Getting ETDs off the Calf-Path:

Digital Preservation Readiness for Growing ETD Collections and Distributed Preservation Networks

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What is the Calf Path Syndrome?

One day, through the primeval wood,
A calf walked home, as good calves should;
But made a trail all bent askew,
A crooked trail as all calves do.
Since then two hundred years have fled,
And, I infer, the calf is dead.
But still he left behind his trail,
And thereby hangs my moral tale…

...The years passed on in swiftness fleet,
The road became a village street;
And this, before men were aware,
A city's crowded thoroughfare;
And soon the central street was this,
Of a renowned metropolis;
And men two centuries and a half,
Trod the footsteps of that calf.
Each day a hundred thousand rout,
Followed the zigzag calf about;
And o'er his crooked journey went,
The traffic of a continent.

A hundred thousand men were led,
By one calf near three centuries dead.
They followed still his crooked way,
And lost one hundred years a day;
For thus such reverence is lent,
To well-established precedent.

-Sam Walter Foss,
“The Calf-Path” 1896

Overview

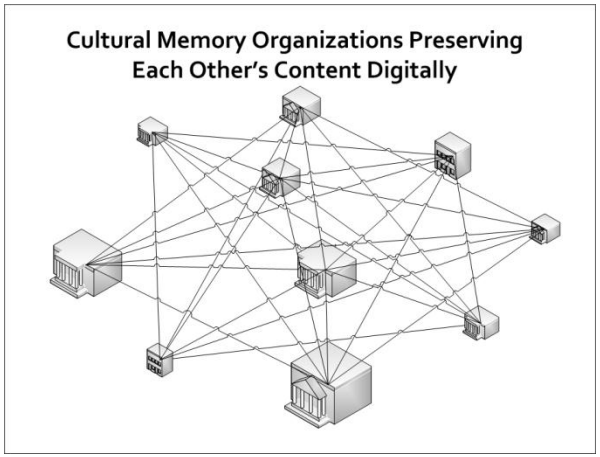
- This paper will address **"Calf-Path" problems for ETD repositories**, problems associated with the early ad hoc and idiosyncratic workflow patterns
- This paper will document relatively simple **principles and guidelines for such ETD programs** that can greatly improve the subsequent likelihood of implementing successful distributed digital preservation programs
- These best practices **can benefit start-up programs** that have not yet established regular procedures and standards for directory structures, metadata, and file naming conventions
- These guidelines were **distilled from workflow analyses within the MetaArchive Cooperative**

MetaArchive Cooperative Overview:

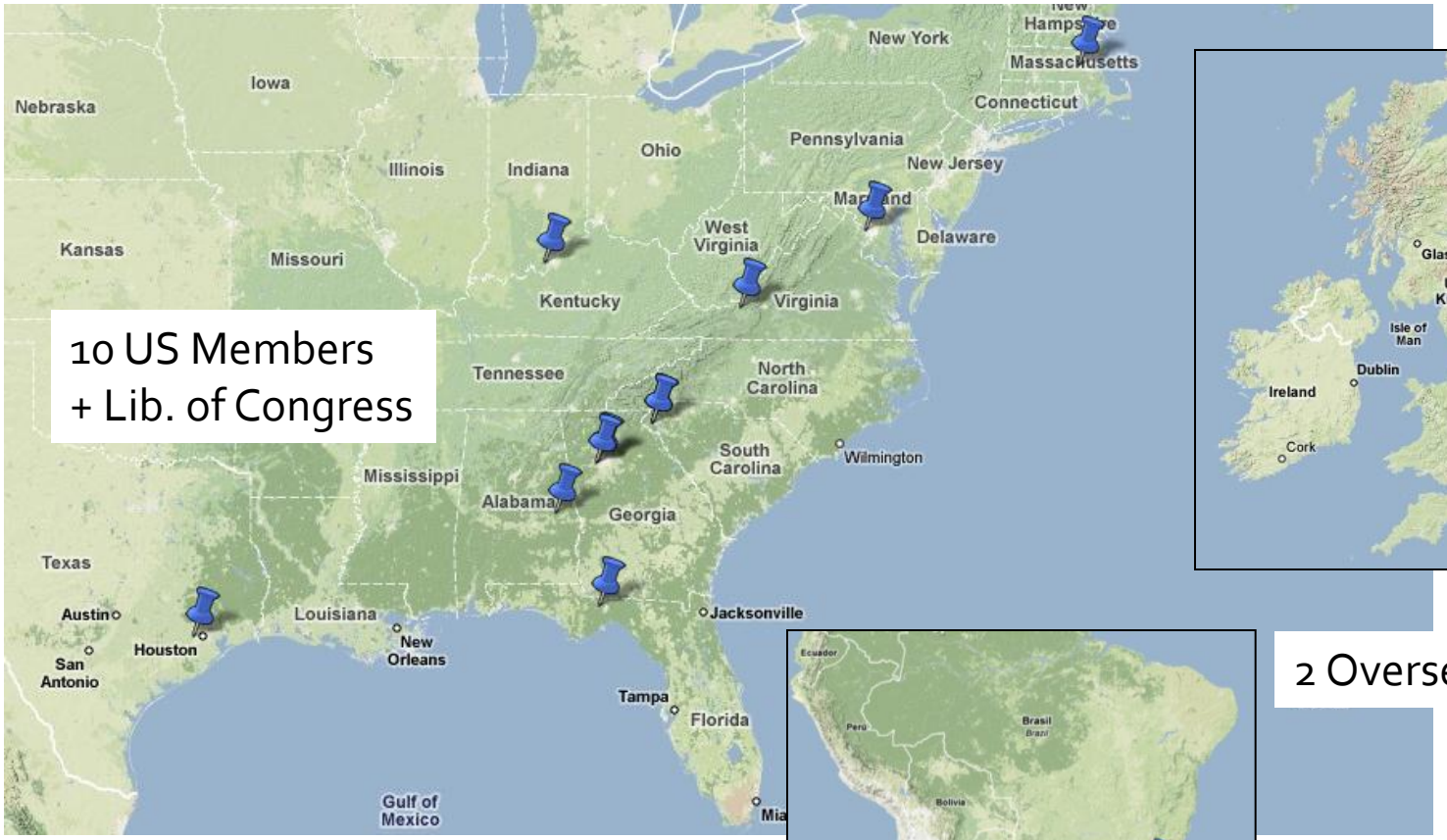
A Community-Based Distributed Digital Preservation Cooperative

- Established in 2003 under the auspices of and with funding from the NDIPP Program of the Library of Congress
- It is both a functioning distributed digital preservation network and nonprofit cooperative for libraries and other cultural memory organizations
- Sustained by cooperative membership fees, NDIIPP contracts, and grants from the National Historical Publications & Records Commission and other groups
- Provides training and models to foster broader awareness of distributed digital preservation and to enable other groups to establish similar networks

MetaArchive COOPERATIVE



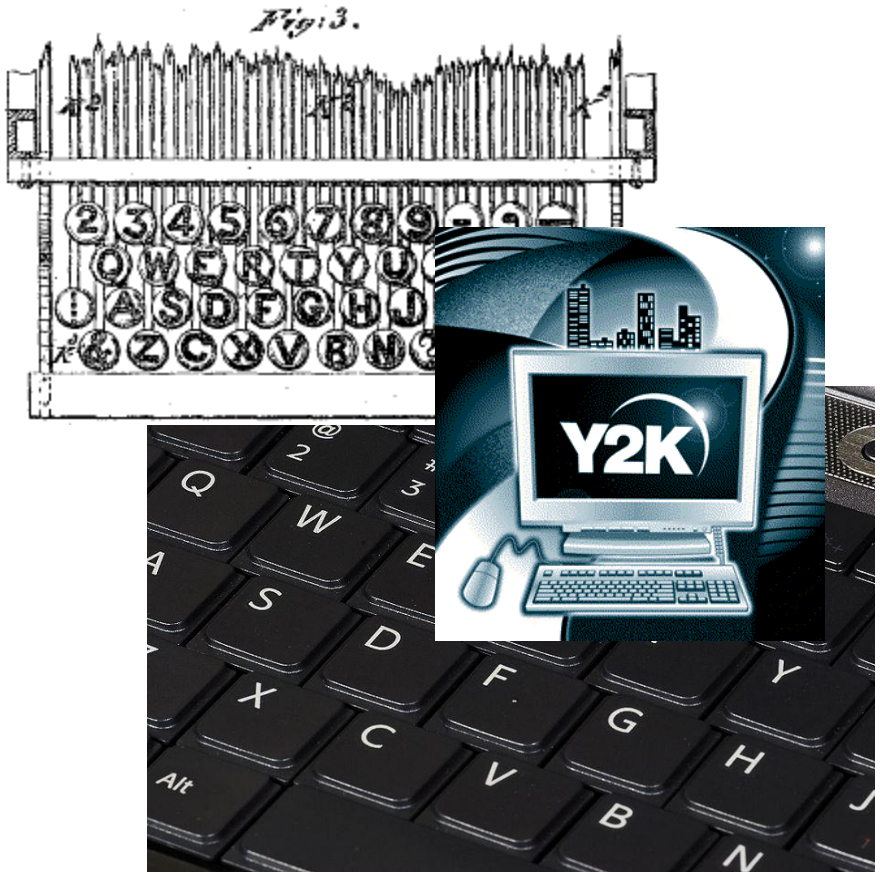
Membership Distribution



2 Overseas Members

Calf-Path Phenomena

- Unfortunate legacies of prior decisions, or lack of decisions/re-examination of processes, are omnipresent and cause enormous problems
- Many (most?) efforts of organizational process remediation are aimed at addressing calf-path issues
- Avoiding following calf-paths should be a goal whenever establishing new precedents



How ETDs get on the Calf-Path

- ETD programs often start with pilot projects featuring ad-hoc procedures and idiosyncratic data storage structures.
- By "data storage structures" we mean the entire range of methods by which ETDs may be stored in structured ways, including directories, administrative metadata, and other data management techniques.
- These idiosyncrasies often quickly evolve into formal practices, much as the awkward and twisted path of the wobbling calf in Foss's poem becomes a standard road followed and solidified by others over centuries.
- Early ad-hoc procedures may become a torturous pathway upon which an academic organization's ETD collection and its management workflows continue to be built.

Recognizing the Calf-Path in ETD Programs

- Do our ETDs accumulate in structures such that we could transfer (preserve) them in logical and discrete groups to another infrastructure, or would such a transfer require restructuring of ETDs?
- Do we accumulate ETDs in patterns that the majority of our staff understands, or do individuals pursue significantly variant processes in silos?
- Are either our ETD storage structures or accumulation processes documented anywhere?

Best Practices: Unique Directory Names

- Standardized, uniform, easy to decipher
- Timestamps
  - etd-mmddyyyy-tttttt
  - http://scholar.lib.vt.edu/theses/available/etd-10022007-144864
  - ETD submitted at 2:48:64 pm on Oct. 2, 2007
- Same naming convention for scanned and born-digital ETDs

Best Practices: File Names

- etd.pdf
  - If file names are not unique, directory names must be unique
  - May not be good for local management
- Lastname_initials_doctype_year.format
  - McMillanGM_T_1981.pdf
  - SoundararajanS_D_2010.pdf
  - SoundararajanS_D_2010_copyright.pdf

Best Practices: Archival Units

- Recommend discreet static (unchanging) archival units (clusters of ETDs)
  - May be done simply with annual ingest into preservation caches
- Suggested accumulation size for archival units of no more than10 GB for portability
  - Divide annual directories into subunits

Best Practices: Triage for ETDs

- Inconsistent practices in directory structures, metadata, and file naming conventions
- Rename, rearrange files or
- Creative strategies needed
- Adapt the existing situation to find, harvest, and ingest the files into the preservation network

Best Practices: Web Accessible

- Keep ETDs on live, spinning discs
- Not on CDs or other static storage devices
- Avoid problems: finding those discs, loading them onto spinning discs, rectifying errors and failed media
  - Even gold CDs regularly fail!
- Declining cost of online storage

Establishing a Digital Preservation Readiness Program

- Start with a shared programmatic vision.
- Document that vision and a corresponding set of best practices for your organization.
- Disseminate your vision and best practices throughout your organization.
- Review your vision and best practices annually.
- Create a registry of collections for your organization.

Recommended Practices for Lifecycle Management of Digital Assets

- Live versus Static Media
- Standardize File and Directory Structures
- Metadata Discipline
- Implement a Digital Preservation Viability and Recovery Program
  - *Assign staff to be responsible for viability and recovery tests.*
  - *Document the entire process of asset recovery.*
  - *Recovery tests should be realistic.*
  - *Conduct periodic tests.*

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