

CROWDSOURCED MOBILE SOLUTIONS FOR FLOODPLAIN MANAGEMENT



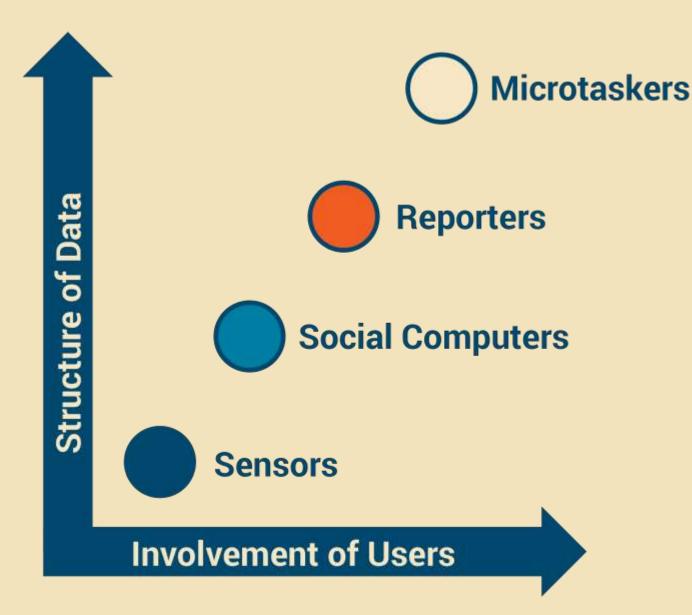
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Overview

- What are the different types of crowdsourcing in mobile solutions?
- What are the current crowdsourced mobile solutions?
- How is social media used in crowdsourcing?
- What analytics can be applied to crowdsourced data?
- What are some future directions for crowdsourcing?

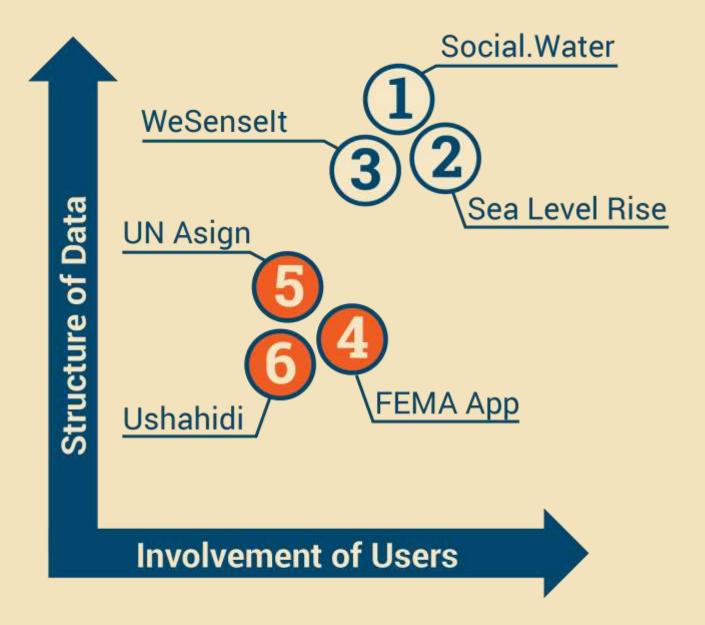


Solution users produce more structured data when they are more engaged.



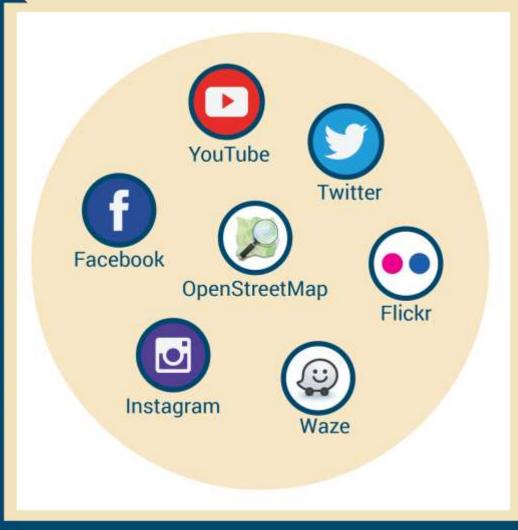


Dedicated apps and crowdsourcing platforms engage users and produce well-structured data.





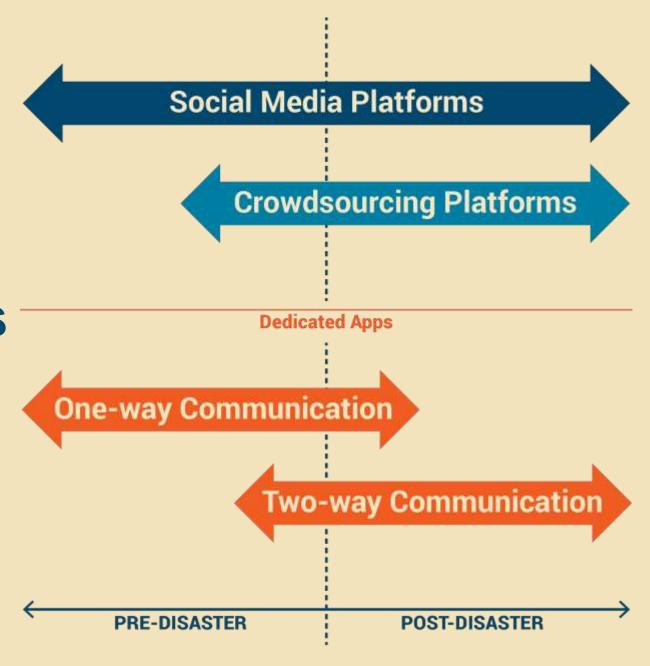






Involvement of Users

Communication direction varies with disaster phase, but social media platforms allow users to choose how and when they receive or send information.





Using social media for crowdsourcing means we have to reduce the noise and boost the signal.



Ideation, Inc
@ideationino

@703Fairfax Colvin Run gauge in #Reston showing
5ft incr over last 4h #flooding

RETWEETS FAVORITES 175 283

Reply 13 Retweet * Favorite *** More
08:04 PM-14 Apr 2017

- No specific location in tweet
- No hashtags to categorize content
- No specific change in flood conditions noted

- Tagged local office of emergency management
- Hashtags include regional and topical tags
- Specific values for flood conditions noted



The basic steps in analyzing social media data are straightforward.



Analyze Data

Interpret Information

Decide Next Steps



The actual analysis of social media data can be a major time investment.

Data Identification

Twitter streaming API
Facebook Real Time API
SMS messages to
dedicated number
Facebook posts/likes

Data Analysis

Hand-review tweets or SMS messages
Computer programs to classify data
Analytics platforms to identify patterns

Interpretation

Update web-based crisis maps
Update web-based flooding maps
Create graphs or charts as visual aids

Next Steps:

Decide who is notified and what they need to know



The future of crowdsourcing for floodplain management...



Improved Analytics



Improved Security



Resilient Networks

Firewall **IoT Architecture** in Brief Cloud (Cognitive) Analytics Machine Learning Fog (Reflexive) Sensors ' **Actuators** Realtime ideation

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