maintenance of effective leadership roles during a crisis event, the following research provides insight on how to manage and mobilize SBTF's valuable online volunteer workforce. This paper has been organized into four parts. These are:

- **Review of related literature** –provides a background regarding the practical aspects of the emergence of the digital humanitarian phenomenon and moves on to the theoretical framework that the research uses as a lens to look into the SBTF.
- **Methodology** – discusses the semi-structured, in-depth interview methodologies conducted with SBTF leader participants using a purposive selection derived from SBTF core team members.
- **Findings and discussion** – elucidates the findings that came up during the conduct of the research and discusses common themes that arose.

- **Conclusion** – relating the research results back through the lens of the reviewed literature, some insights can be gleaned and relationships with previous related works can be observed.

In looking into the recent phenomenon of online communities, this study cannot claim that its findings will be applicable and generalized beyond its study population. However, it does provide insight in the fields of leadership, emergency management, communication technologies and the emerging field of digital humanitarianism. This multi-disciplinary field is ripe for research. This study provides some insight on how to manage and mobilize this valuable volunteer workforce, by increasing our knowledge about online leadership and how they can be most effective in providing indirect aid or even direct assistance to victims of disasters.

2 **Review of Related Literature**

Seeking to determine how members of the SBTF online community establish and maintain effective leadership roles during a crisis event, the literature related to this study was wide and vast. Literature had to be drawn from various technical and social disciplines in order to try to understand and somehow focus on the research topic.

2.1 **Overview of the Context of Literature**

A major obstacle in responding to both natural and man-made disasters is communication. Sharing and dissemination of information is both critical and problematic in emergency situations. Organizational challenges are also prevalent in disaster response. The customary hierarchical (centralized) decision making processes most organizations are accustomed to, must suddenly give way to a flatter, more dynamic, ad-hoc organization that emerges during disaster relief efforts (Manoj & Baker, 2007).

Furthermore, emergency management may have been one of the first fields that had to do battle with Big Data. An overflow of information and data can be as paralyzing as the absence of it, when mobilizing disaster response efforts (Meier, 2015).

2.2 Literature Review Areas

This section walks us through the practical aspects of the emergence of the digital humanitarian phenomenon and moves on to the theoretical framework that the research uses as a lens to look into the SBTF. The initial literature review was literally all over the map. The search included topics such as history, geography, information technology, organizational management, political science and even parks and recreation. However, the

literature has been narrowed down for the purpose of this review. The literature can be

divided into two major parts:

- Recent Communications Technologies used in Emergency Management; and
- Leadership and Emergency Management.

2.2.1 Recent Communications Technologies used in Emergency Management

We need to become familiar with a few concepts and understand some of the

different ingredients that make up the subject, before we can even begin to comprehend

and try to understand emergency leadership in online communities. The following topics will

help us understand the emerging field of digital humanitarians.

2.2.1.1 The Concept of Big Data

According to Mayer-Schönberger & Cukier (2013), Big Data has no rigourous

definition. However, it refers to the enormous volumes of information that the memory and

processing capacity of present-day computers can no longer handle. This dilemma has lead

engineers to redesign the way computers handle and process information of this volume.

The concept of Big Data has made it possible for technology to gain and provide insight not

previously possible from limited amounts of information.

2.2.1.2 Participatory GIS (PGIS)

Geographic Information Systems (GIS) had been the realm of the military,

environmental scientists, and government planners for the past two decades. Its use by

other parties had been limited due to its previously high cost and the extensive training

required for its operation. These barriers have since been minimized with further

advancements in technology, now enabling many more groups to participate in the use of

GIS. As a result, the traditional view of GIS (as a spatial database, and mapping/ analytical tool) is no longer suitable to describe this technology and its social implications. In a broader sense, GIS must be defined as a communication tool that conveys information to an audience in society (Fontaine, Krywulak & Urrutia, 2013).

Over the past several decades, there has been a rapid adoption of Geographic Information Systems (GIS) in the government and commercial sectors while the non-profit sector has lagged behind (Edwards, 2011). Boroushaki (2010) states that there is a growing demand for greater public participation in shaping public policy decisions through PGIS. In order for this to happen, spatial planning and decision-making procedures need to be collaborative and distributed over an extended period of time. Web-based GIS (WebGIS) can offer solutions that are accessible to non-experts and online tools that can provide an alternative to the traditional place-based planning as they do not require in-person attendance.

2.2.1.3   Crowdmapping:

A subset of PGIS is emergency crowdmapping. The distinction lies in the urgency of requirements. However, even in its urgent nature, there is a need to provide adequate Web-based learning materials on the meaning, rationale and the use of the system (Mustajoki, Hamalinen & Marttunen, 2004). Crowdmapping participants also need to understand the methods, technology and the rationale behind them in order to use the system efficiently and not lose confidence in the application.

In Starbird's (2012) dissertation consisting of four separate studies of digital volunteerism and other forms of remote participation, she examined several ways members

of the remote crowd help to organize information during mass disruption events. She coins

and unpacks the word, 'Crowdwork.' Crowdwork describes the productive activity of remote

participants. She identifies salient features of crowdwork in this context and compares those

with current understandings of crowdsourcing. Across her different studies, she utilized a

mixture of methods, including qualitative and quantitative analysis of large volumes of

Twitter data, interviews with digital volunteers, and participant observation within virtual

volunteer organizations.

Goodchild and Glennon (2010) basing on their observations on the Santa Barbara

(U.S.) wildfires of 2007–2009, state that Volunteered Geographic Information (VGI) has

provided an interesting alternative to traditional mapping information sources. However,

data quality becomes a major concern because information is not subjected to traditional

quality control mechanisms employed in traditional mapping. Risks need to be weighed

against the benefits in the use of VGI because timely information is especially critical during

emergencies. Moreover, another difference from the conventional hierarchical controls,

VGIs offer a unique perspective on disasters that would not have been possible from

conventional emergency services (McDougall, 2012).

2.2.1.4   Management through Technology

One of the biggest challenges of emergency managers is dealing with information.

Too much, too little, relevant or not, information has to be received, screened, categorized,

acted upon, ignored or archived. In today's world, this is multiplied exponentially through

feeds and posts from social and traditional media. An overflow of information can be as

paralyzing as the absence of it. This is the battle with Big Data. And the current most

effective weapon against it is crowd computing. Microtasking is defined by Meier (2015) as 'smart crowdsourcing' or simply crowd computing. Simply put, a microtasking platform serves up short-duration tasks to online workers. Ideally, a platform like this will support automated quality control and fast turnaround times. In order to use a microtasking platform, a requester packages the work into microtasks and publishes them in batches or groups (Sarasua, Simperl, & Noy, 2012).

2.2.1.5   Future Directions

Looking towards the future, technologies need to be widely adopted and used properly to create more effective, people-centered approaches (Coyle & Meier 2009). Starbird (2011) recommends establishing direct connections between crowdsourcing projects and existing social media so that crowdsourcing systems can be enabled to tap into social capital incentive mechanisms that allow for communication, collaboration, and self-policing systems.

Further research on how to employ the eyes and ears of the general public through VGIs are needed. Eventually, geographic information will not only be used by all, but created by all. This is the reason why protocols and institutions will be needed to ensure that VGIs will be as reliable and useful as possible (Goodchild & Glennon, 2010). Even if it is possible to establish these guidelines, VGIs will continue to face potential threats of spam and fraudulent postings (Thatcher, 2013).

Current developments in machine learning or artificial intelligence (AI) subject disaster data or imagery to automated processing will continue to be a rapidly developing field. Crowd computing has also helped machine learning (Meier, 2015). Feighery (2014)

investigated crisis mapping in natural disasters. He focused on emerging tools for social

media and health promotion. He also discussed development and comparison of an

automated algorithm to code text messages regarding disaster needs and actual human-

derived codes. These findings suggest that machine coding methodology could increase

accuracy of situational analysis and speed of responses to future disasters. The findings

suggest that automated algorithms can enhance speed of response and overcome human

biases. The result is improved situational awareness. Algorithm codes revealed a pattern of

message topics, which transitioned from emergency needs, such as: finding missing persons;

health infrastructure requests; and needs for food and water. Another study employed a

social capital framework to understand the system users' intents. The findings revealed that

individuals far outnumbered aid organizations in users of the system. Furthermore,

compared to the traditional rapid analysis that takes six weeks, the messages revealed real-

time needs (Feighery, 2014).

Lastly, Meier (2015) states that the field is ripe for policy research. Innovative

technologies will require innovative policies and forward-thinking leadership. Guidebooks

and guidelines are insufficient and inadequate. The SBTF has started to try to channel digital

goodwill by taking the hard lessons learned from previous years of disasters. Humanitarian

organizations partnering with each other can share best practices, codes of conduct,

protocols and other efficiency mechanisms (Meier, 2015).

2.2.2 Leadership and Emergency Management

Setting aside the technological innovations in recent years, man's survival has always

been dependent on how he copes with crises and emergencies. Emergencies and their

management has been around for thousands of years. This section looks at traditional and online leadership, together with traditional emergency management practices in the context of effective leadership roles in an online community.

2.2.2.1 Leadership

Luther (2012), discussed two types of Leadership. These are namely: vertical leadership and distributed leadership. **Vertical leadership** refers to a centralized individual who is the leader figure. The study of vertical leadership can be broken down into several approaches:

- **Traits -** the characteristics associated with leaders are investigated. These traits included many types of special personality attributes, including skills, abilities, and even physical appearance (Glynn & DeJordy, 2010).

- **Behaviour** - successful leaders exhibit certain types of behaviors. By identifying and classifying these behaviors, researchers could solidify our understanding of effective leadership (Yukl, 2013)

- **Power and influence -** explains leadership effectiveness based on the amount and type of power a leader has and how he exercises it. The scope of people influenced by power can be broadly conceived, including other leaders, followers, organizations, and external entities (Yukl, 2013).

- **Situational Factors -** universal rules of leadership effectiveness are unobtainable because some behaviors or traits may work well for leaders in one situation, but fail in different circumstances. Effective leaders are expected to be able to call upon a

range of possible behaviors depending on what is appropriate for the situation (Yukl, 2013).

- **Integrative approach** - two or more of the abovementioned leadership approaches are combined to develop more comprehensive theories. Treating leadership as a change process, and the leader as a primary catalyst of change, is a common theme in integrative approaches (Glynn & DeJordy, 2010). One of the best-known integrative theories of leadership is the conceptualization of transactional and transformational leadership. **Transactional leadership** is simplified as rewarding or punishing members to reinforce desired outcomes, while **transformational leaderships** seek to inspire and excite their followers through techniques like charisma and intellectual stimulation (Bass & Stogdill, 1990).

A challenge to the premise of vertical leadership, where the individual leader reigns supreme, is distributed leadership. This type of leadership is often spread across members of a group. **Distributed leadership** differs sharply from traditional theories of leadership, which generally assume vertical or top-down leaders exerting influence on followers. A key distinction between shared and traditional models of leadership is that the influence process goes beyond just the downward influence on subordinates by appointed or elected leaders (Pearce & Conger, 2003). The concepts of vertical and distributed leadership can also be viewed as extremes on a continuum (Gronn, 2008).

Successful online creative collaborations tend to be run by leaders who have proven technical competency and a record of past successes in their respective communities. Emphasis on the importance of the soft skills of a leader, such as personality and charm

were also cited. The following common leadership success factors were described by Luther (2012):

- **Structure and planning** – leaders providing structure and planning is extremely important. Substantial planning up front reduces confusion and conflict later on. Leaders who have carefully thought through the process also appear more trustworthy and reliable.

- **Reputation and experience** – successful leaders also tend to have solid reputations within a community because of substantial previous experience. People tend to prefer to work with leaders they already know. Others assess the ability of unfamiliar leaders by exploring their history.

- **Communication and dedication** – successful collaborations can also be characterized by frequent communication among all members, especially the leader. The best leaders also seem dedicated to the success of the project. This dedication manifests itself not only as regular and active communication, but also a willingness to lead from start to finish.

2.2.2.2 Command and Control

From the general topic of leadership, we focus in on the emergency management field. Many studies suggest that a lot of emergency managers subscribe to the command and control model of emergency management (Drabek & McEntire, 2003). The command and control approach is very strict, rigid and highly centralized (Neal & Phillips, 1995; Britton, 1991). Schnieder (2015) also states that this model is based upon:

- clearly defined objectives;

- a division of labor;

- a formal structure; and

- a set of policies and procedures that governments rely upon to oversee disaster

  operations.

Furthermore, the command and control model assumes chaos after any crisis event;

the difficulty that people have in responding to disaster compels many emergency managers

to seek command and control as a means to bring order to the situation (Dynes, 1994).

However, people require information about: when there are expectations of threats;

what preparations they should undertake; and what actions to take if a threat escalates.

People do not need command and control during a disaster to avoid panic and chaos. The

general population can function as an asset in managing the disaster as opposed to being a

liability (Bussey, 2009). This is when we ask the question why command and control

continues to remain the dominant model of emergency management. The two main reasons

provided are: many emergency managers are unaware of information that has been

available in social science for many years (Canton, 2007); or the military and/or paramilitary

mindset of most official response organizations. The military, hierarchical, top-down, chain

of command becomes the most natural response because it removes uncertainty and

provides clear direction in times of great stress (Drabek & McEntire, 2003).

Fowler (2008) discussed the competing paradigms of command and control versus

emergent citizen groups in the context of the 2005 Lake Wabanum, Alberta disaster

response. The strict subscription to command and control of traditional response authorities

in that case resulted in initial confusion, a delayed response, inhibition of access to vital

information, and more difficult recovery efforts. The situation resulted in conflict, civil

disobedience and public mistrust. A paradigm shift in emergency management philosophy is

long overdue (Fowler, 2008).

2.2.2.3   Emergent Group Behaviour

Alternatively, organizations emerge from individuals communicating with each other,

especially from the interplay of conversation and text (Taylor & Van Every, 2000). In any

emergency, there is a need to improvize. In addition to outlining appropriate courses of

action, communications between actors in an emergency also allows them to learn about

each other's skills and capabilities in order to assemble necessities to meet unexpected

dangers. Good planning enables flexibility, construction of shared visions, awareness of

capacities and vulnerabilities, and communication that facilitates the improvisation that is

needed in a disaster (Wachtendorf & Kendra, 2006).

In order understand emergent citizen groups, the theory of emergent behavior states

that whenever an emergency or disaster happens, people and resources will almost

instantaneously flow to the scene and new organizations will form. These organizations are

characterized by: a great sense of urgency; high levels of interdependence; general volatility;

and independent operations to traditional responders (McEntire, 2004). A typology of

disaster developed by Dynes & Quantarelli (1970) discusses four types of organizations that

typically respond in emergency situations. They are as follows:

- **Type 1: Established** – organizations that normally engage in response activities with

  their operational structure unchanged during responses.

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- **Type 2: Expanding** – organizations that routinely engage in response activities but expand their operational structure to do so, typically by recruiting volunteers.

- **Type 3: Extending** – organizations that do not normally perform response activities but use their existing organizational structure to do so.

- **Type 4: Emergent** – organizations likewise do not normally participate in response, but must create a new organizational structure to do so, and are often formed spontaneously.

The level of disaster determines the involvement of the four main types of responding organizations. This involvement nearly always occurs in sequence. Local emergencies may only involve Types 1 and 2. As emergencies become disasters by exceeding the response capacity of these organizations, Types 3 and 4 begin to appear (Dynes, 2002).

2.2.2.4   Volunteer Motivations

Zeroing in on the SBTF as an organization, Hichens (2012) administered a survey and conducted semi-structured interviews with SBTF volunteers and core team members regarding their motivations. This is an extremely relevant study given that the entire SBTF core team, it's leadership are unpaid volunteers themselves. According to her findings, SBTF volunteers are generally motivated by altruistic concerns. They want to volunteer for the SBTF because they are passionate about the SBTF's work. They also find the work enjoyable. SBTF is a place where volunteers can both put their existing skills to good use while simultaneously also acquiring new skills. However, these aspects of enhancing their personal credentials and networking opportunities to progress one's career were seen as less important.

As an organization, the aims of the SBTF were found to be changing and will continue to change over time. According to the findings, believing that 'keeping the conversation alive,' was key to the effectiveness of the SBTF. Moving forward, SBTF needs to ensure whenever possible, the provision of detailed information to its volunteers regarding the impact of their work. This type of communication will allow the volunteers to feel like a partner in SBTF's initiatives (Hichens, 2012).

2.2.2.5   Comparable Organization

There are a few similar organizations to the SBTF. One such organization is Humanity Road (HR). HR is a volunteer-based public charity that harnesses the power of the internet and mobile-based technologies to close the communications gap when natural disasters strike. HR delivers disaster preparedness and response information to the global mobile public before, during, and after a disaster. Providing aid information helps individuals survive, sustain, and reunite with each other and with their pets. HR strives to close the disaster communications gap through process improvement, collaboration, partnerships, education and training (Humanity Road, n.d.)

Work at HR revolves around educating and informing the public: before; during; and after disaster events. In educating the public 'Before' emergencies, it focuses on disaster prevention and preparedness. Making use of blogs and social media, an example cited was preparedness and early evacuation during wildfires. 'During' the event, HR educates the public how to respond to the current emergency with two separate – yet overlapping purposes: (1) to improve situational awareness; and (2) to determine appropriate action or response of the public and HR's own use of available resources. 'After' the event, HR extends

its mission to educate by gathering lessons learned and improving processes (Starbird, 2012).

2.3 Connections to the Literature

The emergency management field's battle with Big Data is becoming a love affair through advances in technology. The technological advances in GIS and its increasing accessibility has also provided itself as a communication tool. Through collaboration, the technical realm of GIS has opened the field of Participatory GIS and a sub-field of emergency crowdmapping. With more human collaboration and better technological integration, the combination of factors has led to the phenomenon of digital humanitarianism.

The command and control model is based on inadequate theory, incomplete evidence and a weak methodology. The model's real world application often produces misguided conclusions (Fowler, 2008). However, it is possible that current communications technologies may be bridging the gap between these two competing paradigms of command and control and emergent group behaviour. With an online collaboration platform, a crowdmap or any shared visualization tool can become a command and control instrument. This platform will not only be allowing the formal authorities to visualize and plan, but make the rest of those with access to it involved in coming up with solutions. The current and upcoming technology may provide a better basis for the command and control model to become more practical and applicable.

Historically, SBTF would have been considered a Type 4, emergent group when it was formed spontaneously without prior experience in participating in any previous emergency response. In SBTF's current form, it has actually become a Type 1, established organization

that normally engages in response activities with its operational structure largely unchanged or intact. Conversely, SBTF is also a combination with a Type 2, expanding organization because of its typical by recruitment of volunteers. Lastly, SBTF cannot be classified as a Type 3, extending organization because it normally performs response activities. However, it does use its existing organizational structure to provide a venue for emergent individual or group of volunteers to help in a crisis. The SBTF and organizations like it may merit the coining of a new emergent group typology because it straddles across the spectrum.

Given the nature of SBTF as a networked online organization, one would readily assume that a distributed type of leadership exists. If we were to look at individual core team members, we would know that no single vertical leadership trait, behaviour, power and influence, or situational factor will play a dominant role in the leadership of the SBTF as an online community. Rather, it will be a combination of two or more of these factors. It will be an integrative approach that will provide better insight in the establishment and maintenance of effective leadership roles during a crisis event.

2.4 Literature Review Summary

Leadership, emergency management and communication technologies are vast multi-disciplinary fields. To help navigate through this, we investigated works on: recent communications technologies used in emergency management. We looked at the concept of Big Data and how it has affected emergency management. Consequently, we also went through, Participatory GIS, crowdmapping, other technologies and the possible future directions in the field. With leadership and emergency management, we considered the

approaches in studying leadership, the conflicting models of command and control against

emergent group behaviour, and specific volunteer motivations within the SBTF.

       The purpose of this study is to ascertain factors affecting the establishment and

maintenance of effective leadership roles during a crisis event from the perspective SBTF

core team members. Looking beyond the past works through the literature, let us explore

the research methodologies that will allow us to learn more about the topic.

3   Methodology

The phenomenon of digital humanitarians are a major contribution to emergency

disaster response efforts of today. The SBTF as an organization is a great example of this. In

the literature review, we included Humanity Road as a similar organization. A specific

research by Hichens (2008) studied the SBTF volunteers' motivations. There are a number

more of researches on the phenomenon being conducted about the SBTF as of the writing of

paper. However, the SBTF volunteer leadership is an aspect of digital humanitarians that has

not been directly studied. This section outlines the research design in investigating the

establishment and maintenance of leadership roles of the SBTF during a crisis event:

- Design – the choice of key informant interviews;
- Participants – the sample frame of formally appointed SBTF leadership;
- Setting – the global dispersion of participants;
- Instrument – the utilization of semi-structured Skype interviews;
- Procedures – the research protocol with the ethics requirements of the research; and
- Analysis – the use of qualitative methods in analyzing the research findings.

As important as the thousands of volunteers providing their time, skills or expertise,

the leaders are those who stoke the fires of online communities by encouraging

communication and social interaction. (Huffaker, 2010).

3.1 Design

3.1.1 Study Objectives

The purpose of this study is to ascertain factors affecting the establishment and

maintenance of effective leadership roles during a crisis event from the perspective of the

SBTF core team members. This study provides some insight on how to manage and mobilize

this valuable volunteer workforce, by increasing our knowledge about online leadership and

how they can be most effective in providing indirect aid or even direct assistance to victims

of disasters.

3.1.2 Key Informant Interviews

To generally stimulate conversations about the experiences, perceptions and feelings

of participants, qualitative interviews were conducted (Holland & Edwards, 2013).

Qualitative data analysis methods focusing on observing, describing, interpreting, and

analyzing the way people experience, act on, or think about themselves and the world

around them, may lead to serendipitous findings, and new integrations that can go beyond

initial conceptions to generate or revise conceptual frameworks (Brazeley, 2013).

A set of semi-structured, in-depth interviews was conducted using a purposive

selection of participants derived from the SBTF core team members. Initial written questions

were accompanied by appropriate probing questions to draw out details in each answer. The

semi-structured format of the interview allowed the researcher to ask questions beyond the

interview schedule. Important factors in considering this methodology includes balancing

between rigor, reliability, time and finances (Stenbacka, 2001).

3.2 Participants

3.2.1 Study Population

SBTF is a network of over 1800 volunteers from more than 85 countries. It consists of

people who give up their time to help (the UN and other agencies) understand what is

happening in disaster zones. The SBTF trains digital volunteers into a flexible and prepared

network that is ready to be deployed in any crisis, mobilization starts with the recruitment of

volunteers. SBTF volunteers are recruited through various traditional, web and social media channels and asked to sign-up through a registration site (Standby Task Force, 2015).

Whenever there is an emergency or crisis, the SBTF starts its emergency response operations into what is officially known as a 'deployment.' The SBTF activates into a deployment on a case-by-case basis at the request of international agencies and/or local actors operating in a disaster or complex emergency setting. To mobilize for a deployment, a request to activate should be in compliance with the SBTF's mission and principles in providing humanitarian organizations with real-time crisis mapping and situational awareness support. The duration of a deployment should typically be no more than two weeks but could be extended if determined feasible (Standby Task Force, 2015).

The SBTF as an organization has its board of directors. However, in the event of a crisis, the SBTF has a relatively flat organizational structure. The SBTF core team members and a coordinators group compose the SBTF leadership. The population of interest is comprised of English-speaking male and female core team members of the SBTF over the age of 18. The leaders are dispersed globally.

Core Team / Deployment Coordinators

Volunteers
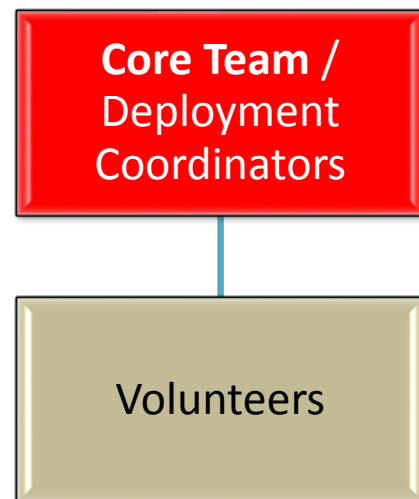
Participants were comprised of five people from the SBTF core team members. Invitations to participate was based upon a purposive selection of participants derived from the general SBTF membership, intentionally focusing on SBTF members in formally appointed leadership positions – the core team. The researcher's level of interaction with

each of the participants, together with their positions and responsibilities with SBTF was the

basis for prioritizing invitations to participate. The sample frame involved the SBTF core

team members and excluded all regular (non-leadership) volunteers and other information

sources involved in the running of an SBTF deployment (i.e., tweeters, news agencies, on the

ground volunteers and possibly victims). For the purposes of this research, only the formally

appointed leaders of the SBTF were the study focus.

Furthermore, the study also concentrated on leadership 'during' a crisis. The

dynamics 'during' a crisis are the most interesting and dramatic times. This is the time where

hours and minutes (even seconds) count in the provision of aid and relief. As much as there

is merit and importance in the leadership dynamics before and after a crisis event, this

research limited its study focus to the leadership dynamics 'during' a crisis.

3.2.2 Sampling Method

The research interviewed five people from the SBTF core team. The SBTF being a

volunteer led and managed network, give volunteers the equal responsibility for the success

of their deployments and overall mission. The SBTF core team was the target group. The

core team deals with the overall organization of the SBTF and the individual deployments.

They are volunteers drawn from the network. Volunteers are appointed based on being able

to demonstrate the relevant skills, experience and capacity. They play a vital role in the

deployments because help make sure that volunteers are focused on the most important

tasks. They support and encourage new volunteers and make sure experienced volunteers

are able to share their skills (Standby Task Force, 2015).

Purposive samples intentionally focus on the target group to the exclusion of other groups (Smith, 1988). A purposive selection of participants was derived from the SBTF core team members. This method of sampling lets the researcher access just the right participants for their study. This is especially true when the required sample frame is unavailable for stratified random sampling (Merrigan, Huston & Johnston, 2012). It is acknowledged that this sampling method is a biased sample and will not equally represent the study population of the SBTF or any other online community.

A survey of general membership was considered and rejected as a research methodology because it was determined that a survey will only reach volunteers who may have only been provided specific task-based contributions to the SBTF and not be fully cognizant of the operations of SBTF behind the scenes. Surveys will also not allow in-depth discussions to arise and more interesting qualitative information to be gathered and considered as compared with the use of in-depth interviews.

3.3 Setting

The SBTF is a global network of trained and experienced volunteers working together online. The organization is a not for profit entity based in the United States of America and have a number of specialist teams that comprise their digital humanitarian work (Standby Task Force, n.d.). Participants were dispersed geographically. Time zone differences was a major consideration and challenge in scheduling interviews. Skype (video conferencing) interviews were the closest alternative to face-to-face interviews. It offered most of the non-verbal cues present in a face-to-face interviews. According to Iacono, Symonds, & Brown, (2016), Skype opens up new possibilities by allowing us to contact participants worldwide in

a time efficient and financially affordable manner. The use of Skype affects the areas of rapport, non-verbal cues and ethics by creating limitations but also new opportunities. Because of the need to reach an international, varied and purposeful sample, Skype interviews will also provide the advantage of ease of scheduling and setup compared to the time, transport and other incidental costs associated with face-to-face interviews. In the case of the global variation of the location of participants, video conferencing or phone interviews are the only feasible alternatives.

The biggest concern in a Skype interview is a high probability of technical glitches on the other end which the interviewer will have no control over. Alternative phone interviews were the contingency plan in case video conferencing resources fail. However, there were minimal challenges with Skype in the conduct of this research.

Furthermore, a preliminary introduction Skype test/trial would have been a preferred first step in order to get to know the participant on the other end of the line before the longer interview took place. However, due to time and resource constraints for both the researcher and the participants, an alternative introductory YouTube video was produced. The video introduced the researcher and research to the participant. It established familiarity with the researcher and allowed the participant to have a preliminary understanding about the subject of study.

3.4 Instrument

An interview schedule was developed to guide the semi-structured interview. Rather than answering dictated questions in the same sequence, the format could be compared to that of a formal discussion (Merrigan, et. al., 2012). Questions consisted of: personal and

professional background questions; the participant's views and expectations regarding their leadership role; their feelings and emotional state at the start of a deployment; their leadership tools, styles and challenges encountered; the software and platforms that they use; possible room for improvement of SBTF as an organization; and any other pertinent thoughts or ideas they wished to share. The preferred Interview method would have been face-to-face interviews. However, due to time, cost and geographic constraints, recorded video conference (Skype) interviews were used. The semi-structured interview was a good match for study because it allowed each participant to further elaborate on topics and subtopics.

3.5 Limitations

A principal limitation of this study will be the size of the sample population because only a limited size will be required to conduct this exploratory research. Relying upon Skype interviews, this research will also be limited by time and resource constraints. Findings will not extrapolate to the larger population of online communities.

Participants will also be self-reporting their own experiences. In approaching this research, we must be mindful of an 'emic' focus where participants may perceive and categorize, define, imagine and explain things as they see it. Conversely, the 'etic' focus draw upon the researcher assuming that participants may be too involved in what they are doing and emphasis on what is considered important will be up to the researcher (Schutt, 2015).

Furthermore, the researcher is a member of the SBTF as a volunteer. Being a volunteer has granted the researcher access to the SBTF membership database and

subsequently contact information of the SBTF core team. However, the researcher has had limited interactions with any of the participants directly prior to the study.

3.6 Procedures

Interviewing SBTF core team members could be described as an elite interview. As defined by Gillham (2005), an elite interview is a distinctive and rich source of information involving talking to people who are especially knowledgeable about a particular area of research or about the context within which the researcher is searching. Participants are commonly in positions of authority or power by virtue of their experience and understanding. Further, participants will likely to be sophisticated subjects for interviewing because not only do they know more than the researcher about key dimensions of the area, but will be alert to the implications of the questions and of the answers to them. The characteristics described by Gillham (2005) were indeed exhibited by the highly successful participants in this research study.

The interview schedule, introductory letter and consent form can be found in the appendices. The research procedures can be broken down in five major steps:

1. Selected SBTF core members were invited to participate with a personal email invitation and simultaneous/concurrent messages on their available personal social networks profiles and the current SBTF forum platform (Slack).

2. Once a potential participant responds positively, a second e-mail containing an introduction and informed consent form is sent with a request that the signed form be returned to the researcher.

3. When the participant provides consent, an introductory video (a sample can be found at: https://youtu.be/-CDe5RuCgdk) together with an interview meeting request (including multiple schedule options) are sent. Negotiation of time availability between the researcher and each participant may be an easy or quite tedious exercise.

4. Conduct the interview at the agreed upon time and ensure that it is recorded. Note that participants always have the option of proceeding with the interview, stop the interview at any time, or withdraw consent up to two weeks after the interview.

5. As soon as possible, transcribe interview recordings and organize interview notes while it is still fresh and at the top of the interviewer's mind.

3.7 Analysis

The analysis of the data gathered was subjected to the following qualifiers as outlined by Singleton and Straits (2010):

- Data organization;
- Pattern Identification;
- Idea development; and
- Formation of conclusions.

The focus of the analysis was based on the narrative produced while documenting the responses of the participants. Looking at the data from the lens of leadership was also an underlying theme throughout the qualitative data analysis process. Common themes were identified among those in the limited population interviewed. Topics that recur regularly or repetition is one of the easiest ways to identify themes (Ryan & Bernard, 2003). Repetition

of common themes also serve to validate participants' thoughts and ideas against each other. However, individually mentioned thoughts and ideas did merit exploration based on its relationship with the theme of leadership. Furthermore, as the researcher interacts continuously with the data, he gradually refines his focus. This process is known as progressive focusing (Parlett & Hamilton 1976). It is hoped that the interview will be sufficient time with participants to explore their relevant experiences in sufficient detail and to also be able check for distortions in their narrative, if any (Rudestam & Newton, 2015).

3.8 Methodology Summary

The leadership of the SBTF is run by its core team of volunteers. A set of semi-structured, in-depth interviews was conducted using a purposive selection of participants derived from SBTF core team members. Participants were comprised of five people from the SBTF core team members. The participants represent the leadership of SBTF and were dispersed globally.

In trying to ascertain factors affecting the establishment and maintenance of effective leadership roles during a crisis event, in-depth semi-structured interviews enabled the core team members to self-report their experiences. This methodology also allowed for experiences beyond the research questions to come out and be discussed. Moving forward, let us see what the research findings have to tell.

4   Findings and Discussion

During natural disasters that threaten large communities with loss of life and

property, traditional community response and resources are unavoidably stressed and

spread thin. The availability of relevant, organized and actionable information during these

emergencies has life or death implications in the provision of direct assistance or indirect

aid. In many recent catastrophes, online volunteers have come forward to help both from

within and beyond the boundaries of affected areas (Goodchild & Glennon, 2010).

In investigating how SBTF core team members establish and maintain effective

leadership roles during a crisis event, the outline of the findings and discussion are as

follows:

- Presentation of Findings – discusses the findings based on the interviews;
- Data Analysis – analyzes the findings from the previous section;
- Discussion – highlights the significant and relevant findings; and
- Summary.

4.1 Presentation of Findings

A set of semi-structured, in-depth Skype interviews was conducted using a using a

purposive selection of participants derived from the membership SBTF core team members.

Purposive samples intentionally focus on the target group to the exclusion of other groups

(Smith, 1988). The nature of the SBTF as an organization enables its members to be globally

dispersed. The same communication technologies allowing the SBTF to operate this way also

paved the way to feasibly conduct this research by bridging geographic distances and several

time zones. Questions consisted of: personal and professional background questions; the

participant's views and expectations regarding their leadership role; their feelings and

emotional state at the start of a deployment; their leadership tools, styles and challenges

encountered; the tools that they use; possible room for improvement of SBTF as an organization; and any other pertinent thoughts or ideas they wished to share. The semi-structured format of the interview also allowed the researcher to ask questions beyond the interview schedule.

The analysis of the data gathered was subjected to the following qualifiers as outlined by Singleton and Straits (2010): data organization; pattern identification; idea development; and the formation of conclusions. Looking at the data from the lens of leadership was also an underlying theme throughout the qualitative data analysis process. Topics that recur regularly or repetition is one of the easiest ways to identify themes (Ryan and Bernard, 2003). Repetition of common themes also serve to validate participant's thoughts and ideas against each other. As the researcher interacted continuously with the data, he gradually refined his focus. This process is known as progressive focusing (Parlett & Hamilton 1976). It is hoped that the interview will be sufficient time with participants to explore their relevant experiences in sufficient detail and to also be able check for distortions in their narrative, if any (Rudestam & Newton, 2015).

4.1.1 Participants

The research interviewed five people from the SBTF core team. The core team deals with the overall organization of the SBTF and the individual deployments during a crisis or emergency. The research participants can be described as:

- Five (5) English-speaking SBTF core team members consisting of three (3) females; and two (2) males.
- Their ages range from twenty-four (24) to fifty-seven (57) years old.
- They have been members of the SBTF from two (2) to five (5) years and leaders from less than one (1) year to three (3) years.

- All participants are highly educated completing university to post-graduate level academic credentials.
- Prior to joining the SBTF, none of the participants had direct prior experience in the emergency management field. They worked in fields such as: communications and social media; research; education; library science or environmental science.

Participant Information

Participant	Location	Age	Gender	Started with SBTF/Started as core team member
1	Italy	31	Female	2013/2015
2	Norway	57	Male	2012/2013
3	USA	50	Female	2012/2014
4	India	24	Female	2014/2016
5	UK	45	Male	2011/2014

Participant locations
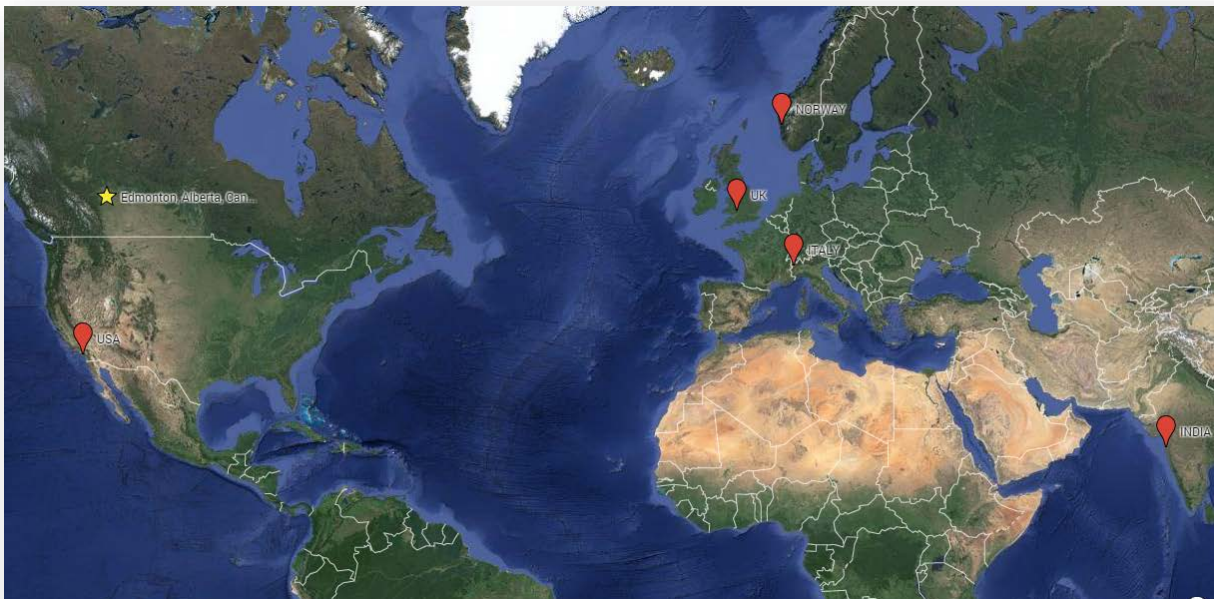
4.1.2 Help me help you

One of the several questions posed to the core team concerned their views towards their roles as leaders. The emphasis of this part of interview focused on each participant's expectations of their role during a deployment. Key words that they used to describe their role are:

- coordinator
- facilitator
- moderator/mediator
- point of contact

Participants describe their leadership in their own words as:

> *It's a facilitative leadership.*
>
> *[I feel like I am] a little piece of the puzzle.*

Core team members are an essential puzzle piece that helps other volunteers find their place. This 'facilitation' is towards two (2) general objectives. Namely:

1. **To help victims of disaster** – SBTF deployment provides a good venue to help in a useful and tangible way. One participant says:

> *Most people cannot fly to the scene of a disaster… to help on the ground… nor do they have the financial resources to give…*

2. **To be able to improve the skills, training and knowledge of the volunteer** – working with SBTF should be an opportunity to increase skills and knowledge. One of the participants noted:

> *If the work a volunteer does helps them in their professional life... This is good. If it doesn't… the experience should at least allow them to be better people by helping others.*

4.1.3   Challenge accepted

In the fulfillment of their duties, it is only expected that they will encounter some

challenges. All participants expressed how seriously they take the responsibilities that they

have volunteered for. Participants describe this as:

> *[I feel that there is] a heavy responsibility on my shoulders at the start of a deployment…*
>
> *[I feel] a severe optimism that volunteers will come to help…*

Some of the challenges that were identified by the participants are as follows:

- **Multi-tasking, volume of work and information** – during a crisis everything is

  time-sensitive. Ensuring that systems are setup properly, dealing with the volume

  of volunteers and the amount of information to sift through becomes

  overwhelming. It is extremely difficult to balance personal life with SBTF work

  during a deployment. One participant told a few interesting stories:

> *One time, I was helping my parents with renovation in the middle of a possible deployment. It was difficult to move furniture around while trying to answer messages on your mobile phone. I also burned my dinner twice while at a deployment – I had to decide that is was important to eat…*

- **No expectations from the volunteers** – it is important to note that all core team

  members, just like the rest of the SBTF volunteers are all unpaid. The leaders will

just have to take the volunteers' word that they will do a task when they say so.

Just like any other volunteer organization, there are limitations to being able to

provide performance incentives or sanctions for failing to complete a task. One

participant had this to say:

> *You cannot fire a volunteer… You just have to appreciate their engagement and the time they spent with us…*

- **Feeling of isolation and separation** – on a personal level, the digitally mediated

  interaction of online chats can be limiting compared to face-to-face

  communication. However, interaction with other geographically distant

  volunteers will not be possible without the Internet. This is illustrated by a

  participant as:

> *We are distant participants. We are not on the ground. We are not smelling anything. We don't get dusty…*
>
> *Having only the screen and Skype to use as a tool is a limitation… It's a two dimensional channel of interaction... [We are not sure] whether this online communication tool is a limit or a benefit with interactions with other human beings...*

- **Emotional exposure** – many volunteers feel the need to keep working because of

  what is happening on the ground a world away. Another situation are those

  volunteers who tag images of damage and disaster, they can also become very

  emotionally affected by the graphic nature of those photographs. Both volunteers

  and leaders need to be reminded that it is OK to step away from the work even

though there may be a feeling that they are abandoning the victims. They have to

be reassured that they have done a good job. One participant had this to say:

> *Standing down from Nepal was a challenge. It had already been an extended deployment. However, with real-life happening on the ground in Nepal, it was hard for both the core team and the volunteers to stand down…*

4.1.4   Leadership Style and Tools

Establishing and maintaining leadership requires effort and resources. The following

section discusses personal and professional traits and behaviours as well as the technology

that facilitates leadership.

4.1.4.1   What's your style?

The most common theme among the participants is authenticity. As far as they

believe, none of the participants assume any type of 'leadership' persona within the SBTF.

Because they are a volunteer organization where honesty and transparency are essential,

each participant expressed that they must be their true and genuine self when interacting

within the SBTF. Participants expressed this as:

> *I have to be myself because I'm dealing with volunteers. There is no difference [in my personality] but I'm really not sure…*
>
> *I try not to have a core team persona. I have to be authentic…*

Given this fact, there are still subtle differences to their actual in-person self that

have been identified. Some of these are:

- **Clearer and more concise** – even if they are more talkative in real life, all participants exercise the discipline of avoiding being misunderstood. Messages need to be more distilled and avoid being verbose. A misunderstood post will require several other (possibly lengthy) posts to clarify and correct. One participant says:

> *I am extremely conscious about how I write, what I write… Read twice, send once to make sure you don't have anything confusing…*

- **Friendly, yet professional** – volunteers need to feel welcome and useful. Leaders may be naturally friendly and will use this personality trait to welcome and encourage volunteers. Meanwhile, the leader also has to ensure that volunteers stay on task. One participant tells a story:

> *I try to be professional and friendly at the same time. I want people to feel comfortable. Which is funny because I've 'played' online with women – and I'll finally figure out later – my gosh! This person has multiple PhDs. – We've talked back and forth like we were old friends…*

- **English is not the first language** – for native English speakers, they have to ensure that they are not writing using local language or idioms. For non-native English speakers and depending on their fluency, this may be a factor in how they conduct themselves online. There were a couple of quotes about this:

> *When I speak, I probably use more local language. Idioms that are American –southern Californian American. When I type (especially when I'm in the chatroom), I am extremely conscious about what I type… I don't use any terms that*

> *may be confusing to who is either a non-native English speaker, not an American, or specifically not in the region where I've grown up…*
>
> *There is a difference because English is not my mother tongue. My mother language is Italian. I speak to my housemates in Italian then write in English. I'm not sure if my personality is fully reflected because of this barrier.*

- **Thinking globally, not speaking locally** – especially true for those based in more affluent countries, participants will not discuss: local topics such as, material concerns (e.g., housing); or culturally sensitive issues, out of respect to all the members from other parts of the world who may or may not understand the context of topics like these. A participant expresses this as:

> *Where I sit in Norway, the richest country in the world. I have a decent house. Beautiful surroundings. Below average by Norwegian standards, but decent. The location is marvelous. After a while I discovered… Hey! Don't talk about this to the community. Don't tell too much about it, because most of our members in the world are not sitting in some noisy flat in the big city somewhere. So online I'm SBTF, I have been reducing how much I talk about the situation. And that is simply in respect for all the other members. You don't know what they think. We have members from North, South, rich, or poor countries. You have to be aware of the variations among your members.*

4.1.4.2   Tools: platforms, applications and technology

For majority of the lifetime of SBTF, the organization had used Skype as its instant messaging platform. In recent months, it had shifted to Slack for its ease of use and better organizing capabilities. One of the participants also stated that without the Google platform, the SBTF would not exist. Perhaps another platform would have been able to fill this need. However, the statement illustrates the collaborative nature of SBTF's work.

- **Free or cheap** – collaboration is possible only with the most accessible and cost-

  effective tools common to all its volunteers. It is necessary that the tools that

  SBTF uses be either free or the cheapest available for everyone. A couple of the

  participants offered these thoughts:

> *The SBTF is a low-tech outfit. This is SBTF's strength and resilience.… SBTF would not be possible without the Google ecosystem.*
>
> *We definitely don't have enough [tools]. If we have them, we have the free version, or the absolutely cheapest version possible… …we're a global disaster group without money.*

However, there is also the dichotomy with the need for cutting edge tools.

- **Cutting-Edge** – not accessible to all the volunteers, the SBTF through Patrick

  Meier's work, is also able access Artificial Intelligence (AI) tools to analyze social

  media posts, location data and imagery. It is also possible that this imagery may

  have been obtained using Unmanned Aerial Vehicles (UAVs) or drones. It is then

  up to the technicians and operators to filter this down to the volunteers for

  further human processing beyond an AI capability or just for quality control. A

  participant said:

> *We use QCRI's (Qatar Centre for Research and Innovation) AIDR program (Artificial Intelligence for Disaster Response) which is an aggregator for all those tweets and everything. We kicked that in quickly. We have also tested satellite and UAV imagery. We were one of the first to be able to do that. A lot of that is because of Patrick [Meier]. Now, he has created WeRobotics, and we have a couple of SBTF people working for them. I imagine that we may be used for that.*

Current and emerging tools are also being slowly utilized and tested by the core

team: Trello is considered good for Project Management; Storify has been utilized (in lieu of

a deployment) recently in the Fort McMurray Fire; Google Hangouts (instead of Skype) for

core team meetings; Litmus for training is being considered; and the use of Silk for data

visualization has already been implemented. There is always a need for more tools but the

time and resources of a volunteer organization can be limited. It is also good to note that

software, applications and platforms would do well for their brands to be able to promote or

market that they are utilized by SBTF, a humanitarian organization. One participant had this

opinion:

> *I can see the start of software companies starting to compete to share their tools with SBTF because… It hasn't really exploded, but the competition is so fierce, that to have a humanitarian profile is very useful. So when somebody wants to sell us stuff, [I think] – they should pay us for using it. We as a network can show we can do a job, we can deliver fast and precise, and all these things –they will come running after us.*

4.1.5   Improving the SBTF as an organization

It would be impossible to talk to a leader and not discuss their views of the

organization they lead. Without a doubt, the SBTF has had its share of successes. However,

not all deployments are successful. An example of a failed deployment happened in

Pakistan. There was a language barrier and there was no social media presence. This could

be considered, more or less, a total failure. To help us define success in a deployment, we

also need to understand that there are two types of deployment according to one of the

participants:

> *There's two kinds of disasters:*
>
> 1. *The Sudden Onset Disaster – the earthquake.*
>
> 2. *And then there's one that takes more time to build up. We watched this typhoon heading towards Vanuatu. We had a few days beforehand. A famine – something that has built over time, it can take a few days to be able to get that ready.*

Based on participant responses, a deployment can be considered successful when some of the following situations happen:

- **Achieve something new** – when the SBTF gets its heads together on a project that none of the other humanitarian organizations have done, it can be considered a successful deployment. A couple of examples of this are: In Nepal, SBTF created a 3W (a humanitarian response tool, Who does What, Where?) that was used by many organizations; in the Ebola deployment, SBTF was also able to create a health centre database. A disaster relief colleague related this to one of the participants:

> *This one guy from the US Navy says: 'You guys saved my bacon!' I've been getting calls left and right going: 'Do you have a 3W?' And then you guys came up with it! …and I said, 'Yes, I do! I have this one from the SBTF.' He was so grateful.*

- **Use of collected information** – directly related to this is the use SBTF collected information. It does not have to be new. It could be tried and tested as long as people and organizations are using it. During the refugee deployment, nobody was saying anything or providing feedback because of political sensitivity, the

difficulty of the situation and other possible reasons. One participant related an

interesting story:

> *Because we know these people, we noticed that they were on the Google Sheet. We saw their names. They are logged into Google. This is the head of UNHCR in Athens and he is constantly monitoring our Google sheet. They don't say it, but they are using the information that we have collected. That is basically the success criteria.*

- **Completing a given task** – when other organizations ask for SBTF's help and they

  are able to accomplish this task. It can be considered a successful deployment.

  Another participant had another interesting story:

> *We worked with Nethope during the refugee crisis. I finally had to say: Do you have more work for our group? They finished this task in like 2 hours and now they are just kind of waiting. And they said, 'Oh!?' I said, 'Give them more work. You can!' They are extremely fast because they are highly skilled. They completed a task that Nethope thought would take days, in hours!*

4.1.6   Common themes

Success factors in leadership studies can be distilled into these three general themes:

structure and planning; reputation and experience; and communication and dedication

(Luther, 2012). Using these factors as a lens, some common themes in our findings are as

follows:

4.1.6.1   Structure and Planning

SBTF leaders provide structure and planning. Substantial planning up front reduces

confusion and conflict later on. Leaders who have carefully thought through the process also

appear more trustworthy and reliable.

- **Challenges an organization** – like many volunteer organizations, the SBTF faces

    similar organizational challenges in managing its volunteers. Currently, the core

    team has two full-time unpaid volunteers ensuring that the SBTF continues its

    operations. A participant had this thought to share:

> *I honestly don't know of another group that offers that level of opportunity to help their fellow man. I really love that about the group. When the group was struggling and we decided to do this full-time… Where else will people be able to do this? If this group falls and doesn't exist, where will they be able to help? And I think we're a better world when we all help each other that way. … that was a huge motivator for us.*

    As SBTF grows, gains credibility and becomes an expected and essential part of

    humanitarian efforts, it may be necessary to re-think and re-evaluate its

    organizational model and structure in order to ensure the sustainability of the

    organization.

- **Flat maintenance** – given suggestions of organizational tweaks and changes, the

    SBTF's strength also lies in its flat structure. SBTF being a flat organization allows it

    to become nimble and responsive when it counts – in the face of disaster. With its

    gains in credibility and expectations in becoming an essential part of

humanitarian efforts, it may also be a daunting challenge for SBTF to maintain its relatively flat organizational structure. One participant had this to say:

> *It would be interesting to what degree SBTF will be able to maintain its flat, participatory volunteer structure [moving forward into the future].*

If the SBTF does intend to evolve into a different leadership structure, they should keep in mind that customary hierarchical (centralized) decision making processes most organizations are accustomed to, must suddenly give way to a flatter, more dynamic, ad-hoc organization that emerges during disaster relief efforts (Manoj & Baker, 2007).

- **Continuity of ideas** – if someone would read the archives of the SBTF, too many brilliant ideas have not been implemented. The volunteers standing behind these ideas, their passion for it, and the time they can devote to it are the main deciding factors, if any of these ideas can become reality. A participant relates:

> *We have network of very enthusiastic and engaged people. A common phenomenon among those ideas is that they will never happen unless a lot of people join in, accept them, support them, and follow up. That is a true challenge.*

- **Frantic planning** – in the aftermath of a crisis, right before a deployment, is where the SBTF leadership shines in its discipline to ensure that it is not hasty in deploying. Behind the scenes, the SBTF core team members are frantically coordinating with other organizations and preparing the tools and instructions

needed to make sure that they make sense and are user friendly. A participant

relates:

> *[Before I became a member of the core team], I didn't imagine the things that go on in the background. The volunteers do not get to see [this]. In order to make sure we get the volunteers a user friendly experience, there is lot of work that goes on. [We have to] ensure that nothing goes wrong… if it does we have to fix it as quickly as possible….*

4.1.6.2   Reputation and Experience

Successful leadership also tend to possess solid reputations within a community

because of substantial previous experience. People tend to prefer to work with leaders they

already know.

- **Building a reputation** – The general public does not know what the SBTF is or

  what it does. However, in the humanitarian community, the SBTF has proven over

  time that it can make a difference. The SBTF has been featured in the media and

  has gained respect in the humanitarian community. It is just very different from

  other humanitarian organizations that it is purely run by unpaid volunteers. A

  participant had this to say:

> *SBTF has been around long enough. Prominent groups already look to SBTF as the tech people. [They] ask us to tell them the secret. [SBTF is] also viewed as different because we have no Geneva office which may not be good, relevant or proper... to be taken or not taken seriously…*

- **Leading as an advisor/collaborator** – there are other organizations, classes from

  university programs, and local community groups who have looked to SBTF for

advice. Other Humanitarian organizations also look to SBTF to collaborate with

them in order to prevent duplication of efforts. There was an interesting story

about this:

> *In Kitu in Ecuador, a local group gathered to create a Crowdmap on the earthquake. The lady who was in charge looked like she was maybe 20 something. She got her friends together. They created this crowdmap. Then someone from the SBTF in Columbia discovered them. Hey guys, I have this large network behind me that can assist you. And so this local group came in touch with a global community of digital responders. I imagine that must have been a great feeling.[A] perfect experience for them… …from now on [they] will have the consciousness about what happens in their country. They have the experience that if they start a project, they have a global network of concerned people that they can play with.*

- **Leading as a flagship** – the SBTF gets some press coverage. The term they use to

  describe SBTF is as a 'flagship.' Prominent humanitarian groups already see SBTF

  as the 'tech people.' In part, due to its pioneer role in digital humanitarianism.

  And another as an ideal testing ground for new technology. A third dimension is

  its readiness to be an academic topic, such as this particular research. Another

  exhibition of leadership is SBTF's ability to deploy ahead of other humanitarian

  organizations. A good story about this was:

> *I noticed that in [multi-agency] Skype rooms, we're actually one of the first groups that actually deploy. A lot of groups talk about it. We tend to deploy ahead of all the others. It's fun to watch them all of a sudden typing in, 'SBTF has deployed!' And then you see the other groups start to deploy. I have noticed that we often lead in that because you can actually talk about it for a month and never actually do anything…*

4.1.6.3   Communication and Dedication

Successful collaborations can also be characterized by frequent communication among all members, especially the leader. The best leaders also seem dedicated to the success of the project which manifests not only as regular and active communication, but also a willingness to lead from start to finish.

- **Communication efforts** – from the perspective of an SBTF volunteer, the organization has done a good job communicating its efforts to its members and letting them feel connected and plugged-in even when they have not spent much time in a deployment. It is not clear how the SBTF markets or promotes itself to other organizations. One had this to say:

> *SBTF involves commitment. How much time you can devote to it. It typically involves battlefield promotion –where you show what you are good at doing…*

Perhaps beyond 'battlefield promotion,' it would be possible to market SBTF's capabilities better to other organizations to ensure that the organization is utilized to its full potential. A dilemma is recognized that the skill level may vary with each deployment but perhaps it may also be possible for longer running core team members to estimate the extent of volunteer engagement and levels of expertise available. Furthermore, as part of a two-way communication, soliciting feedback from other organizations that SBTF has collaborated with, will also help qualify, if not directly quantify, SBTF's success.

- **The calm before the next storm** – the SBTF regularly conducts trainings and

  orientations for its new recruits and longer running volunteers alike. One

  participant identified that there may not be enough engagement between

  deployments. On top of just conducting training, perhaps other activities can be

  organized to bring the SBTF community together. There is also a possibility that

  this 'calm' period can attract a different type of volunteer personality – those who

  still want to help but are not attracted to the frantic and possibly stressful

  deployment situations. They can also be equally valuable volunteers. A

  participant had this to say:

> *Between deployments there is not a lot of connectivity between the core team and the normal volunteers. Outside of a deployment, there are a lot of things that can be done…*

- **Dedicated leaders and volunteers** – worth mentioning is the inspiring dedication

  that is exhibited. The influence between leaders and volunteers is definitely two-

  way. In this particular situation, it seems that it is the leaders that are more

  inspired by their volunteers. A participant shares an opinion:

> *If the group wasn't so great, I don't think I'll have the passion. If they weren't trying to put kids to bed at night, so they can help for two hours… Or people going, I've got internet on the train on the way to work, I'm gonna help for an hour. How amazing are people like that?! On their lunch hour… Or in between classes and they help out. What a great group of people.…*

- **Quantifying success** – Even if the SBTF theoretically operates at no cost. This is

  due to the dedication of the volunteers who actually pay for SBTF with their own

  time, skills, equipment and materials. This may be perfectly fine and acceptable

  given that no one is forced to volunteer and there are virtually unlimited potential

  volunteers online. However, the SBTF should also continue to study the metrics

  and requirements of funding agencies so that it is able to secure more funding. A

  participant had this to say:

> *Unfortunately, we don't have numbers and impact stories from the ground. It also makes us difficult to be funded. Because those are the types of things that funders need.*

  A longer-term funding arrangement, as opposed to project-based funds, would be

  a preferable funding source. Since the SBTF already crowdsources its work,

  perhaps crowdfunding may also be a viable funding avenue to explore.

4.2 Data analysis

The data was filtered, organized, and patterns were identified in the previous

section. Ideas have been developed and preliminary conclusions have been drawn and

recorded in this section (Singleton & Straits, 2010). Identifying common themes as well as

the process of progressive focusing by interacting with the data and gradually refining the

focus has also produced the following ideas in this section (Parlett & Hamilton 1976).

4.2.1 **Establishing and maintaining effective leadership roles during a crisis event**

Coming back to the research question regarding establishing and maintaining

effective leadership roles during a crisis event, the interviews offered the following insights:

- **During a crisis event** – a lot of uncertainty and confusion arise during a crisis.

  People want to immediately help but many organizations are not yet sure how to

  do so. Local authorities and even seasoned organizations such as the UN have to

  figure out how to mobilize. Everyone is under pressure whether to mobilize or

  not. The SBTF as an organization, because of its digital nature, is able to deploy

  ahead of its other organizational counterparts because they actually have the

  advantage of not having to consider the physical aspects of any deployment.

  Notwithstanding, the SBTF still needs to plan for numerous considerations but it

  becomes easier when the core team is able to draw upon templates and

  processes from its previous deployments.

  For the individuals in the core team, multi-tasking SBTF duties with their real-life

  tasks can be truly challenging. If notifications from their mobile phones are not

  turned off, it will be constantly asking for attention. For some, a deployment is a

  chance to peel away from real life. To have the 'luxury' of focusing on a singular

  endeavour. It is also the time when they can say that they are 'saving the world.'

- **Establishing leadership** – the core team's leadership is actually already

  established by virtue of their appointed positions. However, during a crisis, the

  manifestation of their leadership lies in the prudence, discipline and due diligence

  that the tools (instructions, spreadsheet, etc.) are ready to be viewed, used and

populated by its volunteers. And if it is not fully ready, they should be able to quickly respond and rapidly fix whatever problem manifests itself.

As core team members, they have the tag '[Core Team]' beside their name on the Slack platform. If a volunteer does not recognize their name, the tag establishes their leadership. When deployments were previously done through Skype, the '[Core Team]' tag was not available. Because of this, core team members usually introduce themselves to the currently online volunteers each time they log on. This practice of beginning with an introduction is still continued on Slack.

- **Maintaining leadership** – the volunteers of the SBTF are an excellent collection of altruistic people and a group fine human beings. Like many other volunteers, they provide their time, skills and resources to be able to help. No one on the Slack platform just stumbles in without being vetted through an application process conducted by the core team. This due diligence possibly eliminates trolls and prevents undesirable behavior from volunteers. Volunteers generally stay on task. The biggest challenge in maintaining leadership encountered by the core team during a deployment are people getting tired, stressed and too emotionally involved. This also happens to the core team members themselves.

    The SBTF has an Empathy Team that helps volunteers cope with the stress and emotional effects involved in dealing with the situations in a disaster. Even if the volunteer is geographically detached from disaster sites, the exposure to social media posts, images or any other disaster-related information can affect a person.

As an example, general stress and tiredness can happen when a volunteer is at the end of a twelve (12) hour shift for the third day in a row. Their online demeanor and attitude can change. Core team members notice this change. As a practical response to this challenge, the SBTF created a friendly chat room, apart from the deployment chat platform. In the Nepal deployment, they named this room, 'The Tiki Bar and Grill.' In the general Slack platform currently, it has been replaced by 'The Wander Inn' in between deployments. It is a place where volunteers can unwind, share a virtual drink, joke around and talk about anything other than the deployment. Core team members are quite pleased and proud of these chatrooms where they can invite volunteers to step away from their tasks or computers.

They do have to continuously remind volunteers that it is OK to take breaks. Disaster work is important work. Volunteers feel like they are making difference. Possibly saving lives. Stepping away can be a challenge. In Nepal, many core team members and volunteers had trouble with this. It was especially true because of the fact that the SBTF was standing down after an already extended deployment period.

4.2.2   Looking at Leadership Study Approaches

Returning again to the research question regarding establishing and maintaining effective leadership roles during a crisis event, Luther (2012) discussed vertical leadership study approaches. Based on the findings we are able to observe the following traits and behaviours from the SBTF core team:

- altruistic
- authentic
- clear/concise/precise
- culturally sensitive
- dedicated
- friendly
- helpful
- supportive
- welcoming
- works well with others

More descriptions, such as intelligent, highly-educated and many other adjectives can be used to depict the SBTF core team. Yukl (2013) also cited situational leadership factors where universal rules of leadership effectiveness are unobtainable. In the case of this research, the situation can be considered consistent, because we are looking at leadership 'during' a crisis even though there may be variances in each crisis situation. The abovementioned traits and behaviours were found to be generally successful in establishing and maintaining effective leadership in the case of SBTF core team members in this situation.

However, looking at traits and behaviour may be a very limited approach because the SBTF leadership cannot really be described as a vertical type of leadership. By definition, SBTF is a distributed leadership, where power and influence goes beyond just downward influence on subordinates by appointed or elected leaders (Pearce & Conger, 2003). Furthermore, the SBTF core team viewed their role as a facilitative form of leadership.

Viewing vertical and distributed leadership as extremes on a continuum (Gronn, 2008), we can also look at the SBTF core team's leadership as a transactional from of leadership during a crisis because most of the work is task-based. But instead of rewarding

or punishing to reinforce desired outcomes (Bass & Stogdill, 1990), the SBTF core team

encourages its members and appeals to the volunteer's altruistic nature or desire to help.

Stepping back, the SBTF as an organization can exercise a transformational type of

leadership by leading the way as a flagship towards newer and better ways of doing digital

humanitarian work. However, these leadership actions would have to occur as strategic

planning and tactical preparation 'before' a crisis, and even evaluating and finding better

ways of doing things 'after' a crisis.

4.3 Discussion

As with any disaster or emergency, it is hopeful and reassuring that people are willing

to step up and help out when possible. Although well-intentioned, emergent groups trying

to help can lead to more challenges dependent upon the manner that they help. Disjointed

and disorganized groups can also add to the confusion of an already chaotic disaster or

emergency. The SBTF as an organization establishes and maintains leadership by:

- **Becoming a venue** – the SBTF is a platform where people who want to help are able

  to. Volunteers are also able to leverage their skills, their time, computer equipment,

  access to the Internet and social media to productively help. Concerns about not

  having enough money to give, or how the donation is spent is not a relevant question

  with the SBTF. It allows anyone with Internet access and the desire to help, to do just

  that.

- **Becoming an organizer** – the confusion and chaos inherent in disasters will remain.

  There is information overload and no such thing as an organized disaster or

  emergency. With the SBTF residing in the Internet, it deals mainly in information. The

information are in the form of websites, social media posts, news reports and other

digital or even analog information. The SBTF takes the chaos and large volume of

disaster related information and attempts to organize them, and eventually turn

them into actionable information. It may use its volunteers to hunt, tag, and

categorize information. It may also use technology (such as UAVs and AIs) to gather

and also organize. In the end, the SBTF helps make sense of the chaos.

- **Becoming a bridge** – the nature of the work of SBTF volunteers is collaborative. The

  work is a collaboration of a group of individuals hunting, tagging and categorizing

  information. This cooperative nature extends in its collaborative endeavours with

  other organizations. The SBTF becomes a bridge to prevent duplication of efforts. It is

  also able to lend its expertise to allow other organizations to achieve what they could

  not do on their own.

It should be noted that participants self-reported their own experiences. The

research was mindful of an 'emic' focus where participants may have perceived and

categorized, defined, imagined and explained things as they saw it. On the other hand, the

'etic' focus could assume that participants may have been too involved in what they have

been doing and the emphasis on what is considered important will be up to the researcher

(Schutt, 2015).

As an additional factor, the researcher is also a member of the SBTF as a volunteer

which granted the researcher access to the SBTF membership database and subsequently

contact information of the SBTF core team. However, the researcher has had limited

previously interactions with any of the participants directly prior to the study.

4.4 Findings and Discussion Summary

The findings from the interviews described the SBTF core team member's view of their leadership as that of a facilitator. They were able to identify challenges they encountered, which were: multi-tasking, volume of work and information; minimal expectations from the volunteers; a feeling of isolation and separation; and also emotional exposure to disaster situations.

Furthermore, an authentic leadership style was deemed necessary to operate in an online volunteer organization. To help in leading the SBTF, the core team utilizes different platforms, applications and technology as their tools. These tools can range from: free, or the cheapest software to provide the most accessible platforms for the volunteers; to cutting edge technology such as (UAVs and AI applications) that are tested and utilized by the SBTF and its partners. Measures of successful leadership, both as an individual core team member, and as an organization, were also discussed.

Common themes also emerged in the interviews. Core team members talked about their perceived challenges of how to change the organization to adapt and also how it must remain flat and responsive.

Finally, the research question regarding establishing and maintaining effective leadership roles during a crisis event was revisited. The SBTF is also able to bridge emergent group behavior by becoming both a venue and an organizer. Its online volunteers, the digital humanitarians are enabled to act and collaborate as one, in a virtual command and control platform that is the SBTF.

In the end, the availability of relevant, organized and actionable information during emergencies has life or death implications in the provision of direct assistance or indirect aid. In many recent catastrophes, online volunteers have come forward to help both within and beyond the boundaries of affected areas. This study provides some insight on how to manage and mobilize this valuable volunteer workforce, by increasing our knowledge about online leadership and how they can be most effective in providing indirect aid or even direct assistance to victims of disasters. It may be possible to find ways to tweak and enhance online organizations in order to work for better communications in times of distress. It is literally a matter of life or death.

5   Conclusion

During natural disasters, availability of relevant, organized and actionable information has life or death implications in the provision of direct assistance or indirect aid. The SBTF is a network of over 1800 volunteers from more than 85 countries consisting of people who help organize relevant crisis related information. The purpose of this study is to ascertain factors affecting the establishment and maintenance of effective leadership roles in the SBTF during a crisis event. Leaders play a key role in providing direction, instructions and guidance to get work done. A set of semi-structured, in-depth interviews was conducted using a purposive selection of participants derived from the SBTF core team members. Participants were comprised of five people from the SBTF core team. The participants represent the leadership of SBTF and were dispersed globally coming from Italy, Norway, USA, India and the UK. The study provides insight in the fields of leadership, emergency management, communication technologies and the emerging field of digital humanitarianism. In this last section, we will:

- Summarize the findings;
- Look at the findings in the context of leadership;
- Explore possible future research directions; and
- Offer some parting words.

5.1 Research Findings

> *This is the story of thousands of largely anonymous volunteers who stepped forward in times of need. They worked long, sleepless hours for free and without expectation of praise (or blame). They did this because they saw a need. My role in this, given the accidents of interest and experience, has often been a catalyst. This should not be interpreted as taking away from the hundreds and thousands of other volunteers who each have their own story to tell (Meier, 2013, p. xxiii).*

The findings reveal that the SBTF core team members view their role in the organization as a facilitative leader to primarily to help victims of disasters. The leaders being volunteers themselves encounter challenges in managing the volume of work and information and multi-tasking within their work in the organization and also balancing it against their lives outside the SBTF. With the intensity of events that occur in a crisis, there is a dichotomy in the a feeling of isolation and separation from the disaster or even the rest of the world; but at the same time there is also a big risk of emotional exposure, by being a remote witness to loss of life and property.

Given this backdrop, the facilitative leadership of the SBTF core team is characterized by authenticity in the way they interact with volunteers. Core team members assert that they do not assume a leadership or core team persona. However, comparing their SBTF online selves to their real life personalities, they express themselves better and more concisely online. They are also friendly and professional at the same time. The SBTF core team are also more sensitive to language use and cultural differences in the way they interact.

The SBTF is made possible through collaborative platforms. The available Internet tools provide free or cheap technology solutions (e.g. Google, Skype, or Slack). At the same

time, the SBTF is a good laboratory or testing ground for cutting edge technologies such as artificial intelligence or unmanned aerial vehicles.

To ascertain factors affecting the establishment and maintenance of effective leadership roles during a crisis event, we also need to consider that vertical leadership study approaches looking into individual leadership traits, behaviours, power and influence, or situational factors are insufficient. An integrative approach considering two or more these factors is necessary. Furthermore, the more appropriate study approach is to look into the distributive leadership model because the SBTF leadership is not based on one individual leader and the flow of influence and power goes both ways.

5.2 Findings in Context

Highlighting Dynes (2002), we look back at his organizational typologies. Historically, SBTF would have been considered a Type 4, emergent group when it was formed spontaneously without prior experience in participating in any previous emergency response. In SBTF's current form, it has actually become a Type 1, established organization that normally engages in response activities with its operational structure largely unchanged or intact. Conversely, SBTF is also a combination with a Type 2, expanding organization because of its typical by recruitment of volunteers. Lastly, SBTF cannot be classified as a Type 3, extending organization because it normally performs response activities. However, it does use its existing organizational structure to provide a venue for emergent individual or group of volunteers to help in a crisis. Based on this, the SBTF and organizations like it may merit the coining of a new emergent group typology because it straddles across the

spectrum. This may be an interesting new typology applicable to the field of emergency

management and the emerging field of digital humanitarianism.

Going back to Luther (2012), we used his leadership themes as a lens to organize our

findings:

- **Structure and planning** – the SBTF faces the similar challenges other volunteer

  run organizations encounter. It may need to re-think its structure because of the

  need for stability and continuity but they should keep in mind that hierarchical

  organizations must make way to a flatter, more dynamic, ad-hoc organizations

  during disaster relief efforts (Manoj & Baker, 2007). Right before a deployment,

  SBTF core team members frantically coordinate with other organizations and

  prepare tools and instructions needed to make sure that they make sense and

  are user friendly. This is arguably one of the keys to SBTF's success.

- **Reputation and experience** – the SBTF has proven over time that it can make a

  difference by proving their capabilities, and gaining the humanitarian

  community's respect. The SBTF as an organization leads as an

  advisor/collaborator for other organizations. It is also looked upon as leader in

  innovation through the testing and utilization of new technologies not previously

  used in humanitarian endeavours.

- **Communication and dedication** – the SBTF understands that volunteers need to

  connected and plugged-in. However, between deployments there may need to be

  more communication and engagement. The dedication of leaders and volunteers

  is what makes SBTF succeed. Without pay, volunteers provide their time and

talent. Since the SBTF already crowdsources its work, perhaps crowdfunding may

also be a viable funding avenue to explore.

It would have also been interesting to look into the SBTF through the lens of

Benkler's (2006) commons-based peer production theory. SBTF seems to fit the

phenomenon of peer production or mass collaboration. Peer production is the way of

producing goods and services that relies on self-organizing communities of individuals where

the labour of a large number of people is coordinated towards a shared outcome. This was

one of the theoretical lenses considered in moving into this research. Furthermore, worth

mentioning is the idea of cooperation theory as articulated by Rheingold (2011), where

observations can contradict old assumptions about human selfishness vs. altruism and self-

interest vs. collective action.

5.3 Future Research Directions

This exploratory study was about the establishment and maintenance of effective

leadership roles in the SBTF during a crisis event. It was short foray into the new and vast

multi-disciplinary field of digital humanitarianism. The size of the sample population was not

only limited size but was also confined to the SBTF. A much larger study involving more

participants and more organizations may yield findings that may possibly extrapolate to the

larger population of online communities and/or digital humanitarians.

The SBTF already crowdsources its labour. As a very practical research

recommendation, crowdfunding may also be a viable funding avenue to explore both

internally as a business initiative, and ideologically to preserve its organizational integrity by

not being beholden to any large donor agency but funded by the Internet populace.

Furthermore, research on how to employ the eyes and ears of the general public through volunteered geographic information is needed. Eventually, geographic information will not only be used by all, but created by all. This is the reason why protocols and institutions will be needed to ensure that volunteered geographic information will be as reliable and useful as possible (Goodchild & Glennon, 2010).

Meier states that the field is ripe for policy research.   Innovative technologies will require innovative policies and forward-thinking leadership. Guidebooks and guidelines are insufficient and inadequate. The SBTF has started to try to channel digital goodwill by taking the hard lessons learned from previous years of disasters. Humanitarian organizations partnering with each other can share best practices, codes of conduct, protocols and other efficiency mechanisms (Meier, 2015).

Finally, investigating digital humanitarian phenomenon through the lens of Benkler's (2006) peer production theory holds great promise and potential in studying the SBTF. Commons-based peer production may appear to be becoming the new norm, possibly replacing traditional hierarchical humanitarian organizations. It is more likely that peer production groups like the SBTF will be co-evolving with traditional organizations. This would be interesting juxtaposed to our findings on how the SBTF must change its structure or maintain its flat organization. It would probably be safe to predict that aspects of hierarchical organizations and aspects of peer production groups will find similar characteristics of each other as they mutually evolve.

5.4 Parting Words

The purpose of this study is to ascertain factors affecting the establishment and

maintenance of effective leadership roles during a crisis event. The facilitative leadership of

the SBTF core team is made possible through collaborative platforms which is a good testing

ground for cutting edge technologies. The emerging multi-disciplinary field of digital

humanitarianism is ripe for research:

- In studying the SBTF, vertical leadership study approaches looking into individual leadership traits, behaviours, power and influence, or situational factors are insufficient. An integrative approach considering two or more these factors is necessary. Furthermore, the more appropriate study approach is to look into the distributive leadership model because the SBTF leadership is not based on one individual leader and the flow of influence and power goes both ways.

- The SBTF and organizations like it may merit the coining of a new emergent group typology because it straddles across the spectrum defined by Dynes (2002). We found that organizational all typologies (1 – 4) each have characteristics that are possessed by SBTF. This may be an interesting new typology applicable to the field of emergency management and the emerging field of digital humanitarianism. Conversely, current communications technology also enables digital humanitarians to act and collaborate as one, in a virtual command and control platform that is the SBTF.

- The SBTF as an organization currently operates best as a flat and dynamic organizations during disaster relief effort. However, it may need to re-think its organizational structure, engagement mechanisms and funding sources in order to maintain continuity, reputation, and long-term sustainability as an organization.

The multi-disciplinary field of digital humanitarianism is truly ripe for research. This

study provides some insight on how to manage and mobilize this valuable volunteer

workforce, by increasing our knowledge about online leadership and how they can be most

effective in providing indirect aid or even direct assistance to victims of disasters.

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Appendices

1. Engagement Letter

2. Information Letter & Consent Form

3. Interview Schedule

Engagement Letter

May 9, 2016

Dear SBTF Core Team Member:

I am an MA Communication and Technology student from the University of Alberta working on my Capstone Project. I would like to express my utmost respect and appreciation for the work that you do as one of the SBTF leaders. I have been privileged to experience a little bit of the tremendous good that SBTF brings by being part of some deployments in recent unfortunate events.

I would like to invite you to participate in an interview regarding your experiences as a leader of the SBTF. The following research will to examine the establishment and maintenance of effective leadership roles during a crisis event in an online community. Your experience and knowledge is extremely valuable for this research.

The interview will take 30- 45 minutes to complete through Skype. This is a 4-month long study that relies, to a great extent, on interviews with the SBTF core team and SBTF coordinators. Should you decide to share any documents, images or any other files with me to aid in my research, it will be used solely for the purpose of this research and will not be distributed to anybody else.

The findings of this study have the potential of benefiting the SBTF and other online communities in effectively leading their memberships. The results may help the SBTF identify some room for improvement in leadership components and possibly overall operations. Participation in this study is absolutely voluntary and there will be no reimbursement to participants.

You are under no obligation to participate, even if you agree to be a part of the study, you can withdraw at any time up-to 2 weeks past the interview by contacting me via email or phone. In the event of your withdrawal, the information and any materials that you will have provided by that point will be deleted from the research and destroyed in full. There are no known risks associated with this research.

The interview will be private and confidential taking place in your choice of location to take the video call and will occur in my private office or residence on my end. You as a participant, will have the option of proceeding with the interview, stop the interview at any time, or withdraw consent up to two weeks after the interview. Furthermore, you will have the right to refuse to answer any of the interview questions. All your responses will be strictly confidential and will be stored in a safe at my supervisor's office at the Faculty of Extension. Only I and my supervisor will have access to it. Information collected will be stored for 5 years following the completion of this research. Your name will not be specified in the research findings. If you would like to receive a final copy of my findings, please let me know.

I will be sending you the same message on other channels. Please kindly respond to any one of them and I will get back in touch with you to schedule an appropriate telephone or Skype interview. Please reply by May 18, 2016. I will also send a reminder e-mail closer to the deadline. Participation is strictly voluntary and you may refuse to participate at any time.

Thank you for taking the time to assist me in my educational endeavours. If you require additional information or have questions, please contact me at the e-mail listed below.

If you are not satisfied with the manner in which this study is being conducted, you may report (anonymously if you so choose) any complaints to the MACT Program Director at (780) 492-6111 or at gordon.gow@ualberta.ca.

Sincerely,

Leo Urrutia
Research Investigator
University of Alberta
Edmonton, AB Canada
lurrutia@ualberta.ca

Information Letter and Consent Form

Research Investigator:	**Supervisor:**
Leo Urrutia	Dr. Gordon Gow
Enterprise Square, University of Alberta	Enterprise Square, University of Alberta
10230 Jasper Avenue	10230 Jasper Avenue
Edmonton, AB T5J 4P6	Edmonton, AB T5J 4P6
lurrutia@ualberta.ca / (780) 218-6408	gordon.gow@ualberta.ca / (780) 492-6111

Dear participant,

RE: An Exploratory Study on Establishing and Maintaining Effective Leadership Roles during a Crisis Event in an Online Community.

Thank you for your interest in my research. As you may recall from our previous correspondence, this study aims to ascertain factors affecting the establishment and maintenance of effective leadership roles during a crisis event from the perspective of Standby Task Force (SBTF) members. The following research will examine the establishment and maintenance of effective leadership roles during a crisis event in an online community. Your experience and knowledge is extremely valuable for this research.

The interview will take 30- 45 minutes to complete through Skype. This is a 4-month long study that relies, to a great extent, on interviews with the SBTF core team. Should you decide to share any documents, images or any other files with me to aid in my research, it will be used solely for the purpose of this research and will not be distributed to anybody else.

The findings of this study have the potential of benefiting the SBTF and other online communities in effectively leading their memberships. The results may help the SBTF identify some room for improvement in leadership components and possibly overall operations. Participation in this study is absolutely voluntary and there will be no reimbursement to participants.

You are under no obligation to participate, even if you agree to be a part of the study, you can withdraw at any time up-to 2 weeks past the interview by contacting me via email or phone. In the event of your withdrawal, the information and any materials that you will have provided by that point will be deleted from the research and destroyed in full. There are no known risks associated with this research.

The interview will be private and confidential taking place in your choice of location to take the video call and will occur in my private office or residence on my end. You as a participant, will have the option of proceeding with the interview, stop the interview at any time, or withdraw consent up to two weeks after the interview. Furthermore, you will have the right to refuse to answer any of the interview questions. All your responses will be strictly

confidential and will be stored in a safe at my supervisor's office at the Faculty of Extension. Only I and my supervisor will have access to it. Information collected will be stored for 5 years following the completion of this research. Your name will not be specified in the research findings. If you would like to receive a final copy of my findings, please let me know.

Bellow you will find a consent form. If you choose to participate in this study, please fill out this form and return it to me by email. If at any time you have any questions regarding this study, please do not hesitate to contact me or my supervisor.

The plan for this study has been reviewed for its adherence to ethical guidelines by the Research Ethics Board of the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at (780) 492-2615.

Sincerely,

Leo Urrutia

Research Investigator: **Supervisor:**
Leo Urrutia   Dr. Gordon Gow
Enterprise Square, University of Alberta   Enterprise Square, University of Alberta
10230 Jasper Avenue   10230 Jasper Avenue
Edmonton, AB T5J 4P6   Edmonton, AB T5J 4P6
lurrutia@ualberta.ca / (780) 218-6408   gordon.gow@ualberta.ca / (780) 492-6111

Participant Informed Consent

I have read all the information pertaining to the research I am currently participating in. I have been given the opportunity to discuss this information and all of my questions have been answered to my satisfaction.

My signature on this consent form means that I agree to take part in this study. I understand that I remain free to withdraw at any time.

Signature (initials) of Participant	Name (Printed)	Year/Month/Day

Signature (initials) of Investigator	Name (Printed)	Year/Month/Day

Interview Schedule

Respondent   _____

SBTF
Position   _____ Date   _____

Introduction Script
My name is Leo Urrutia, a graduate student with the University of Alberta, under a program at the Faculty of Extension. I am working towards a Master of Arts in Communications and Technology. My research today focuses on the attitudes, perceptions, and behaviours that SBTF core members and emergent leaders have towards their roles during a deployment.

The questions asked will focus on both your professional and personal attitudes and opinions about your role while a crisis unfolds. I would like to stress that this interview is strictly private and confidential and that no participants will be identified in any way in the final report.

To the best of my ability I will keep your anonymity but your anonymity can not be totally guaranteed. I would like your permission to record our interview as it will assist me with my analysis. Thank you again for agreeing to this interview. The interview should take about 30 -45 minutes to complete. Shall we start?

1.   **Tell me about you**
Can you tell me how you became a leader with the SBTF?
We are looking for the respondent's professional and personal background and his/her story in becoming involved with the SBTF. (Leadership Position, History with the SBTF and Roles (especially of leadership) outside of SBTF) Experience related to SBTF work

2.   **Your Views**
How do you view your role as a core group member? What are your expectations of your role in a deployment?
Emphasis would be on the role as a deployment moderator or any other role during a deployment.

3.   Your Leadership

How do you feel during the start of a deployment?

This should lead the respondent to start thinking about a deployment. Asking whether they feel excited, dreading what's about to happen, or ambivalent.

How do you personally establish your leadership? Is your Leadership (maybe knowledge or credibility) ever challenged?

Can you tell me about a challenging situation you have encountered?

Any other challenging situations encountered? (Explaining, trolling, need for correcting/discipline/moderation/encouraging/Directing/Redirecting efforts, etc.)

How about internal challenges? (fatigue/burnout/emotional response)

4.   Your Style

How would you describe your personality and moderation approach during deployment?

(formal? funny? easygoing? etc.?)

Do you behave differently when acting as a deployment moderator?

Do you have to assume a persona? Do you have the same leadership style or personality between live vs. online interactions? Do you find that there a difference leadership in online practice… Or are you exactly the same personality online and face-to-face?

5.   Your Tools (and Techniques)

Are there tools/techniques that help you in your leadership?

What are they? Which do you most often use?

Are there procedures (written or unwritten) for specific situations?

What are they? Which do you most often use?

6. Room for improvement

How are emerging leaders/methods/ideas handled?

Are there gaps/needs that you see that would help you do your job better?

How do you determine how successful or effective a specific deployment has been?

How do you determine how successful you have been as a moderator in a specific shift/deployment?

Are you able to make adjustments to your style or approach as you go forward in a deployment? A conflict?

7. SBTF Leadership as an organization

Are there emergent groups (from schools/disaster sites) that look to SBTF for leadership?

Does SBTF have to compete for volunteers/labour from other initiatives? How?

8. General question(s)

What is your age? (Age, gender, ethnicity, location, etc.)

Any other story/fact/opinion you would like to share?

Thanks for your help

Those are all the questions I have for you. I would like to thank you again for taking the time to meet with me. Thank you/ possibility of follow-up questions via email? I greatly appreciate your participation and contribution to my final project. Thank you.