## Digital Preservation

Sharon McMeekin Head of Training and Skills Digital Preservation Coalition



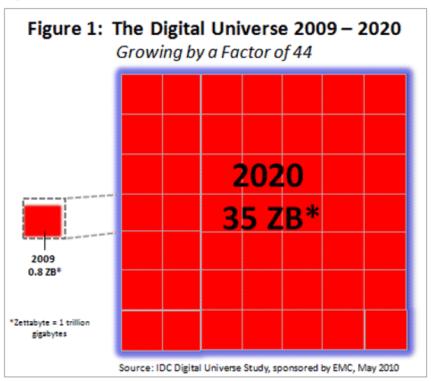
## Part One: Why should we care about Digital Preservation?





### 'Digital Universe' Nears A Zettabyte

May 4th, 2010: Rich Miller



The Great Recession hasn't slowed the breakneck growth of the Digital Universe. In 2010 the volume of digital information created and duplicated in a year will reach 1.2 zettabytes, according to new data from IDC.







Cash Value: \$6.3bn

Share Valuation: \$104bn

Intangible assets: \$97.7bn

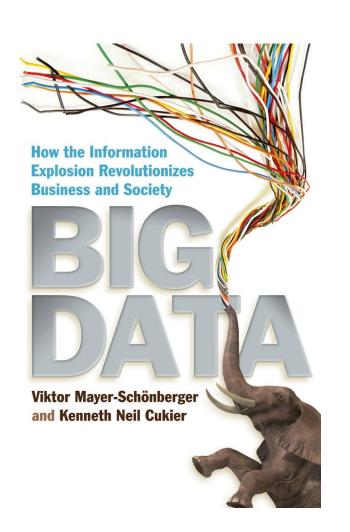
(10 dollars every 3 seconds non stop for 950 years)

Pieces of data: 2.1trillion

Price per datum: \$0.05

## It Needs to be Useable (1)





"...The crux of data's worth is its seemingly unlimited potential for re-use: it's option value. ...most of data's value lies in its use not in its possession"

(Mayer-Schonberger and Cukier 2015)

## It Needs to be Useable (2)



'It's not like finding a needle in a haystack: it's like finding a needle in Germany.'

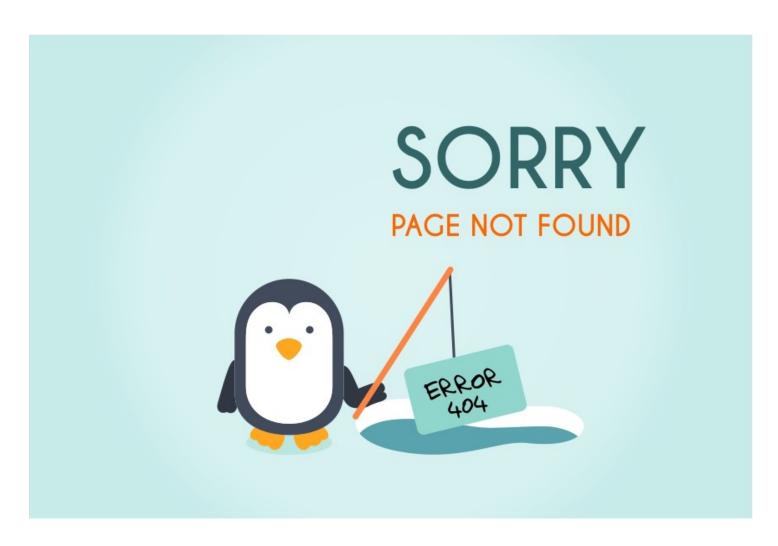
(Paul Miller, DPC Briefing Day on Linked Open Data, July 2013)



G. Bembridge 2012 https://www.flickr.com/photos/tipsfortravellers/











Nook GoogleCode GeoCities GoogleWave Knol Friends ReUnited Yahoo Mail

Blipfoto MySpaceBlo Yahoo 360 del.icio.us MyBlogLog BeBo Classic



www.digitalbevaring.dk

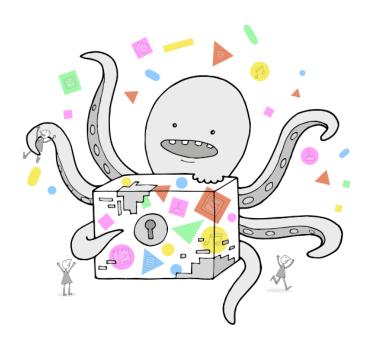


## People are a Big Threat

Accidents Happen but also...

People With Things to Hide....

- US Environmental Data
- Hillsborough Enquiry
- Leave.EU



## Why We Preserve....



- Legal and Regulatory Compliance
- Increased Efficiency
- New Revenue Streams
- Improving Health
- Protecting the Environment
- Enabling Research
- Documenting Cultural Heritage
- Ensuring Transparency and Accountability



Part Two: So, what's the problem?

## Traditional Media



You will have already heard from the larques of Jullibardine the Papisfachon ceived in knowing you were safe on this, · lea, after all the dangers & fatigues was e gone throw on my account; the home I we of them is greater then I can express; in good of the Senece having been all alon is only wiew, you will I am sure casily en to nasous which oblidged me to direct you rain as this juncture some when in pance. is hother is so liverble of them that he do. tremain here very patiently but I comer noin her wither quite alone, & his asten very agnable to me. the home will I hope win which wer may all meet in a more easing place them this, and as our present

- Robust
- Tangible
- Independently understandable
- Well-developed approaches to preservation
- Experienced in assigning value

## Digital Information



- Ephemeral
- Need tech to interpret
- Obsolescence
- How to estimate value?
- New skills and solutions required
- But also new opportunities!







Media failure

Media obsolescence

Software failure

Software obsolescence

Inaccessible file format

Format migration errors

Loss of media

Disaster

Broken dependency

Failure of systems integration

Data Theft

Virus or malware

Poor documentation

Poor rights management

Lost encryption key

Poor version control

Inadvertent deletion

Malicious deletion

Poor file-naming

Corruption

Link rot

...

## What's the Problem?



Digital data (images, documents etc.) have value and create opportunities

...but...

Access depends on software, hardware and people ...and...

Technology and people change, creating barriers to reuse

...therefore...

We need to actively manage data to protect and create opportunities



## What is Digital Preservation?

"the series of managed activities necessary to ensure continued access to digital materials for as long as necessary" (Digital Preservation Handbook)



Part Three:
Seems like Digital
Preservation is hard.....
AKA – Stuff I wish I'd known about/had access to.....

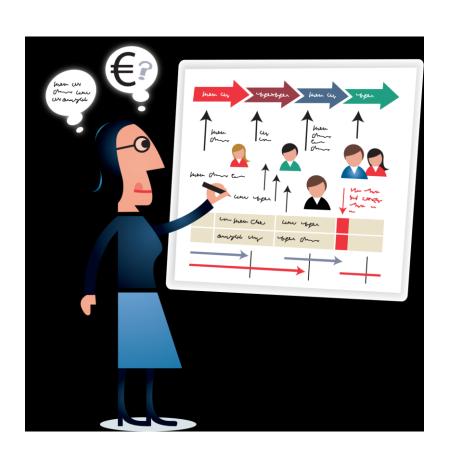








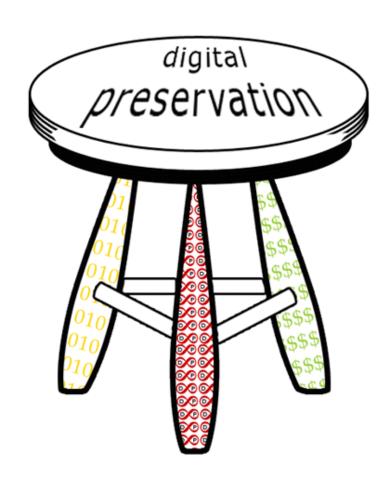




- Risk Management
- Maturity Modelling
- Bit-Level Preservation
- Digital Asset Register
- Policy

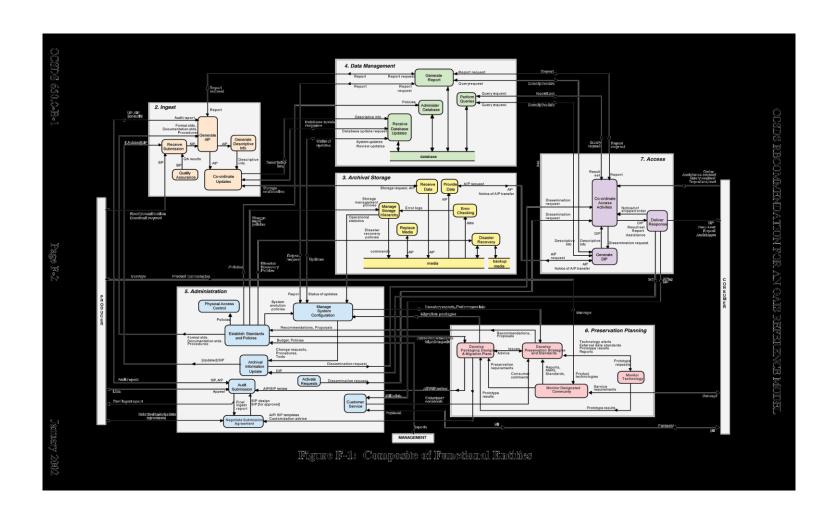












## Other Standards



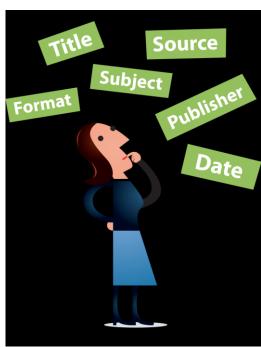
- Metadata METS and PREMIS
- •Information Packages E-ARK Project

Audit and Certification – Core Trust Seal,

ISO 16363...

Data Security

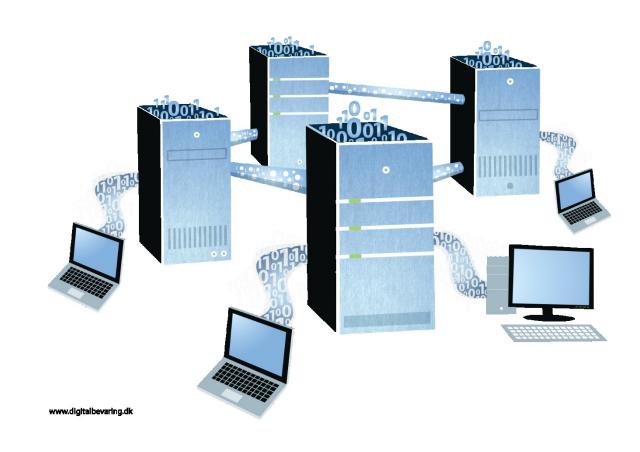
File Formats



## Vendors/Service Providers



- Arkivum
- Artefactual
- Ex Libris
- FormPipe
- Hanzo
- Keep Solutions
- Libnova
- Mirrorweb
- Preservica
- TownsWeb









## Not in Comparison to the Costs of Looking After Physical Collections!





Setup: Tens of thousands?



Setup: Tens of millions?



## Is Digital Preservation Expensive?

## No!

- But it is an unfunded mandate
- Don't throw money at it
- Get the mandate properly incorporated







## A New Profession?



- Skills gaps
- Increasing recruitment
- Collaborative field
- Traditional Skills Relevant
- Be Adaptable
- Well paid!







				1
monitoring of project plans  • Understands project management concepts and techniques  • Understands data management requirements  • Is able to undertake project management activities and innovative practices  • Is able to deal with data curation challengesthrough structured planning	<ul> <li>Understands fundamental lifecycles</li> <li>Understands designated ()</li> <li>Is able to select and apply</li> <li>Is able to develop a profes</li> <li>Is aware of digital preserv</li> <li>Understands digital curati</li> <li>Understands information</li> <li>Is able to select and apply techniques</li> </ul>	appropriate technological solutions ssional network for support	Is able to articulate benefits and long-term value of collections Understands information- and records-management principles Understands institutional policies, including criteria for selection/appraisal Is able to plan application of selection/appraisal criteria to collections	Is able to conduct user needs analysis Is able to continuously monitor and evaluate digital curation technologies Is able to conduct usability evaluation Is able to prioritise curation activities based on value of digital objects and the risks facing them
to support decision-making				errano con comance e troncolar a reconstruiros.
Understands audit of curation functions     Understands certification of repositories     or programmes     Is able to maintain documentation in     preparation for audit process		CONTROL DESCRIPTION OF THE PROPERTY OF THE PRO	ection / Evaluation set to te	nderstands user information- teking strategies, access chnologies and sharing behaviours nderstands how to support formation access and sharing able to deploy appropriate formation-seeking strategies
Is able to apply risk management practice, techniques and standards to digital curation activity within institutional risk management context     Is able to assess, analyse, monitor, communicate risks      Understands social and ethical	Risk Management  Ethics, Principles and	Practitioner Lens ofessional Personal Qualities	Data Skills st	nderstands key metadata andards for sector/ subject able to select and apply metadata andards nderstands relationship between opropriate controlled vocabularies nd metadata standards
responsibility in digital curation  • Understands energy consumption, carbon footprint of digital curation activity  • Is able to adhere to principles of ethical conduct  • Understands institution's legal culpabilities in digital curation activity  • Understands institutional regulatory framework in which digital repositories operated is able to apply appropriate actions to curation workflow to ensure compliance with legal and policy frameworks and relevant standards	Understands     legal     frameworks in     which curation is     taking place     Understands     domain policies     and standards     for management	Is able to cultivate and maintain relationships with other relevant sources of information in digital curation (individuals, services, institutions)     Is able to maintain continuous awareness of emerging developments in digital curation.	Is able to communicate across domains, staff groups and with other relevant communities     Is able to articulate importance of digital curation to peers, other staff and public     Is able to engage with wider digital curation community.	Understands data structures and types Understands file types, applications and systems Understands database types and structures Is able to execute analysis of and forensic procedures on digital objects.  Is able to apply responsibility, accountability and good practice in digital curation Is able to identify
<ul> <li>Is able to select and apply validation techniques against policy infringement</li> </ul>	and preservation of digital objects	digital curation knowledge into new services and tools	community	malpractice



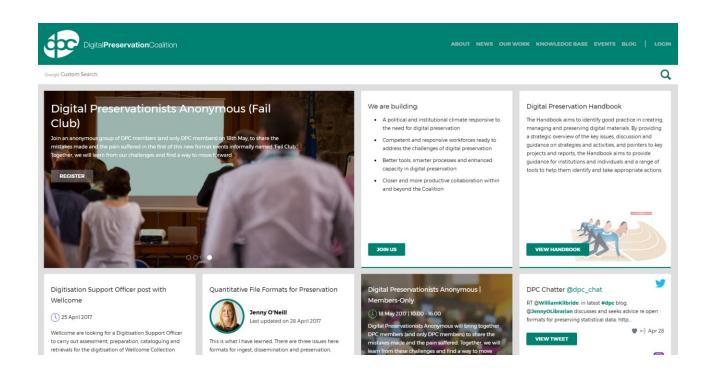
## And Finally: A Little on the DPC



## Digital Preservation Coalition

## We exist to "secure our digital legacy"

## 80+ Members and 6 Supporters















An Chartlann Náisiúnta **National Archives** 



























Historic England









**National** 























UNIVERSITY OF LEEDS



























Archives & Records Association























ARCHAEOLOGY | DATA SERVICE |





















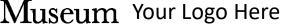












Bibliothèque nationale de Luxembourg

## We Do 6 Things...





- Advocacy
- Community Engagement
- Workforce Development
- Capacity Building
- Good Practice and Standards
- Management and Governance

## Advocacy





- BitList
- Digital Preservation Awards
- Advocacy Tools
- Advocacy Support











- Webinars
- Blog
- Networking
  - Unconference
- Email List
- World Digital
   Preservation Day

## Workforce Development





- Training
  - Getting Started
  - Making Progress
- Leadership Programme Grants
- Student Conference
- Labour Market
   Intelligence
- Curriculum Development
- DP Handbook

## Digital Preservation Handbook





## Digital Preservation Handbook

# Explore the Handbook Home Contents Introduction Digital preservation briefing Getting started Institutional strategies Organisational activities Technical solutions and tools Content-specific preservation Glossary



### **Digital Preservation Handbook**



Illustration by Jørgen Stamp digitalbevaring.dk CC BY 2.5 Denmark

Welcome to the revised 2nd edition of the Digital Preservation Handbook. A key knowledge base for digital preservation, peer-reviewed and freely accessible to all.

"Overall the improvements to the Handbook make it, in my opinion, one of the more useful and flexible tools for identifying, understanding and getting to grips with practical approaches to the varying challenges of digital preservation. It uses approachable language, clear terminology and provides useful links to case studies and further reading which will be of







- Technology Watch Reports
- Briefing Days
- Digital Preservation Anonymous
- Research Projects

## Good Practice and Standards





- Standards Development
  - OAIS Review
- Understanding member needs
- Talking to vendors
- Certification and accreditation

## Good Governance







- Member owned and member led
- Transparent
- Accountable
- Responsive



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