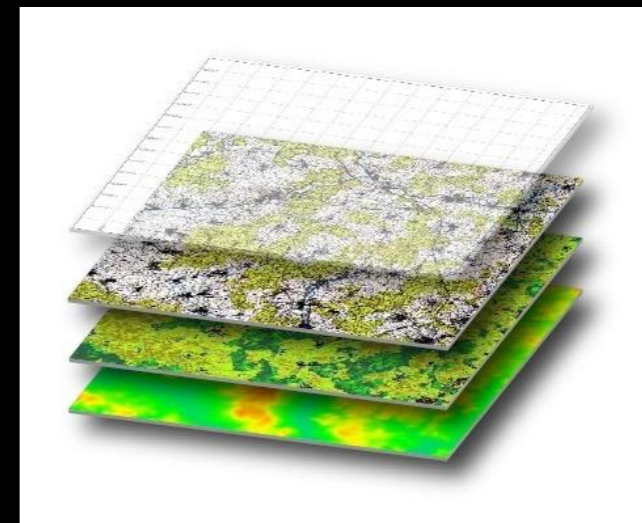


Crisis Mapping

Through
Crowd Sourcing

By

Lt Col Saravanan G
MILIT, Girinagar, Pune





Natural Disasters

Can't see them coming.. Can't stop them.. Can we?

the path til
now...

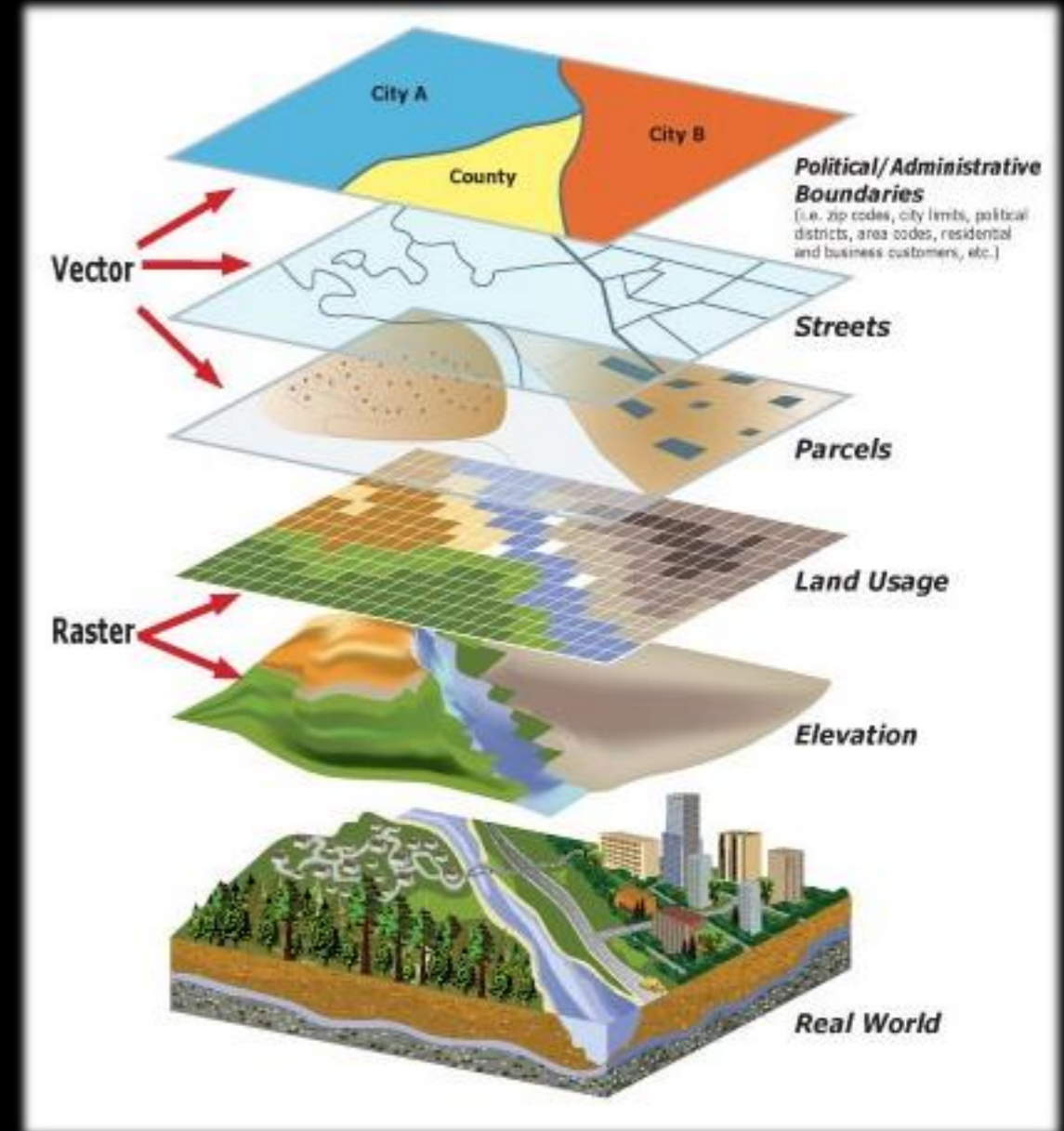
History



Static Maps to GIS

✧ From the last quarter of the 20th century, the indispensable tool of the cartographer has been the computer.

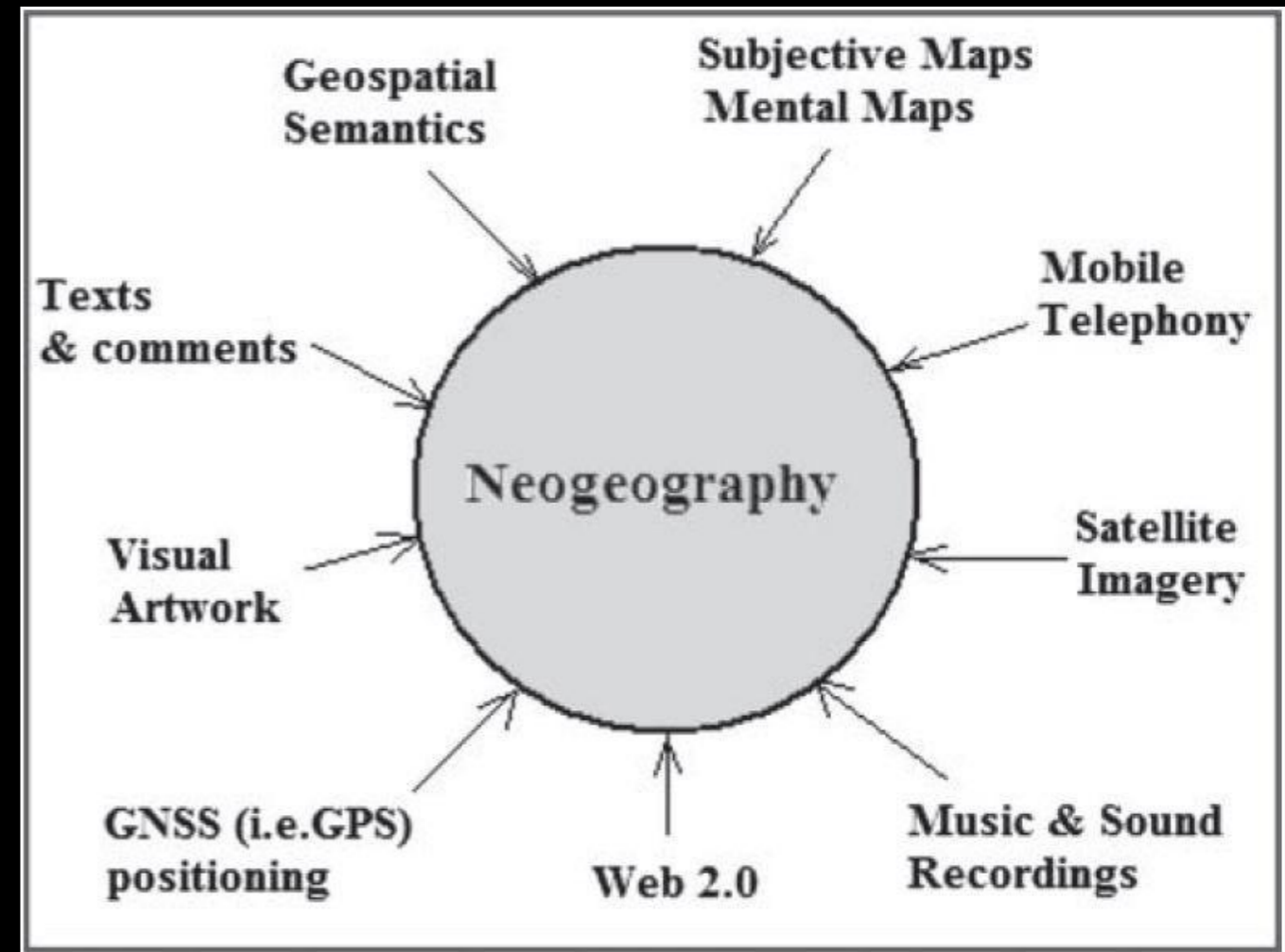
✧ Much of cartography, especially at the data-gathering survey level, has been subsumed by Geographic Information Systems (GIS)



Post GIS days...Neogeography

The three core drivers of this change are the increasingly available and accessible of:

- ✿ Open-source, dynamic mapping tools;
- ✿ Mobile data collection technologies;
- ✿ The development of new methodologies.



“Neogeography,” is essentially about “people using and creating their own maps.”

The revolution in applications for user-generated content and mobile technology provides the basis for crowdsourcing.

- ✦ Don't require expensive software or training
- ✦ Are created by the users
- ✦ Allow for more data sharing than proprietary data
- ✦ Allow for more real time data

Roll out of Google Earth

In 2005, Google rolled out Google Earth.

Free, user-friendly platform drastically reduced the cost of dynamic and interactive mapping—cost in terms of both availability and accessibility.

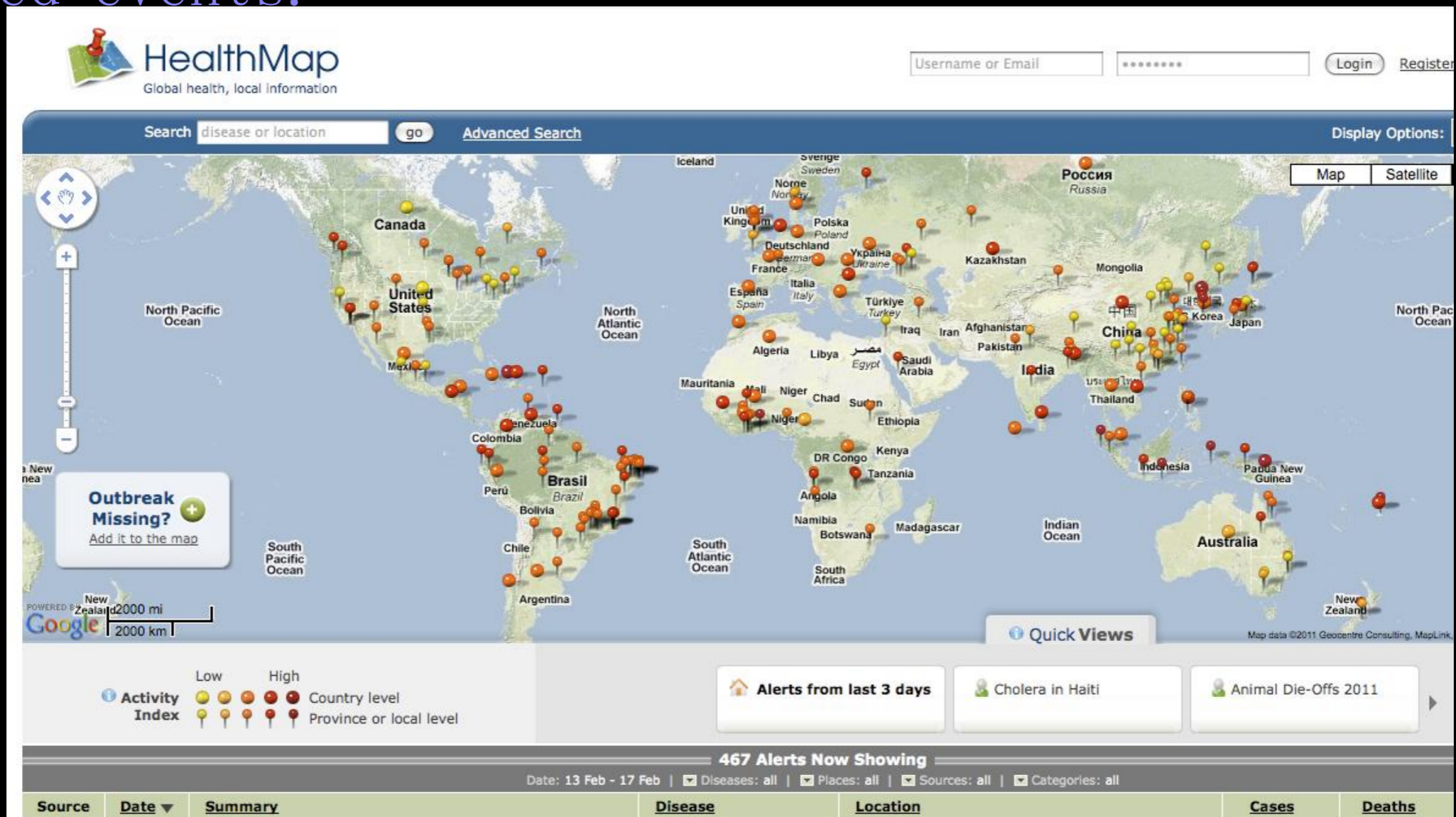


Google™ earth



Development of Crisis Mapping : 2007 – 2008

✿ Automated Crisis Mapping (ACM), real-time and automated information collection mechanisms that allow for the automated and dynamic mapping of disaster and health-related events.





- Devastating Haiti earthquake
- Over 1,00,000 dead
- Millions homeless

Crisis Mapping

Crisis Mapping is composed of three key components

- Information collection
- Visualization
- Analysis





A photograph showing a rescue operation in a rubble-strewn area. Several rescue workers in red uniforms and white helmets are carrying a person on a stretcher. A woman in a blue shirt and light-colored pants is also visible, holding the stretcher. The background shows damaged concrete structures.

The Crowds

The Clouds

Way Forward

There is a silver lining to every 'crowd'

Information Collection

✧ Surveys



✧ Groups

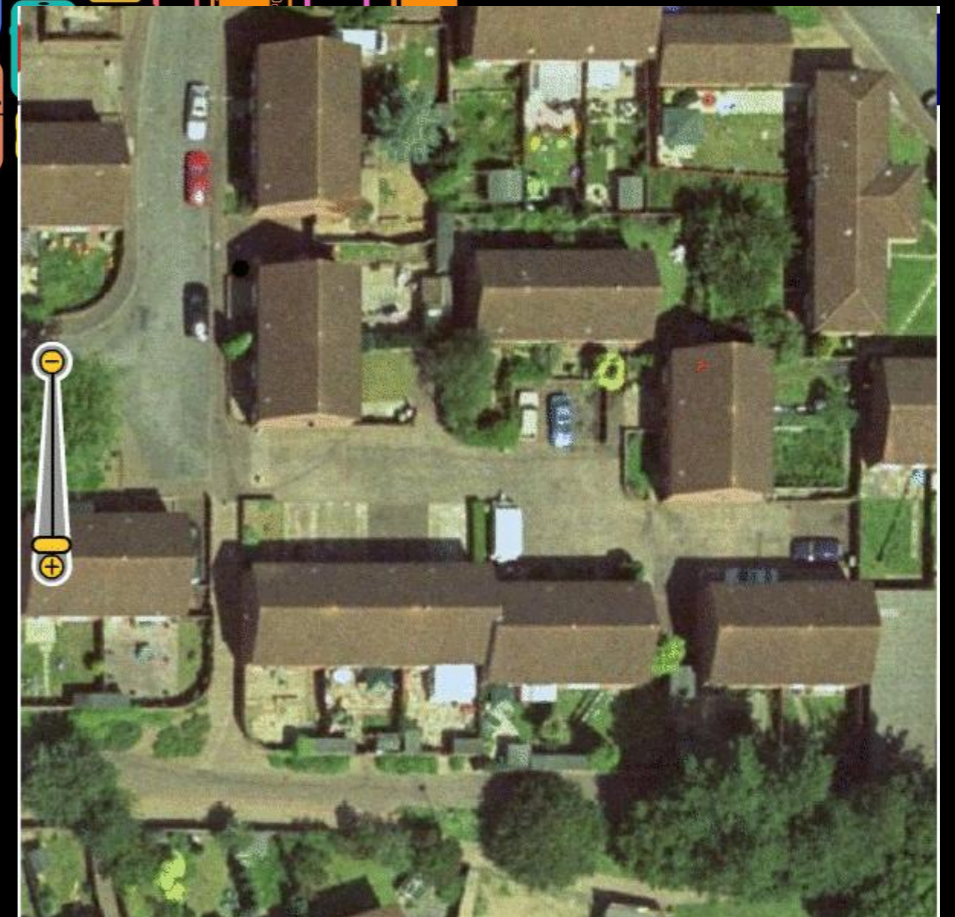


✧ Mobile Phones



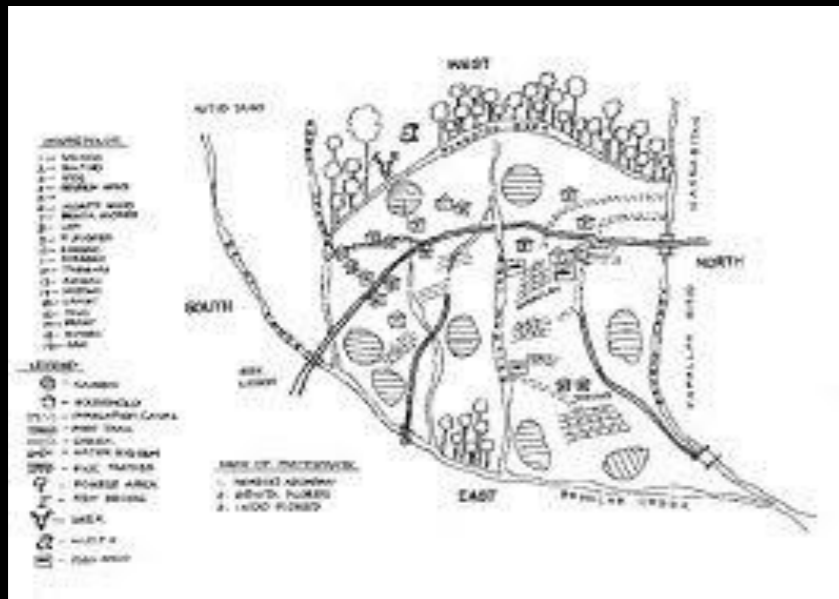
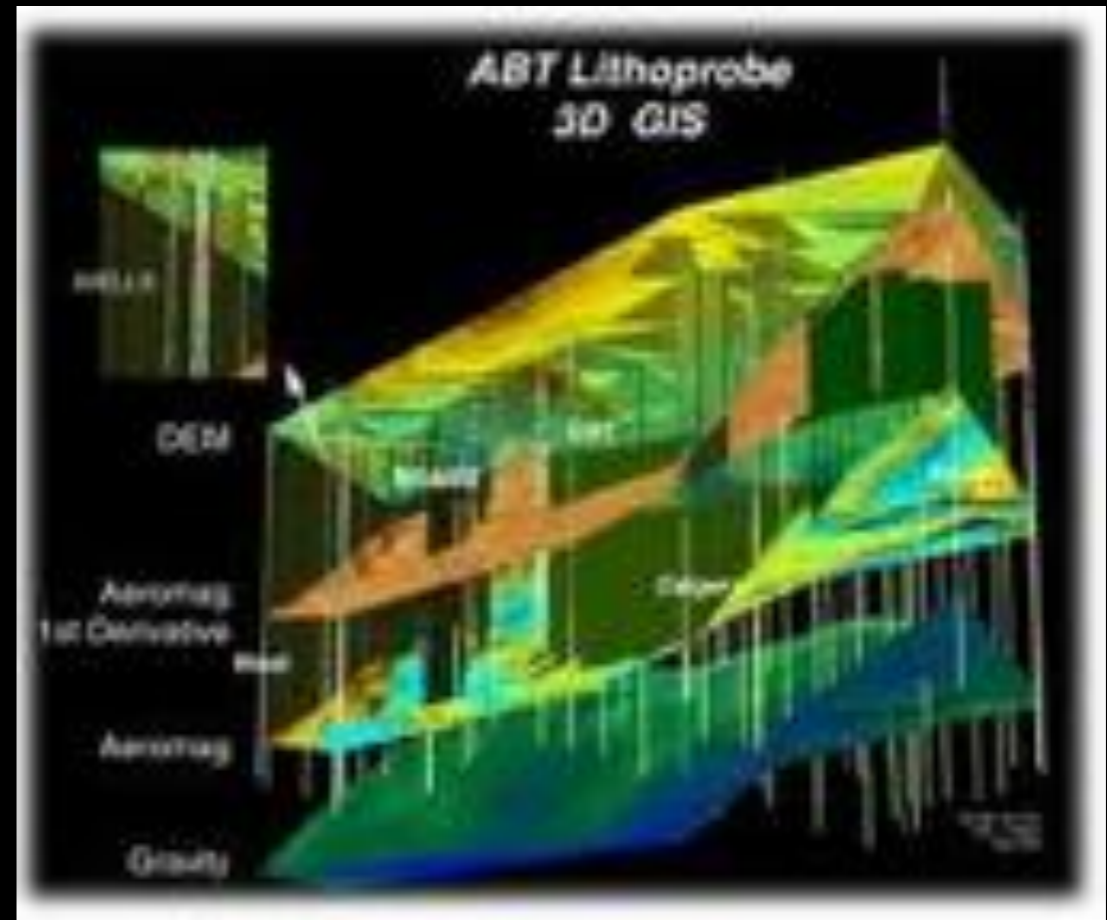
✧ Automated Systems

✧ Satellite Images



VISUALISATION

- ✿ Social
- ✿ GIS
- ✿ Document
- ✿ Dynamic



HOME REPORTS SUBMIT INCIDENT GET ALERTS CONTACT US HOW TO HELP ABOUT

FILTERS → **REPORTS** NEWS PICTURES VIDEO TODO VIEWS → **CLUSTERS** + CATEGORY FILTER

Terms of Use

Scale = 1 : 217K -72.43458, 18.51673 EPSG:900913 © OpenStreetMap contributors, CC-BY-SA

+ TIMELINE OF EVENTS

From: Jan 12 2010 To: Feb 16 2010 PLAY

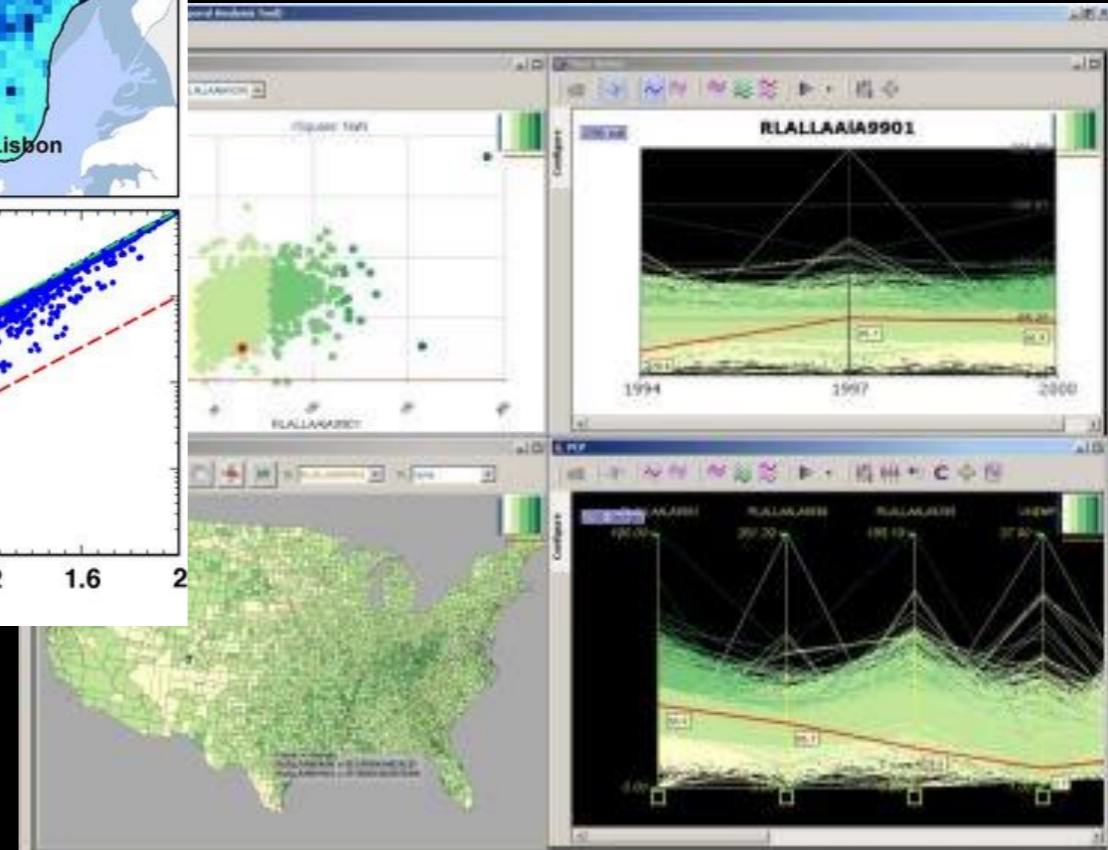
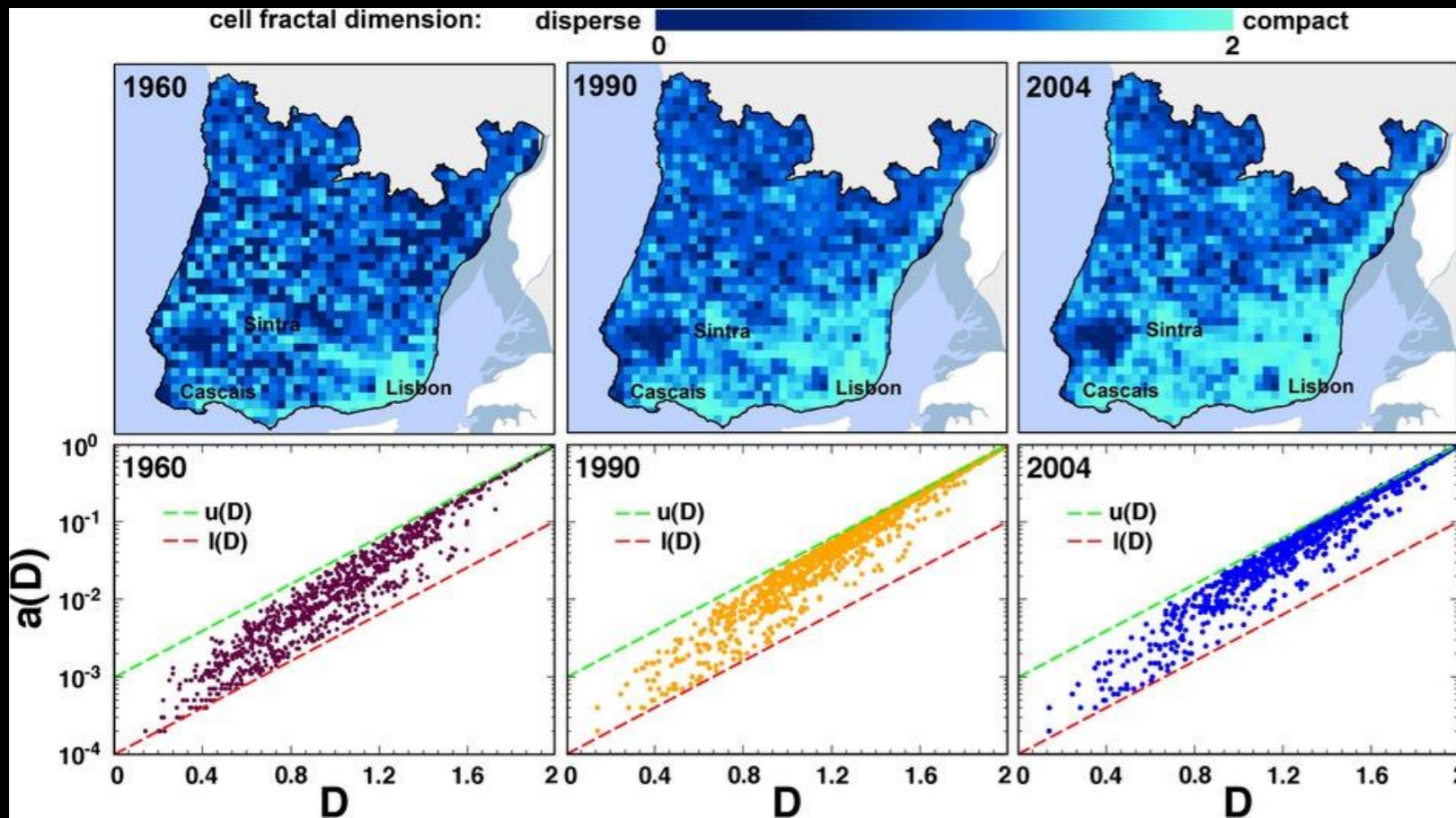
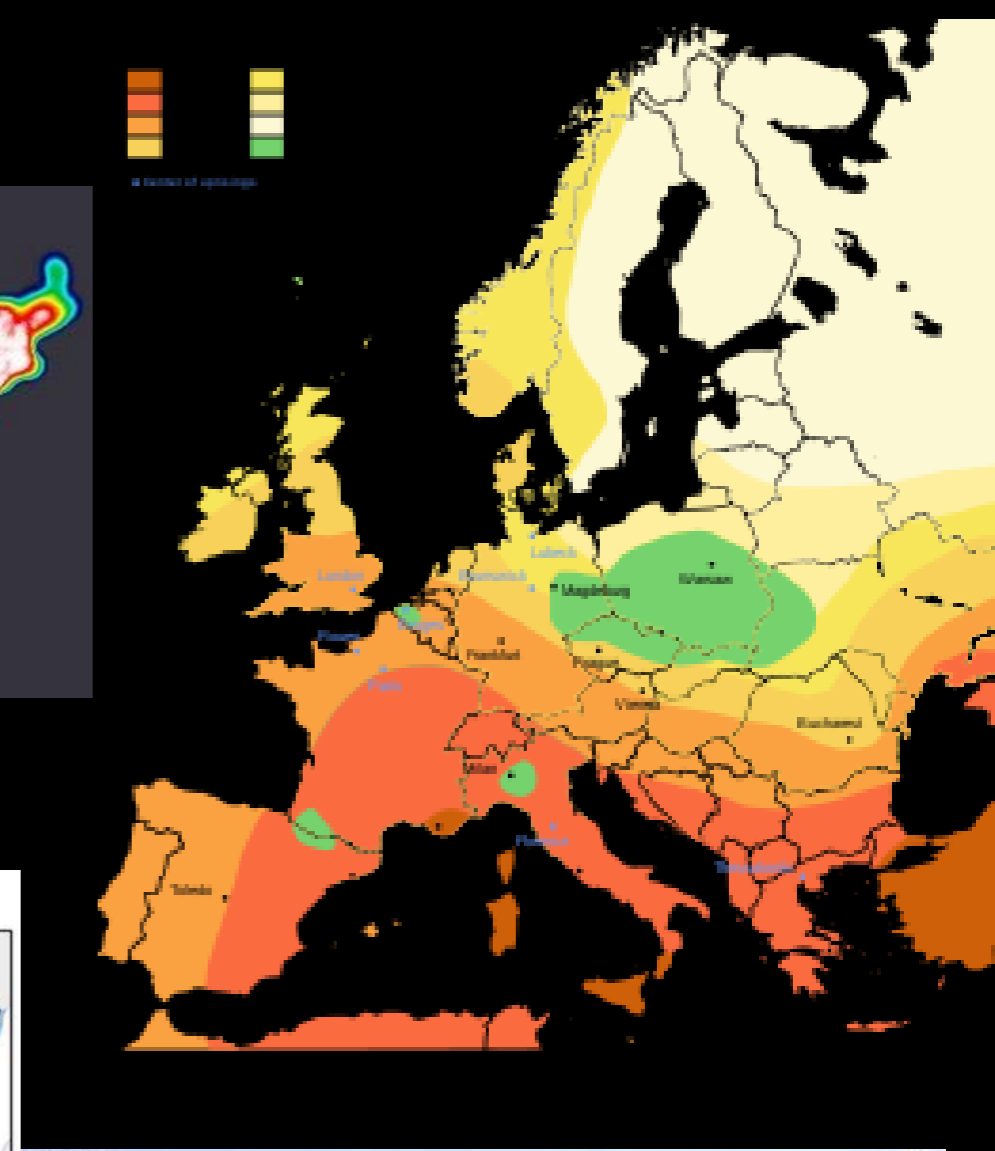
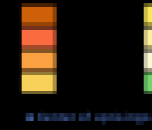
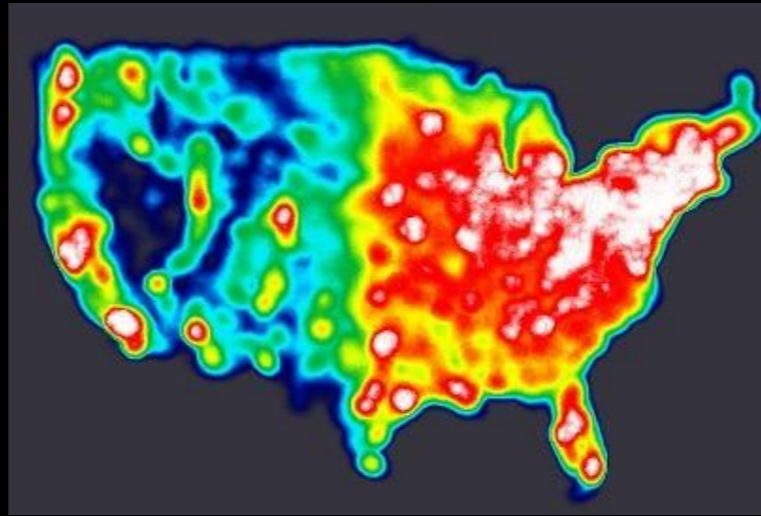
Jan 12 Apr 22 Jul 31 Nov 8 Feb 16

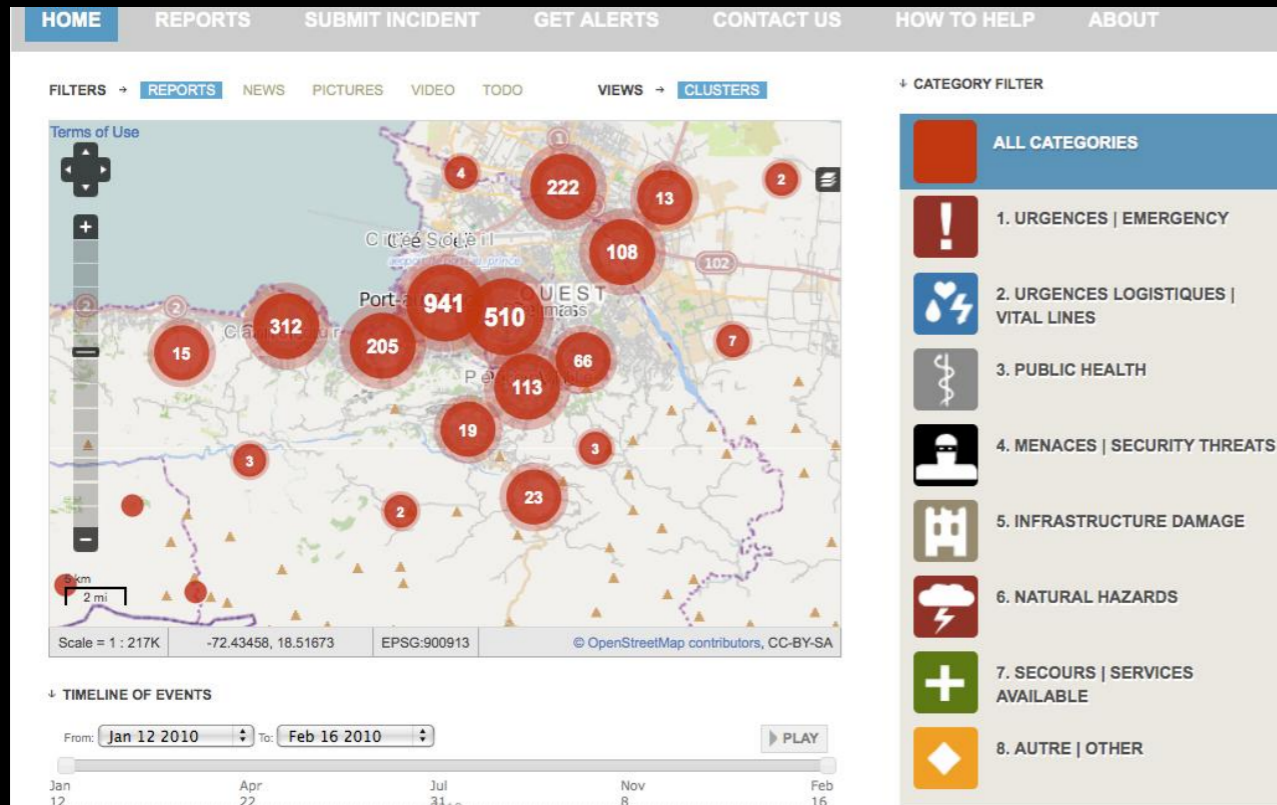
+ CATEGORY FILTER

- ALL CATEGORIES
- 1. URGENCES | EMERGENCY
- 2. URGENCES LOGISTIQUES | VITAL LINES
- 3. PUBLIC HEALTH
- 4. MENACES | SECURITY THREATS
- 5. INFRASTRUCTURE DAMAGE
- 6. NATURAL HAZARDS
- 7. SECOURS | SERVICES AVAILABLE
- 8. AUTRE | OTHER

ANALYSIS

- ✿ Spatial
- ✿ Temporal
- ✿ Mix Analysis
- ✿ Demographic Analysis





Mobile crowdsourcing platforms designed for the dynamic mapping of conflict and natural disasters

Ushahidi is a pioneer of sorts.
more about it later !!!



Social Media is all prevalent, driven
by the growth of smart phone
availability !!



Expressing

Networking

Publication			Discussion					
 Blog	 Wiki	 Microblog	 News	 Livecast	 Forum	 IM	 Comment	 3D

Search	Niche	BtoB	Mobile	Tools
 classmates	 boomp!	 LinkedIn	 groovr	 Ning
 myDearBook	 diggster	 plaxo	 MOO.com	 KickApps
 alumni.net	 patientslikeme	 XING	 iSmy.com	 CrowdVine
 my life	 footbo	 viadeo	 ZANNEL	 Collective

Aggregation

Social Platforms

Content				
 Video	 Photo	 Music	 Links	 Doc.
 Video	 Photo	 Music	 Links	 Doc.
 Video	 Photo	 Music	 Links	 Doc.

Social Games	Casual Games
 CHALLENGE GAMES	 doof
 zynga	 pogo
 SGN	 CAFE.COM
 Three Rings	 PlayFirst
 playfish	 PopCap
 CasualCafe	 KONGREGATE
 6 waves	 mytopia

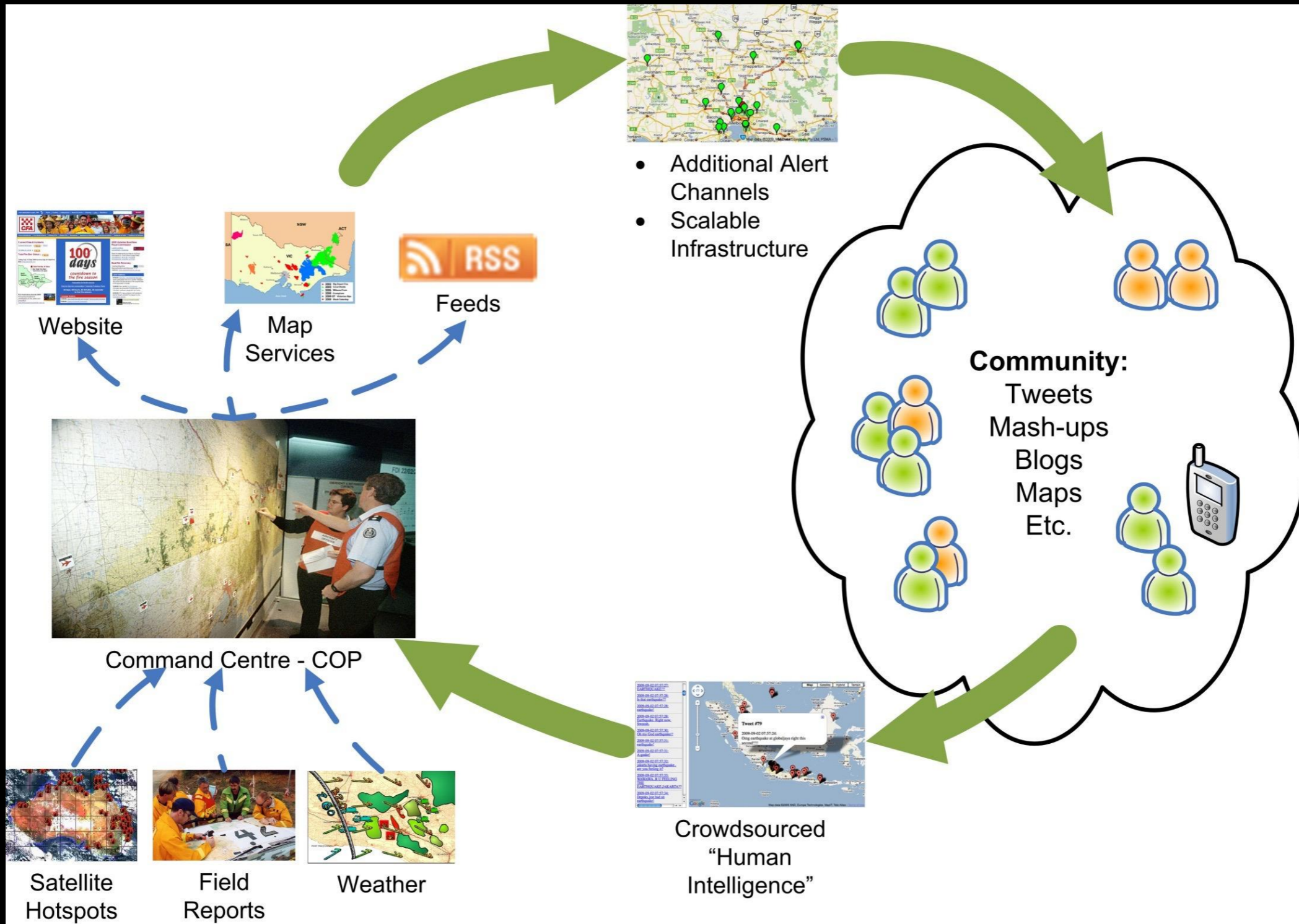
Product	Place
 Recommend ^o	 Addresses
 Suggestions	 Events
 Share	 Events
 Suggestions	 Events
 Share	 Events
 Share	 Trip
 Addresses	 Trip
 Addresses	 Trip
 Trip	 Trip

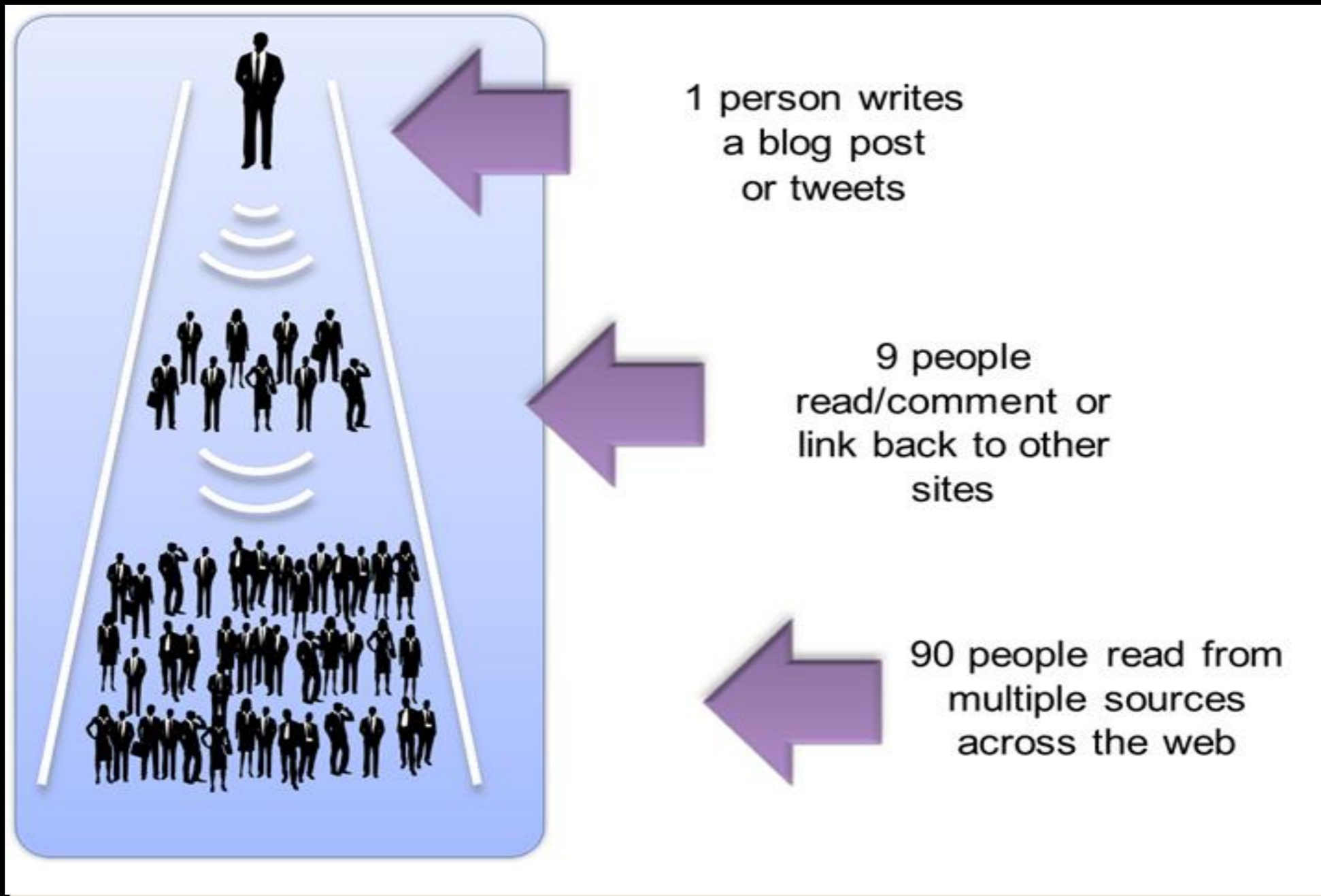
Casual MMO	MOG	MMORPG
 PUZZLE PIRATES	 KART RIDER	 WORLD OF WARCRAFT
 CLUB PENGUIN	 MapleStory	 EVE ONLINE
 neopets	 gaia ONLINE	 CITY HEROES
 WORLD'S	 OUR WORLD	 LINEAGE II
	 COMBAT ARMS	 DOFUS
	 GUNZ	
	 QUAKE LIVE	

Sharing

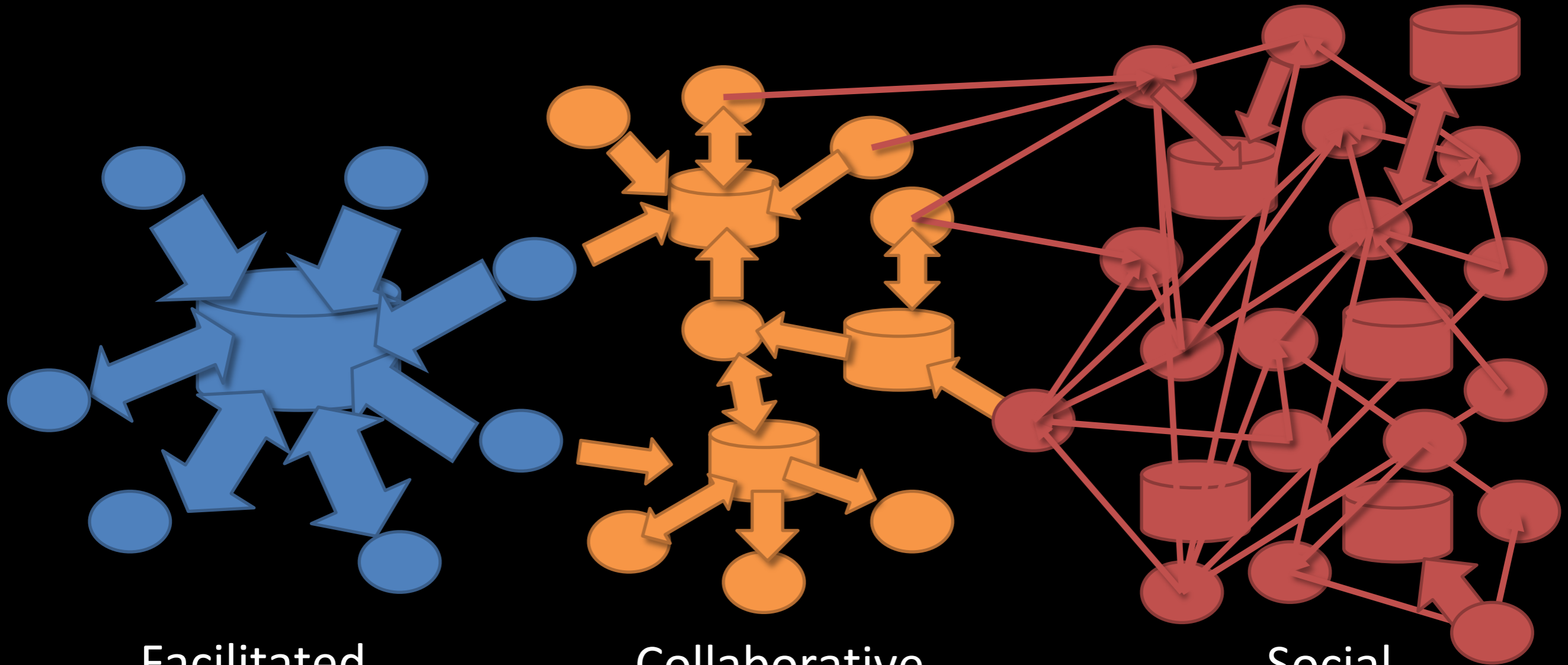
Gaming

The stakeholders...





Mobilise the Crowd



Facilitated
Knowledge
Management

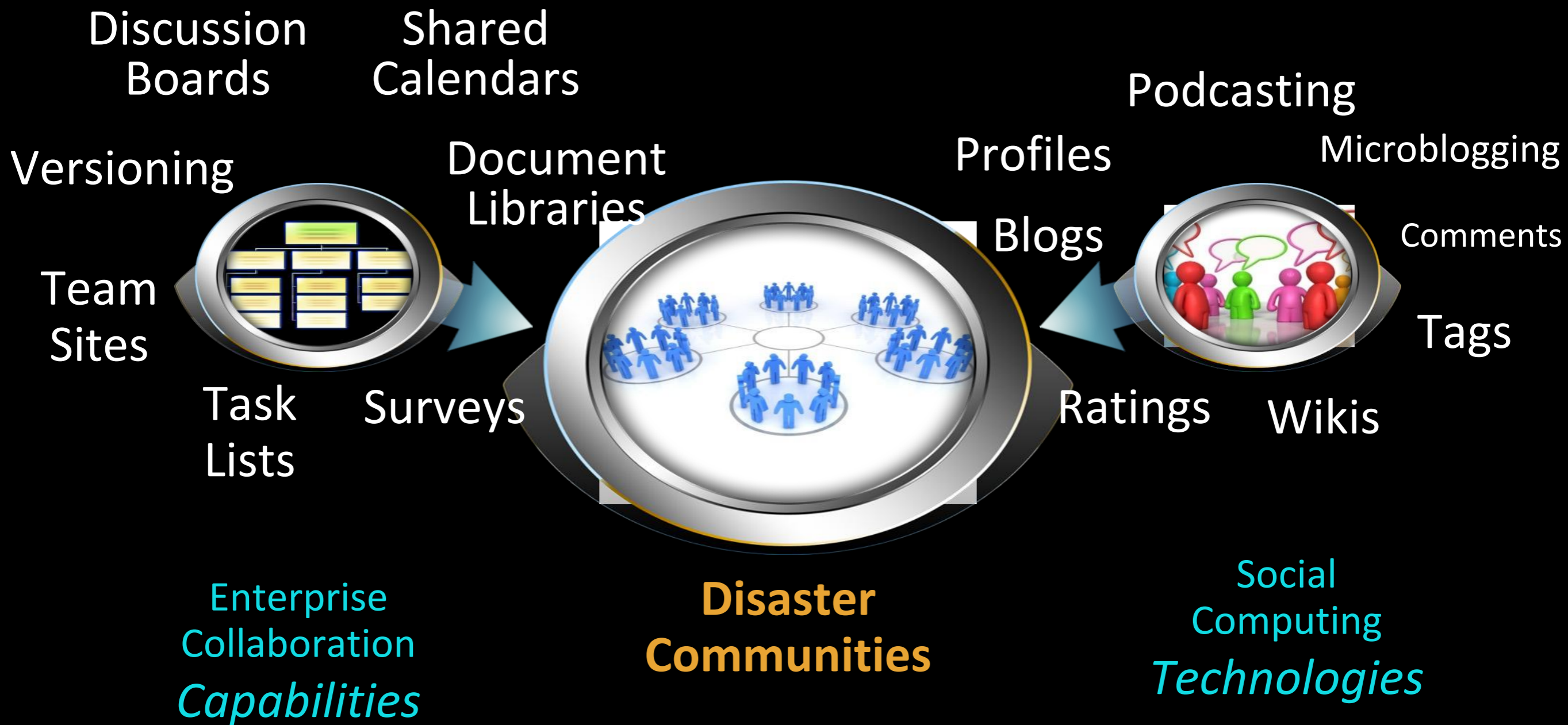
Collaborative
Workgroups

Social
Networks

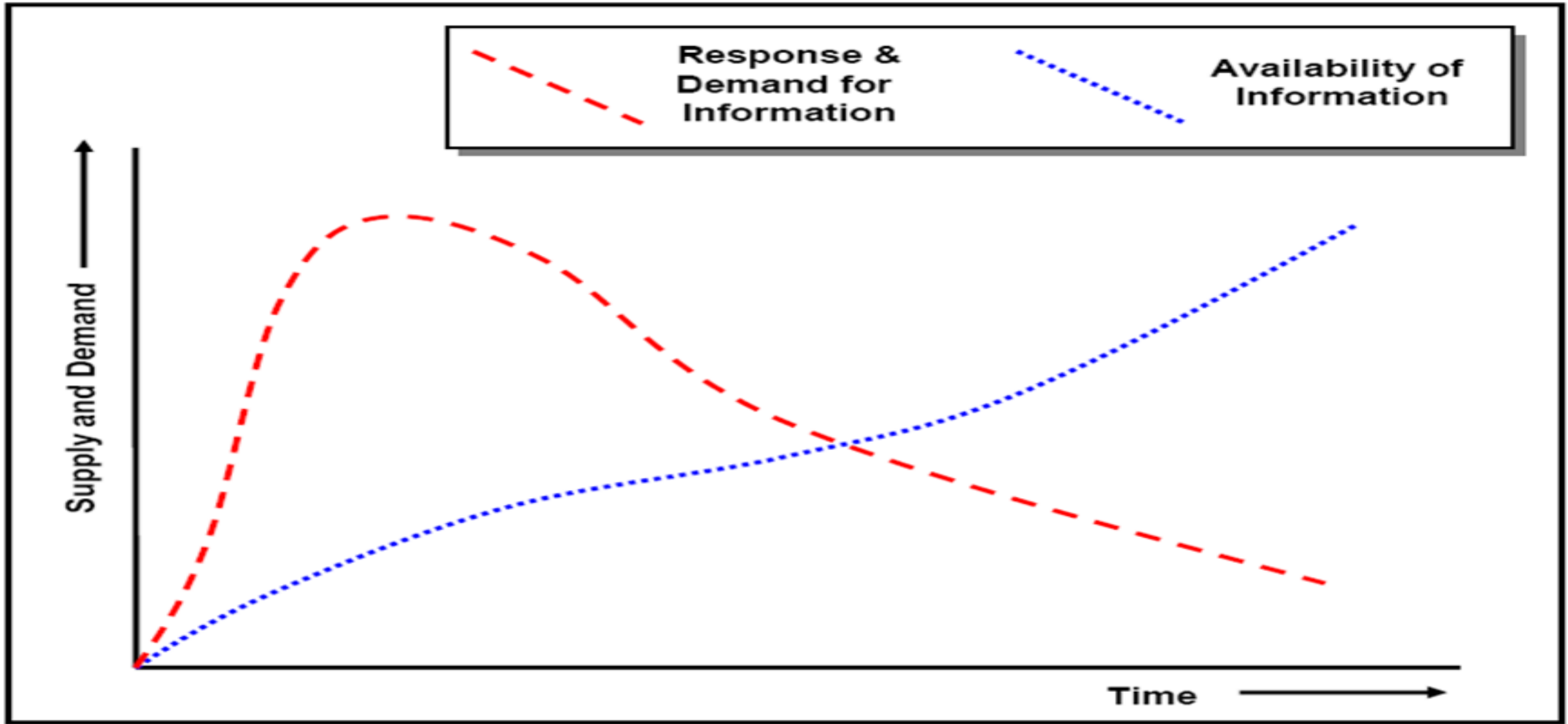
Evolution



The Crowds

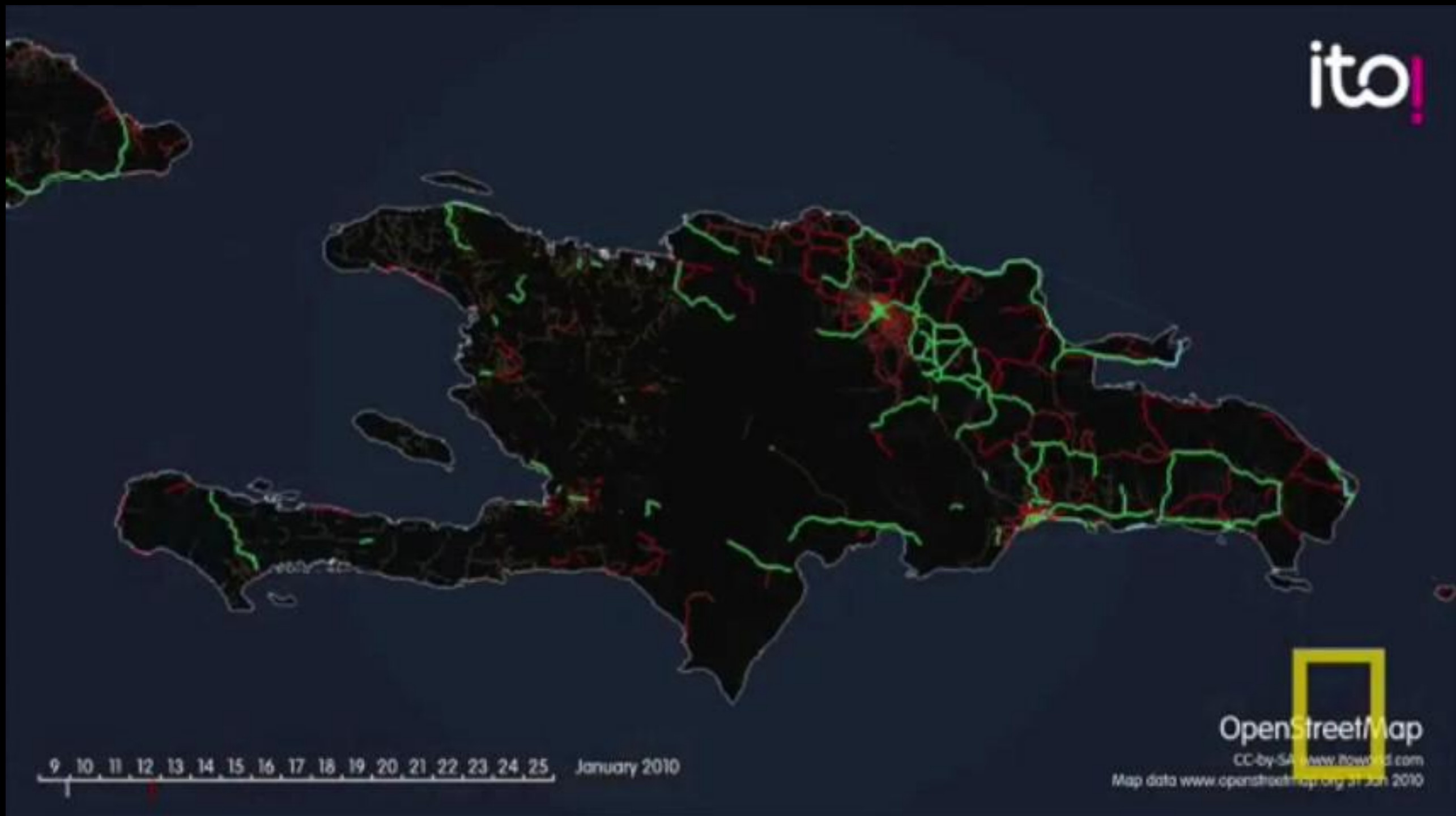


The Need for Communities



Information Management

ito!



9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 January 2010

OpenStreetMap

CC-by-SA www.bowling.com

Map data www.openstreetmap.org 31 Jan 2010



The Cloud



Ushahidi

CROWDSOURCING, MAPPING, AND
CROWDFEEDING TOOL

What is Ushahidi?

- ❑ Originated from electoral violence in Kenya in 2008
- ❑ Kept Kenyans current on crisis and provided assistance to relief workers
- ❑ Swahili for “witness” or “testimony”
- ❑ A crisis mapping tool and/or an early warning system
- ❑ Global citizen journalism: allows people around the world to tell their story during a disaster or emergency situation
- ❑ Free, easy to use, deployable worldwide



Haiti – January 12, 2010

Haiti: earthquake



- More than 230,000 people died, mass destruction and 1.5 million left homeless
- The response system unable to prioritize data from outside sources
- Ushahidi provided a way to capture, organize, and share critical information

Haiti: data analysis

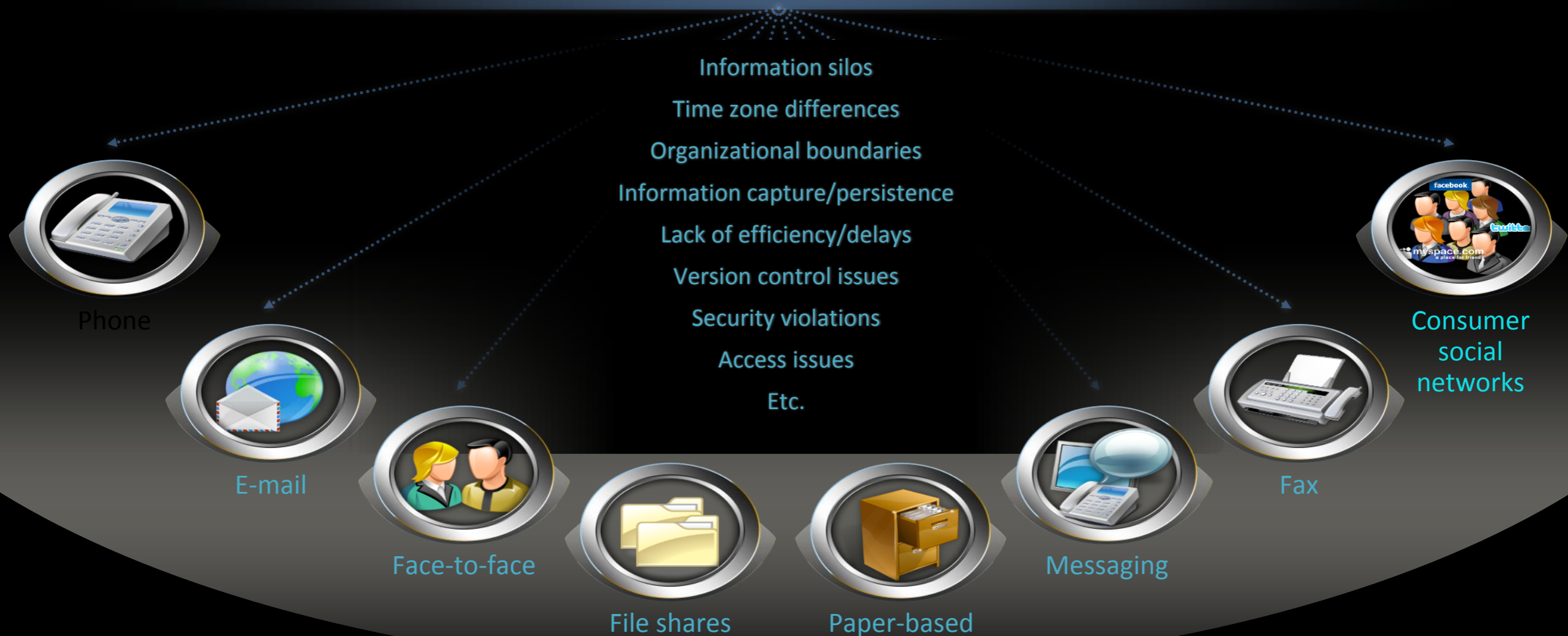


- Ushahidi was deployed in the first two hours
- Within four days of the earthquake, 100,000 reports had been received
- Approximately 85% of Haitian households had access to mobile phones
- Although 70% of the cell phone towers in Port-au-Prince had been destroyed in the disaster, they were back online before Ushahidi became operational
- Volunteers translated 25,186 SMS messages and numerous e-mail, Web, and social media communications, resulting in 3,596 reports that were actionable

god want location asking phone sleeping impassé phone location hungry hello water get house please
know good my-name-is please
thank-you send work family name anything food
need find go aid help
like live message people
jean school eat already money died machine in last church thirty la delmas victims now radio im
dying leoganc living given children victim sleep hunger waiting something
lot job live message needs lost
country address
rue incomplete received
port-au-prince links nothing
call thanks
destroyed place
earthquake haiti
number street
going road



What are the issues and limitations?



How People Work Together Now

Thank You

GeoIntelligenceAsia 2015

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