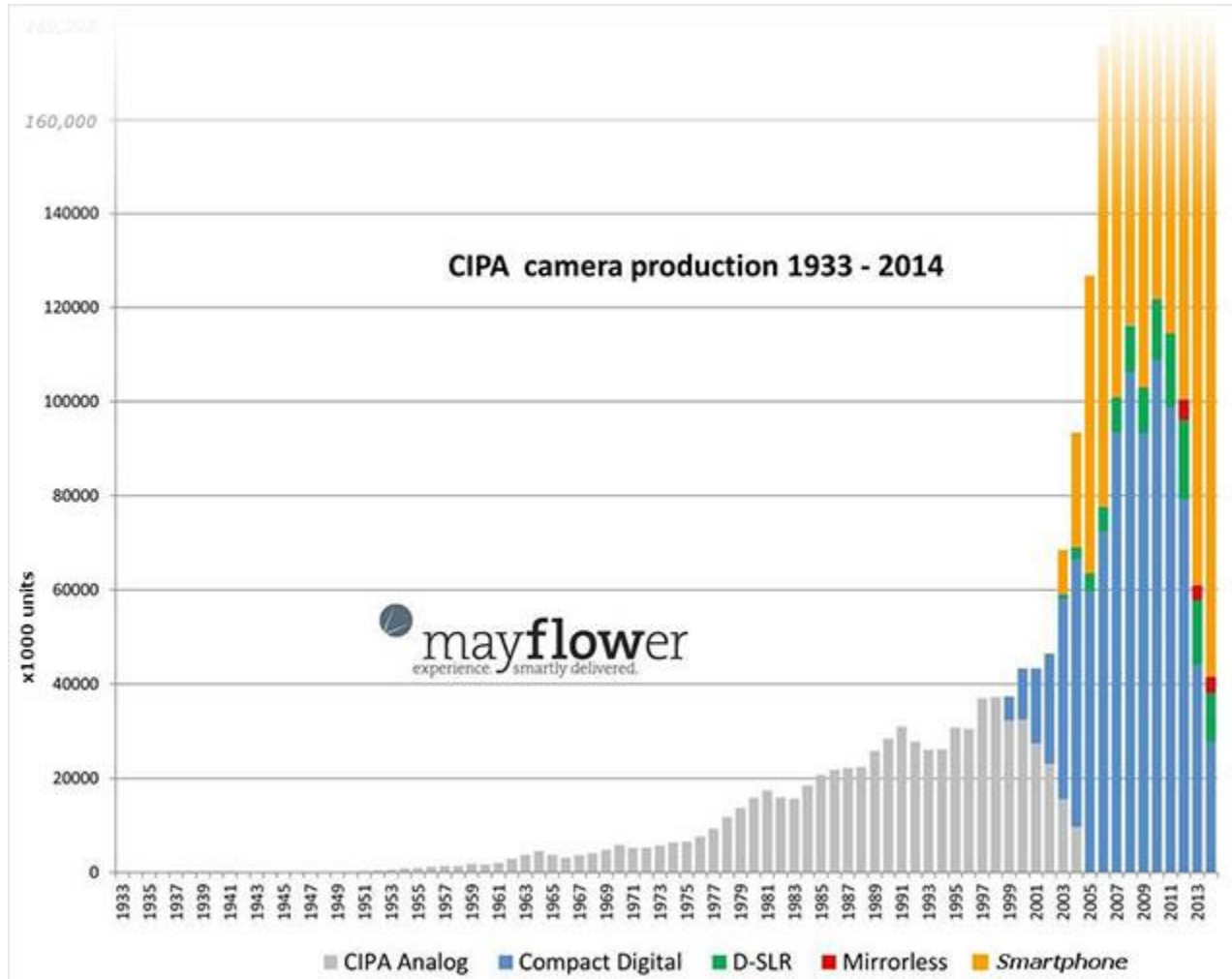


JPEG Privacy & Security Workshop

Media-JSON for Creating Visual Web

Ramesh Jain
jain@ics.uci.edu

Camera and Photos



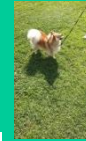
**This century is different from the last.
Should we think differently???**



Berners-Lee: Suppose all the information stored on computers everywhere were linked. Suppose I could program my computer to create a space in which anything could be linked to anything.

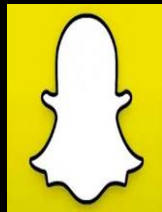


**Web: Human experiences, knowledge,
and understanding captured using
associative links in DOCUMENTS.**



Imagine if every photo and video captured were connected to every other! And to other information!!

In 20th century, we tolerated photos in our textual documents.



In 21st century, **you** create visual documents that tolerate text.

Major Disruption in Photos: From Memories to Information Sources.



Photos are the most compelling source of information.

Dualism in Photos

Photos are Memories



Photos are Compelling Information

Visual Web uses this Dualism.

Kodak Moments in 2016

An event is modeled as:



Smartphone camera captures events.



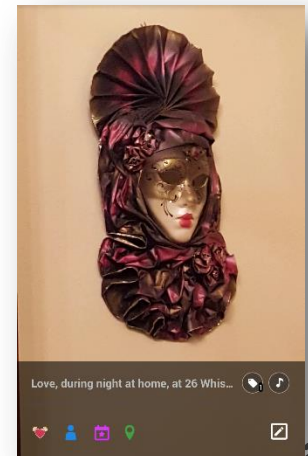
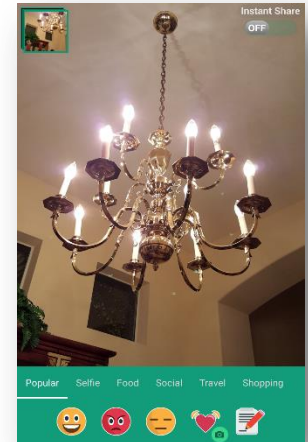
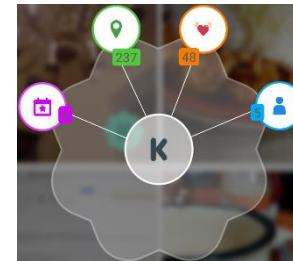
Krumb's: Intent Capture + Contextual Reasoning + Visual Web

Use customizable Emojis to grab intent (“why”) from camera.

Add all context metadata into captured *media-JSON*.

Visual Web - navigate ‘from’ photo using context and content links.

API service to retrieve, analyze *media-JSON*.



MicroBlogs

- **Became very powerful very fast**
- **Easy to use – like SMS.**
- **Aggregated for trend analysis, analytics, visualization of evolving situations.**
- **# for addressing a theme**

First Principle in Journalism

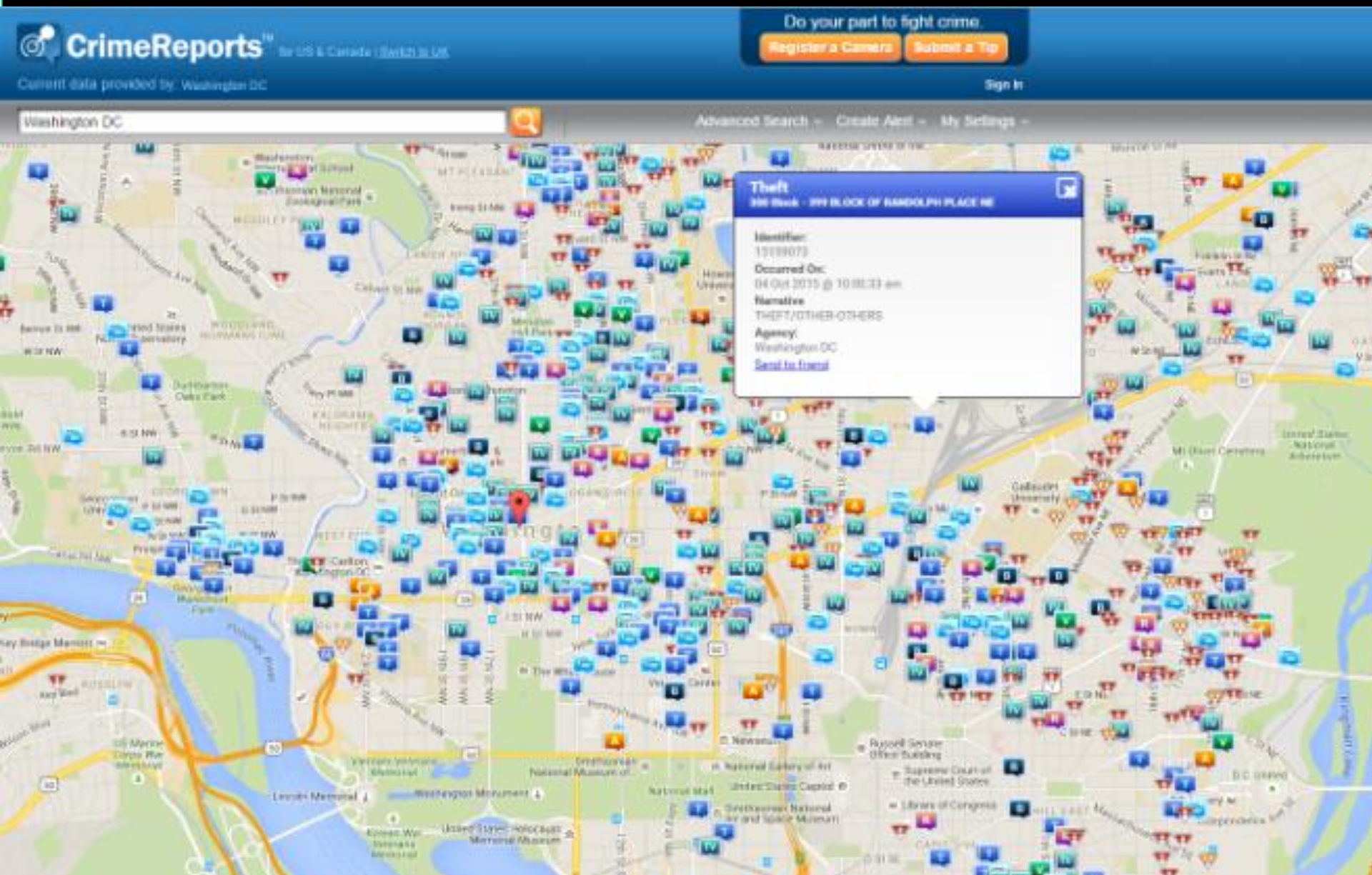
- Truthfulness,
 - Accuracy,
 - Objectivity,
 - Impartiality, Fairness and Public accountability.
-
- Seek Truth and Report it as Fully as Possible

Problem with Micro-Blogs

- **Noisy**
- **Subjective**
- **Poor context**

- **Great concept but has limitations.**
- **New technology can overcome these limitations.**

Crowdsourced Situations



Most Reports or Information are Related to Events.

Moments in Events

- **‘Kodak Moment’**
- **Each event has interesting and important moments.**
- **How do we capture a moment?**

Micro-Reports

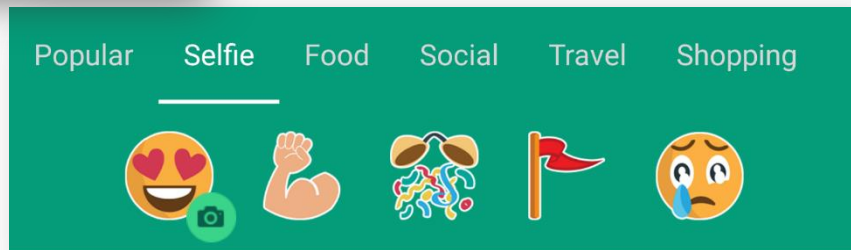
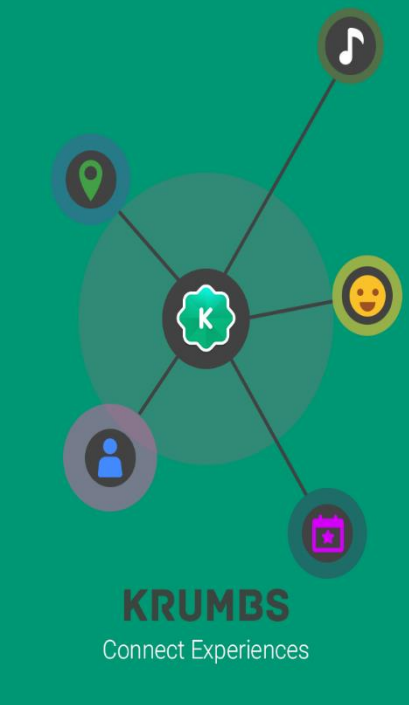
- **What (Information)**
- **Who (Information)**
- **When (Time)**
- **Where (Location)**
- **Why (Causality)**
- **How (Experiential)**



Micro-Reports: Requirements

- **Objective (Subjective comments put explicitly)**
- **Spontaneous**
- **Compelling**
- **Universal**

Krums: Capture and Report experience of a moment.



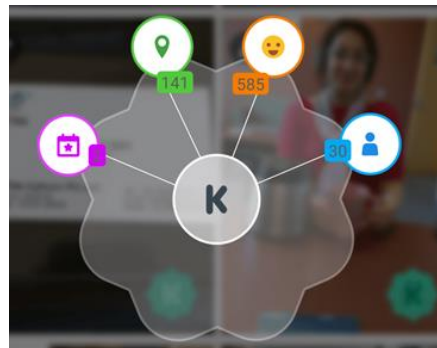
What: *Objects*

Who: *People*

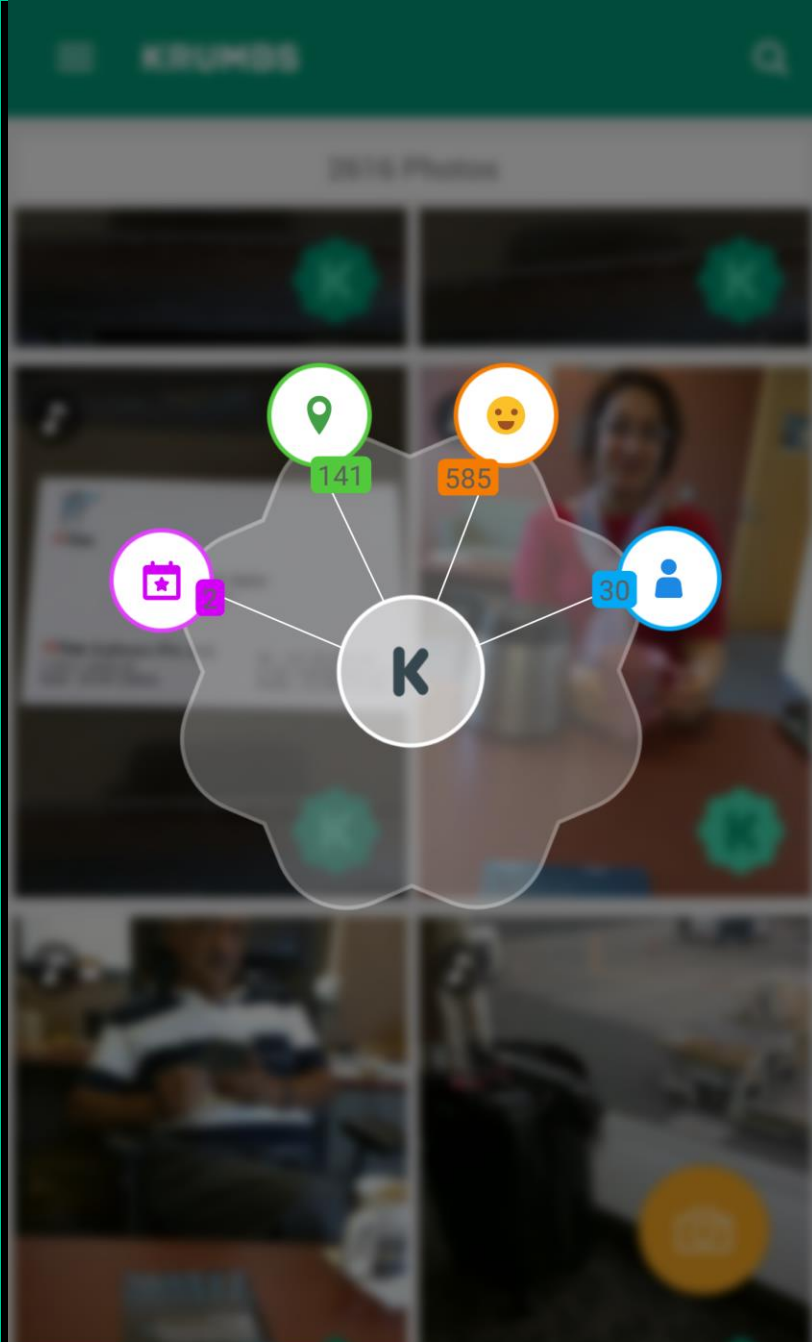
When: *Events*

Where: *Location*

Why: *Intent/Emotions*







bord



Bordeaux



Bordeaux trip



Evening in Bordeaux



Evening in historic Bordeaux



Gare SNCF de Bordeaux Saint-Jean



Grand Hôtel de Bordeaux & Spa



Grand Théâtre de Bordeaux



1 2 3 4 5 6 7 8 9 0
q w e r t y u i o p

a s d f g h j k l

↑ z x c v b n m ✕

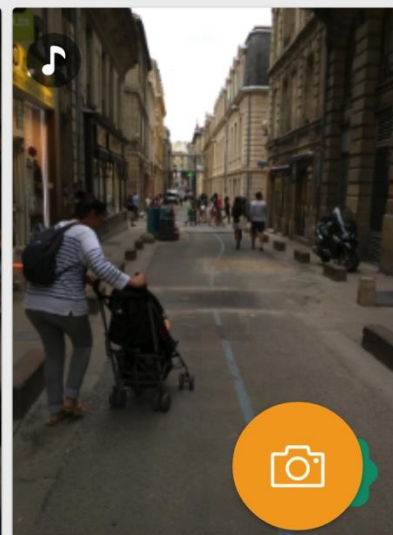
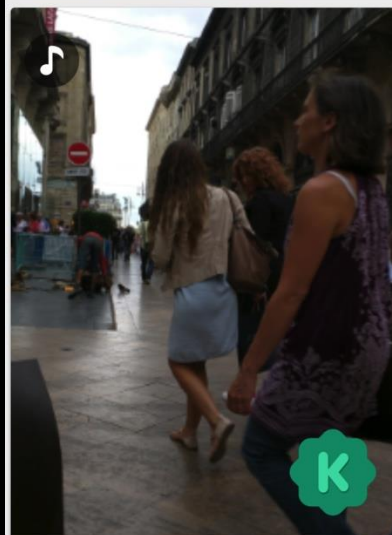
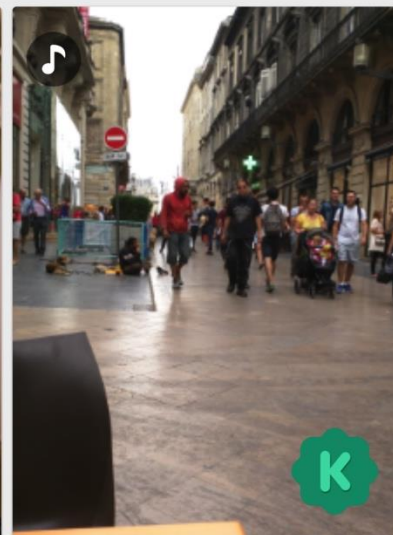
?123

,

.

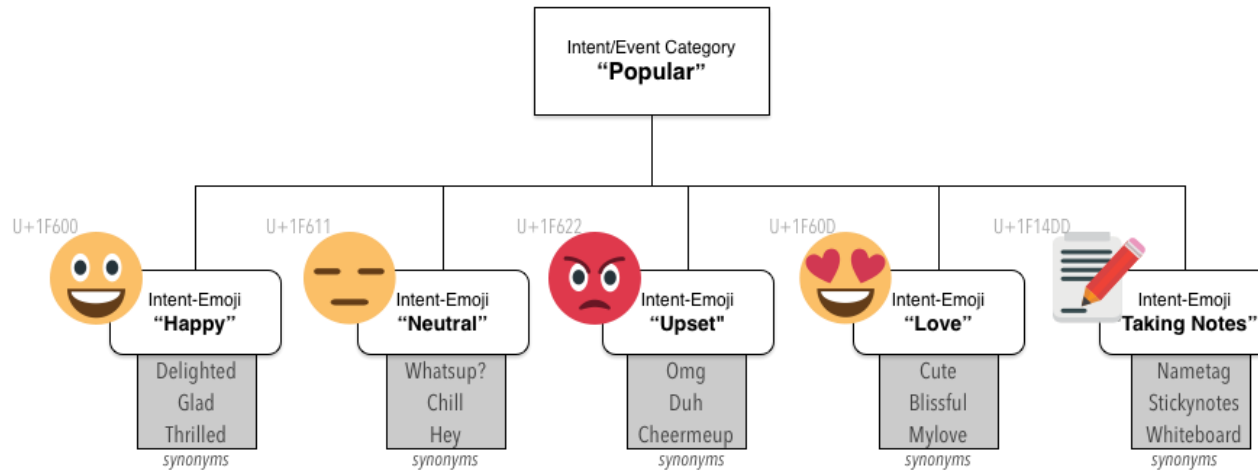
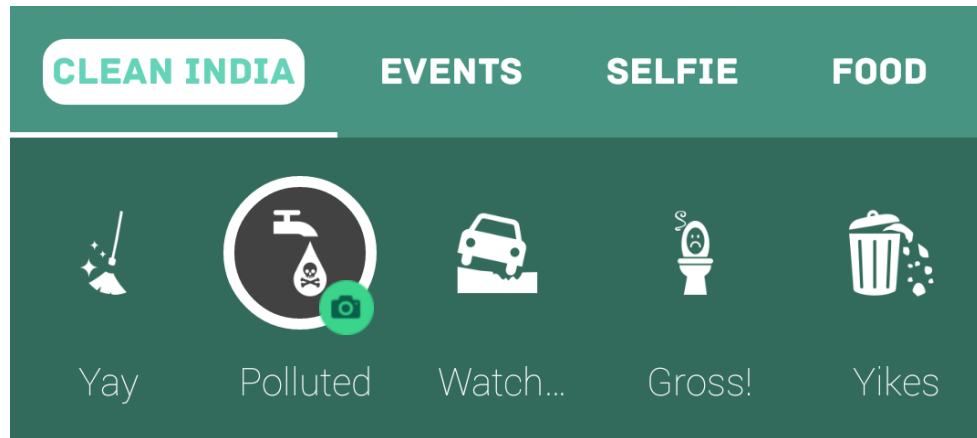


166 moments from Bordeaux

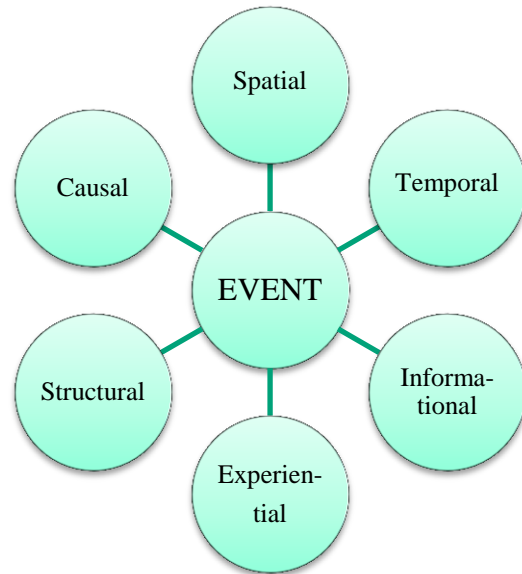




Krumbs SDK



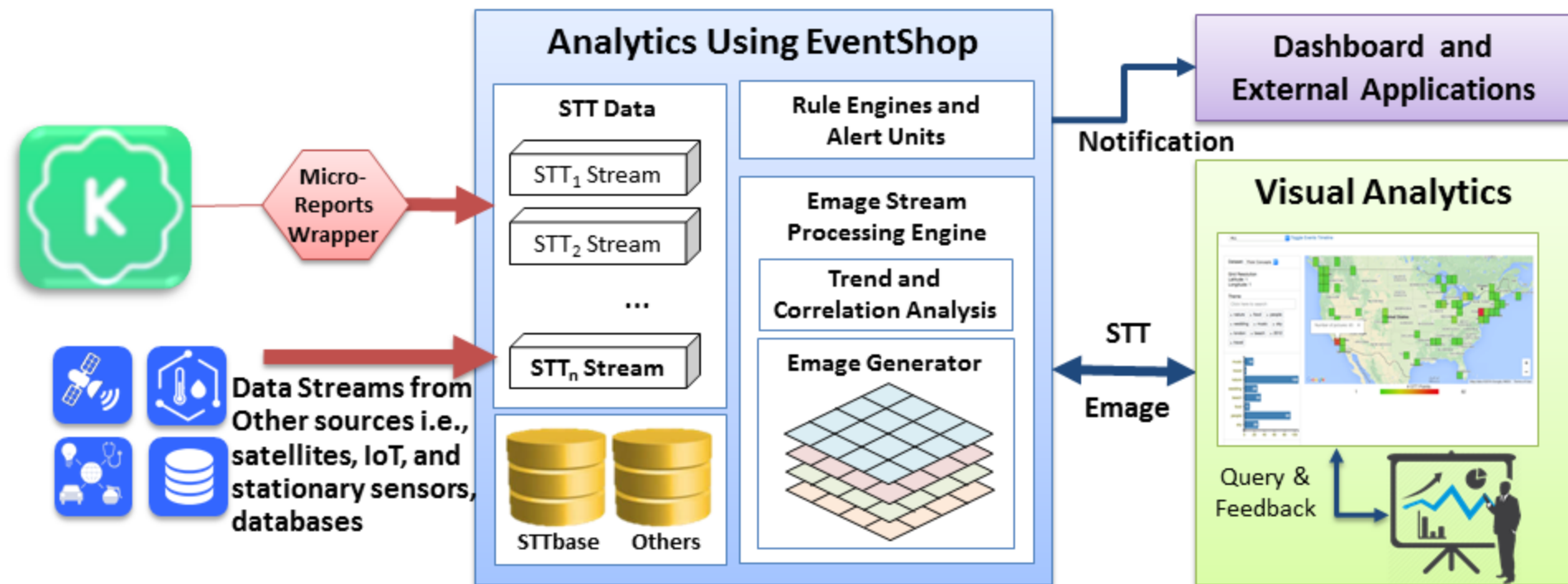
MediaJSON for each micro-report



```
{
  "micro_reports": [
    {
      "where": {
        "geo_location": {
          "latitude": 32.90233332316081,
          "longitude": -117.2441166718801,
        }
      },
      "when": {
        "start_time": "Jun 14, 2009 11:25:19 AM",
        "end_time": "Jun 14, 2009 11:25:19 AM",
        "time_zone": "America/Los_Angeles",
      },
      "what": [
        {
          "concept_name": "people",
          "confidence": 0.9836078882217407,
          "visual_concept_provider": "CLARIFAI",
          ... {
            "concept_name": "food",
            "confidence": 0.8526291847229004,
            "visual_concept_provider": "CLARIFAI"
          }
        ],
        "tag": "#niceday #summer",
        "source": { "default_src": "https://....jpg" },
        "sub_event": [],
        "why": [],
      ... ]
    }
  ]
}
```


Converting Micro-reports In Actionable Information.

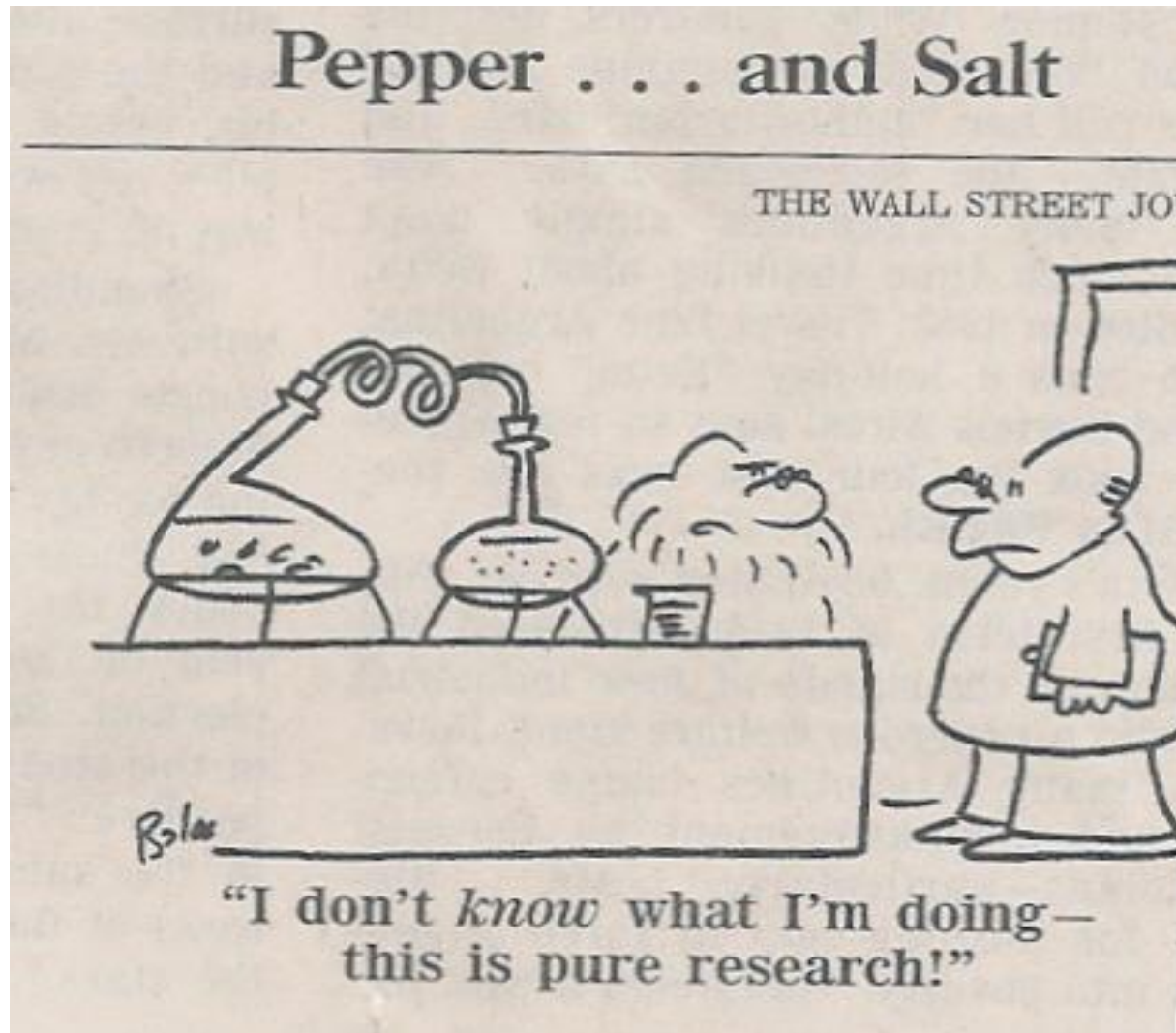
- Develop a ‘wrapper’ for each micro-report and create MediaJSON.
- Aggregate it.



Privacy and Security

- **For Photos and other experiential data.**
- **For meta-data**
 - **Time**
 - **Location**
 - **Other people**
- **Without Sacrificing**
 - **Analytics**
 - **Navigation**
 - **Search**

Thanks for your time and attention.



For questions: jain@ics.uci.edu

Krums: Visual Information Platform

AgTech

Hyper-
Local

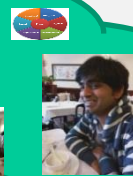
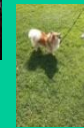
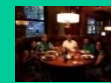
Personal

Krums SDK:

Sharing and Communication

Knowledge Discovery

Navigation and Search



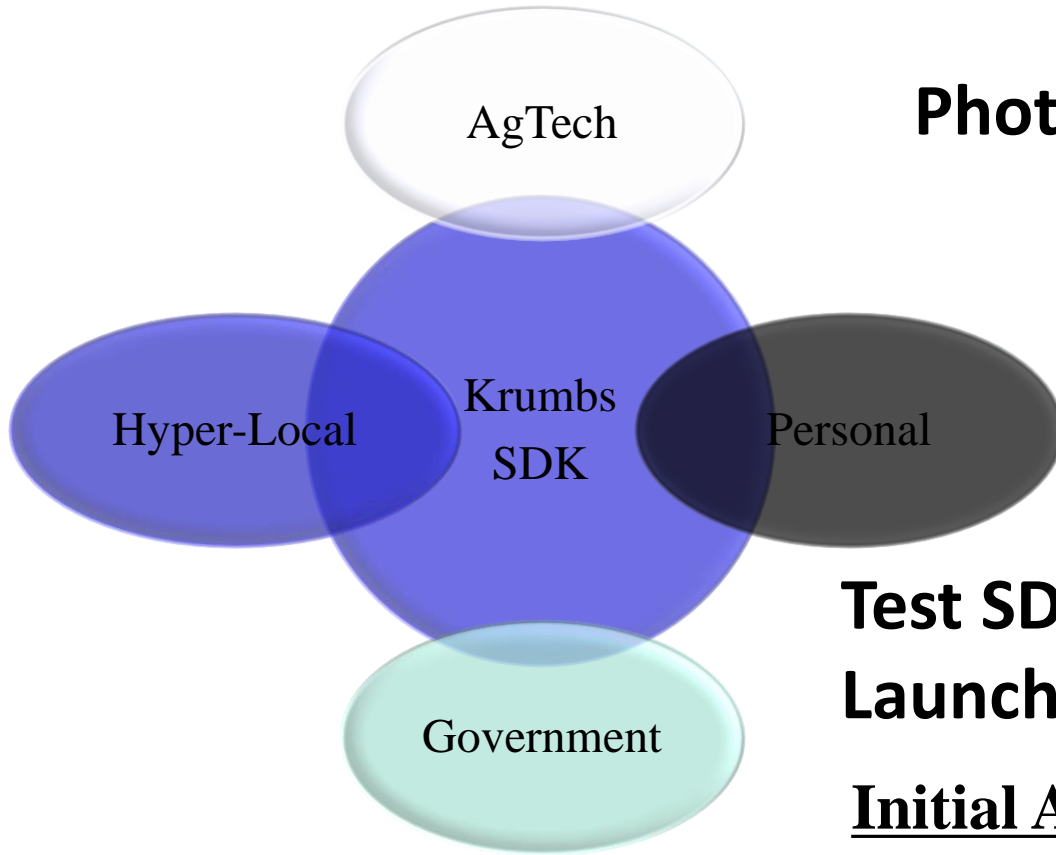
Linked Photos

Contextual Reasoning

Krums: Moment Capture

Krums SDK:

For Emerging Social/Government/Enterprise Applications based on Participatory Sensing.



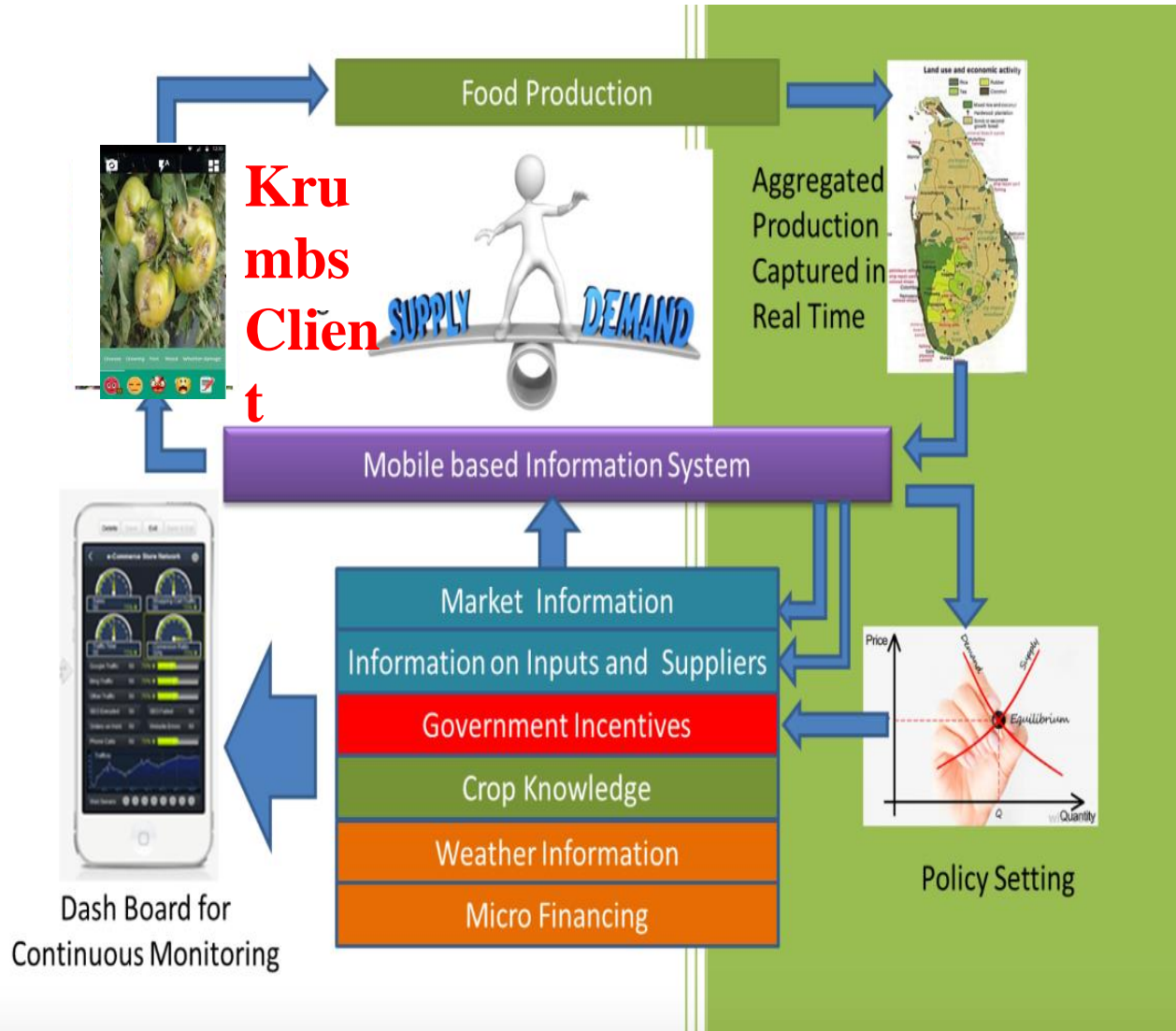
Photos are New micro-blogs.

**Test SDK Apps outside US in 2015.
Launch in US in Q1 2016.**

Initial Adopters:

- 1. Sri Lanka Farmers: 3M Farmers**
- 2. Personal: Krums.**
- 3. Reacho: Hyperlocal for Nagpur.**

SLN-4-Farmers: National Project in Sri Lanka



Supported by Sri Lanka Government.

Several Million Farmers.

Already other countries, India, are interested.

Business Model:
Licensing Client and software components.

Crowdsourced Situations

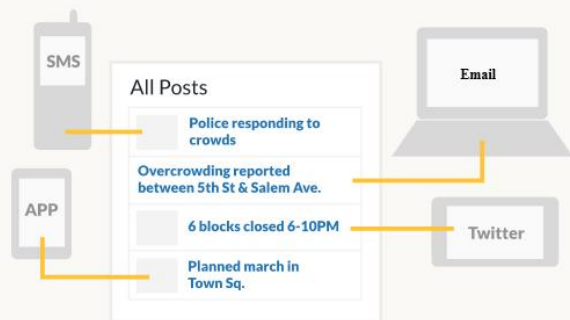
[FEATURES](#)[PLANS](#)[ABOUT](#)[SUPPORT](#)[+ MORE](#)[CONTACT](#)[LOG IN](#)

POWERFUL FEATURES

Collect, Manage, Analyze

Data Collection

Gather submissions from anyone, anytime, anywhere



Multiple sources

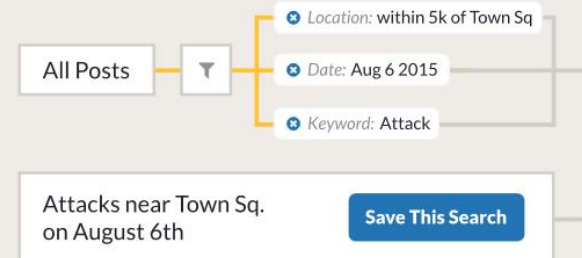
Receive reports from many sources,

SMS submissions

Collect posts via SMS when you

Data Management

Manage and triage reports with filters and workflows



Filters & Saved Searches

Retrieve the right data with filters and

Workflows

Send your posts through multiple

Waze

waze

LIVE MAP

MAJOR EVENTS

SUPPORT

BLOG

ABOUT

Login



Nothing can beat real people working together

Imagine millions of drivers out on the roads, working together towards a common goal: to outsmart traffic and get everyone the best route to work and back, every day.

Traffic is more than just red lines on the map

Get alerted before you approach police, accidents, road hazards or traffic jams, all shared by other drivers in real-time. It's like a personal heads-up from a few million of your friends on the road.



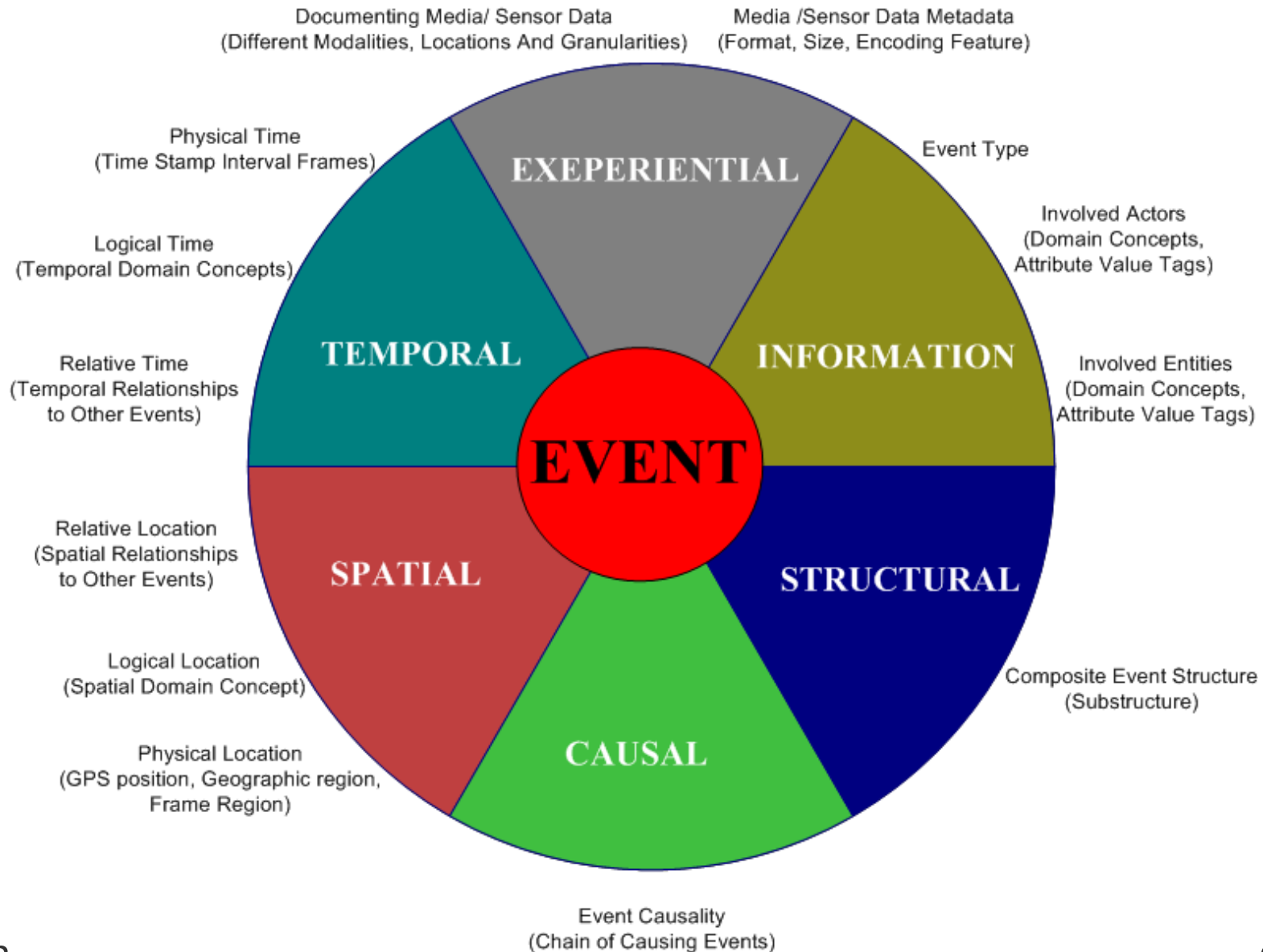
With community-edited maps, you won't hit a dead end

An active community of Waze map editors works to constantly improve and update Waze's maps. That's why they're the first to reflect changes happening in your neighborhood.

Micro-Blog Mining Process

- **Extracting Data From Data Providers**
- **Parsing, Integrating, and Storing the data**
- **Extract Information of interest**
- **Earthquake Analysis; Flu; Trends**

Event Representation



Microblogs (Origin in Journalism)

- **Blogs** provide commentary on a particular subject; others function as more personal online diaries. Short form of Web logs.
- **Microblogging** is a broadcast medium that uses **typically smaller** form of blogging.
 - Tweet of 140 characters
 - A photo
 - A short video
 - ...

First Principle in Journalism

- **Truthfulness, accuracy, objectivity, impartiality, fairness and public accountability**
- **Journalists cannot always guarantee ‘truth’, but getting the facts right is the cardinal principle of journalism. We should always strive for accuracy, give all the relevant facts we have and ensure that they have been checked. When we cannot corroborate information we should say so.**
- **Seek Truth and Report it as Fully as Possible**