

Under-appreciated Threats to the Long-term Preservation of Electronic Archival Records

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UN ACCIS Report 1990

- Risk Management approach
- Established user mental models as problem in policy oriented solutions
- Technical risk factors based on different architectures than now

Threats

- Natural and Social Environment
- Capturing Records
- New Genres of Communication

Environmental risks
are probably
underestimated

What does one
chance in 10,000
years mean for
policy?



National Weather Service North Georgia

9.7 inches = 5000-year rain event

10 inches = 10,000-year rain event

Recorded 16.7 inches, Douglasville GA, 21/09/2009



Tsunami, Japan
12/03/2011



Fort Calhoun Nuclear Station: Flood Berm Collapses At Nebraska Nuke Plant

26/06/2011



Wildfire threatens Los Alamos lab
29/06/2011

Policy Conundrum

- How many types of risks are assessed?
- When each has a 1 : 10,000 yr. chance of occurrence, how rare does that make them?

Unusual Threats

- These don't get assessed yet historically they have occurred
- e.g., Electromagnetic Pulse (EMP) events



Aurora Borealis, $36^{\circ} 30' N$
06/04/2000

***“The red light was so vivid
that the roofs of the houses
and the leaves of the trees
appeared as if covered with
blood”***

Aurora Borealis, San Salvador

13°40'N

02/09/1859

Low Occurrence, High Impact Events

- Carrington Event, September 2, 1859
- Tunguska event, June 30, 1908
- Disintegration of the Larsen B ice shelf in Antarctica in three weeks, 2002
- Collapse of Cumbre Vieja into the Atlantic, near future?
- A massive EMP event like 1859, 1921 - near future?

**Social Institutions are
more fragile than we
appreciate**

**Social Institutions
we take for granted are
surprisingly young**

<200 yrs



National Museums or Archives

Professional sport teams



State schools

<100 yrs

Passports as necessary for travel



Income tax



THE NEW ALTRUISM

LABOUR M.P. "My poor friend, here's five shillings for you."
LIFE-LONG LOAFER. "Gawd bless yer, Gav'ner!"
CITY MERCHANT. "Here, hang it, that's my money!"
LABOUR M.P. "Yes, I know, but it's my idea!"
[According to Mr. Ramsay MacDonald, the programme of certain Labour Members includes an Old Age Pension scheme based on a graduated super-tax on incomes above £5000.] (October 9, 1907)

the Electric 'Grid'



Credit cards



Accident & Emergency

Hospital emergency room

Significant Social
Institutions have died
in the past century

Ticker tape



Mechanics Institutes



Passenger ships

The Telephone Exchange



Stage coach



Colonial Administrations



Subscription Libraries

Some Important Social
Institutions that are
likely to die soon

Personal cheques?



Stock exchanges?



National Postal Services?

Daily print Newspapers?



Research Libraries?



Nuclear Power Industry?



Broadcast radio and tv?

Depending on
Social Institutions for
Perpetual Support is
Risky

Preserving Records

- Non-records don't become records by keeping them

Preserving Records

- If all records aren't captured, what is captured is suspect

Preserving Records

- If capture, use and appraisal metadata doesn't persist for all records, retained records are suspect

Yet...

- We aren't typically capturing records at creation
- We are only appraising some records
- Metadata about use is not required by most records capture architectures
- Metadata on disposed records is often not kept

Capture at Creation

- Service Oriented Architecture
- User profiles and context metadata
- Instantaneous scheduling and disposal
- Vastly Distributed Storage

New Genres Of Communication

1st generation was analogous to paper

- e-mail had content and metadata of a letter
- e-transactions took place in our systems
- e-transmissions retained locally on receipt

New Genres

- Dropbox - asynchronous cloud based communications
- Facebook status - social media permitted views
- Monitoring/sensing data - may or may not ever be accessed

The Issues

- Content stays in the cloud, not local
- Permissions metadata not managed by us
- Receipt only potential
- Viewing leaves no trace

Metadata we have
relied on for
recordness may soon
be inherently
unavailable except at
creation

Thank You

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