Local Advisory Board Meeting
Blacksburg, VA – 9/29/2009

Crisis, Tragedy, and Recovery network (CTRnet)

Edward A. Fox

Virginia Tech, Digital Library Research Laboratory

fox@vt.edu   http://fox.cs.vt.edu   www.dlib.vt.edu
www.dl-vt-416.org
www.ctrnet.net

Outline

▸ Introductions

▸ Overview of proposal and project

▸ Reports from co-PIs and students

▸ Discussion of priorities

▸ Advice/recommendations

Attendees (plus CS5604 team)

Co–PIs:	Advisory Board:
Fox, Ed	Blythe, Erv
Kavanaugh, Andrea	Guilbaud, Patrick
Ramakrishnan, Naren	Hawdon, James
Sheetz, Steve	Jones, Russell
Shoemaker, Don	Luke, Tim
GRAs:	McMillan, Gail
Dewanjee, Bidisha	North, Chris
Srinivasan, Venkat	Nowak, Jerzy
Chigani, Amine	Powers, Jim

External Advisory Board

- Starr Roxanne Hiltz – NJ Institute of Technology
- Murray Turroff – NJ Institute of Technology
- Kristine Hannah – Internet Archive
- Susan Metros – U of Southern California
- Ben Shneiderman – U of Maryland
- Padmini Srinivasan – U of Iowa
- Eric Van de Velde – Caltech
- OTHERS????

The 4/16 Digital Library

VirginiaTech

A digital library for recovery, research, resources, analysis and community relating to 4/16/2007, and after, at Virginia Tech

Share
Share your stories, photos and videos with us.

Resources
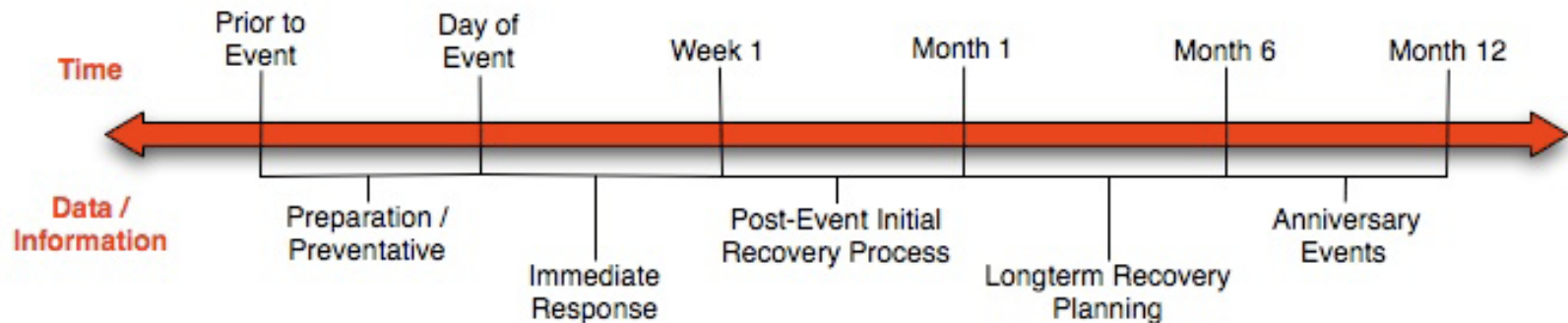Browse our multimedia and external link collections.

Analysis
Query the resources, generate visualizations, data mine for patterns, and share results.

Thanks to: NSF IIS-0736055

Crisis, Tragedy, and Recovery

▸ Human tragedies that result from man-made and natural events affect communities significantly.

▸ During and after a tragic event, there are a series of needs that have to be addressed.
  ◦ Usually centered around communication and a confusing plethora of data and information

Intro: Broader Interest

- Kauhajoki Finland shooting
- Northern Illinois U. shooting
- Texas A&M Bonfire disaster (Project BEAM)
- Beslan school massacre
- Requests for help with documentaries
- MoU with eIFL.net (Iryna Kuchma)?
- Proposal to Google Research?
- Support by Regroup?
- **Interest:** counseling, psychology, sociology, history, oral history, technology use, …

  - **Idea: distributed digital library network, with world-wide collaborating community**

Intro: Crisis, Tragedy, and Recovery (CTR) Interest

Year	Event	IA Collection	Wikipedia suffix, other URLs
2004	Asian Tsunami	2004	Indian_Ocean_earthquake, tsunami.archive.org
2007	Burmese Uprising	937	2007_Burmese_anti-government_protests
2007	California Wildfires	877	California_wildfires_of_October_2007
2008	Georgia and Russia Conflict	1120	2008_Georgia–Russia_crisis
2005	Hurricane Katrina	174	Hurricane_katrina, www.hurricanearchive.org, hellicane.blogspot.com, everythingandnothing.typepad.com katrinapoetry
2008	Iowa Flood	1092	Iowa_flood_of_2008
1998	Matthew Shepard murder	1075	Matthew_Shepard
2008	N. Illinois U. Shooting	970	Northern_Illinois_University_shooting
2008	Tibet protests	1044	Tibet_protests
2007	VT April 16 Shooting	694	Virginia_Tech_massacre, www.april16archive.org
2008	Zimbabwean crisis	1048	Zimbabwe, www.crisiszimbabwe.org

Plan: school shootings, school events, then to full set of natural / man-made

Broad Project Research Questions

▸ How can a portion of the CTR Network be built semi-automatically, drawing upon related digital libraries, web pages, query logs, Web 2.0 applications, and other readily available Internet resources?

▸ How can this CTR Network be utilized, efficient-ly and effectively, for a wide variety of tasks?

▸ What kind of (usable) user interfaces can facili-tate building and utilizing the CTR Network?

▸ How can our solution be evaluated and validated, leading to a widely used methodology?

Related Work: Analysis in Response to Crisis Situations

- Facebook Study
- If you used a social networking website to communicate to others that you were safe or OK, which website did you use first?
  - 426 responses
  - Content Analysis
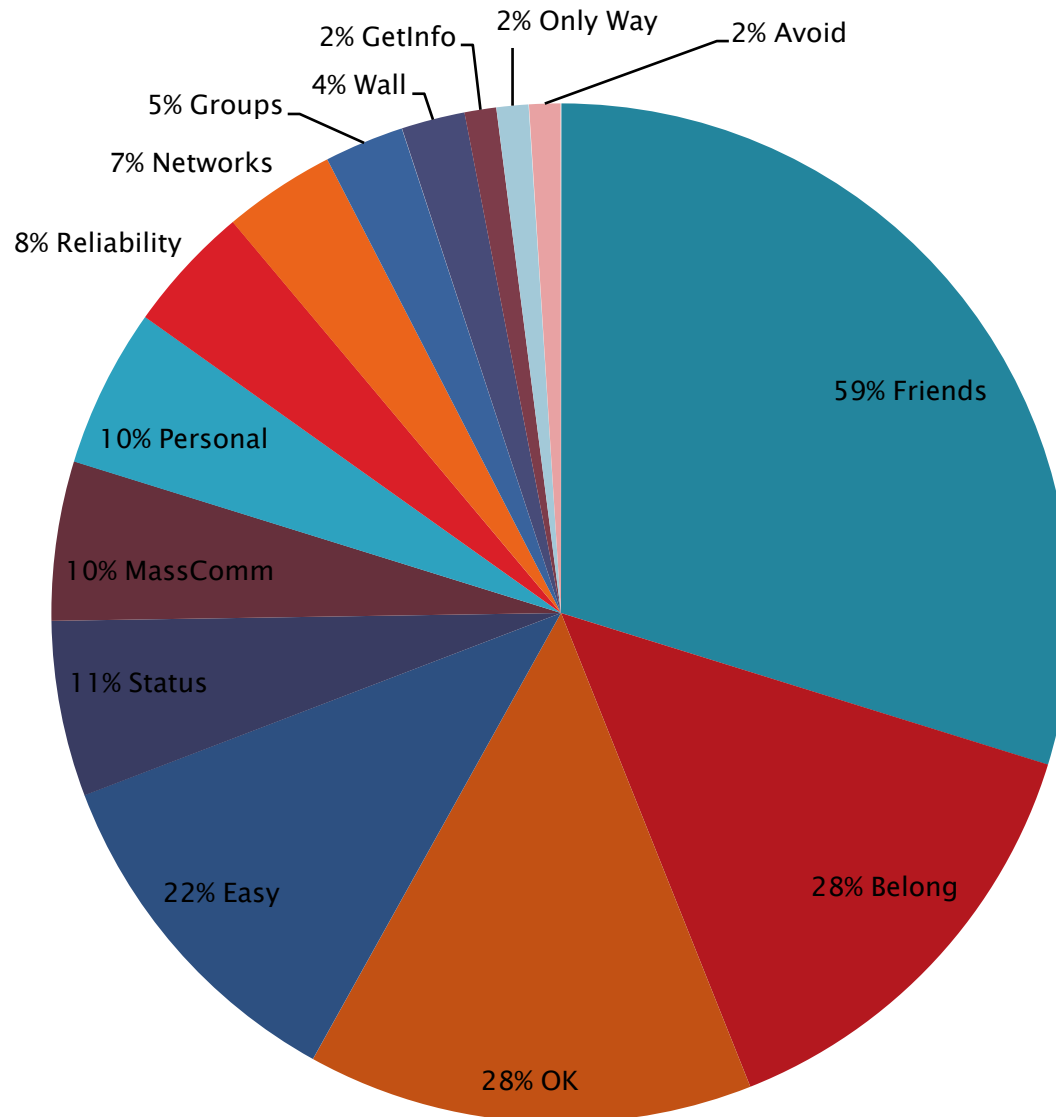 - Results

Related Work: Keywords for coding

Avoid	Don't have to deal with AIM or phone calls.
Belong	Only social networking website respondent belongs to or they say that they had an account at the time.
Easy	Easy (and quickly) way to contact people or saying I know how to use Facebook.
Friends	Friends and other peers use this particular social networking website, must have thought that friends are on this site, everyone means their friends.
GetInfo	Went to the site to get information or best information.
Groups	Joined groups to connect with others.
Mass Comm	Wanted to reach many people at once, must have the intent to contact many people. Not make a direct connection with individual.
Networks	Means that the site is the most popular or has the most people.
OK	Idea that they went to the site for the purpose of letting others know they were OK or checking if others were OK.
Only Way	For some lost touch friends, this was the only method of communication available
Personal	Personal messages to or from individuals were utilized.
Reliability	Cell phone or other services were unreliable, however, social networking, websites were online the entire time allowing for faster response time
Status	Indicates that they used the public status feature to provide or receive updates about who was OK faster
Wall	A general post could be left on one's own "wall" indicating they were OK. Ability to post single message for all friends to see. Anytime posting is mentioned.

CTR keyword pairs from literature

Extracted top keyword pairs from ISCRAM proceedings using the N-gram statistics package
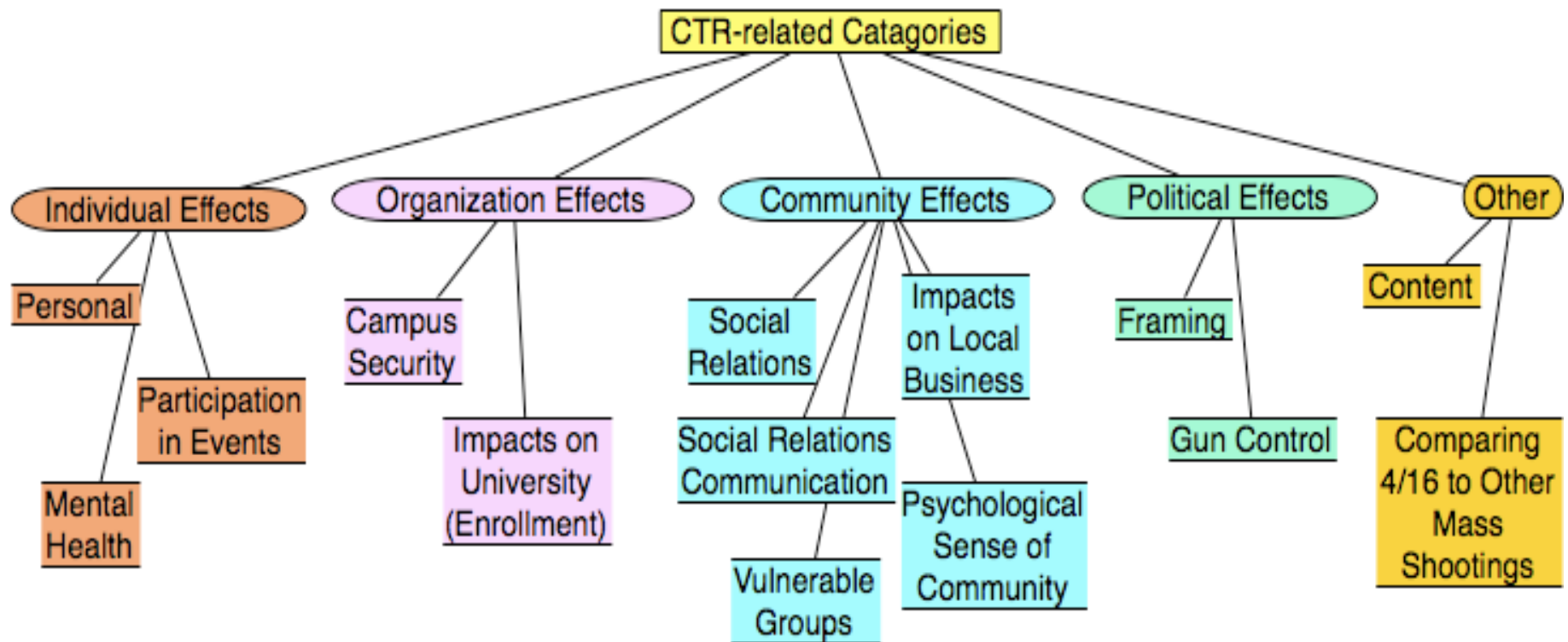
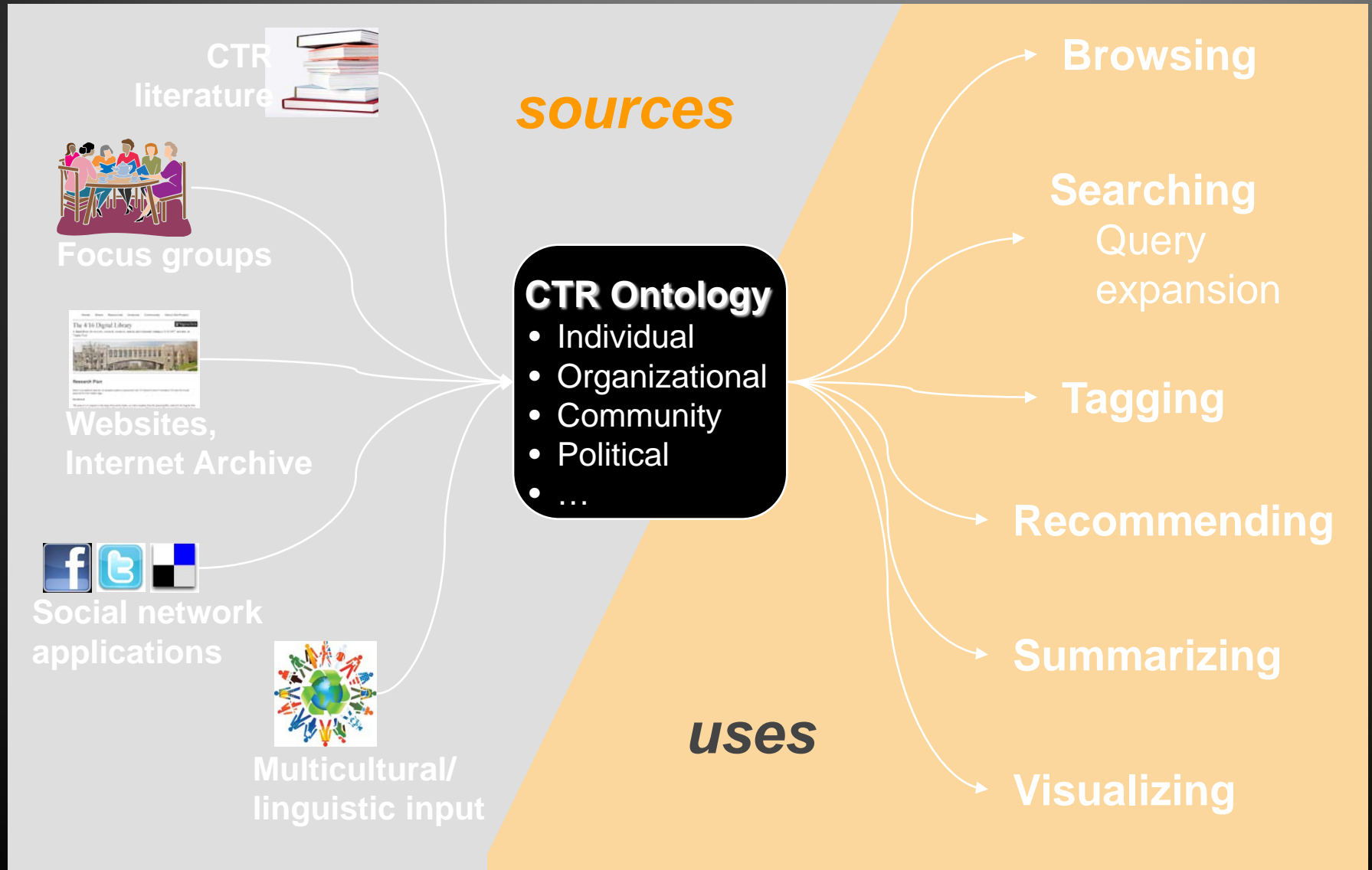| emergency response	decision support	information systems	teams participants
decision making	data models	disaster monitoring	teams maps
command teams	disaster plan	crisis management	sms text-message
flood alerts	information seeking	situational awareness	disaster registry
physical communication	human disaster	teams access	decision preference

Related Work: Coding Results

Categories from focus group study

Results from focus group interviews following the April 16, 2007 tragedy at Virginia Tech
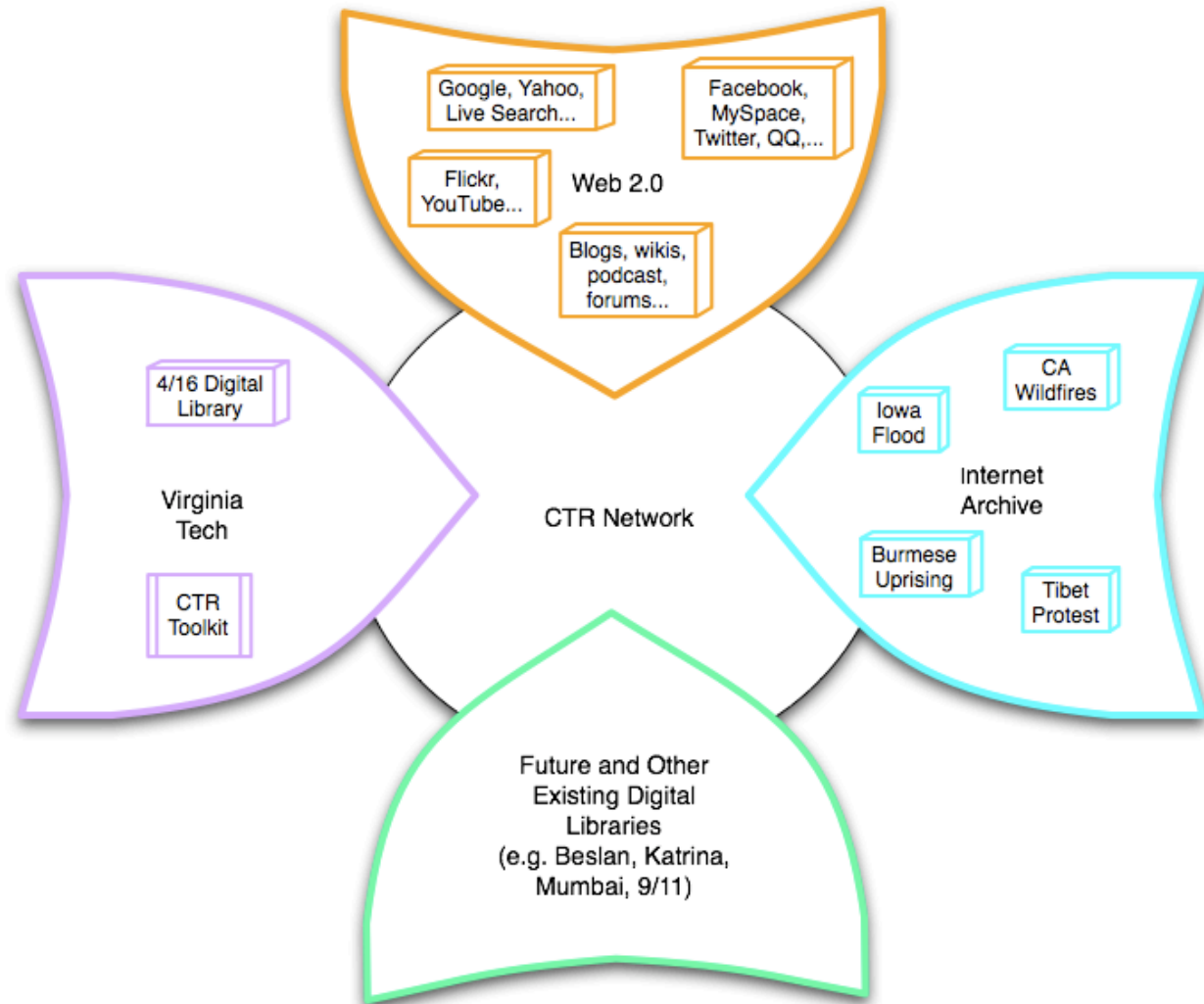
An ontology for CTR

CTR literature

Focus groups

Websites, Internet Archive

Social network applications

Multicultural/ linguistic input

sources

CTR Ontology
- Individual
- Organizational
- Community
- Political
- ...

uses

Browsing

Searching
Query expansion

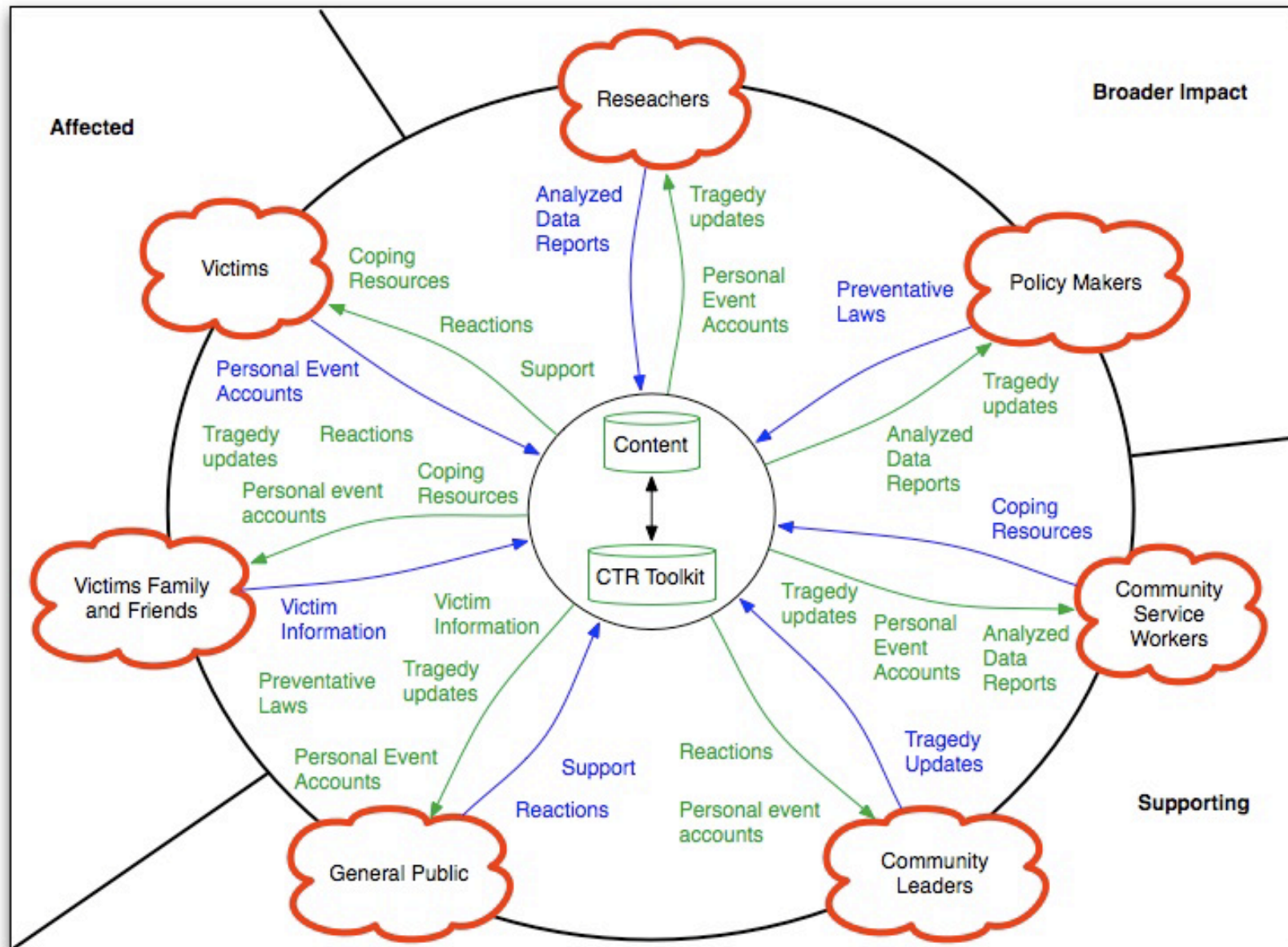**Tagging**

Recommending

Summarizing

Visualizing

Crisis, Tragedy, and Recovery Network (CTRnet)

▸ Build a networked digital library relating to CTR

▸ Integrate community, content, and services relating to CTR, making it accessible, and preserving it for long-term reuse
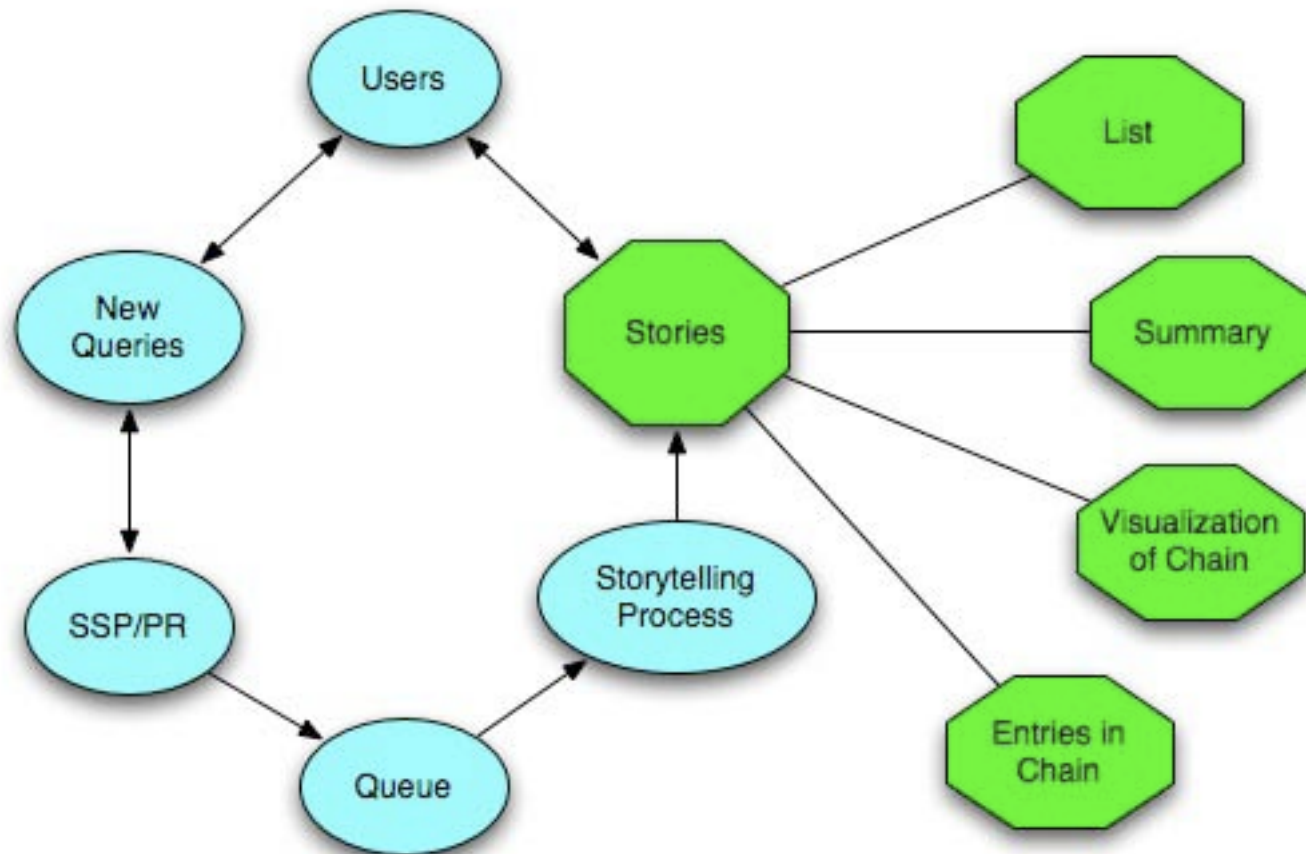
▸ Support information exploration

▸ Aided by an ontology

System Stakeholders

Approach: Services

Infrastructure Services		Information Satisfaction Services
Repository-Building	**Add Value**	
Acquiring	Classifying	Browsing
Cataloging and Annotating	Clustering	Collaborating
Crawling	Entity Extraction, and Integration through URM	Customizing
Digitizing	Evaluating	Filtering
Federating	Auto Tagging	Providing access
Harvesting	Publicizing	Recommending
Submitting	Rating	Searching
Indexing	Ontology building	Visualizing

Approach: SSP and Storytelling

Research Questions – sample

An important goal of the CTRnet project is to provide assistance to researchers, especially from social / behavioral science fields. Listed below are a few research questions which are connected with school shootings and similar tragedies.

1. What are the social parameters of social networking (such as Facebook and Myspace) in reaction to school tragedies?   For example, do women use social networking more often than men? Is social networking more common among students than faculty or staff? Is social networking more common among university personnel than within the community?

▸ (cont'd)

Research Questions – continued

2. How do school structures affect responses to tragedies? What is the impact of tragedies on community structures and school-community relationships?

3. Are there stages of grieving within a community? We know people go through several stages of grief in reaction to the loss of loved ones. Do communities also go through stages of grief in reaction to tragedies?

4. What are the characteristics of school administrations in reaction to tragedies? For example, do schools vary in initial reactions to tragedies, such as communication and class schedules? Are there differences with regards to long-term effects of tragedies, in terms of organization and communication systems?

5. Are there international differences in response to school shootings? Are these differences evident in school and community settings?

Questions

▸ Other VT people, partners, collaborators, sponsors, members of external board?

▸ Should we run more focus groups?

▸ Pointers to

  ◦ papers, classes, case studies, publications?

▸ Ontology

  ◦ what should it contain?

Priorities

1. Find key partners
2. Work with data in hand re VT, NIU
3. Prepare to crawl with IA; practice, train others
4. Collect key information especially related to school shootings worldwide
5. Demonstrate storytelling & SSP integration
   - Using social/behavioral science research questions
6. Plan CTR computer
   - Key tools
   - Key content
7. Initial release – of interest to general public

Thank you

http://www.ctrnet.net

VirginiaTech