Grassroots Disaster Relief Network Response to Superstorm Sandy: Successes and Opportunities
General Focus

“Grassroots disaster relief networks” are neither unaffiliated volunteers, nor are they affiliated volunteers. They’re different.

- Organizing members have prior relationships
- Horizontal, consensus based decision making
- Incorporate themselves into conventional relief structures over time
- Heavy Use of Social Media and FLO Software
Superstorm Sandy hit New York City on October 30th, 2012. 2nd most impactful in US history.

147 people died. 300k/750k homes affected in NYC/USA. $19B/$65B cost of damage in NYC/USA.
Occupy Sandy’s Impact

Within 48 hours
- Social network profiles
- Website and volunteer database
- First base of operations

Within two weeks
- 3 main hubs producing 10k-20k meal/day
- Supplying approximately 20 relief sites

In Total
- $2.5 million raised
- 12k signed in volunteers
- 60k volunteers mobilized (4x more than the Red Cross)*

Response

Hundreds of groups and “relief sites” sprang up in the NYC area for Sandy response. Many of these groups had never before been involved in disaster preparedness or relief efforts.

Within **30 days** of the storm...

...**360** relief sites and organizations connected to Occupy Sandy “central hubs” in NYC.
Why is this Important?

- Grassroots disaster relief networks are increasingly effective.
- We have yet to achieve integration between grassroots and institutional relief – we can, we must. The outcomes will be great.
- We can leverage insights and advances in grassroots relief work to accelerate innovate in institutional relief efforts.
Theory of Change: The Clamp

Pressure from within institutions to do better.

Citizens modeling effective, innovative alternatives.

Innovation

http://upload.wikimedia.org/wikipedia/commons/2/2a/G-clamp.jpg
How Did Occupy Sandy Happened?
Occupy Wall Street

Occupy Wall Street (OWS) began on September 17, 2011, in Zuccotti Park, in NYC’s financial district as a movement against social & economic inequality.

Over 1,500 “occupations” emerged worldwide. Many ended with “evictions” and arrests: 1500 arrests in NYC and nearly 8,000 worldwide.

The term is still used by social movements such as the recent social movement in Hong Kong called #OccupyCentral.
Two Sides of OWS

Protest

Mutual Aid

https://placesjournal.org/assets/legacy/media/images/massey-snyder-axon-homepage2_525.jpg

nycprepared.org/presentations
Zuccotti Park was a Relief Site

- Kitchen
- Comfort
- Shipping, Inventory and Storage
- Medical Center
- Sacred Space
- Info
- Media
- Sleeping/Shelter
- Assembly Space
- Resource Center

https://placesjournal.org/assets/legacy/media/images/massey-snyder-axon-homepage2_525.jpg

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New York City Needs More of Them

The primary cause of homelessness, particularly among families, is lack of affordable housing leading to eviction; doubled-up or severely overcrowded housing; domestic violence; job loss; and hazardous housing conditions.

Homeless single adults have significantly higher rates of serious mental illness, addiction disorders, and other severe health problems.

Source: NYC Department of Homeless Services and Human Resources Administration and NYCStat shelter census reports

For data through September 2011, figures for homeless families, children, and adult family members reflect end-of-month census data. All numbers for families after September 2011 and for homeless single adults (men and women) for all months reflect average daily census data.

http://www.coalitionforthehomeless.org/basic-facts-about-homelessness-new-york-city/
Opportunity for Social Services Providers

Meeting place of difficult to reach “at risk” populations attracted by service provision outside the conventional “institutionalized” environment.

- Chronically houseless
- Mental health issues
- Gay youth without support at home
- “Drop outs”

It was an unprecedented opportunity to reach these populations.

http://www.coalitionforthehomeless.org/basic-facts-about-homelessness-new-york-city/
Bloomberg (and Wall St.) Didn’t Care
11.5 Months Later...

- Kitchen
- Comfort
- Shipping, Inventory and Storage (off site)
- Medical Center
- Sacred Space
- Info
- Media
- Sleeping/Shelter
- Assembly Space
- Library

Where FEMA Fell Short, **Occupy Sandy** Was There...

[Image: A satellite view of a hurricane and a photo of people in military uniforms]

Nov 9, 2012 - In Hurricane Sandy’s aftermath, **Occupy** Wall Street has tapped into an unfulfilled desire among city residents to assist in the recovery.
OWS Had “Preparedness” Tools

- Community organized into informal affinity groups
- OWS social media profiles (500k followers) ready to promote new OS ones
- Network of Occupy websites ready to deploy technology
- Relationships with religious institutions and spaces
- Shared philosophy
  - direct action
  - horizontalism
  - mutual aid
# Phase 1: Scouting - within 48 hours

<table>
<thead>
<tr>
<th>Online</th>
<th>Offline</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Listservs for internal communications</td>
<td>● People go to affected communities</td>
</tr>
<tr>
<td>● Twitter and Facebook for external communications</td>
<td>● Survey damage</td>
</tr>
<tr>
<td>● WePay for donations</td>
<td>● Connect with residents</td>
</tr>
<tr>
<td>● WordPress Website with relief maps</td>
<td>● Start hubs</td>
</tr>
<tr>
<td>● Celly loops for organizers</td>
<td>● Report back to emerging OS community</td>
</tr>
</tbody>
</table>

**Governance: None**
Phase 2: Networking - within 2 weeks

<table>
<thead>
<tr>
<th>Online</th>
<th>Offline</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Social media profiles grow</td>
<td>● More hubs are established at churches</td>
</tr>
<tr>
<td>● Press takes notice</td>
<td>● Main distribution location are set up</td>
</tr>
<tr>
<td>● CiviCRM for volunteer management is launched</td>
<td>● Resource begin to flow in</td>
</tr>
<tr>
<td>● Newsletters and email alerts start</td>
<td></td>
</tr>
</tbody>
</table>

**Governance**: managed through facilitated meetings

**Finances**: controlled by a small group distributing emergency funds to hubs
Phase 3: Relationships - within 2 months

- Developed strategic relationships with local partners.
- Deeper integration with local operations
- Volunteer and financial climaxed
- Meeting sizes continued to grow and include institutional folks
- Struggled to navigate institutional partnerships
- Migrated from Google Docs to Sahana EDEN

Governance: official network meetings

Finances: team and decision making process is transparent, all accounting information is published online
Phase 4: Projects - Ongoing

People have organized autonomous projects, often with local partners in affected communities.

Projects that are still active.
- Coop Incubation
- Community Organizing and Political Education
- Survivor Storytelling
- LTRG Facilitation
- Community Space
- Technology Development

Attempted participatory budgeting but decide to fund Long Term Recovery Groups instead.

Governance: projects made decisions via “spokescouncil”
Finances: allocated by spokescouncil, administered by a project,
Introducing NYC:Prepared
Grassroots & Institutional Collaboration

Disaster

Grassroots has the most valuable information and local capabilities.

How do we move info from the local to the global?

Institutions have the most valuable resources and global capabilities.

How do we move resources from the global to the local?

Information

Resources

Data Resources

- FEMA
- ARC
- VOA
- OEM

Web Apps

Social Media
A Massive Information Challenge

Neither grassroots nor institutional relief have central software systems for coordination.

- Hundreds of organizations - each with their own systems.
- Politics ensures there will never be a single “miracle” solution everyone uses.
- Information is money and power.

We need a strategy that enables many independent solutions to work together.
UN’s OCHA is Tackling this Problem

Humanitarian Data Exchange (HDX) project allows participants to upload data in the most accessible file formats (ex. CSV) and then produces information products with it.

http://docs.hdx.rwlabs.org/
Our Target: Coordination Networks

Organizations engaged in disaster relief and community resilience work after Sandy are the most in need of these types of coordination systems.

Many of these organizations participate in coordination networks that lack software coordination solutions.

- Borough-based response networks (ex. Brooklyn Long-Term Recovery Groups)
- City-wide relief networks (ex. New York City Voluntary Organizations Active in Disaster Relief - NYCVOAD)
- Networks engaged in human service provision (ex. Human Services Council)
- Networks building community resilience (ex. Community Garden Coalition)
Target Valuable Proposition

- Nonprofit organization logs into its own website's and uploads a post requesting volunteers for an event.

- Event is published on their website, syndicated through social media and posted on an inter-organizational coordination system (IOCS).

- Network partners/users can commit to, prepared, fulfill and report on requests through IOCS.

- If the nonprofits website goes down, they can use IOCS, if IOCS goes down, the nonprofit can use their website.
Our Strategy

● Establish data standards and build templates we can use to make HDX style info products.

● Provide software solutions to organizations that makes producing compatible data easy.

● Provide central a platform “coordination networks” can use to turn data into action.
Common Software Needs

These groups need a common set of tools not just for themselves, but also for their coordination networks.

<table>
<thead>
<tr>
<th>For Individual Groups</th>
<th>For Coordination Networks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Online Publishing</strong></td>
<td><strong>Information Management</strong></td>
</tr>
<tr>
<td>● Syndicatable News &amp; Events</td>
<td>● Contact &amp; Facilities Directories</td>
</tr>
<tr>
<td>● Form Builder/Manager</td>
<td>● Services Directories</td>
</tr>
<tr>
<td>● Newsletters</td>
<td>● Request &amp; Work Order Queues</td>
</tr>
<tr>
<td>● Donation Processing</td>
<td>● Mapping &amp; Data Visualization</td>
</tr>
<tr>
<td><strong>Productivity Suite</strong></td>
<td><strong>Data Repository</strong></td>
</tr>
<tr>
<td>● Collaborative Documents</td>
<td>HDX</td>
</tr>
<tr>
<td>● Data-Driven Mapping</td>
<td><strong>Knowledge Base</strong></td>
</tr>
<tr>
<td>● Inbox Management</td>
<td><strong>Network-Wide IT Support</strong></td>
</tr>
<tr>
<td>● Email Address &amp; Groups</td>
<td></td>
</tr>
</tbody>
</table>
# Common Data Needs

These groups need to access, update, visualize and collaboratively manage a few different types of data.

<table>
<thead>
<tr>
<th>Types of Data</th>
<th>Examples</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: News, Events and General Knowledge</td>
<td>Relevant news &amp; events, localized preparedness plans and procedures, training materials and templates for community-led relief and response.</td>
<td>Local nonprofit &amp; aid community</td>
</tr>
<tr>
<td>2: Core Demographic and Geographic Data</td>
<td>Boundaries such as census tracts, points of interest such as hospitals, vulnerability information such as elevations and flood predictions.</td>
<td>Local, state and federal agencies</td>
</tr>
<tr>
<td>3: Human Services</td>
<td>Disaster food stamps, rental assistance, remediation and repair services, grants for replacing damaged items, assistance with paperwork.</td>
<td>Nonprofits &amp; gov’t agencies.</td>
</tr>
<tr>
<td>4: Coordination Network Information</td>
<td>Individuals, organizations, groups, and facilities within coordination networks; action items, work orders, inventories and assets, internal discussions.</td>
<td>Participating groups &amp; orgs.</td>
</tr>
</tbody>
</table>
# Technology Criteria

<table>
<thead>
<tr>
<th>Accessibility</th>
<th>Autonomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>We use FLO tools &amp; techniques so that as many organization as possible can participate.</td>
<td>We use open data standards so groups can use their own tools or use ours.</td>
</tr>
</tbody>
</table>

**FLO means:**
- **Free**: donation-based business model
- **Liberty**: the community owns its data and leads the software development process
- **Open-source**: people can contribute and innovation can be shared globally

**Open standards include:**
- **RSS** for news
- **iCAL** for events
- **Open Referral** for services data
- **HXL** for reporting (eventually)

All the solutions we produce are released with “copyleft” licenses like GPL and Creative Commons, meaning others can use our intellectual property with minimal restrictions.

nycprepared.org/presentations
FLO Makes Interoperable Systems Possible

- We can provide these products to hundreds (even thousands) of nonprofit in the NYC area using popular, reputable, free/libre/open source software and open data standards.
# A Common(s) Solution Set

<table>
<thead>
<tr>
<th>Products</th>
<th>Software</th>
<th>Data</th>
<th>Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Publishing</td>
<td>WordPress</td>
<td>News, Events and General Knowledge</td>
<td>Glocal Coop</td>
</tr>
<tr>
<td>Knowledge Base</td>
<td>Wagn</td>
<td>General Knowledge</td>
<td>Grass Commons</td>
</tr>
<tr>
<td>Data Repository</td>
<td>CKAN</td>
<td>Core Demographic and Geographic Information</td>
<td>Ontodia Inc</td>
</tr>
<tr>
<td>Services Directory</td>
<td>Ohana API</td>
<td>Human Services Data</td>
<td>Sarapis</td>
</tr>
<tr>
<td>Information Management</td>
<td>Sahana EDEN</td>
<td>Network Information Management</td>
<td>AidIQ</td>
</tr>
<tr>
<td>Productivity Suite</td>
<td>Google Apps*</td>
<td>All Purpose</td>
<td>NA</td>
</tr>
</tbody>
</table>

* free not not FLO

nycprepared.org/presentations
Website Builder

We offer free websites to organizations powered by the **WordPress** content management system. Our particular deployment integrates with the NYC: Prepared ecosystem of tools. We’re working on a plugin that would enable any WordPress-powered site to integrate with our ecosystem.

Our free sites have all the features most organizations need:

- News posts and feeds
- Event calendar and feeds
- Email Newsletters
- Social media integration
- Form building and management
- Donation processing
- Customizable looks and feel
Aid Management System

We offer a central information management platform powered by Sahana EDEN, which is used by dozens of governments and NGOs to manage their humanitarian aid operations. Features include:

- News Feed Management
- Request Queues
- GIS and Data Visualization
- Network Directory
- Inventory and Logistics Management

nycprepped.org/presentations
Human Services Directory

Survivors and their case managers need access to information about services being provided by nonprofits in their area. OpenReferral offers open data standards and FLO software for managing that information.

We’re deploying an Ohana API data platform to manage this information.
Data Repository

Our CKAN powered data repository contains over 100 datasets useful to communities and organizations working on disaster related issues. The files contain elevation maps, flood projections, community district boundaries, census tracts and more.

This same software and functionality is used by the UNOCHA’s Humanitarian Data Exchange (HDX) Project to aggregate, organize and publish data sent to them via their partners.
Productivity Suite

Google offers free Apps for Nonprofits accounts to 501.c.3 organizations.

A single Google Apps account can provide functionality to dozens of organizations.

We help organizations register and configure accounts to meet their unique needs.
A System of Syndication

Organizations following our online communications standards (RSS)/iCAL can syndicate into NYC:Prepared’s information management system.

<table>
<thead>
<tr>
<th>Publish</th>
<th>Aggregate</th>
<th>Organize</th>
<th>Synthesize</th>
</tr>
</thead>
</table>
| Member organizations publish to social media and on our free websites or their own. | Our system aggregates these information feeds and parses them into queues of requests, reports and events. | Our data team adds descriptive metadata and formats it for actioning.                           | • SitRep Feeds  
  • Ticket Queues  
  • Directories  
  • Asset Tracking  
  • Mapping & Viz  
  • Printable Reports  
  • API |

Cloud Sync designed by Kirill Ulitin from the thenounproject.com
Community Information via API

Agencies and large organizations can integrate with the Sahana API to access real time data from these deployments.

What API’s do the large organizations and agencies have that they can offer to our community?
- Shelter Status Map
- 311 Requests
- National Guard Assessment Dat

Broader Question
How do civic institutions and social service organizations share data?
## Services

We provide a few services to keep this system functioning.

<table>
<thead>
<tr>
<th>Training</th>
<th>Data Work</th>
<th>System Support</th>
</tr>
</thead>
</table>
| Regularly scheduled trainings in critical technology skills:  
- WordPress  
- Google Drive  
- Data Sharing  
- Social Media  
- EDEN IMS  
- Open Referral | Our network of data specialists can perform work on-demand:  
- Data entry and cleaning  
- Data scraping  
- Extract, Transform, Load (ETL)  
- Database administration | 24/7 tech support for all NYC:Prepared community tools and “office hours” supporting members WordPress, Google Apps and social media efforts. |
Access Model

Access is provided to organizations that are members of approved coordination networks.

Approval requires:
- NYC-Based
- Nonprofit and Community Groups
- Dealing with Relief and Resilience
- Elect delegate to Information Management Working Group
- Provides resources to sustain the network
Success Required Data Standards

We’re working towards a set of data standards for emergency management information in NYC that is widely accessible to institutions and grassroots groups alike.

- News & Events
- Requests
  - Supplies
  - Assets
  - People
- Facilities
- Organizations
- People

- Resources
  - Assets
  - Inventories
  - Services
- Assessments
  - Canvass
  - Individual needs
  - Damage
  - Unmet needs
It Begins With...

...a series of spreadsheets, form templates and simple training materials that defines how information should be collected and what should be done with it.
It Matures Into...

A comprehensive set of solutions for information sharing.

HDX Component Architecture

- Data acquisition systems
- Dataset repository
- Data curation system
- Data analytics
- HDX Blog
- Humanitarian Community

Data sources: System APIs, Manual entry, Scraping, Spreadsheets, Databases

Data search engine: Index data and deliver search results

Upload/download datasets
Find/analyze curated data
Engage with community

http://docs.hdx.rwlabs.org/
It Requires a Commitment

- For “non technical” people to come to the table and to come to some level of agreement on how to describe things.
- We need a process to keep these standards flexible and up to date.
- For institutions to build capabilities for sharing information with each other and with the grassroots.
- For those with resources to fulfill requests that originate from reputable groups and conform to established standards.
Progress

2013
Info management for Staten Island, Brooklyn, Queens LTROs.

Winter 2014
Contracts with all of our software vendors.

Spring 2014
3 of 5 tools deployed:
- Data
- Eden (Resources)
- Knowledge.

Summer 2014
NYCVOAD website
SI using IMS

Fall 2014
Deploying 2 last tools:
- Website Builder
- Services Directory

Winter 2015
Organize a Crisis Response Working Group to manage data standards.
Goals for 2015 and Beyond

Organization
- Become financially sustainable through member funding and grants.
- Gain adoption in all 5 boroughs of NYC and NYCVOADs.
- Stable governance body with functioning steering committee

Technology
- Mobile Application with offline functionality
- Incorporate social and gamified features into WordPress
- Better integration between Sahana and WordPress system

Affiliates
- Bring cost for additional systems down to:
  - $10,000/deployment
  - $10,000/year of maintenance

If you’re interested in deploying a similar system in your region, let us know.
In New York City, we’re putting together a comprehensive set of technical solutions any group can use to enhance their relief and resilience work.

By packaging and sharing our work under free/libre/open-source licensing, we ensure that groups in future disaster contexts around the world can access and build on our work — building a global, integrated commons for disaster-related technical tools.
Extra Slides

Trainings:

- Data Basics
- WordPress
- Google Drive
Governance Model

Three stakeholder groups coordinate through a steering committee.

Steering Committee:
- Manages a technical development roadmap
- Facilitates coordination amongst the three groups

Operations Group manages fundraising and administration, produces communications, events and training materials, provides support to members and organizes sector-wide standards bodies.

Technology Partners manage NYC:Prepared software and hardware systems.

Members are relief providers who use NYC:Prepared tools and services.
Software Development Milestones

- **General**
  - Apply Uniform Design to All Apps and Improve Mobile Experiences
  - Sync WordPress/EDEN User Directory, Networks and Organizations
  - Package complete systems so they can be rapidly deployed

- **WordPress**
  - Expand of MultiSite Customizability
  - Incorporate of BuddyPress and Gamification Components
  - Incorporate of Wiki (to replace Wagn)

- **EDEN**
  - Build Services Data Model and Sync with Ohana API
  - Integrate Work Orders with CrisisCleanup API
  - Expand Social Media Feed Processing Capabilities
  - Redesign UI of Request Management (Kanban Style)
  - Continuously Refine Data Models and Expand GIS Data Sets
## Feature Access x User Type

<table>
<thead>
<tr>
<th></th>
<th>Individual Organizations</th>
<th>Coordination Networks</th>
<th>Network of Networks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Website Builder</strong></td>
<td>● Free Website</td>
<td>● Free Website</td>
<td>● Free Website (Main)</td>
</tr>
<tr>
<td></td>
<td>● Integration Option</td>
<td>● Integration Option</td>
<td>● Feed Aggregation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Feed Aggregation</td>
<td>● Content Portal</td>
</tr>
<tr>
<td><strong>Productivity Suite</strong></td>
<td>● Google Apps for Nonprofits</td>
<td>● Google Apps for Nonprofits</td>
<td>● Google Apps for Nonprofits</td>
</tr>
<tr>
<td><strong>Data Portal</strong></td>
<td>● Organizational accounts</td>
<td>● Organizational accounts</td>
<td>● Administrative accounts</td>
</tr>
<tr>
<td><strong>Information Management System</strong></td>
<td>● Organization profile</td>
<td>● Manage membership</td>
<td>● All</td>
</tr>
<tr>
<td></td>
<td>● View network asset</td>
<td>● Curate news feeds</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● Make &amp; fulfill requests</td>
<td>● Network info/assets</td>
<td></td>
</tr>
<tr>
<td><strong>Human Services Directory</strong></td>
<td>● Organization profile</td>
<td>● Embed of services on their website</td>
<td>● All</td>
</tr>
<tr>
<td></td>
<td>● Manage services list</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Services</strong></td>
<td>● Trainings</td>
<td>● Trainings</td>
<td>● All</td>
</tr>
<tr>
<td></td>
<td>● NYCP Website Support</td>
<td>● General IT Support</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Data Work</td>
<td></td>
</tr>
</tbody>
</table>
Open Data: A Solvable Problem

What Data Should Be Public
1. Proactively release government information online
2. Reference and build on existing public accountability and access policies
3. Build on the values, goals and mission of the community and government
4. Create a public, comprehensive list of all information holdings
5. Specify methods of determining the prioritization of data release
6. Stipulate that provisions apply to contractors or quasi-governmental agencies
7. Appropriately safeguard sensitive information
8. Mandate data formats for maximal technical access
9. Provide comprehensive and appropriate formats for varied uses
10. Remove restrictions for accessing information
11. Mandate data be explicitly license-free
12. Charge data-creating agencies with recommending an appropriate citation form
13. Require publishing metadata
14. Require publishing data creation processes
15. Mandate the use of unique identifiers
16. Require code sharing or publishing open source
17. Require digitization and distribution of archival materials
18. Create a central location devoted to data publication and policies
19. Publish bulk data
20. Create public APIs for accessing information
21. Optimize methods of data collection
22. Mandate ongoing data publication and updates
23. Create permanent, lasting access to data

How to Implement Policy
24. Create or appoint oversight authority
25. Create guidance or other binding regulations for implementation
26. Incorporate public perspectives into policy implementation
27. Set appropriately ambitious timelines for implementation
28. Create processes to ensure data quality
29. Ensure sufficient funding for implementation
30. Create or explore potential partnerships
31. Mandate future review for potential changes to this policy

Sunlight Foundation's “Open Data Guidelines”
http://sunlightfoundation.com/opendataguidelines/
Open Data Simplified: Four Ingredients

**Schema** (Column Headers) to define services.
Google.org’s CivicServices Schema is sufficient.

**Taxonomy** (Terms) to classify service type and eligibility.
We’ve got a good start on services types and need to work on eligibility.

**Format** (Files) so we can easily exchange information.
PDFs are bad. Documents are okay. Spreadsheets are best.
Databases without APIs are bad. Databases with APIs are good.

**Licenses** (rights) that allow us to share.
Copyright is bad. No license is okay. Creative Commons is good.