

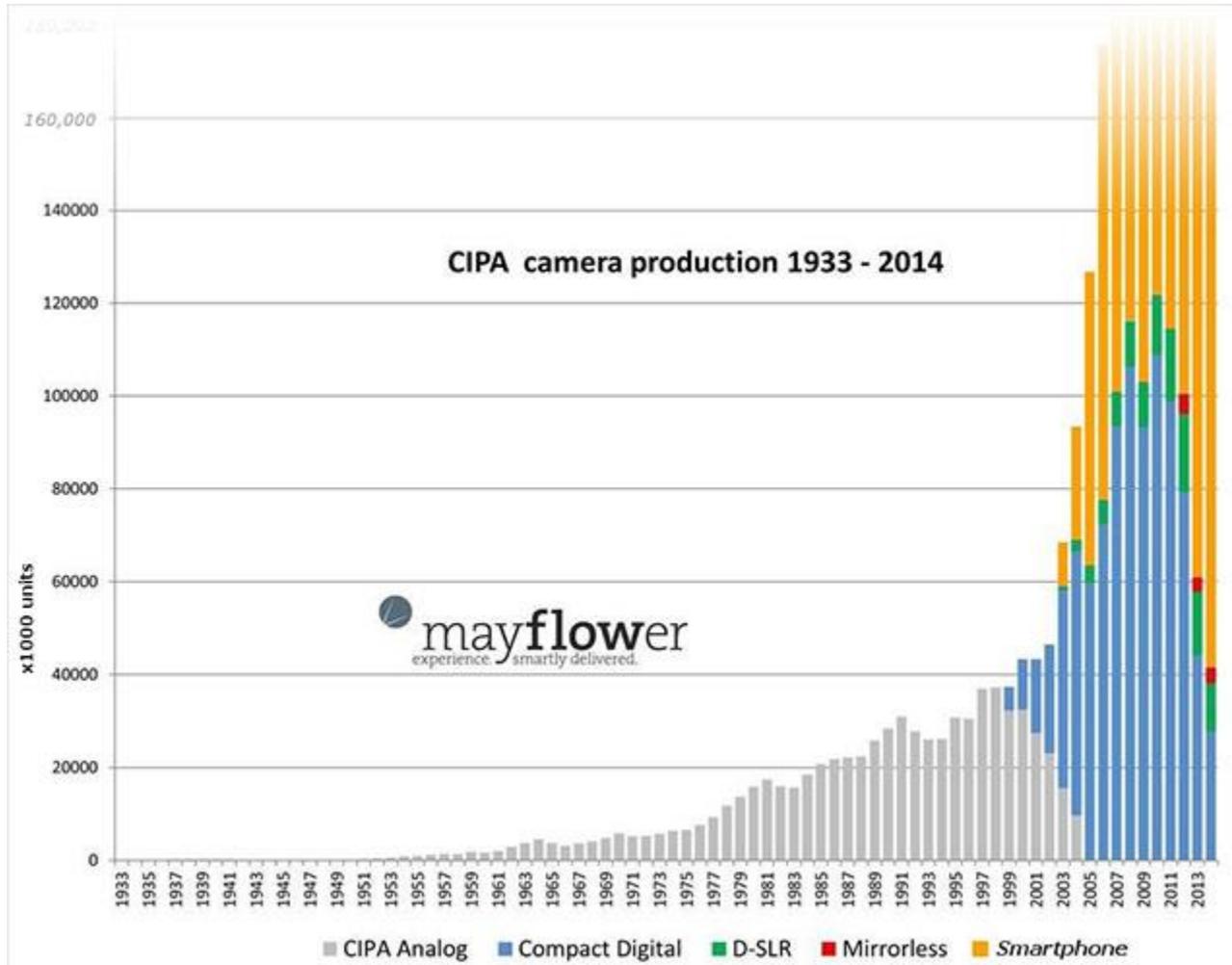
JPEG Privacy & Security Workshop

Media-JSON for Creating Visual Web

Ramesh Jain

jain@ics.uci.edu

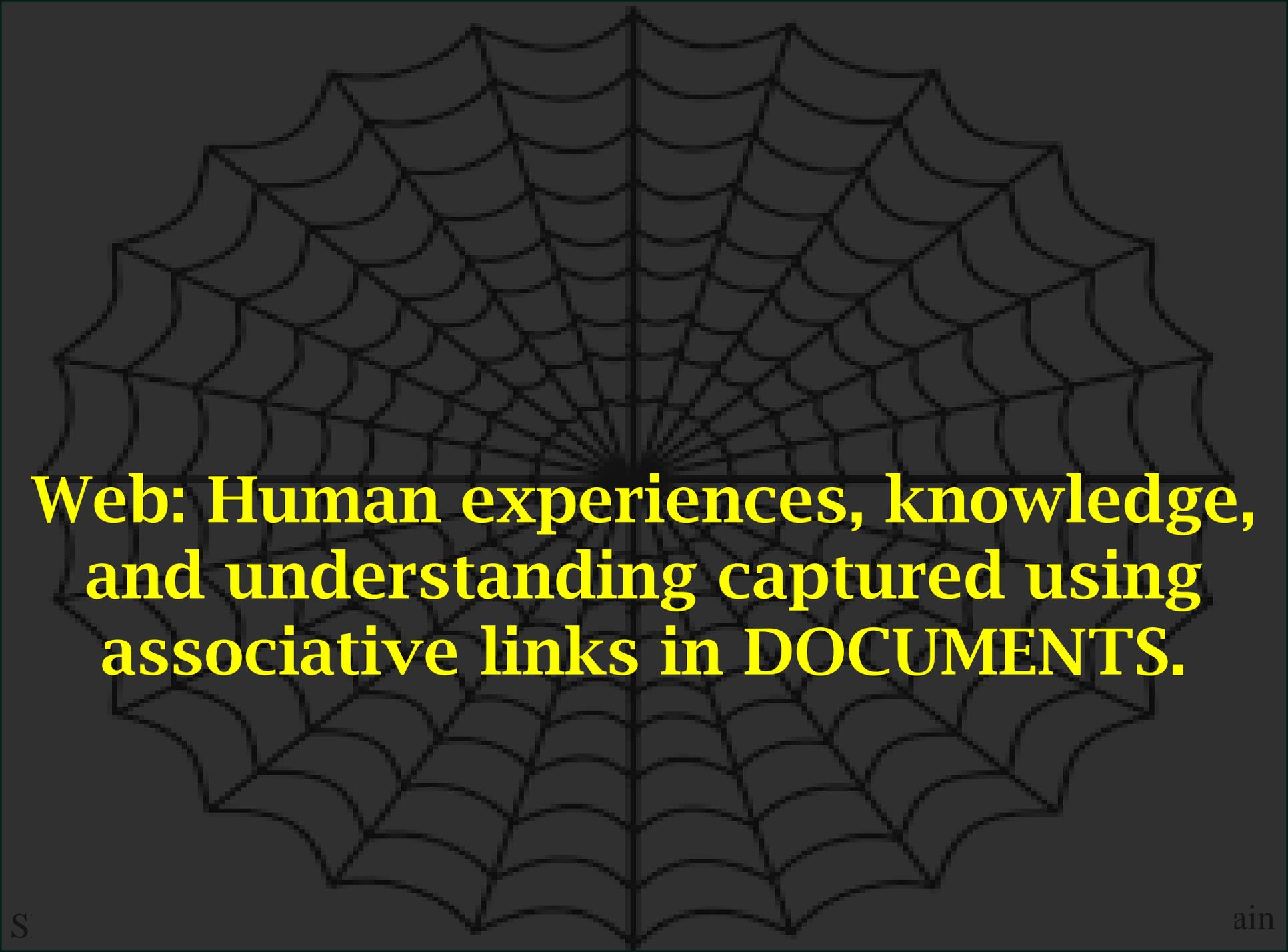
Camera and Photos



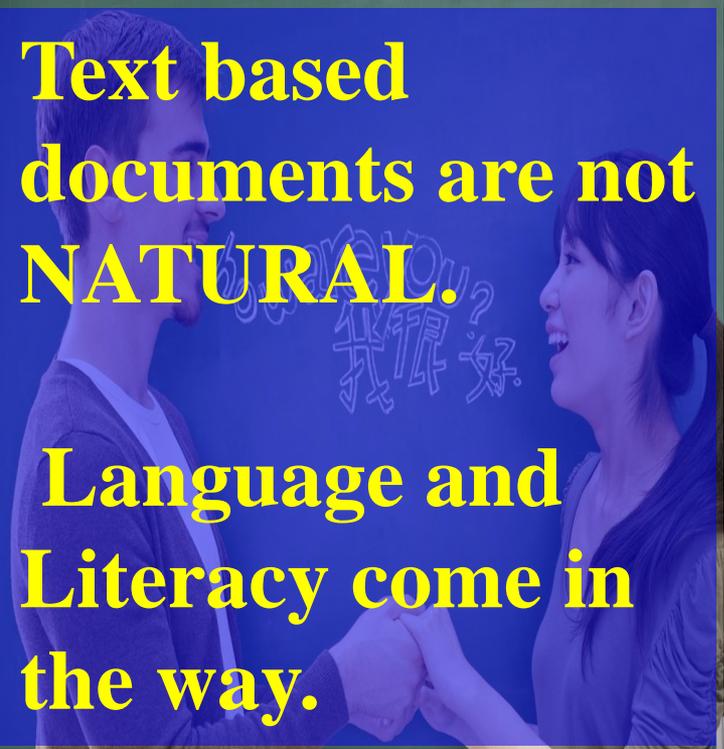
**This century is different from the last.
Should we think differently???**



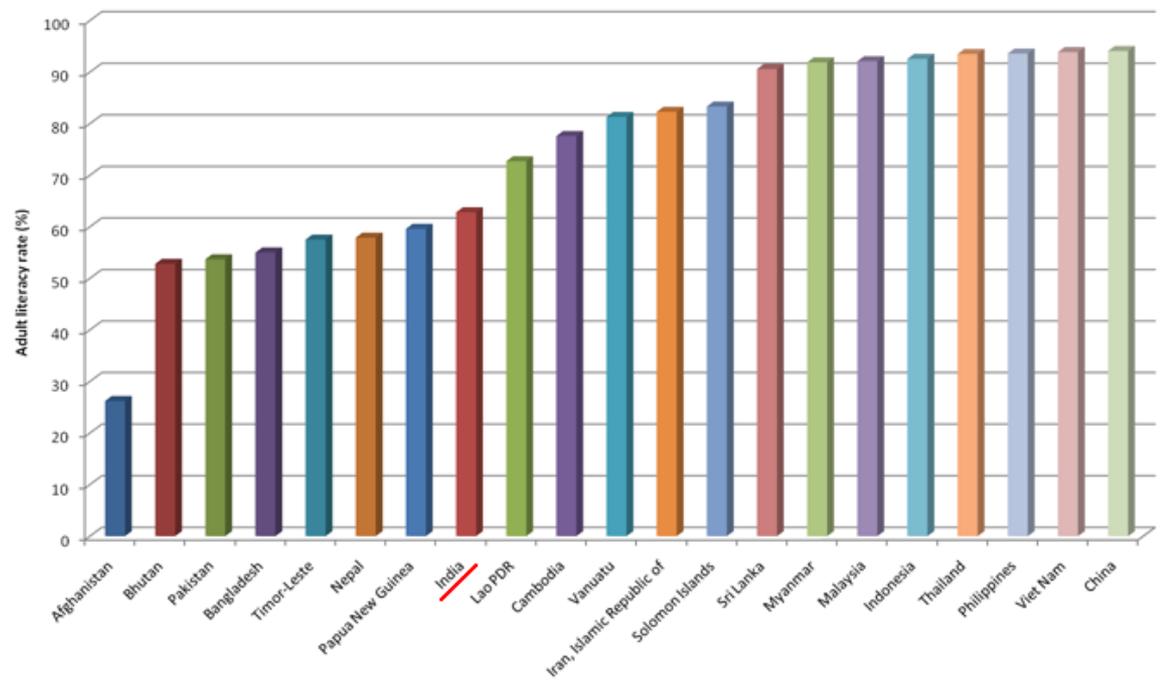
Berners-Lee: Suppose all the information stored on computers everywhere were linked. Suppose I could program my computer to create a space in which anything could be linked to anything.



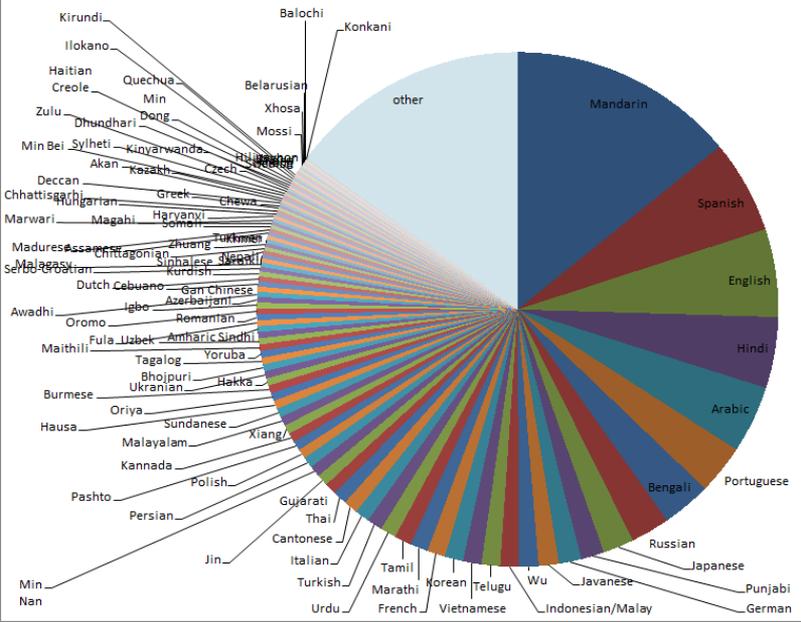
**Web: Human experiences, knowledge,
and understanding captured using
associative links in DOCUMENTS.**



Adult literacy rates, by selected countries, 2005-2010



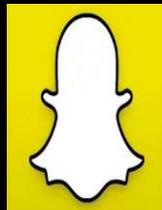
Top 100 Languages by Number of Native Speakers





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.



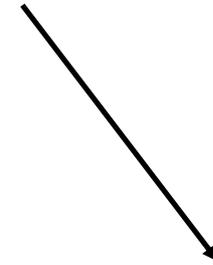
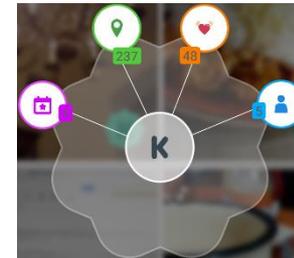
Krumbs: Intent Capture + Contextual Reasoning + Visual Web

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

The image is a screenshot of the CrimeReports website interface. At the top left, the logo for CrimeReports is displayed, with the text "for US & Canada (800) 233-1234". Below the logo, it says "Current data provided by: Washington DC". On the right side of the top bar, there is a blue banner with the text "Do your part to fight crime" and two orange buttons: "Register a Camera" and "Submit a Tip". A "Sign In" link is also visible.

The main content area features a search bar with "Washington DC" entered. To the right of the search bar are links for "Advanced Search", "Create Alert", and "My Settings". The central part of the screen is a map of Washington DC, densely populated with small, multi-colored icons representing various crime reports. A pop-up window is overlaid on the map, providing details for a specific incident:

- Thrift**
- 300 Block - 300 BLOCK OF RANDOLPH PLACE NE**
- Identifier:** 1919073
- Occurred On:** 04 Oct 2015 @ 10:08:33 am
- Narrative:** THEFT/OTHER-OTHERS
- Agency:** Washington DC
- [Send to Email](#)

The map shows major landmarks such as the National Mall, the Washington Monument, and the Lincoln Memorial. The pop-up window is positioned over a cluster of icons in the central-northern part of the city.

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

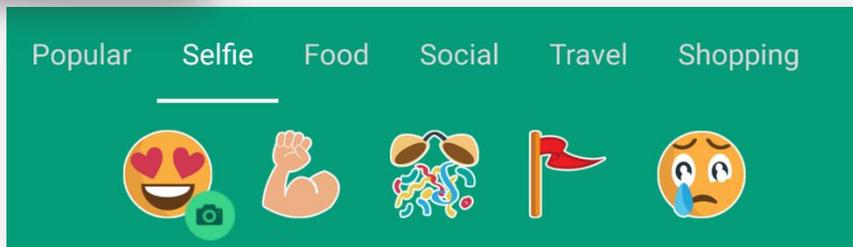
- **What (Information)**
- **Who (Information)**
- **When (Time)**
- **Where (Location)**
- **Why (Causality)**
- **How (Experiential)**



Micro-Reports: Requirements

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

Krumb's: Capture and Report experience of a moment.



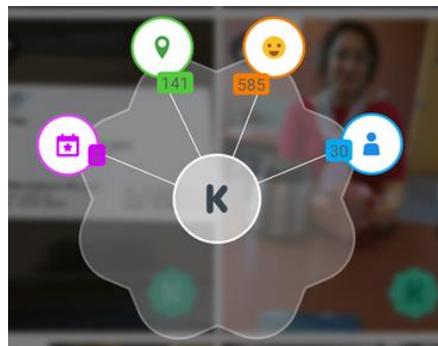
What: *Objects*

Who: *People*

When: *Events*

Where: *Location*

Why: *Intent/Emotions*

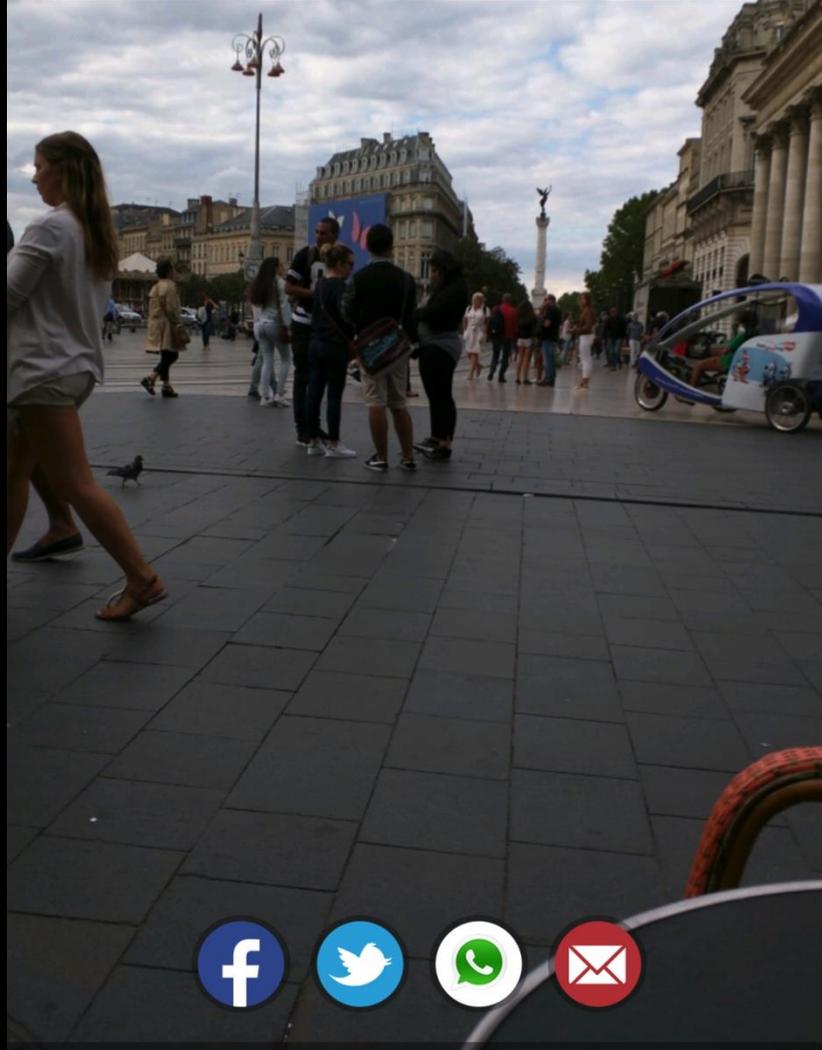




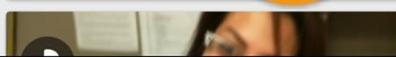
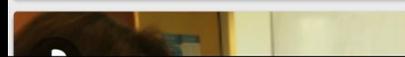
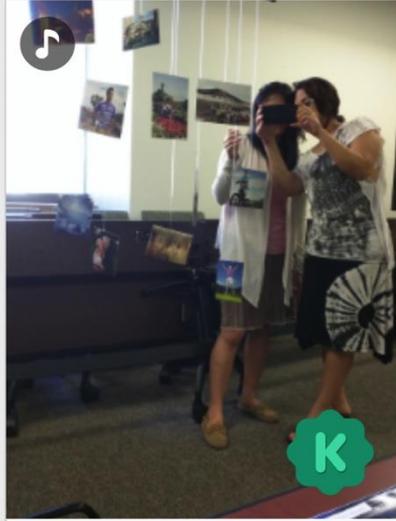
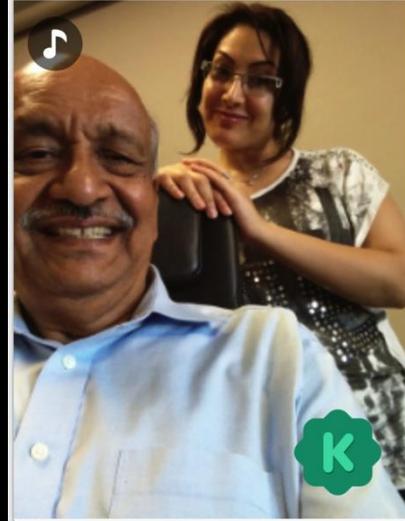
Popular Selfie Food Social Travel Shopping



Exploring, during Evening in Bordeaux, at Le Régent



29 moments with Laleh Jalali



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

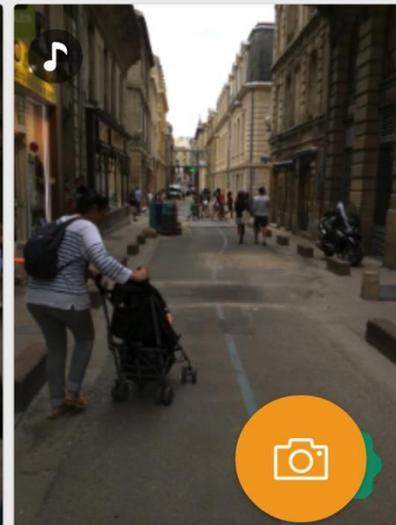
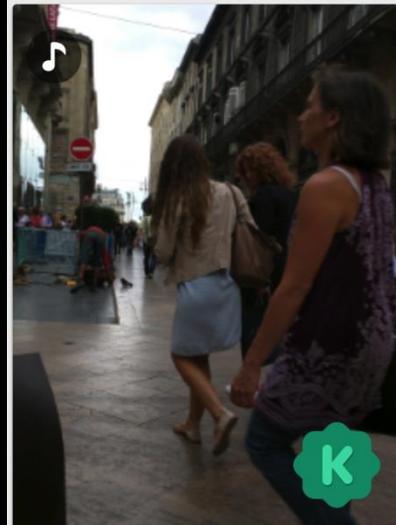
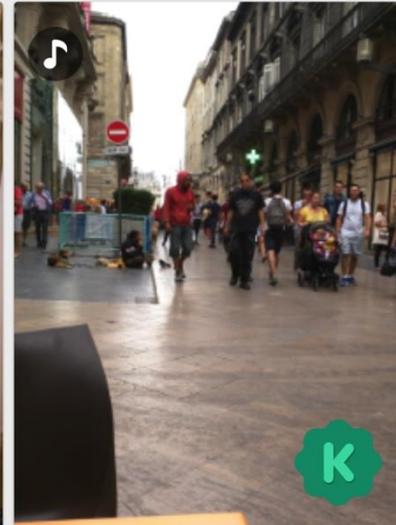
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↑ z x c v b n m ✕

?123 , . ✓

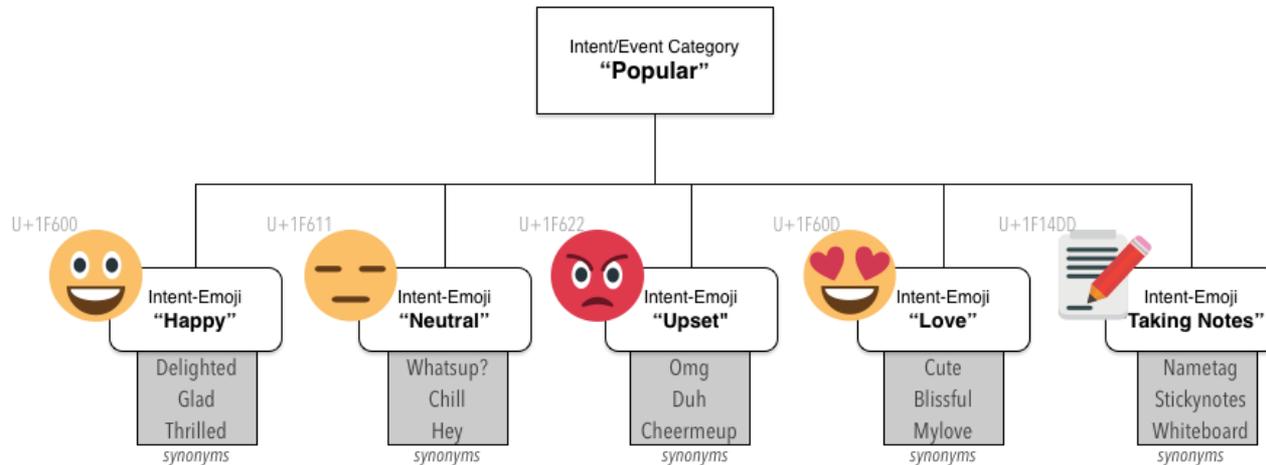
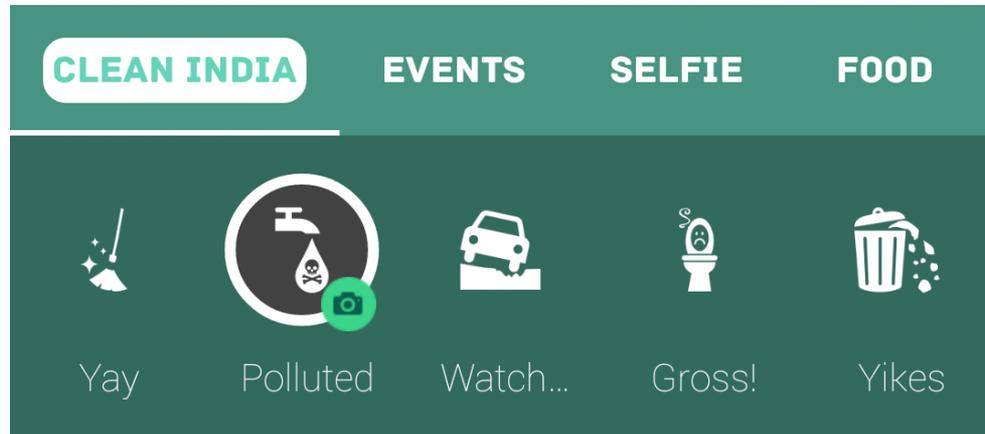


166 moments from Bordeaux

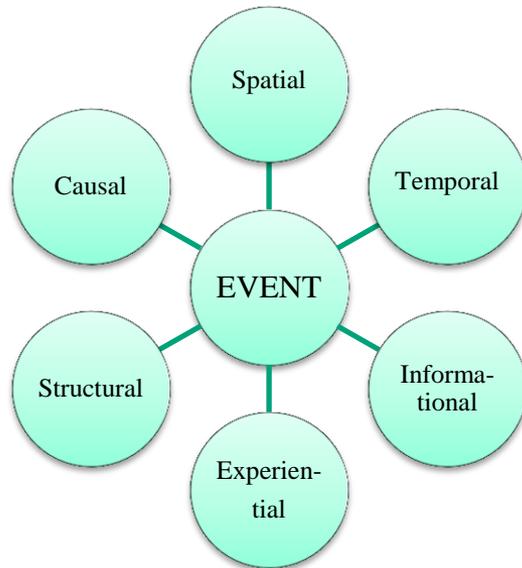




Krumbs SDK



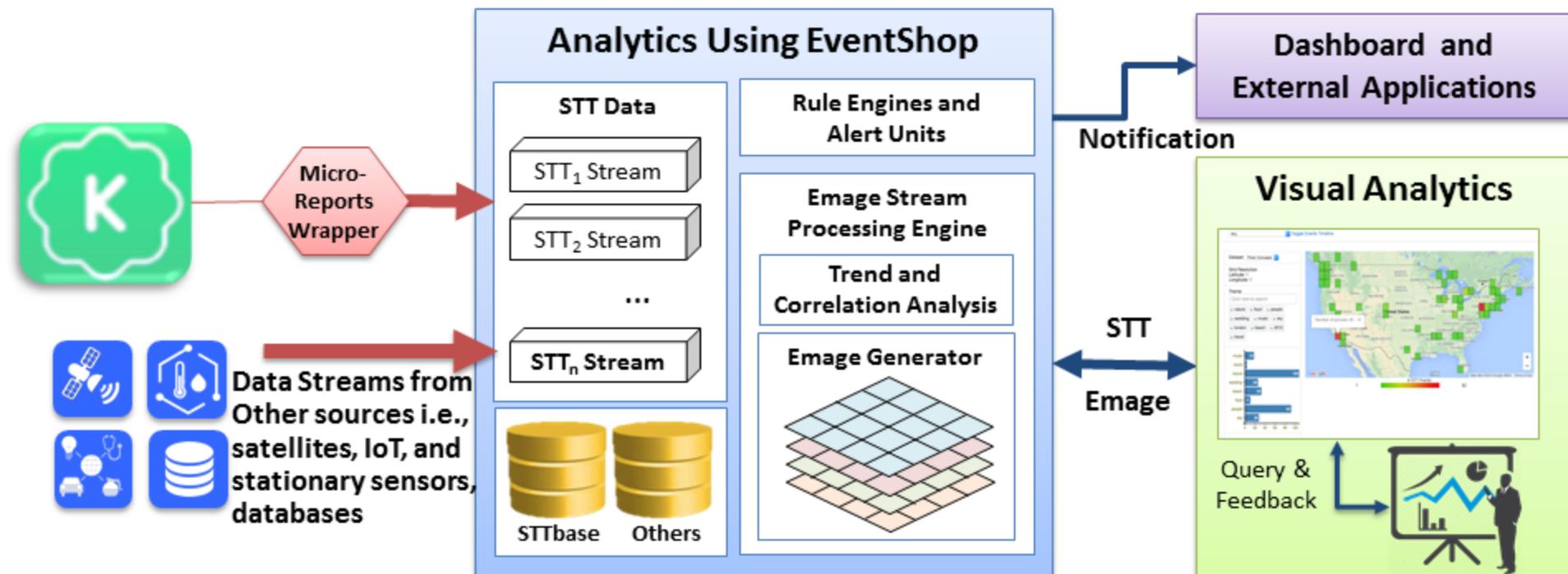
MediaJSON for each micro-report



```
{ "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.

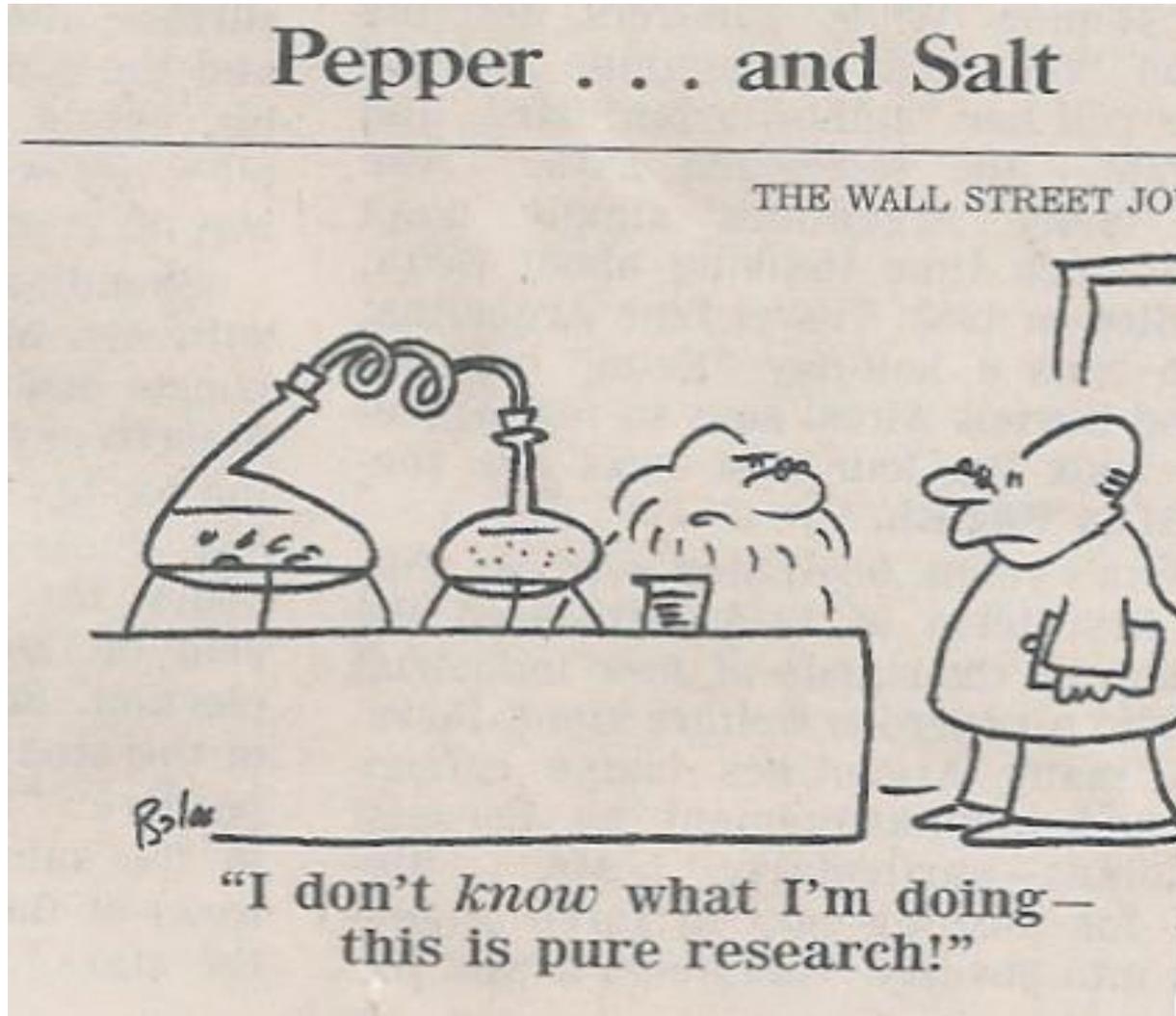
- Develop a ‘wrapper’ for each micro-report and create MediaJSON.
- Aggregate it.



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.

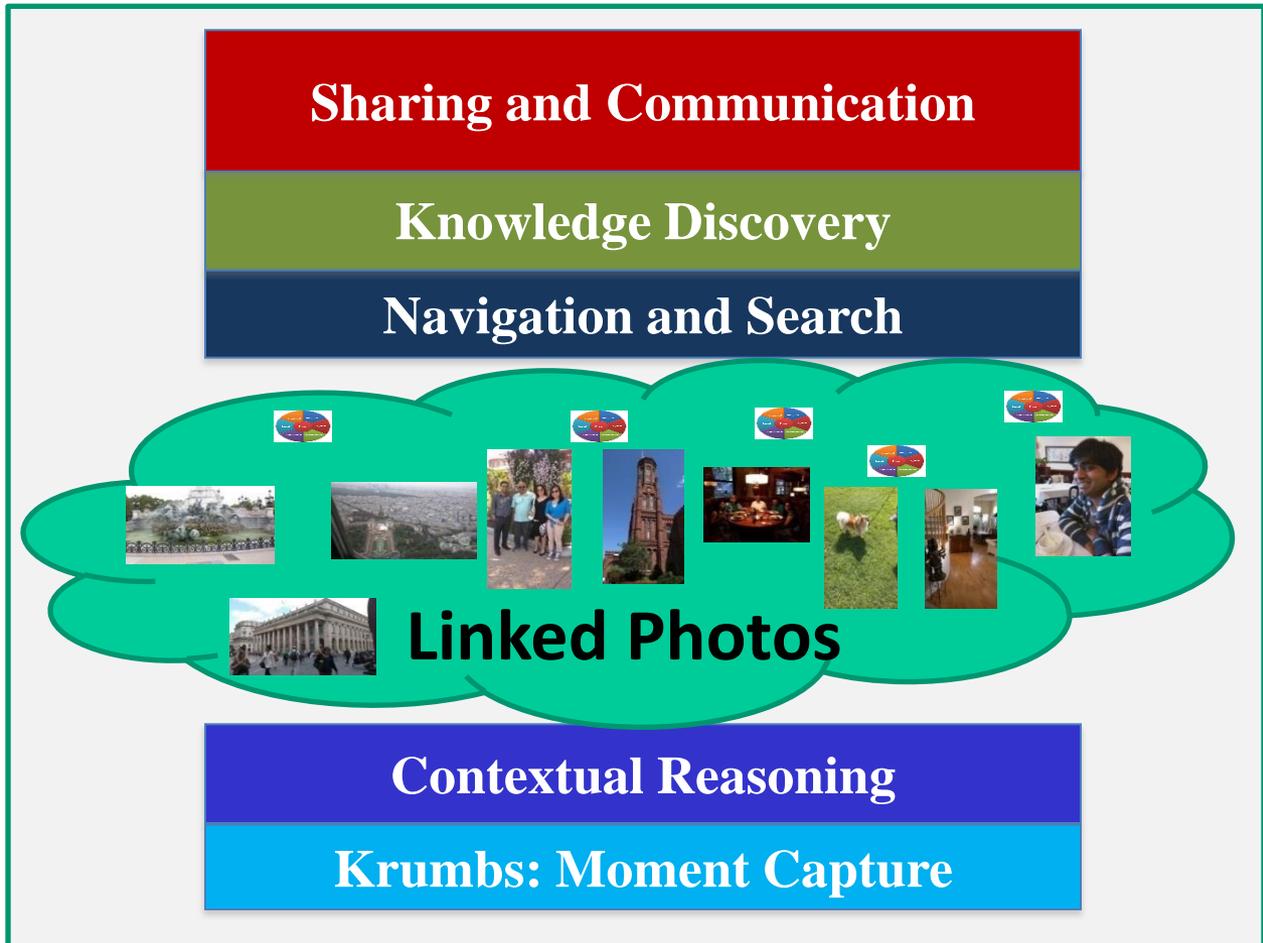


For questions: jain@ics.uci.edu

Krumbs: Visual Information Platform

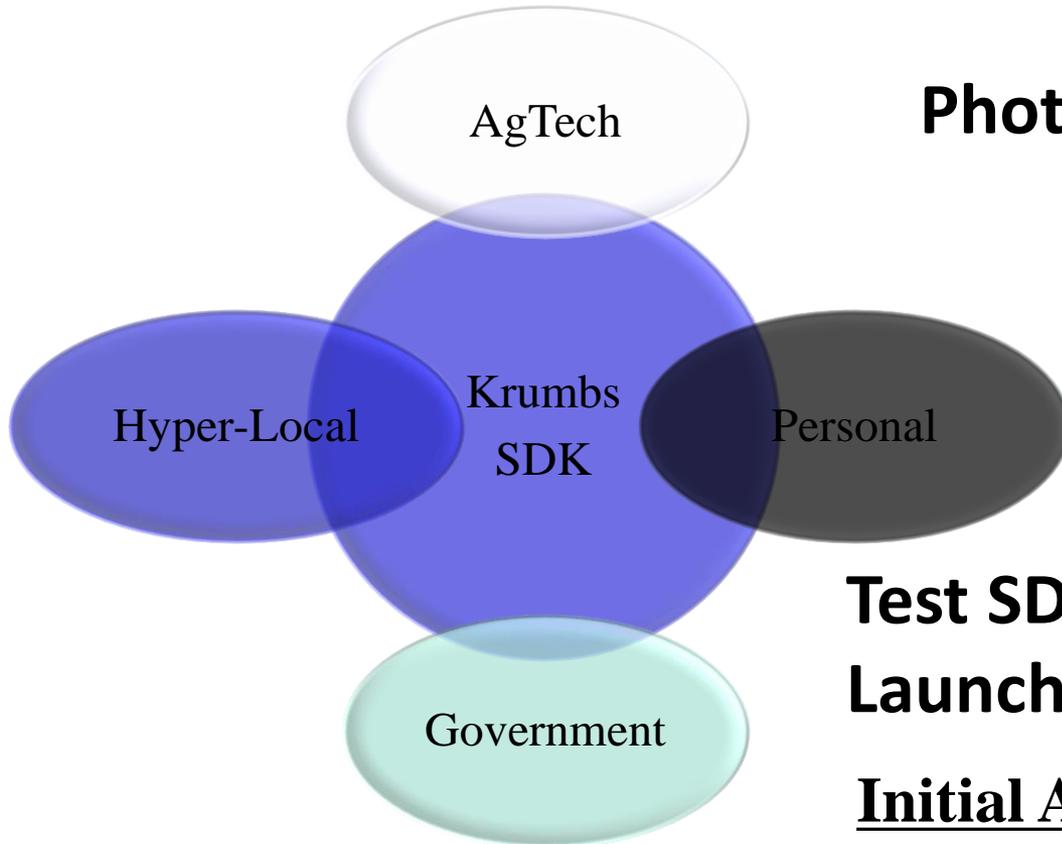


Krumbs SDK:



Krums SDK:

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



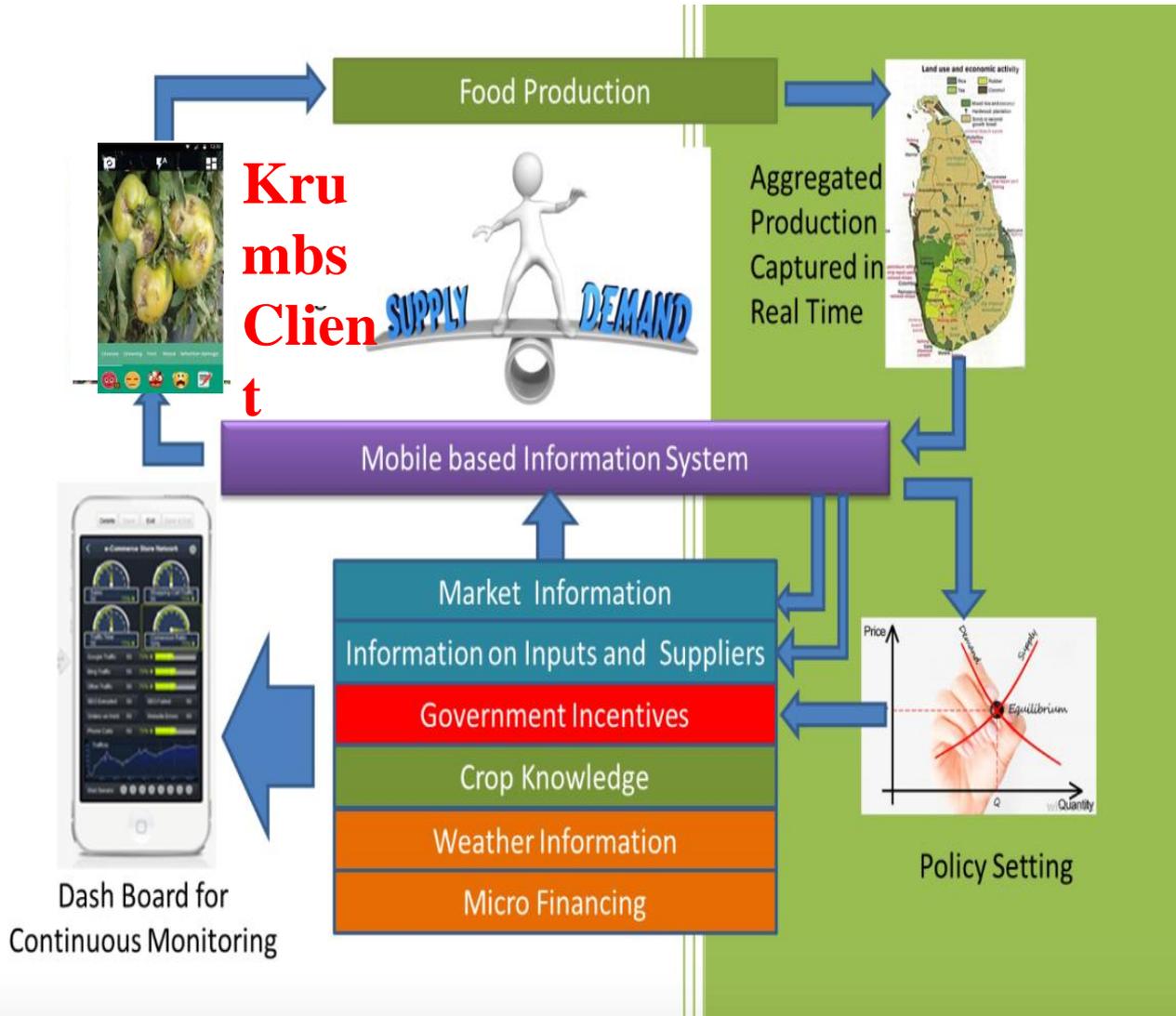
Photos are New micro-blogs.

**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

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.



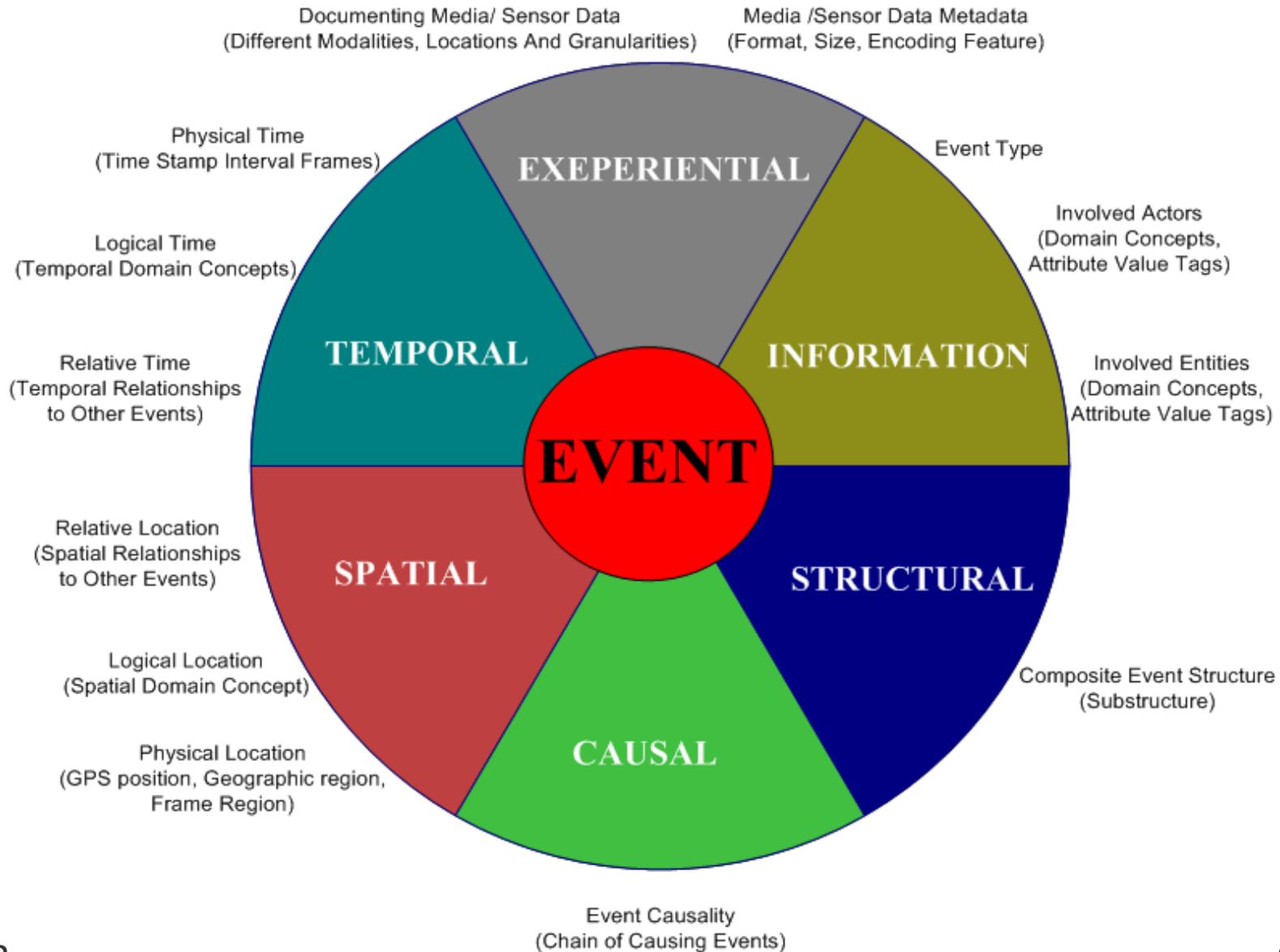
With community-edited maps, you won't hit a dead end

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

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**