Social Media Strategy for Disaster Response: Risk Mitigation

Proposal for the Dipartimento Protezione Civile

University of Southern California, Sol Price School of Public Policy
International Lab - Milan, Italy
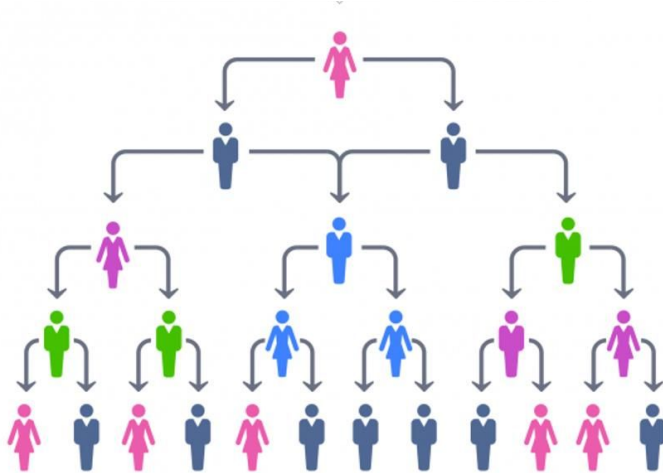
June 1, 2017

Agenda

1. Introduction and Motivations
2. Status Quo
3. International Case Studies
4. Action Plan

1. Introduction and Motivations

Department's Network Approach

The Dipartimento Protezione Civile is a piece of the disaster response system (what we call a network), which should be mirrored by its social media use.

Person-Centric Approach

- Emphasis on individuals in emergency rescues
- Recognize the unique needs that each individual may require
- Understand a victim's perspective during an emergency
- View persons as victims, but also agents

Benefits of Using a Person-Centric Approach

- Knowing your client
- Identifying areas of improvement
- Co-producing solutions by both the user and the provider
- Creating trust
- Enhancing the Department's reputation
- Reaching more people

Subgroups

Children

- Reliant on caregivers for protection

- Can't fend for themselves

Elderly

- Likely reliant on caregivers for assistance in disasters for relocation, direction, medication, etc.

Disabled

- Would require assistance with mobilization and maneuvering through difficult terrain

Remote Areas

- Issues with mobilizing first responders

- Difficult to reach

- Poor internet

Potential of Social Media

+

- Utilize social media to cater to individual needs
- Easily access profiles and information
- Provide quick and efficient assistance
- View data and content provided by users

2. Moving Beyond the Status Quo

Key Considerations for the Status Quo

I. **The Italian Context**
   A. Italy is a disaster-prone country
   B. The Department has a great opportunity to enhance its social media use
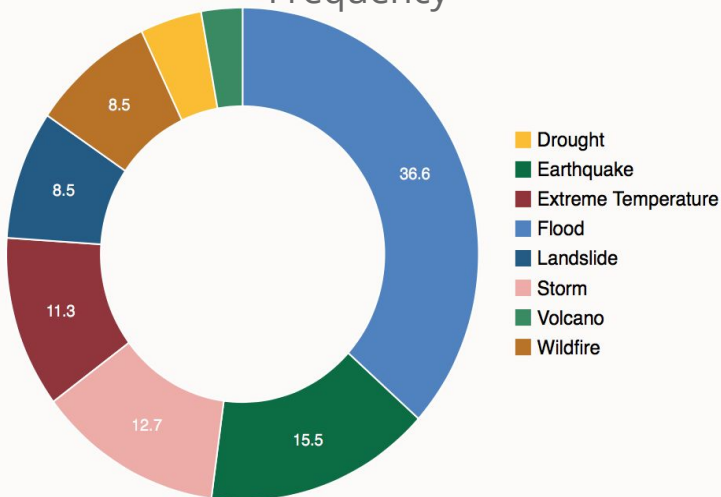
II. **The Global Context**
   A. Social media use is on the rise, including in disaster management
   B. Social media is vulnerable to misuse, such as fake news
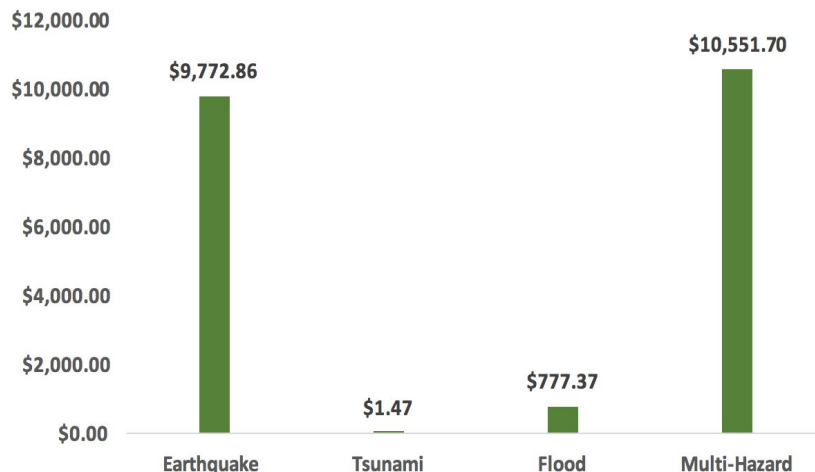
Italy is a Disaster Prone Country

Italy Disaster & Risk Profile (1994-2014) - Frequency

🟨	Drought
🟩	Earthquake
🟥	Extreme Temperature
🟦	Flood
🟦	Landslide
🟪	Storm
🟩	Volcano
🟧	Wildfire

Italy Disaster & Risk Profile(1994-2014) - Average Annual Loss by Hazard

■ Absolute Value (Million US$)

- Disaster-prone country with high frequency and huge economic loss
- Frequent disasters include flood, earthquake, storm, extreme temperature, etc.
- Economic loss mostly caused by earthquake

Comparison of Disasters in Europe

Top 10 natural disasters reported (1980-2008)

Killed People

Country	Disaster	Date	Killed
Soviet Union	Earthquake*	1988	25,000
Italy	Extreme temp.	2003	20,089
France	Extreme temp.	2003	19,490
Spain	Extreme temp.	2003	15,090
Germany	Extreme temp.	2003	9,355
Italy	Earthquake*	1980	4,689
Portugal	Extreme temp.	2003	2,696
Russia	Earthquake**	1995	1,989
France	Extreme temp.	2006	1,388
Belgium	Extreme temp.	2003	1,175

Economic Damages

Country	Disaster	Date	Cost (US$ X 1000)
Italy	Earthquake*	1980	20,000,000
Soviet Union	Earthquake*	1988	14,000,000
Germany	Flood	2002	11,600,000
Italy	Flood	1994	9,300,000
France	Storm	1999	8,000,000
Italy	Flood	2000	8,000,000
United Kingdom	Flood	2000	5,900,000
Germany	Storm	1990	5,500,000
Italy	Earthquake*	1997	4,524,900
Spain	Drought	1990	4,500,000

- Among top 10 natural disasters of killed people, Italy appears twice
- Among top 10 natural disasters of economic damages, Italy appears 4 times and becomes the country with the highest economic damages

Internet User is Growing in Italy

The internet users in Italy has increased rapidly from 13.2 million (23.1% of Pop.) in 2000 to 39.2 million (65.6% of Pop.) in 2016

Internet Users and Percentage of Population in Italy From 2000 to 2016

Legend: ■ Internet Users ● Percentage (% of Pop)

Year	Internet Users	Percentage (% of Pop)
2000	~13,000,000	~22%
2001	~15,500,000	~27%
2002	~16,000,000	~28%
2003	~16,500,000	~29%
2004	~19,500,000	~33%
2005	~20,500,000	~35%
2006	~22,000,000	~39%
2007	~24,000,000	~40%
2008	~26,500,000	~44%
2009	~29,000,000	~49%
2010	~32,000,000	~54%
2011	~32,500,000	~55%
2012	~33,500,000	~56%
2013	~35,000,000	~59%
2014	~37,000,000	~62%
2015	~38,500,000	~65%
2016	~39,000,000	~66%

Italian Social Media Users

Key Indicators for Italy's Internet, Mobile, and Social Media Users

TOTAL POPULATION	INTERNET USERS	ACTIVE SOCIAL MEDIA USERS	MOBILE SUBSCRIPTIONS	ACTIVE MOBILE SOCIAL USERS
59.80 MILLION	**39.21** MILLION	**31.00** MILLION	**76.74** MILLION	**28.00** MILLION
URBANISATION: 69%	PENETRATION: 66%	PENETRATION: 52%	vs. POPULATION: 128%	PENETRATION: 47%

Source: 2017 DIGITAL YEARBOOK

Department's Current Social Media Use

Facebook: Magazine del Dipartimento della Protezione Civile
16,037 followers and 15,940 likes

Twitter: Io non rischio
5,058 followers and 433 like

Youtube: Magazine Protezione Civile
52,130 views

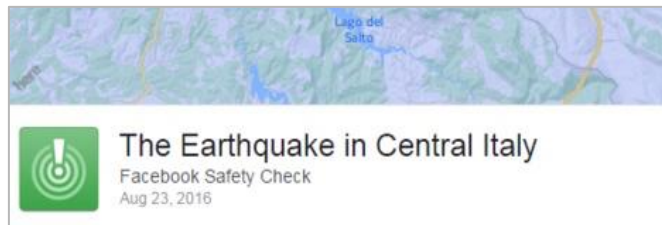**Instagram:** Magazine Protezione Civile
364 subscribers

Social Media Policy Account "Io non rischio - good civil protection practices": A campaign dedicated to the prevention of earthquake, flood and flood hazards and promoted by the DPC with other organizations

#SocialProCiv: Digital community formed by all those realities active in the field of Italian civil protection who intend to make a proper communication of the risk and to give precise information in emergencies even through social media

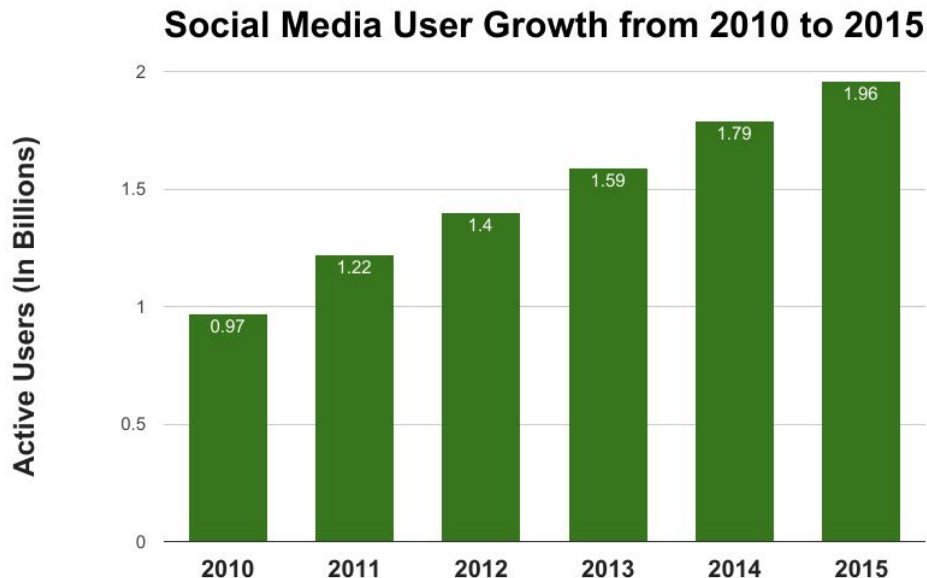# Department's Recent Social Media Response

- August 24, 2016 earthquake, DPC's website went down
- Within first 48 hours:
  - 30 posts on Facebook
  - 15 tweets on Twitter
  - 9 videos on YouTube
- Facebook Safety Check

The Earthquake in Central Italy
Facebook Safety Check
Aug 23, 2016

"Protezione Civile" - Magazine del Dipartimento della Protezione Civile
August 24, 2016

A seguito della scossa di terremoto di magnitudo 6.0 che alle ore 3.36 ha colpito la provincia di Rieti, il Capo del Dipartimento della Protezione Civile, Fabrizio Curcio, ha convocato il Comitato Operativo della Protezione Civile presso dal sede del Dipartimento.

Like   Comment   Share

Social Media Use is Growing Worldwide

Active social media users, worldwide from 2010 to 2015

Users doubled in this 5 year span

Social Media User Growth from 2010 to 2015

Active Users (In Billions)

Year	Active Users (In Billions)
2010	0.97
2011	1.22
2012	1.4
2013	1.59
2014	1.79
2015	1.96

Social Media in Disaster Response

- 4th most popular way to get information during emergencies (Red Cross, 2012)
- Allows people to:
  - Warn others and provide information
  - Inform others that you are safe
  - Donate money or request other types of donations
- Agencies can obtain localized and current information from citizens
- Social media can be used to co-produce service delivery

Social Media Use in Emergencies: Manchester

Twitter quickly responded:

#manchester

 #manchesterarena

#manchesterattack

#prayformanchester

#missinginmanchester

#roomformanchester

Social Media Liabilities

- Difficult to monitor and respond to high influx of social media posts
- Social media posts are often shorter, with reduced information
- Risk of sharing inaccurate information, inability to quickly verify facts
- Scammers use social media to solicit money
- Malicious use of social media, spreading misinformation and fake news

Example of Fake News: Manchester

In the aftermath, fake news spread about a gunman near a hospital, and many fake profiles were created for "missing" victims

GMP Oldham ✔
@GMPOldham

Police have attended an incident @roh Scene searched, no offences and all staff &patient's are safe &well

RETWEETS 496
LIKES 453

5:43 PM - 22 May 2017

Rachel Devine
Yesterday at 6:38am ·

I'm home from surgery and woke from a nap to multiple messages asking if Gemma was safe. Apparently someone used a photo of Gemma in a fake profile on Twitter claiming she was a friend lost in the tragedy in Manchester. I'll never understand the bizarre thing of pretending to be someone else online. Nor the tragedy at the concert. My thoughts go out to those parents and since a news agency contacted me, I hope this clears it up and the "news" takes her photo down.

That is Gem. She is safe and well at school in Australia right now.

Aussie Girl's Photo Used By Trolls In Fake Ariana Grande Post
An Australian mum has hit out at trolls who have used a photo of her daughter on Twitter, claiming she's among those missing in the Ariana Grande concert...
WWW.HIT.COM.AU

👍 Like   ➦ Share

Social Networks Mitigating Fake News Risks

Disputed by 3rd Parties

Before you share this story, you might want to know that independent fact-checkers disputed its accuracy.

CANCEL CONTINUE

Disputed by Snopes.com and Associated Press
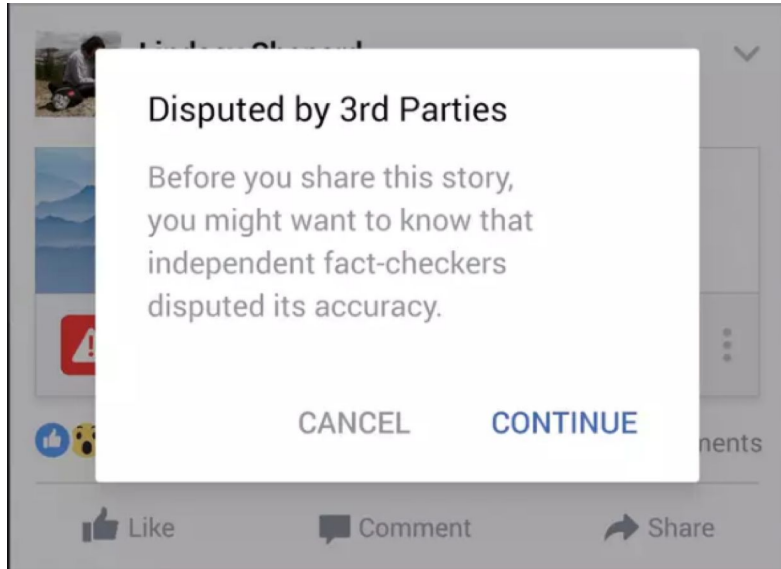
- On Facebook, they use non-partisan, third party fact-checkers
- Once a story has been flagged and found to be fake news, readers are warned
- Citizen accountability and involvement

Citizens Mitigating Fake News Risks

In addition to social media companies fighting fake news, there are many examples of citizens moderating news themselves

Two examples are Wikipedia and Waze

3. International Case Studies

Social Media Use in Disaster Management

I.   The U.S. Federal Emergency Management Agency (FEMA)
II. The United Nations
III. The Beijing City Government

FEMA's Goals with Social Media

	Public Image	**Public Dialogue**
1	**2**	**3**	**4**
Information		**Transparency**	
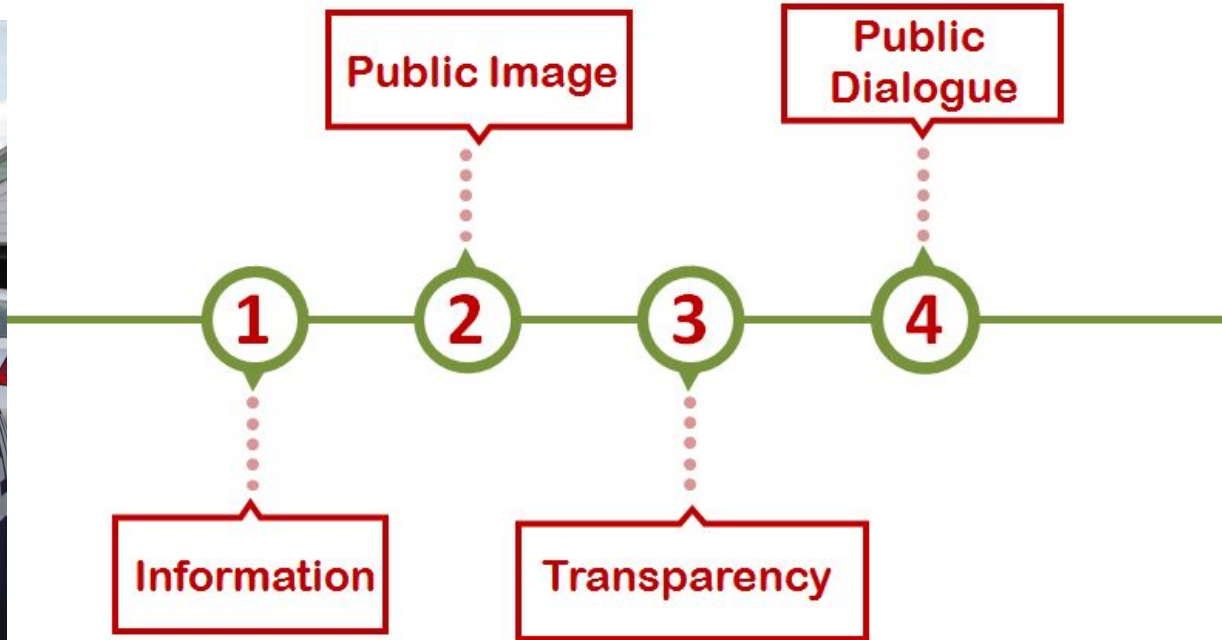
FEMA's Specific Social Media Tools

@fema
603,000 followers

- Direct followers and users of the tool to specific information in a timely manner;

- Provides SMS capability for instant texting during disasters;

- Supplements the efforts of state and local responders by rebroadcasting;

- Engage the general public in discussions on disaster preparedness, recovery process and mitigation tools.

Start

2006 You Tube ➡

twitter 2008 ⬅

2009 facebook ➡
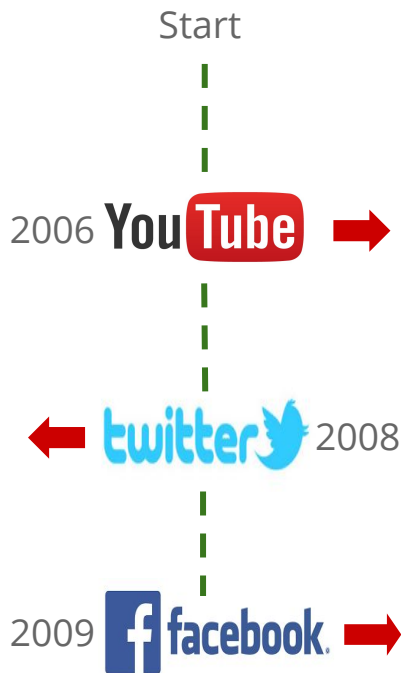
www.youtube.com/user/FEMA
3.1 million views and 13,041 subscribers

- Help state partners host and share public service announcements;

- Explain federal reimbursement process and mitigation efforts;

- Provide access to the overall operation and offer an opportunity for the voices within the community.

www.facebook.com/fema
300,000 likes and 285,000 followers

- Provide a forum for preparedness information and to engage the public with links and topics.

27

FEMA-Recent Example

Goals

- Explained commitment
- Depicted how to work with state and local partners
- Showed the complexity

Action

- One such vignette, titled "Working Dog Searches for Missing in Bolivar Debris" focus on the Texas-based fire and rescue team performing searches for human remains among the debris

Feedback

- >879 individuals have watched the video
- In total, over 3.1 million individuals have logged on to view the videos currently playing

Video:
https://www.fema.gov/zh-hans/media-library/assets/videos/74333

United Nations

Why the UN is involved in social media?

They try to cover what is happening around the whole UN system, to educate people about what they are up to all across the organization.

What sort of content does the UN publish on Twitter?

It's a mix of content put together by the individual organizations, as well as UN's own content which is more to do with their wider campaigns or messaging.

United Nations

Ex.1 In 2015, the member states negotiated sustainable development goals for the next 15 years

- #Action2015
- Education, the environment, climate change, poverty, healthcare and more

Ex. 2 2015 UN Summit for Refugees and Migrants

- #UN4RefugeesMigrants
- A key priority: to share facts about the crisis -- to create infographics featuring the latest data which were widely shared.

GENERATING A BRIGHTER FUTURE *for us all*

United Nations ✔
@UN

Follow

We need to invest ahead to eradicate poverty - this new video explains why: bit.ly/1QPuTBE #FFD3 #Action2015

3:05 PM - 3 May 2015

117   76

2012 Beijing Rainstorm

July 21-22, 2012
Beijing suffered the strongest rainstorm and urban flooding in over 60 years.

According to data released by the Beijing City Government, **79 people** died, about **1.6 million** people's normal daily lives were disrupted, some **10,660** houses were destroyed and the economic loss was estimated to be around **11.6 billion** yuan (**1.51 billion** Euro).

2012 Beijing Rainstorm

- Chinese word segmentation
- Sina-Weibo emoticons
- Remove pointless word

Collection

Retrieval & Classification

Analysis

- Implemented a prototype system that classified Sina-Weibo texts in real-time

- Displayed the Sina-Weibo texts with GPS information on the map
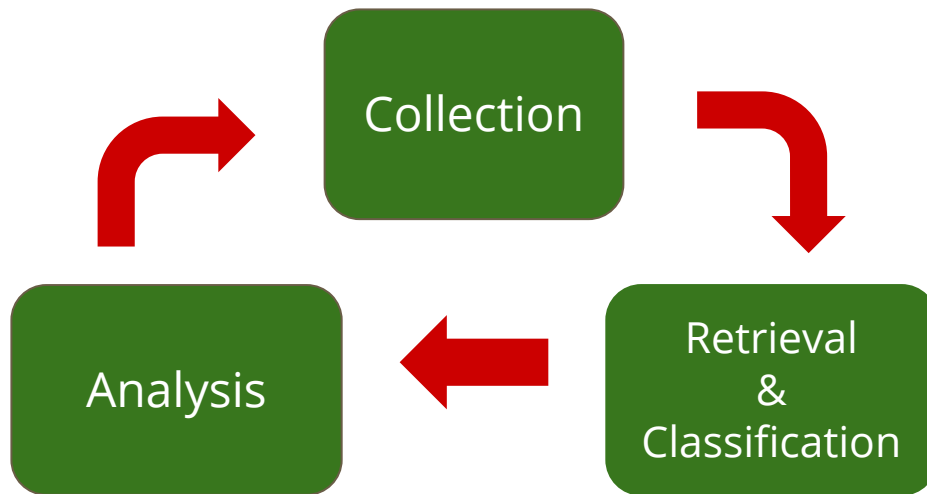
Two lists:

- Topic -Terminology lists (traffic; weather; disaster information; loss and influence; rescue information)

- Document -Topic lists

Prototype System for Beijing Rainstorm
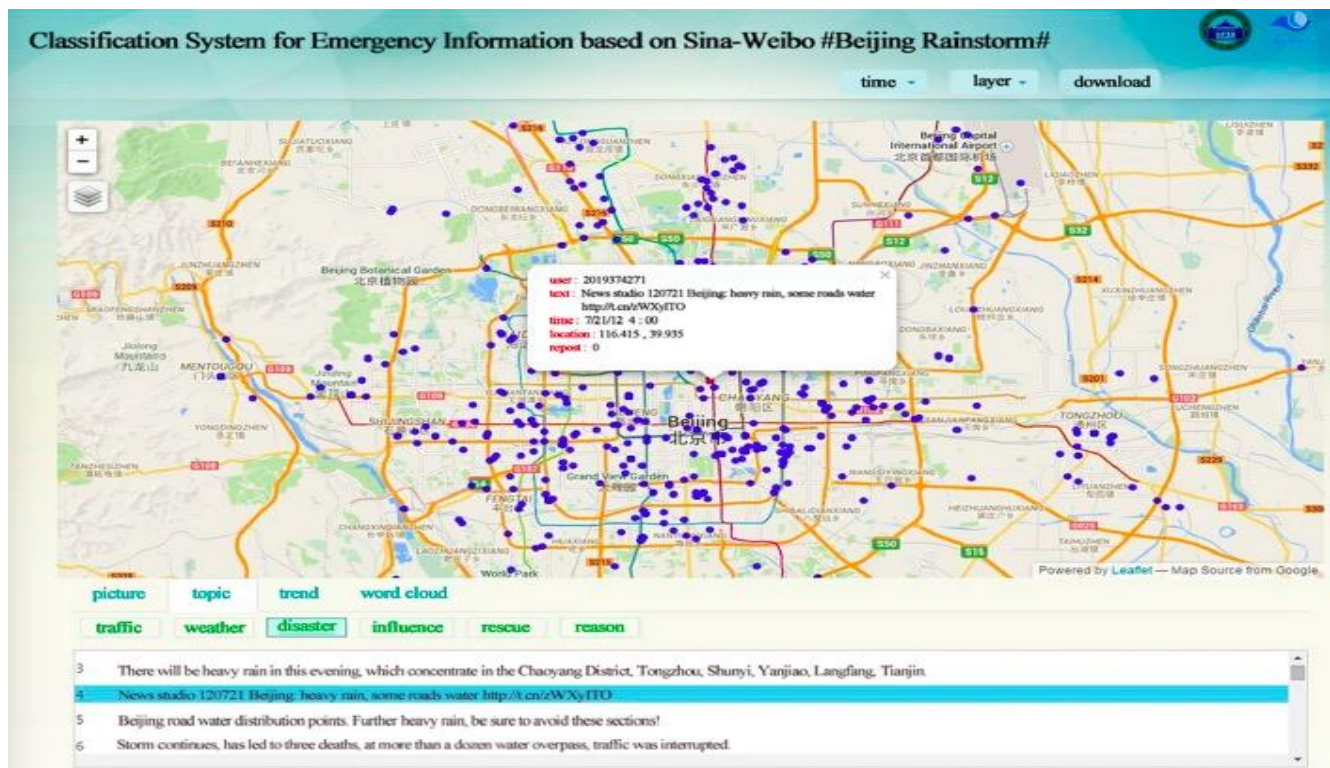
4. Action Plan

Recommendations for Action Plan

I. **Establishing a Viable Identity Online**
   A. Join the Conversation
   B. Strengthen DPC Branding
   C. Invest in Outreach and Education

II. **Organizational Considerations**
   A. Cost of Investment
   B. Utilize Existing Resources
   C. Invest in Social Media Management Tools
   D. Support Social Media with Auxilliary Technology

Join the Conversation...

- #SocialProCiv
- Create official sites + content

Follow us on

Benefits of Co-Producing Solutions

- Co-produce solutions in real time
- Respond to individuals in need
- Have a broader reach
- Strengthen the Department's digital identity and brand
- Strengthen the Department's system
- Mitigate risks

Establish Your Credibility Online

- Io non Rischio Campaign
  - Disclaimers
  - Privacy Policies
  - Rules/guidelines for comments
- Blue verified badge

Strengthen Your Online Brand

- Consistency across platforms
- Style guide
  - Typography (fonts)
  - Iconography
  - Color themes
  - Logo art (color and sizes)
- Continuous presence on social media

Example of Branding: United Nations
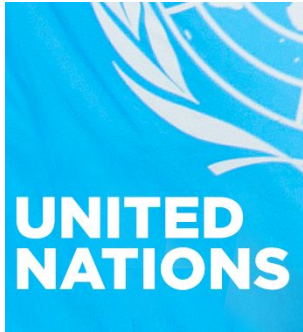
Invest in Outreach and Education

LET PEOPLE KNOW YOU HAVE ARRIVED!!!

- Develop outreach material for print, web, tele- and digital communications
- Work with partner agencies to distribute information
- Create a campaign: FEMA, "It's scary simple."

U.S. Government Spending on Social Media

Federal Departments	Amount in U.S. Dollars	Description
FEMA (2012)	$ 260,000	Analyze social media footprint
Transportation (2012)	$ 42,000	Design, develop, implement and evaluate the Railroad Administration's Social Media pages
General Services Administration (2014)	$ 27,000	Create content and perform maintenance
State Department (2012)	$ 11,000	Analysis of U.S. Embassy's Twitter and FB accounts

Source: Federal Business Opportunities website: https://www.fbo.gov/

Utilize Existing Resources

- Recruit volunteer organizations:
  - To track and report messages on social media sites
  - Disseminate verified basic information (FAQs, emergency contact information, etc.)
  - Identify hashtag trends for research and follow-up

Example of Volunteer Use: Hurricane Sandy
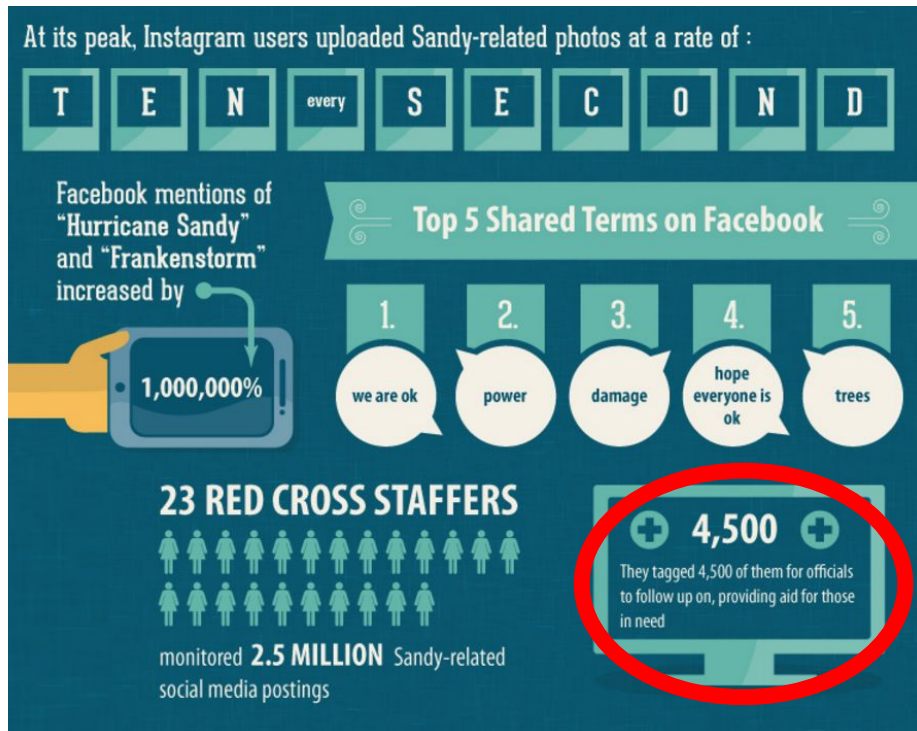
Monitoring social media allowed the Red Cross to reach out to 4,500 individuals in need

Invest in Social Media Management Software

One Dashboard. Multiple Functions.

Measure Your Social Media Footprint

http://www.socialmention.com/

How Can Social Media Work For You?

24 hours after incident (UNICEF)

- Collect impressions from the field
- Use geolocation on *Hootsuite* to see who is tweeting from impacted location
- Issue basic facts, contact info & FAQs about the incident
- Establish or track hashtags to use across all networks and quickly disseminate/promote
  - Use them to categorize specific problems and identify trends

How Can Social Media Work for You? (Cont.)

- Share the link to your social media pages
- Reaffirm your authority as the source of information for the incident
- Catch and report on fake news that is trending
- Retweet/share relevant content from partners/allies

Auxiliary Technology

Supplement your Social Media Strategy

- Smartphone App
- Mass Notification Systems
- Technology Infrastructure (servers)
- Internet Connectivity

Create a Smart Phone Application

- Combine regional apps under one hub and include:
  - Disaster and Weather Alerts
  - Safety Reminders
  - Emergency Checklists
  - Provide Disaster Resources
  - Submit Disaster Photos
  - Educational content
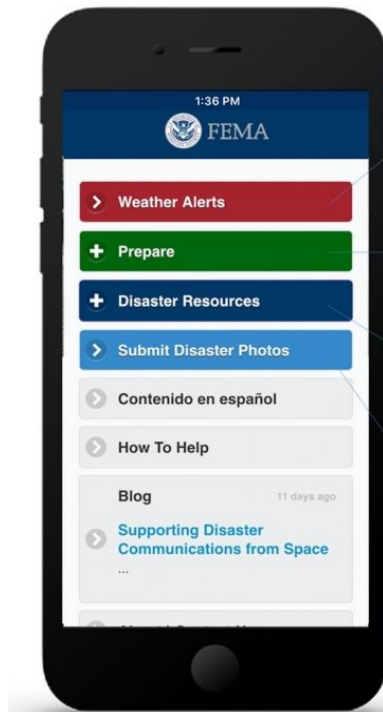
Receive alerts from the National Weather Service for up to five locations.

Get safety reminders, read tips to survive natural disasters, and customize your emergency checklist.

Locate open shelters and where to talk to FEMA in person (or on the phone).

Upload and share your disaster photos to help first responders.
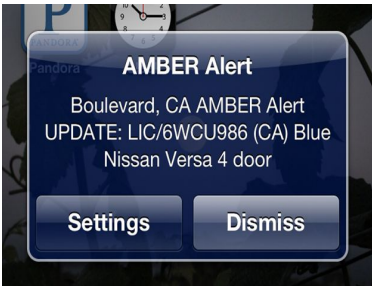
Mass Notification Systems

Benefits:

- Reaches a mass audience quickly
- Centralized command and control messages
- Targets zones/groups/buildings
- Reduces spread of misinformation

Limitations:

- Opt-out systems can have out of date contact information
- Opt-in systems require extensive outreach
- Cell coverage & internet may be limited
- Cost money and require maintenance

Examples of Mass Notification Systems

	Opt-In	Opt-Out	Messaging Options	Message Targeting
		✓	Mobile phone SMS Text Radio Television Highway Signs Billboards Internet	✓
	✓		Mobile phone SMS Text Email	✓

Investing in Infrastructure
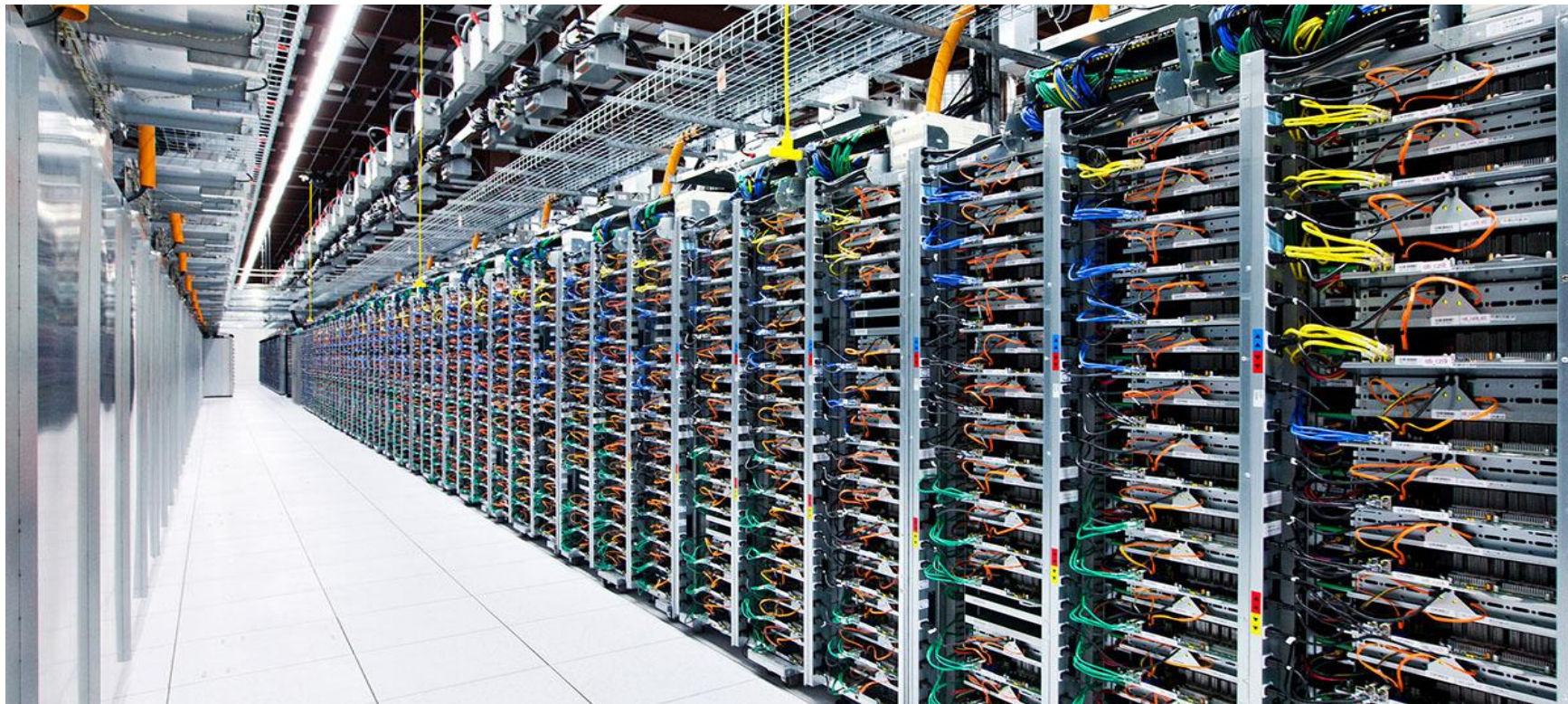
Restoring Internet Connectivity

Grazie

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