9-6-2013

Who Will Archive the Archives? Thoughts About the Future of Web Archiving

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Who Will Archive the Archives?
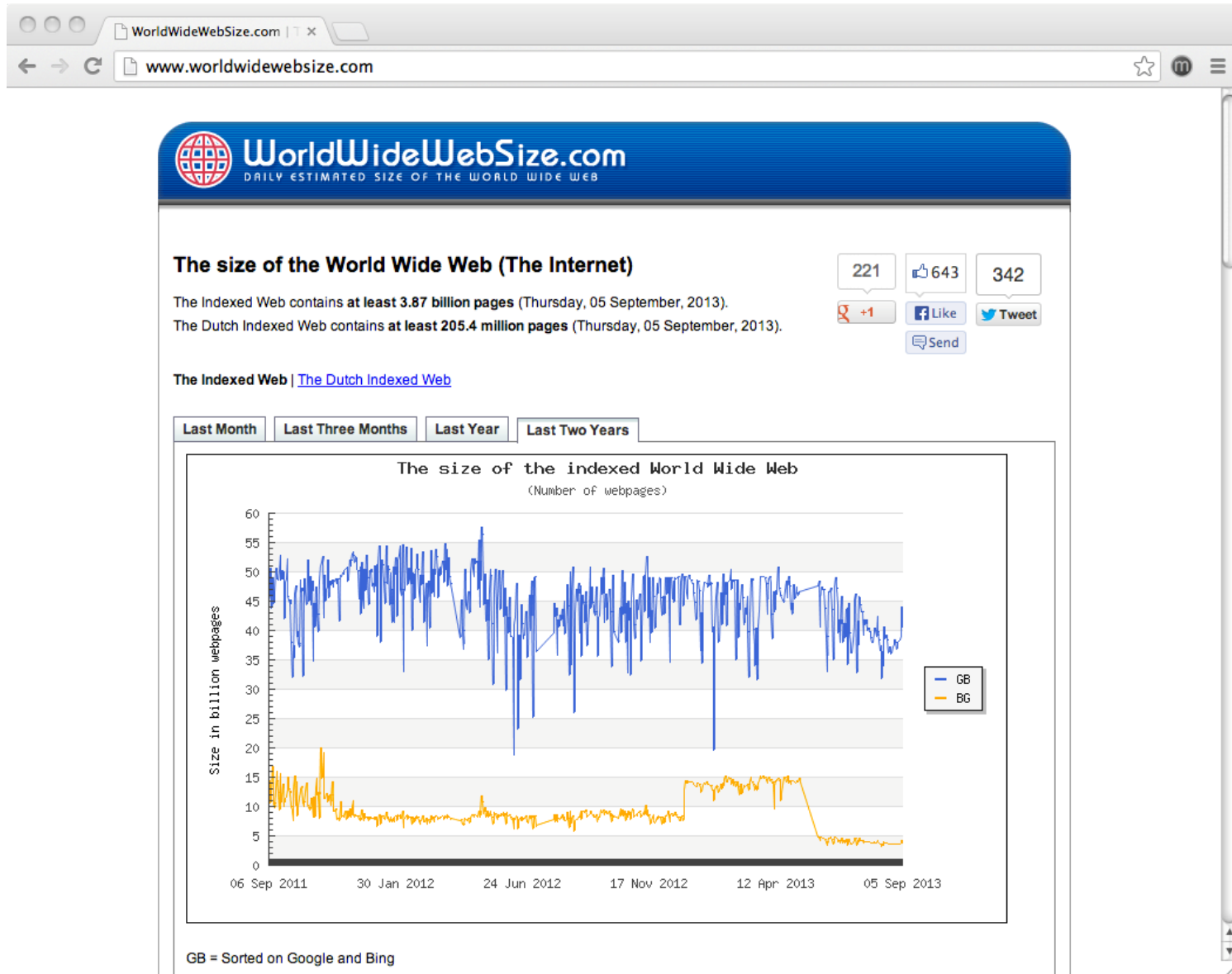## Thoughts About the Future of Web Archiving

Michael L. Nelson

Old Dominion University

with:

Old Dominion University: Scott G. Ainsworth, Ahmed AlSum, Justin F. Brunelle, Mat Kelly, Hany SalahEldeen, Michele C. Weigle

Los Alamos National Laboratory: Robert Sanderson, Herbert Van de Sompel

Web Archiving: Big Data?

Two Common Misconceptions About Web Archiving

- Prior = old = obsolete = stale = bad
  - who cares, not an interesting problem

- The Internet Archive has every copy of everything that has ever existed
  - who cares, problem solved

Why Care About The Past?

From an anonymous WWW 2010 reviewer about our
Memento paper (*emphasis* mine):

"Is there any statistics to show that many or a good number of Web *users would like to get obsolete data or resources?* "

one answer: replay of contemporary pages >> summary pages

http://www.slideshare.net/phonedude/why-careaboutthepast
http://www.nytimes.com/2013/06/19/books/seven-american-deaths-and-disasters-transcribes-the-news.html

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CNN.com Home Page - **U.S.** - **Weather** -   More CNN.com sections: ▾   **Special Reports**

CNN's coverage of Katrina and the aftermath won a 2006 Peabody Award, the oldest honor in electronic media.

Hurricane Katrina

HURRICANE KATRINA MAIN PAGE

Editor's Note: This special report was archived in September 2006.

Voices from the Gulf Coast

August 29, 2005: Hurricane Katrina made landfall on the Gulf Coast, destroying lives, leveling homes and leaving thousands of survivors with the same story: We lost everything. One year later, many still coped with Katrina's devastation. Some had moved forward, but for others recovery was at a standstill. CNN.com visited the region to get their stories.

Rebuilding
· Mardi Gras
· Panoramas

People
· Your Stories
· One Family's Story
· Evacuation

Rescue & Relief
· Help Center

Storm & Flood
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Hurricane Season

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Updated: 11:16 a.m. EDT (15:16 GMT), August 27, 2005

Strengthening Katrina to hammer Gulf Coast
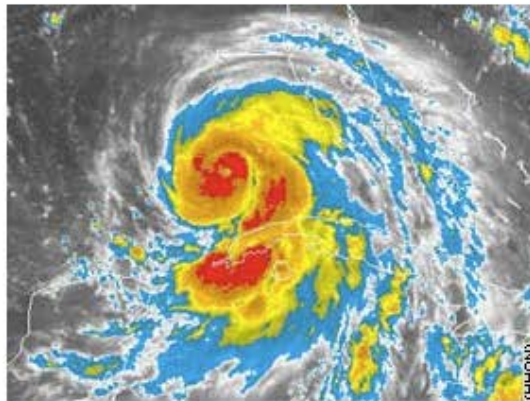
Blamed for at least seven deaths in Florida, powerful Hurricane Katrina is becoming stronger as it churns in the Gulf of Mexico. Forecasts say it's poised to deal a hammer blow to the Mississippi Gulf Coast and southeast Louisiana as a possible Category 4 storm early next week. Meanwhile, residents of southeast Florida are cleaning up after Katrina cut across the state packing strong winds and dumping heavy rain.

FULL STORY

• Watch: Oil rig evacuates | Homes flooded

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Most Popular ▶

- 1,000 prisoners released from Iraq prison
- Brothers held again in Natalee Holloway case | Watch
- Vote to save bases in 2 states, lawsuit in third | Watch
- Watch: Anti-Sheehan group takes duel to Texas (2:20)
- Power-packed muscle cars come roaring back
- Oprah 'furious' at funeral snub claim
- U.S. soldier killed in Afghan attack
- Bush counsels patience in viewing Iraq war
- Criminal probe into 17 Paris fire deaths | Gallery | Watch

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Mistaken for a terrorist (2:17)

Soundcheck with Faith Hill (2:35)

Now In The News (11:14 a.m. ET): Your quick news update

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BUSINESS at CNNMoney

Markets: As of close Aug 26

DOW	▼ -53.34	10,397.29
NAS	▼ -13.60	2,120.77
S&P	▼ -7.29	1,205.10

ON CNN TV
Schedule ▶

Dead Wrong: Inside an Intelligence Meltdown
How did U.S. intelligence get it so wrong? CNN investigates how faulty intelligence led to the Iraq

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Updated: 11:07 p.m. EDT (03:07 GMT), August 27, 2005

Katrina drives people away from Gulf Coast

People leaving New Orleans pack highways.

Tourists and New Orleans residents are leaving the city as Hurricane Katrina churns closer to Louisiana and Mississippi. Officials fear New Orleans is vulnerable because it sits an average of 6 feet below sea level. Katrina could be a category 4 when it makes landfall. "This is a very, very dangerous hurricane," says hurricane center Director Max Mayfield.

FULL STORY

• Watch: 'Very concerned' | 'Big Easy' prepares

MORE NEWS   Most Popular ▸

• Northwest strikers stay on picket lines
• California files french fry lawsuit
• Dual protests square off in Crawford | Watch
• CNN/Money: Greenspan: End of home boom inevitable
• Encephalitis outbreak hits children, poor | Watch
• Oprah 'furious' at funeral snub claim
• Watch: Will aging rats lead to younger people?
• Tall, twisted building opens
• 'Milkshake murder' trial nears end
• Dutch investigate producer's 'Big Brother' baby plan

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Living longer (2:05)

Nail polish car (:56)

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Reasonable Doubt: Can crime labs be trusted?
DNA has cleared some innocent people. But forensic

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Updated: 10:56 a.m. EDT (14:56 GMT), August 28, 2005

New Orleans orders mandatory evacuation

BREAKING NEWS
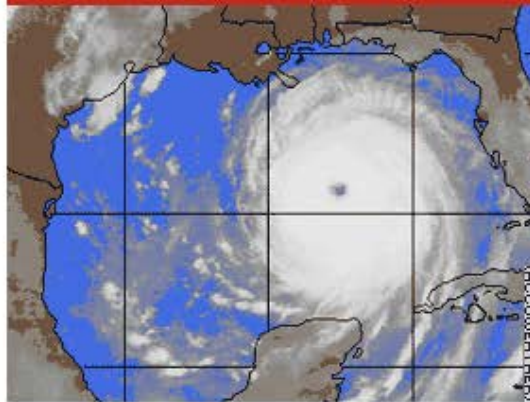
With powerful and strengthening Hurricane Katrina headed straight for his city, the mayor of New Orleans today ordered the mandatory evacuation of residents. The Category 5 storm has maximum sustained winds near 175 mph and has already been blamed for nine deaths in South Florida. Looking ahead, Max Mayfield of the National Hurricane Center said: "It has the potential for a large loss of life."

DEVELOPING STORY

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- Suicide bomber injures 21 in Israel | Watch
- California files french fry lawsuit
- Dual protests square off in Crawford | Watch
- Watch: Will aging rats lead to younger people?
- 'Milkshake murder' trial nears end
- Report: Swazi princess whipped for loud music
- USS Monitor's cat mystery
- Rap mogul 'Suge' Knight shot at Miami party

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Lap danger (2:48)

Human cannonball crosses border (:48)

Now In The News (10:33 a.m. ET): Your quick news update

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ON CNN TV Schedule ▸

Reasonable Doubt: Can crime labs be trusted? DNA has cleared some

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Updated: 7:58 p.m. EDT (23:58 GMT), August 29, 2005

Killer Katrina heading inland

Residents in New Orleans struggle to keep above the rising flood waters.

Killer Katrina heading inland

- Mississippi: Three dead, "unprecedented damage"
- More than 50 rescued from floods in New Orleans
- Katrina downgraded to tropical storm
- Parts of six Louisiana parishes "devastated"
- Oil rig breaks loose, hits Mobile River bridge
- "Life-threatening storm surge flooding" occuring

DEVELOPING STORY

- Watch: Wind flogs Mobile | A beaten 'Big Easy'
- Watch: Katrina's destructive day | Biloxi battered
- Gallery: Photoblog | CNN reporters: In the heart of storm
- Special Report: Tracking Katrina | In depth | Gallery
- Citizen Journalist: Your e-mails | Gallery | Share your story

MORE NEWS   Most Popular ▸

- New Orleans refugees told stay away | Watch
- Downtown Mobile under water | Watch
- CNN/Money: Wholesale gas prices soar | Watch
- TIME.com: Is global warming fueling Katrina?
- CNN/Money: Storm cost could hit $16B | Watch
- Struggling airlines hit by Katrina groundings
- Eight ex-KPMG execs indicted
- Workers struggle to save seals

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Ripping and roaring through the Gulf (2:27)

The Big Easy takes a battering (2:00)

Now In The News (6:30 p.m. ET): Your quick news update

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BUSINESS at **CNNMoney**

Markets: 5:16 p.m. ET, Aug 29

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Katrina continuing coverage

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Updated: 5:33 a.m. EDT (09:33 GMT), August 30, 2005

54 DEAD IN MISSISSIPPI

Levee breached in New Orleans

Residents struggle to keep above the rising flood waters.

Levee breached in New Orleans

- Estimated 50 dead in 1 Missisipi county, officials say
- Levee breach in New Orleans forces hospital evacuation
- 1.3 million without power
- Tens of thousands to be homeless for months
- American Red Cross launching its largest relief operation

FULL STORY

- **CNN Access:** My apartment complex is totally leveled
- **Watch:** Rescued from a roof | Water rises to eaves
- **Gallery:** Photoblog | CNN reporters: In the heart of storm
- **Special Report:** Tracking Katrina | In depth | Gallery
- **Citizen journalist:** Your e-mails | Gallery | Share your story

MORE NEWS   Most Popular ▸

- Huge relief effort under way
- 54 die in Mississippi, 50 in one county | Watch
- Louisiana evacuees told stay away | Watch
- Downtown Mobile under water | Watch
- CNN/Money: Wholesale gas prices soar | Watch
- TIME.com: Is global warming fueling Katrina?

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Up close on the devastation in New Orleans (1:57)

A tour of the damage in New Orleans (2:42)

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Updated: 1:44 p.m. EDT (17:44 GMT), August 30, 2005

STATES OF DEVASTATION

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no longer available

Floodwaters from Hurricane Katrina cover a portion of New Orleans today.

Death toll rising in Katrina's wake

• **Impact:** Katrina's toll leaves Gulf Coast reeling | Watch
• **People:** Survivor describes harrowing experience| Watch
• **Recovery:** Aid groups sending rescuers, supplies | Watch
• **Assistance:** How to help storm victims | Watch

DEVELOPING STORY

• **Watch:** Screams for help | Day that wouldn't end
• **Watch:** Katrina-spawned tornado destroys farm
• **Watch:** 'Everything is gone' | Rooftop rescue| Katrina's fury
• **Special Report:** Tracking Katrina | Gallery | Map
• **Assisting victims:** Do you want to help?
• **Citizen journalist:** Your e-mails | Gallery | Share your story

MORE NEWS

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• **'Significant' death toll in New Orleans** | Watch
• **Mississippi governor vows to rebuild** | Watch
• **Survivors 'screaming for help'** | Watch
• **Bush cuts short vacation because of Katrina**
• CNN/Money: **Katrina closes 123 Wal-Marts**
• CNN/Money: **Oil hits record near $71** | Watch
• **Katrina overwhelms weather Web sites**

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Rescue efforts under way (2:47)

Water pours into New Orleans (1:19)

Now In The News (1:31 p.m. ET): Your quick news update

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Updated: 6:14 a.m. EDT (10:14 GMT), August 31, 2005

SLIPPING INTO CHAOS

A shotgun-toting New Orleans police officer has a word with a man on Canal Street.

(THE DAILY ADVERTISER/AP PHOTO)

Unrest grows in New Orleans

- Water still rising in Crescent City, with no way out
- Looting, shootings reported
- New Orleans mayor blasts failure to patch levees
- Louisiana governor declares day of prayer
- Critical patients being airlifted, shelters being evacuated
- Paint marks indicate Mississippi homes with bodies

FULL STORY

- Watch: Chaotic aftermath | Tragedy, devastation
- Watch: The struggle to survive | Nature's fury explained
- Special Report: Trail of destruction | Gallery | Map | Blog
- Citizen journalist: Your e-mails | Gallery | Share your story
- Hotlines: Emergency info | How to help

MORE NEWS   **Most Popular ›**

- Mayor blasts failure to patch levee breaches
- Tensions rising in New Orleans | Watch
- Relief efforts mobilizing | Watch
- Victims left with nothing | Watch
- States struggle with destruction | Watch
- Alabama power outage statewide | Watch
- Mississippi expects heavy death toll | Watch

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Lifted to safety (2:32)

Hurricane Katrina's ongoing aftermath (4:00)

Now In The News: Your quick news update

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Updated: 3:44 p.m. EDT (19:44 GMT), August 31, 2005

HEALTH EMERGENCY

Health fears as bodies lie in water

- Public health emergency declared; cholera, typhoid fears
- Katrina death toll so far rated at least 120
- New Orleans mayor says toll in his city will be hundreds
- Superdome evacuees moving to Astrodome

FULL STORY

- Watch: Saved by a tree | Dome must be evacuated
- Watch: For Slidell, very bad bump in road
- Special Report: Trail of destruction | Gallery | Levee system
- Citizen Journalist: Your e-mails | Gallery | Share your story
- Hotlines: Where to get and give help

Survivors on an apartment building roof try to get the attention of rescuers.

MORE NEWS   Most Popular ▸

- Public health threat looming | Watch
- Superdome victims moving to Texas | Watch
- CNN reporters: Heartbreak across the coast
- Feds fan out for storm recovery efforts | Watch
- Wife makes desperate trip with husband's body
- Watch: Wife searches for missing husband

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Health risks post-Katrina (2:18)

Clinging to a tree (3:25)

Now In The News (3:31 p.m. ET): Your quick news update

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Updated: 9:51 p.m. EDT (01:51 GMT), August 31, 2005

GETTING OUT

Evacuation of survivors begins

- Public health emergency declared; cholera, typhoid fears
- First evacuee buses leave New Orleans
- Bush: "One of the worst national disasters"
- Extra 10,000 National Guard troops called up

FULL STORY

- Watch: Heartbreaking trip home | Searching for bodies
- Watch: How the levees broke | Saved by a tree
- Special Report: Trail of destruction | Gallery | Levee system
- Citizen Journalist: Your e-mails | Gallery | Share your story
- Hotlines: Where to get, give help | Tell people you're safe

Buses leave New Orleans with evacuees who had been holed up in the Superdome.

MORE NEWS   Most Popular ▸

- **CNN exclusive: Police unable to aid sick woman**
- Babies evacuated from ICU | Watch
- Public health threat looming | Watch
- Superdome evacuees head to Houston | Watch
- Huge sandbags planned for levee leaks |

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Desperate pleas (5:38)

Armed looting in New Orleans (2:30)

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Updated: 12:30 p.m. EDT (16:30 GMT), September 1, 2005

DESPERATION AND DANGER

Boat rescues suspended

- Boat rescuers asked to stand down due to dangers
- Huge crowd spotted at New Orleans convention center
- Gunfire, looting, small fires disrupt Superdome evacuation
- Citizens holed up in high-rises throng to buses
- Major buildings "pancaking" in Mississippi

DEVELOPING STORY

- **Watch:** 'Nobody in control' | Fires at Superdome
- **Watch:** Newborns rescued | Heartbreaking trip home
- **Special Report:** Trail of destruction | Gallery | Levee system
- **Citizen Journalist:** Your e-mails | Gallery | Share your story
- **Hotlines:** Where to get, give help | Tell people you're safe

Storm victims are stuck without food or water at the New Orleans Convention Center.

MORE NEWS   **Most Popular** ▸

- **Bush tells victims: 'A lot of help coming'**
- **CNN/Money:** Bush: 'Zero tolerance' on gouging
- **Town wiped off the map by Katrina**
- **CNN exclusive: Police unable to aid sick woman**
- **Spain MP among stranded in New Orleans**
- **Federal rescue teams arriving**

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FEMA suspends rescue operations (2:34)

Anger and outrage (3:38)

Now In The News (11:48 a.m. ET): Your quick news update

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Updated: 12:29 a.m. EDT (04:29 GMT), September 3, 2005

AID IN, PEOPLE OUT

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Military personnel distribute food and water Friday at the convention center in New Orleans.

Some hope returns to New Orleans

- Food and medicine arrives for desperate survivors
- 40,000 patients airlifted from hospitals
- Bush sees destruction -- and meets angry mayor
- But thousands still stranded in homes and centers

DEVELOPING STORY

- Watch: Fires and floods | Aid rolls in
- Watch: Bush: It seems dark right now | The military mission
- Special Report: Hurricane Katrina | Street-by-street
- Citizen Journalist: Your e-mails | Gallery | Share your story
- Hotlines: Where to get, give help | Tell people you're safe
- CNN TV: The struggle for New Orleans, on CNN

MORE NEWS   Most Popular ▸

- What was said vs. What was happening
- Exhausted evacuees pack airport | Watch
- On the Scene: Hopelessness in Mississippi
- Lt. Gen. Honore a 'John Wayne dude' | Watch
- Drying New Orleans could take months | Watch
- Bush admits relief efforts 'not enough' | Watch

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Role of race questioned (2:14)

Medical nightmare (1:49)

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Updated: 6:08 p.m. EDT (22:08 GMT), September 4, 2005

HELICOPTER HEROES

BREAKING NEWS

Rescuers going roof-to-roof

- AP: Amy engineers say police shoot dead its contractors
- Helicopters dropping supplies, picking up survivors
- Convention center mostly evacuated
- Mayor: Police, firefighters traumatized

DEVELOPING STORY

- Watch: Coast Guard rescuers | Some refuse to leave
- Watch: Mississippi wipe out | Mayor: Officers traumatzied
- Hotlines: How to get, give help | Tell people you're safe
- Citizen Journalist: Your e-mails | Gallery | Share you story
- Special Report: Timeline | New Orleans: Block by block
- On CNN TV: Dr. Phil on healing after Katrina, 9 p.m. ET

A U.S. Air Force rescuer is dropped onto a rooftop to help trapped Katrina victims.

MORE NEWS   Most Popular ▸

- Chief Justice Rehnquist dies at 80 | Watch
- Manning brothers team up for relief | Watch
- New Orleans couple weds in Mississippi shelter
- Mobile hospital stopped by red tape
- Misery has company at Mississippi motels
- Evacuees anguished at leaving pets behind

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Misery in Mississippi (2:16)

Musical tribute to New Orleans (3:08)

Now In The News (5:52 p.m. ET): Your quick news update

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UPDATED: 6:52 a.m. EDT, April 16, 2007

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(AFP/GETTY IMAGES)

Nor'easter slams East Coast

As an oncoming nor'easter dumped heavy rains along the mid-Atlantic coast, Mayor Michael Bloomberg urged New Yorkers to use mass transit today and take other precautions. Commuter train service between upper Manhattan and Connecticut was interrupted Sunday night because of flooding.

FULL STORY

• What's a nor'easter? | Storm on the beach

LATEST NEWS

TOP STORIES   MOST POPULAR

• Fortune: **Newest Fortune 500 rankings** | **Video**
• **Police: Airline pilot on cocaine, driving wrong way**
• **Al-Sadr pulls his ministers from Iraq government**
• **Search intensifies for U.S. aid worker**
• **Madonna back in Malawi to adopt?**
• SI.com: **Jackie Robinson tributes** | **Video**
• **Numbers add up to difficult tax year**
• **Iraqis turn to TV psychic for reassurance**
• **Investigators try to identify 8 skeletons**
• **Anti-Kremlin crowd clashes with police** | **Video**
• **Surfer girl attacked by sea lion**
• **Celebrity foot-in-mouth club gets new member**
• CNN Wire: **Latest updates on world's top stories**

WATCH VIDEO

MOST POPULAR   BEST VIDEO

1. **The year of celebrity slurs** (2:31)
Don Imus' outburst is the latest in a string of celebrity slurs. CNN's Sibila Vargas reports. (April 14)

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UPDATED: 7:27 p.m. EDT, April 16, 2007   Make CNN Your Home Page

BLOODBATH IN CLASS

BREAKING NEWS

(ROANOKE TIMES/AP)

Student: There was blood everywhere

- 32 killed, 29 injured by lone gunman at Virginia Tech
- All I can tell you is he's a male, says police chief
- Killer reportedly dressed in Boy Scout-type outfit
- Student: I was one of only four that made it out
- It is the deadliest shooting rampage in U.S. history

DEVELOPING STORY

- Virginia Tech shootings (LIVE) | Campus map
- Students describe their 'College Columbine'
- Cops draw guns, hunt shooter | Gallery
- I-Report: Gunshots captured on a cell phone
- **Witness:** We were all frightened | Send your videos

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LATEST NEWS

| TOP STORIES | MOST POPULAR |

- Officials thought killer left campus after first shooting
- Student captures video of shooting | Video

📹 WATCH VIDEO

| MOST POPULAR | BEST VIDEO |

1. Gunfire on university campus (5:03)
   A student describes gunfire on the   Gunfire on

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(LIVE) LIVE BREAKING NEWS
Police and VA Tech officials hold a

Requested Date: 1996   2010   06/21/2010

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CNN.com.

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UPDATED: 3:17 a.m. EDT, April 17, 2007   Make CNN Your Home Page

STUDENTS SLAUGHTERED

(AFP/GETTY IMAGES)

Students attend a Mass in Blacksburg, Virginia.

Police have preliminary ID of gunman

- Police not releasing name of Virginia Tech gunman
- Gunman massacres 32 at two Virginia Tech sites
- Some students jumped from windows to escape
- Professor is among dead at academic hall
- It is the deadliest shooting rampage in U.S. history

FULL STORY

- Horrific day ends with sleepless night | Map
- Student: He shot almost the whole class 🔳
- Time.com: Too few warnings? ▶ | Gallery
- I-Report: Gunshots captured on a cell phone 🔳
- **Witness:** We were all frightened | Your photos
- **Special Report:** Massacre at Virginia Tech

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LATEST NEWS

| TOP STORIES | MOST POPULAR |

- Officials thought killer left campus after first shooting

🔳 **WATCH VIDEO**

| MOST POPULAR | BEST VIDEO |

- ▬ 1. Eyewitness describes shooter (1:23)

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| LIVE | WHAT IS PIPELINE? |

- ▬ CNN International

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Most of the Story,
at Least as Conveyed by cnn.com,
is Missing…

in this case, you can reconstruct the events with
http://en.wikipedia.org/wiki/Virginia_Tech_massacre_timeline

How Much of The Web Is Archived?

Public Archives, ca. Late 2010 / Early 2011

Three categories of archives

• Internet Archive

• Search engine

• Other archives

See also: http://arxiv.org/abs/1212.6177
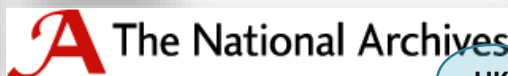
1000 URIs Ordered by First Observation Date

See also: http://ws-dl.blogspot.com/2011/06/2011-06-23-how-much-of-web-is-archived.html
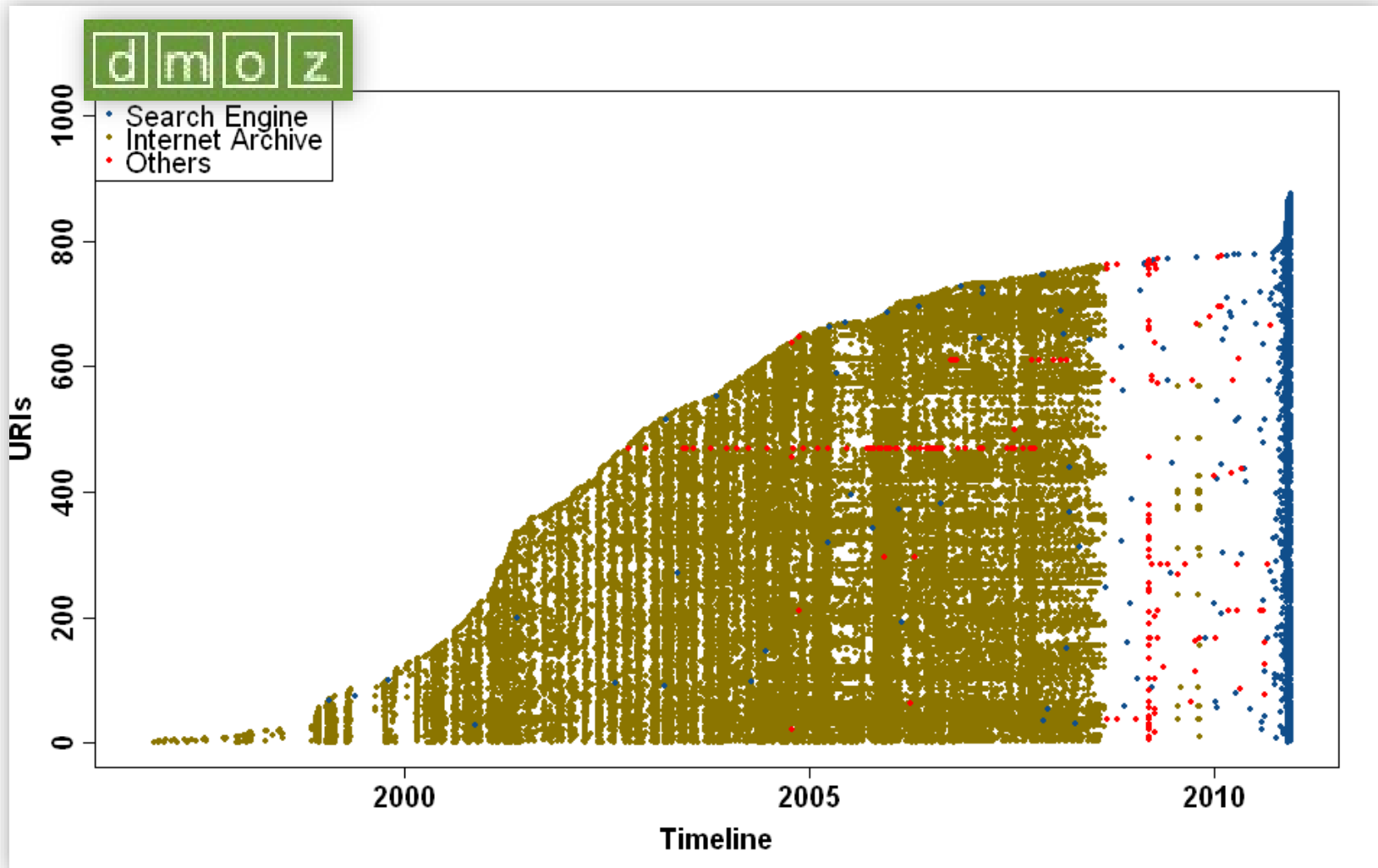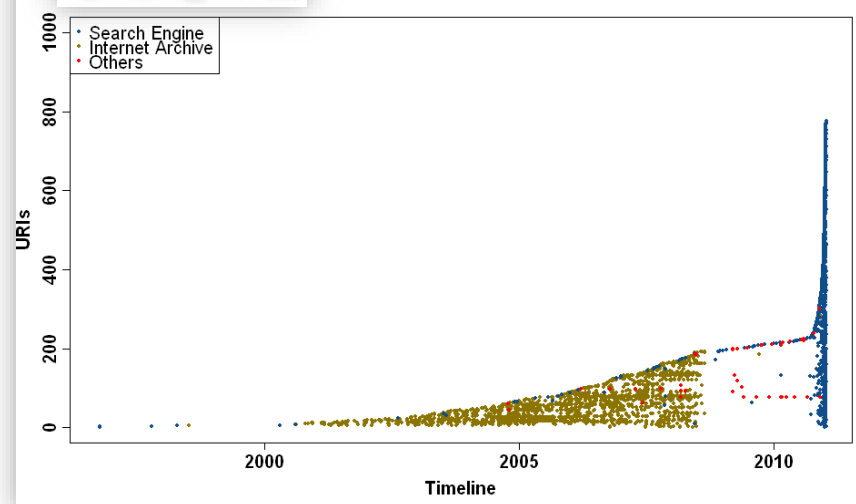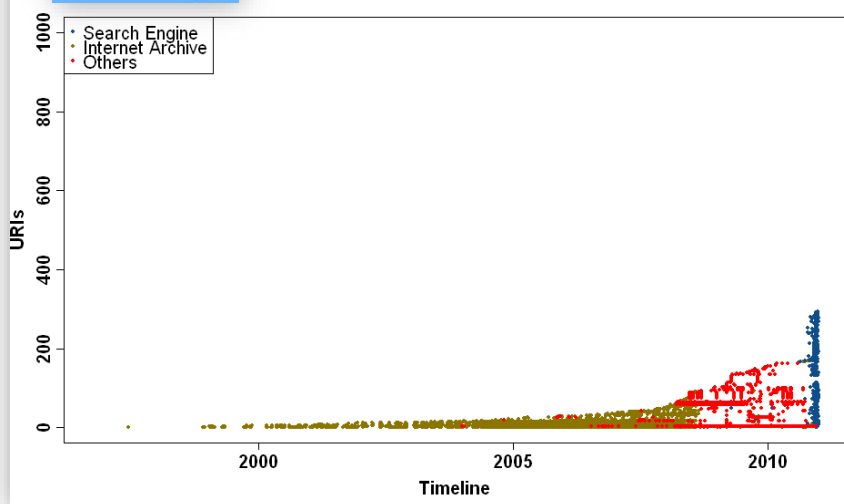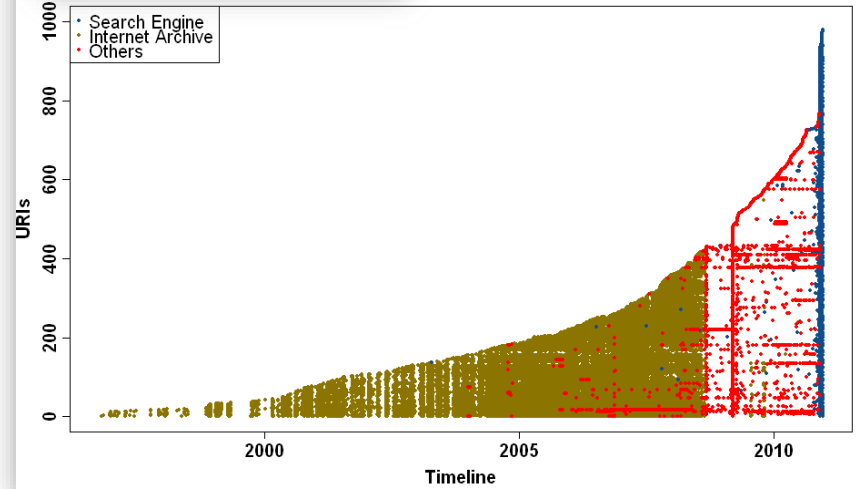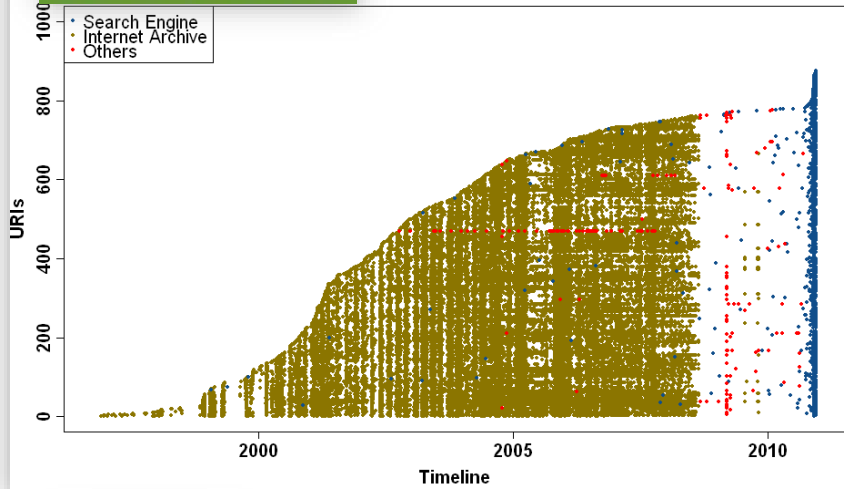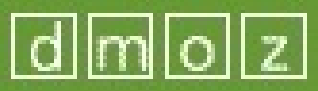
How Much of the Web is Archived?
It Depends on Which Web…

	Including SE cache	Excluding SE Cache	2013
dmoz	90%	79%	95%
delicious	67%	68%	92%
bitly	35%	16%	23%
SE YAHOO!	88%	19%	26%

Changes since 2011: no more free SE APIs;
greatly reduced IA quarantine period; 15 public web archives

Long Tail of Archives

see also: http://www.cs.odu.edu/~mln/pubs/tpdl-2013/paper_134.pdf

Memento: A Multi-Archive Method for Linking the Current & Past Web

see: http://mementoweb.org/

HTTP Link
timegate

URI-M₃ — June 01 2006 representation

ARCHIVE-IT

Content Negotiation
Accept-Datetime = Tm

URI-M₄ — May 20 2008 representation

Content Negotiation
Accept-Datetime = Tn

URI-G'

Content Negotiation
Accept-Datetime = Ti

URI-M₁ — Apr 10 2001 representation

INTERNET ARCHIVE

Content Negotiation
Accept-Datetime = Tj

URI-R — current representation

URI-M₂ — Aug 15 2007 representation
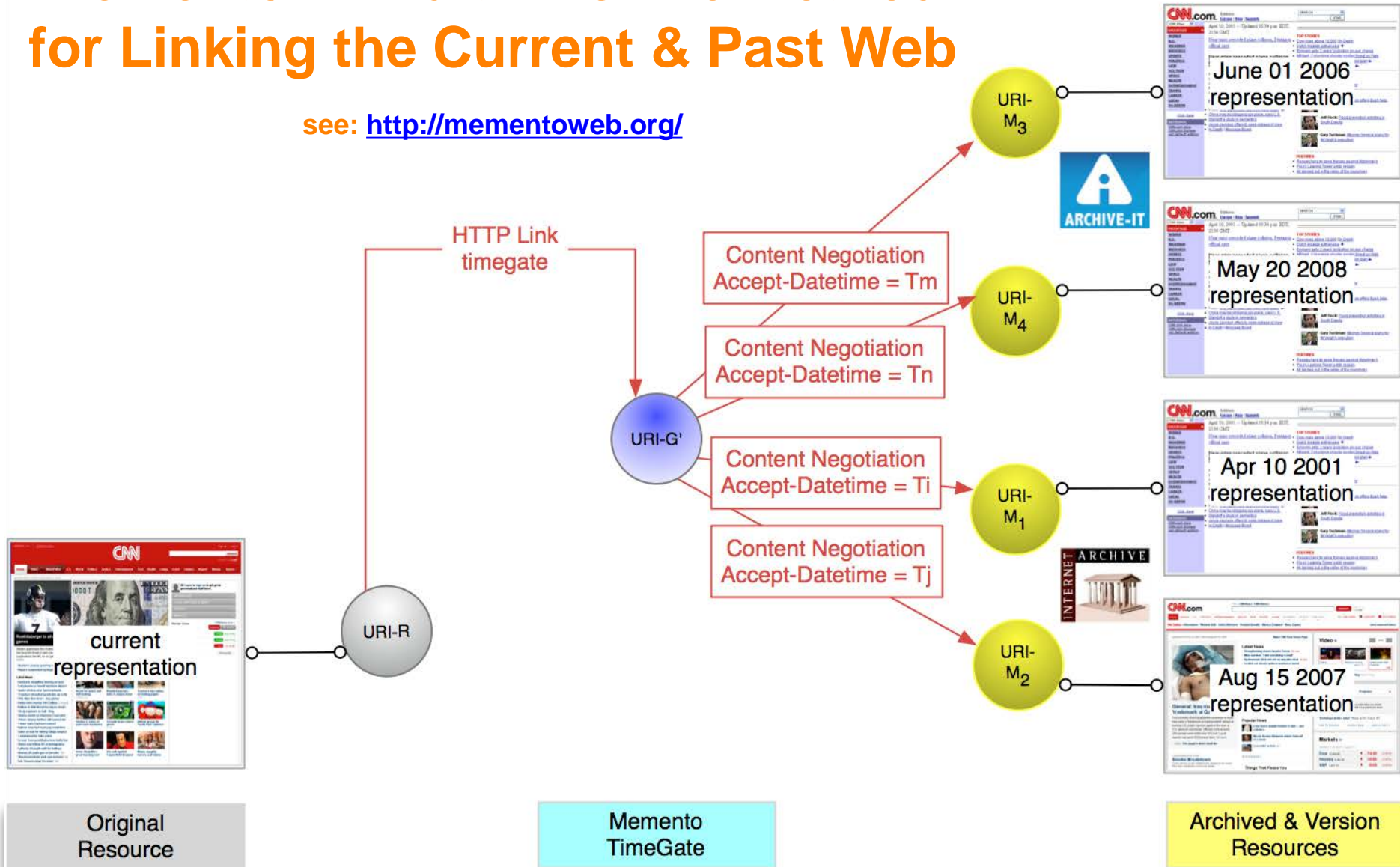
Original Resource

Memento TimeGate

Archived & Version Resources

So It's Been Archived, What Can Go Wrong?

Temporal Drift

August 27, 2005
11:16 a.m. EDT
link

Temporal Drift: Now 3 Hours in the Past

August 27, 2005
11:16 a.m. EDT
link

August 27, 2005
8:00 a.m. EDT
link

Temporal Drift: Now 17 Days in the Future

August 27, 2005
11:16 a.m. EDT
link
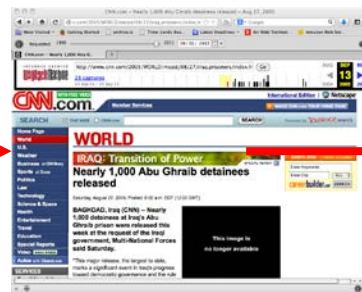
August 27, 2005
8:00 a.m. EDT
link

September 13, 2005
8:12 a.m. EDT
link

Temporal Drift: Now 23 (or 6) Days in the Future

August 27, 2005
11:16 a.m. EDT
link

August 27, 2005
8:00 a.m. EDT
link

September 13, 2005
8:12 a.m. EDT
link

September 19, 2005
8:25 a.m. EDT
link

10+ clicks in the archive results in median drift of ~45 days (standard UI)
or ~15 days with Memento. ~2% of the sessions have drift of > 1 year.
see: http://www.cs.odu.edu/~mln/pubs/jcdl-2013/jcdl93-ainsworth.pdf

We Call the Drift in a Single Page
"Temporal Spread"

**Sometimes the Live Web
"Leaks" Into the Archive…**

see: http://ws-dl.blogspot.com/2012/10/2012-10-10-zombies-in-archives.html

Quis Archiviet Ipsos Archives?

(thanks to webmaster@archive.is for this example)

Эта статья удалена с сайта по требованию Роскомнадзора

lenta.ru/f_words/

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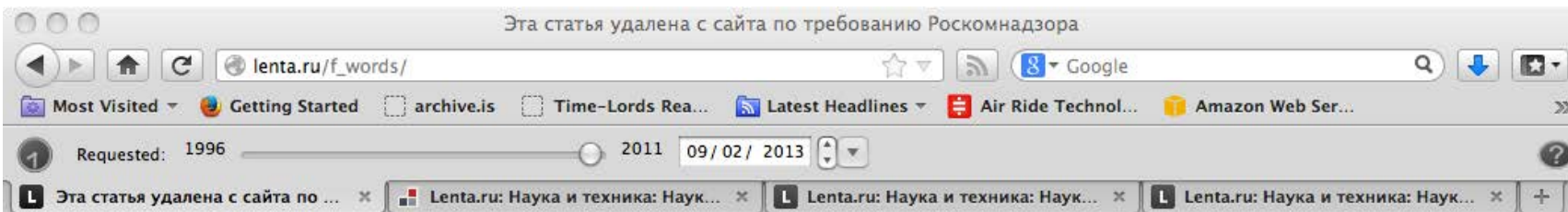
```
% curl -I http://lenta.ru/articles/2013/04/02/mat/
HTTP/1.1 302 Found
Server: nginx
Date: Tue, 03 Sep 2013 00:15:14 GMT
Content-Type: text/html; charset=utf-8
Connection: keep-alive
Status: 302 Found
Location: http://lenta.ru/f_words/
X-UA-Compatible: IE=Edge,chrome=1
Cache-Control: no-cache
X-Request-Id: bd7caae039d6312c0542cb4ad62f3847
X-Runtime: 0.005474
X-Rack-Cache: miss
```

current page for: http://lenta.ru/articles/2013/04/02/mat/

Lenta.ru: Наука и техника: Наука: Запретная филология

web.archive.org/web/20130601231935/http://lenta.ru/articles/2013

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INTERNET ARCHIVE
WayBackMachine

http://lenta.ru/articles/2013/04/02/mat/   Go   MAY **JUN** JUL Close ✖

13 captures

1 Jun 13 – 10 Jul 13   ◀ **1** ▶   Help ?
2012 **2013** 2014

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LENTA.RU

Наука и техника
2 СЕНТЯБРЯ 2013, ПОНЕДЕЛЬНИК, 20:14

14:29, 2 апреля 2013

Запретная филология

*«Лента.ру» разобралась в происхождении русского*
мат...

ПОСЛЕДНИЕ НОВО

23:50 В Турции задержа
демонстрантов

archive.org version of: http://lenta.ru/articles/2013/04/02/mat/

peep.us archived version of archive.org version

archive.is archived version of peep.us version of archive.org version

Why Make Lots of Copies?

Archives Are Subject to the Same Vagaries of Other Web Sites…
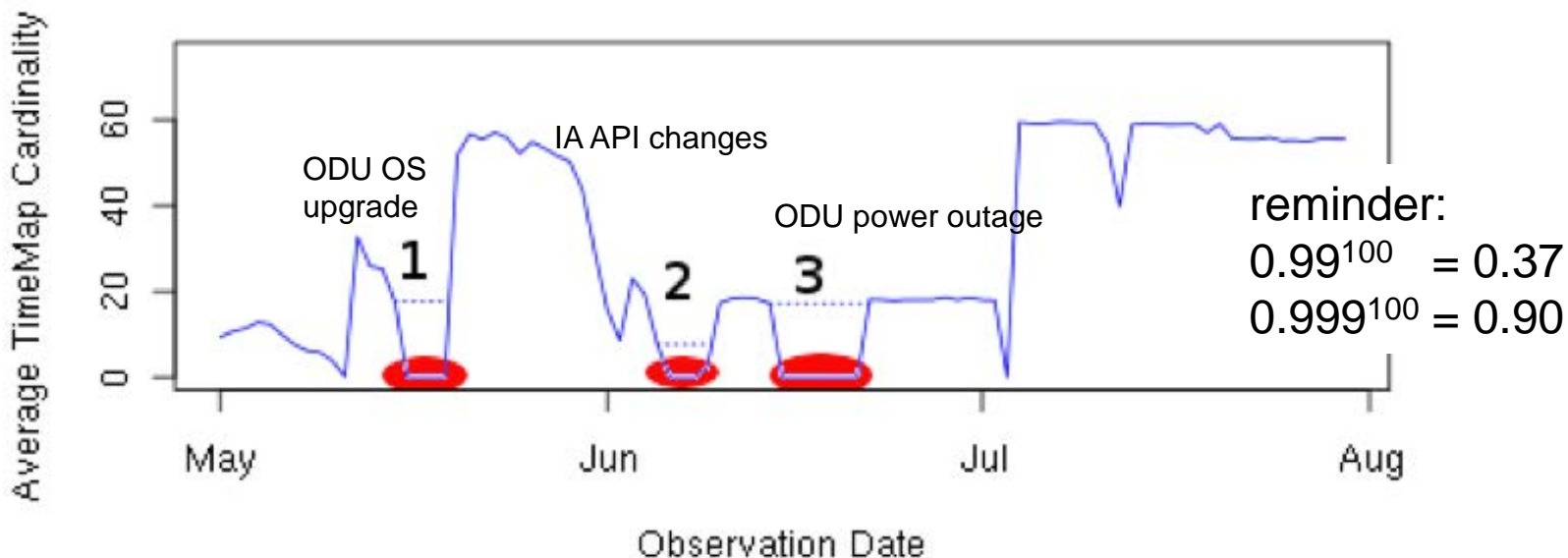
In a perfect world, this graph should be monotonically increasing. Memento allows simultaneous access to more archives, but this also means that at any given time, some archive(s) will be down.
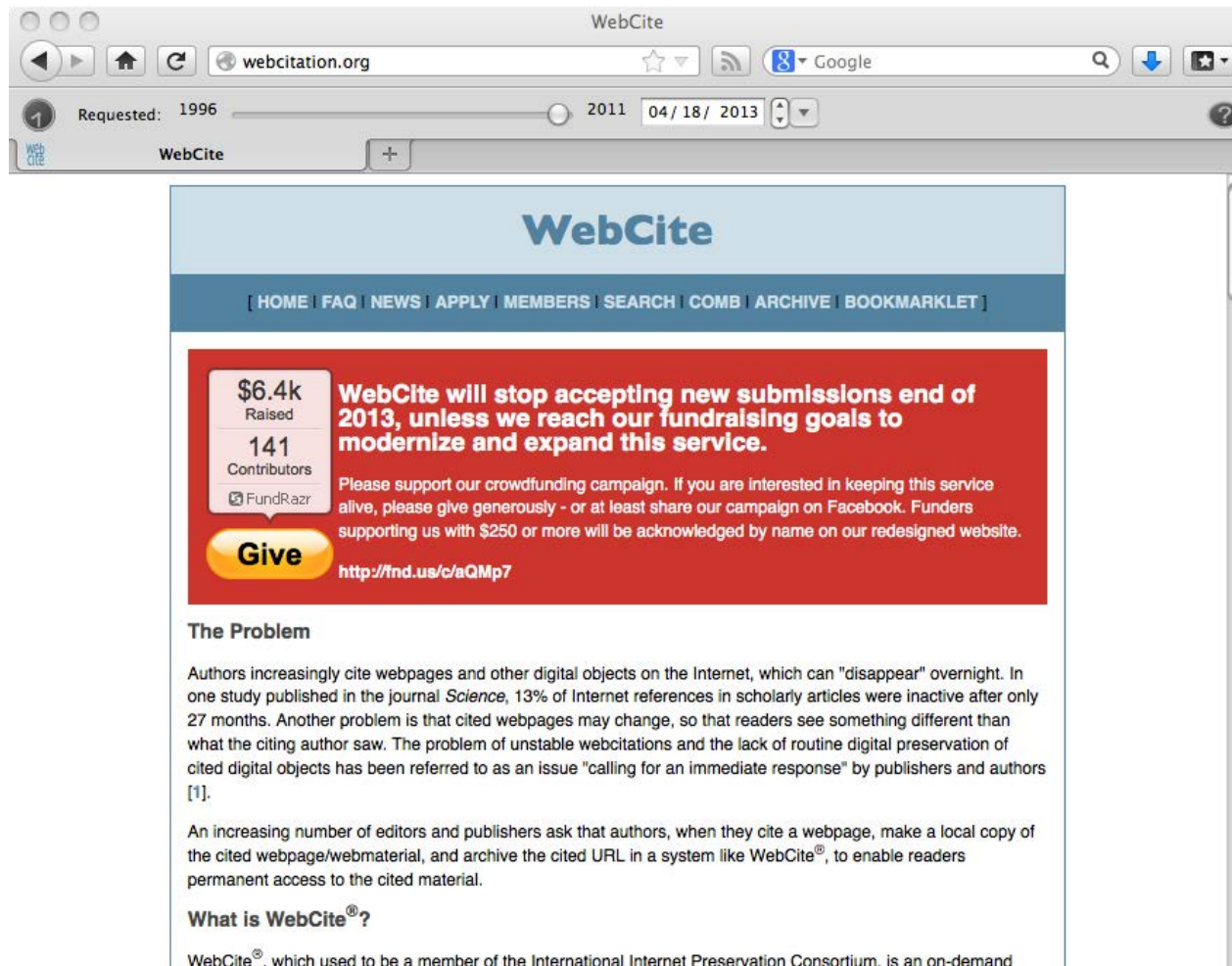
see: http://arxiv.org/abs/1307.5685

Query Routing: Using Only Top-k Archives for URI Lookup Yields Good Results
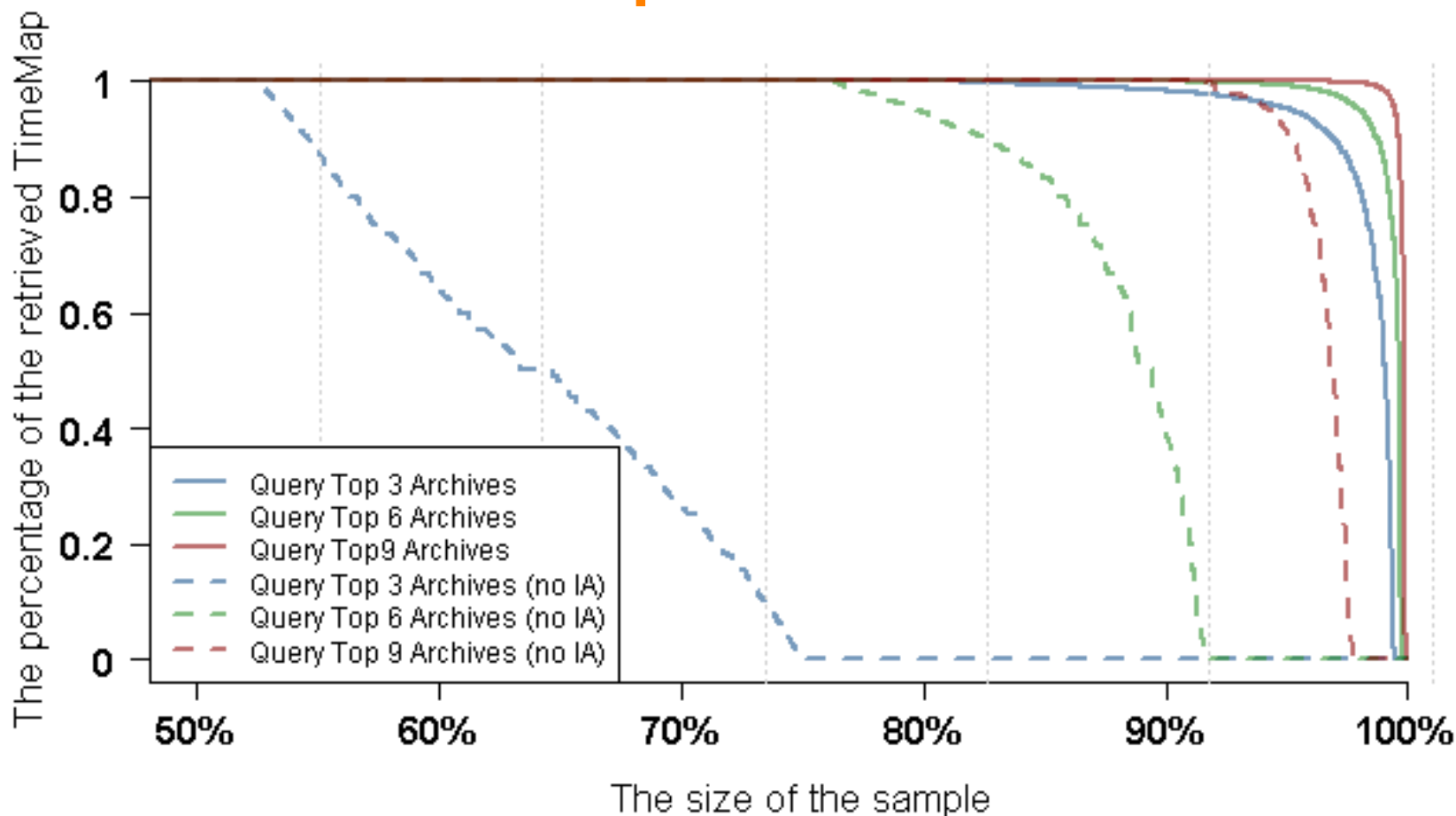
Even when there are 100s of archives, we only need to talk to a few.

see: http://www.cs.odu.edu/~mln/pubs/tpdl-2013/paper_134.pdf

What is the Economic Model for Archives?

1TB endowment = ~$4700: http://blog.dshr.org/2011/02/paying-for-long-term-storage.html
see also: http://blog.dshr.org/2011/01/memento-marketplace-for-archiving.html

Houston, ████████████ **Here. The Eagle has** ██████

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ntrs.nasa.gov   ☆ ▾   🔊   8▾ Google   🔍   ★▾

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The NTRS system is unavailable...   +

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does not contain technical information that is subject to U.S. export control laws
and regulations and that the appropriate reviews were performed.
The site will return to service when the review is complete.
We apologize for any inconvenience this may cause.

see also: http://ws-dl.blogspot.com/2013/03/2013-03-22-ntrs-web-archives-and-why-we.html

Summary

- We have a cultural mandate to preserve "obsolete data or resources"
  - however, we currently have limited discovery and replay tools

- We need lots of people making several copies of many things
  - Memento is the mechanism for accessing the long tail of archives