



Digital**Preservation**Coalition



## **Risk Management in digital preservation**

Some basics on risk

‘Whole class’ example

Parallel your own example

Some final thoughts

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## *Risk management? Eh?*

- Preservation is an ongoing process involving risks
- Most organisations have existing risk management processes

...SO...

- Formal risk management will help
- And can fit with operational management

...in fact...

- There are some regulatory requirements that can help you to raise the problem with managers

## *Simple Risk Assessment*

Identify a risk ...

What is it's likelihood?

What is it's impact?

Risk Score:  $L \times I$

How frequently does the risk occur?

How often do we need to check?

Who owns the risk?

How will we respond to the risk?

How does our response change likelihood and impact?



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## *Typical, Generic Digital Risks (there are more!)*

File format obsolescence

Media degradation (aka bit rot)

Media obsolescence

Barriers to access (eg encryption)

Insufficient resource discovery metadata

Insufficient representational metadata

Insufficient control (eg copyright)

Authenticity and provenance is unclear

Multiple copies are not synchronised

Virus, trojans etc (aka malware)

Disruptive technologies



RISK	Likelihood	Impact	Score	Frequency	Owner	Response
Media will degrade	5	5	25	ongoing		Technology watch Good media storage Refreshment Routine checks of media Keep copies on different media ...
File formats obsolescence	3	5	15	ongoing		Technology watch Pick long term formats Normalise formats Develop migration plan ...
Media obsolescence	5	5	25	ongoing		Technology watch Refreshment Routine checks of media Multiple media ...



RISK	Likelihood	Impact	Score	Frequency	Owner	Actions to maintain mitigation
Media will degrade	3	1	3	ongoing		Technology watch Good media storage Refreshment Routine checks of media Keep copies on different media ...
File formats obsolesence	1	5	15	ongoing		Technology watch Pick long term formats Normalise formats Develop migration plan ...
Media obsolesence	1	3	3	ongoing		Technology watch Refreshment Routine checks of media Multiple media ...



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## *Two Worked Examples*

A whole class example live on screen

Get your notebooks and .....

Write out ELEVEN headings as follows:

**Risk, Likelihood, Impact, Score, Proximity, Owner, Responses,  
New likelihood, New impact, New score, Frequency of review**

Do this twice, on two different pages.

The first example we will do as a group,

The second one you should do on your own or with colleagues



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## *Example 1: The Historic Parish Archive*

Archaeological Excavation: (closed)  
c. 1000 pages digitized text (TIFFS and PDFs)  
c. 500 photographs (TIFFS and JPEGs)  
c. 100 data tables (held as text)  
c. 25 Excel spreadsheets

Architectural survey of building: (closed)  
c. 3000 images in JPEG format  
25 CAD plans

Parish newsletters and website: (ongoing)  
c. 500 document in variety of wp formats  
c. 150 web pages and images

Oral History: (ongoing)  
c. 25 audio recordings

Music performance: (ongoing)  
10 hours of digital recordings

Parish registers: (closed)  
Circa 1000 pages scanned (TIFFS)



Based loosely on the Christ Church Spitalfields Archive, from ADS  
[http://ads.ahds.ac.uk/catalogue/resources.html?spitalfields\\_var\\_2001](http://ads.ahds.ac.uk/catalogue/resources.html?spitalfields_var_2001)





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## *Example 2: The collection that worries you*

### Existing Digital Archives:

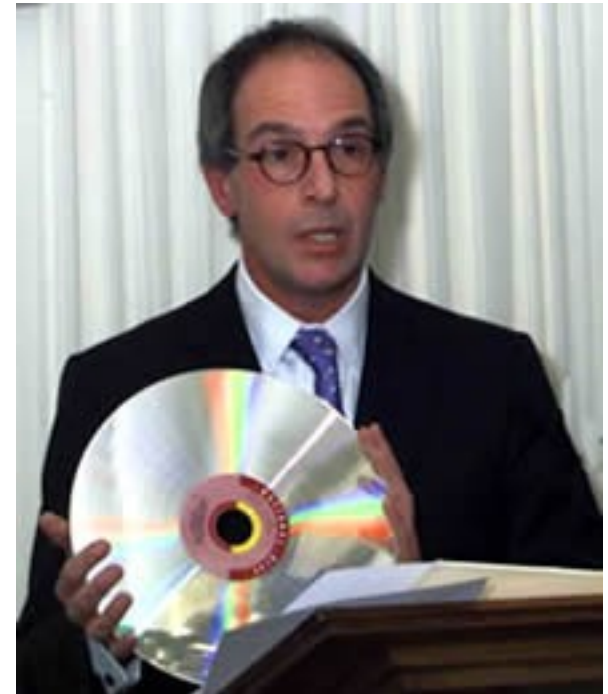
- Digitized text (TIFFS and PDFs)
- Photographs (TIFFS and JPEGs)
- Data tables and spreadsheets
- ...

### Ongoing data flows:

- Outputs from EDRMS
- Document in variety of office formats
- Web pages and images
- ...

### Things you know are coming:

- Digital sound and vision
- Outputs from digitization
- Corporate databases
- ...

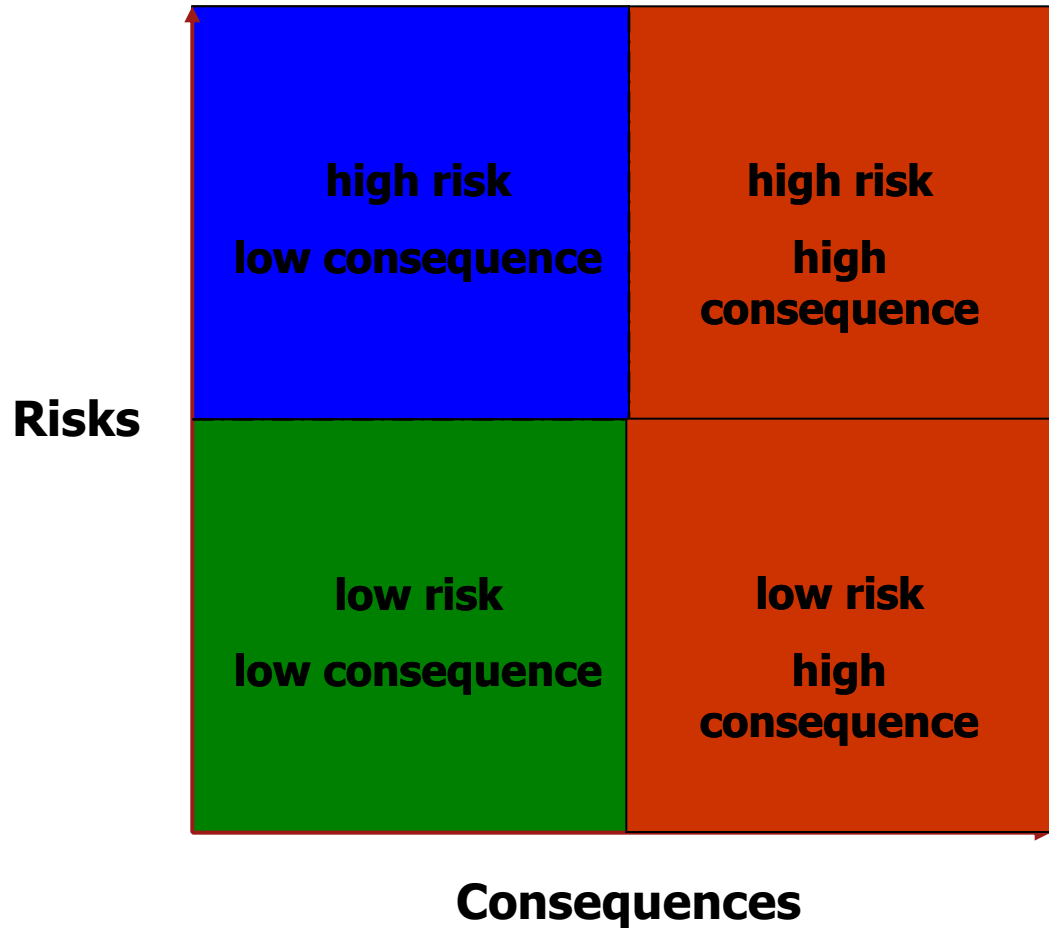


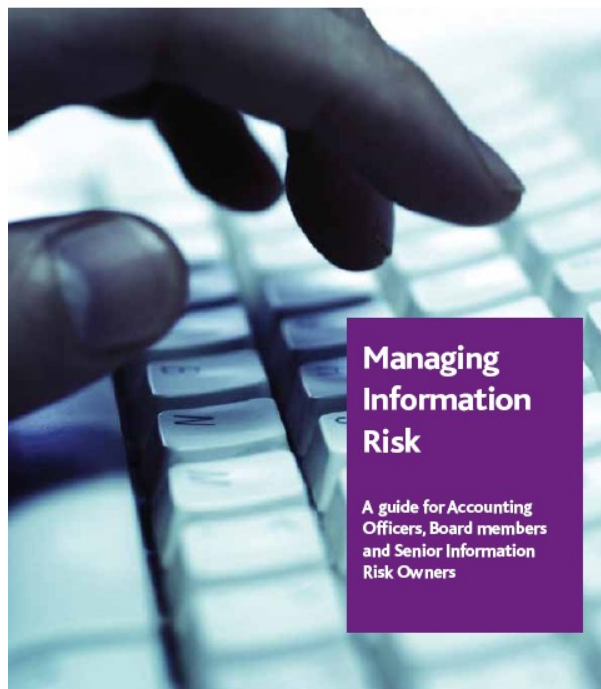
RISK	That
Likelihood	...
Impact	...
Score	...
Frequency	...
Owner	...
Response	...
New Likelihood	...
New Impact	...
New Score	....
Frequency of Review	...



*Any examples you'd like to share?*

RISK	That
Likelihood	...
Impact	...
Score	...
Frequency	...
Owner	...
Response	...
New Likelihood	...
New Impact	...
New Score	....
Frequency of Review	...



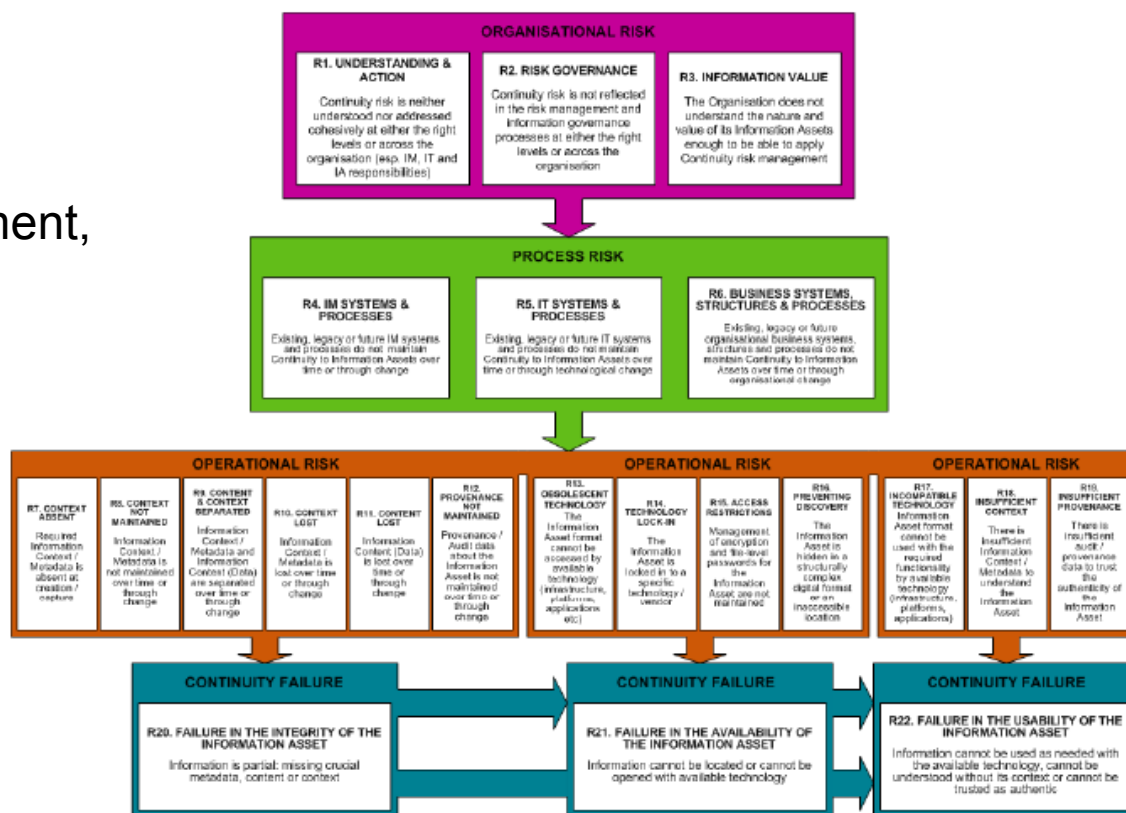


Risk category	Example of risk
<b>Governance and culture</b>	<p>Lack of comprehensive oversight and control (so anything can go wrong)</p> <p>When something goes wrong, handling it badly and not learning (so it can happen again)</p> <p>Third parties let you down (letting down your customers and your reputation suffers)</p> <p>New business processes don't take information risk into account (with serious consequences)</p>
<b>Information management and information integrity</b>	<p>Critical information is wrongly destroyed, not kept or can't be found when needed (leading to reputational damage or large costs)</p> <p>Lack of basic records management disciplines (can have wide-ranging consequences)</p> <p>Inaccurate information (which causes the wrong decision to be made, or the wrong action to be taken)</p> <p>Vital electronic information becomes unreadable due to technical obsolescence (with legal, reputational or financial consequences)</p> <p>Critical information is lost (with legal, reputational or financial consequences)</p>
<b>The human dimension</b>	<p>Despite having procedures and rules, staff, acting in error, do the wrong thing (and things go badly wrong)</p> <p>Despite having procedures and rules, 'insiders', acting deliberately, do the wrong thing (and things go badly wrong)</p> <p>External parties get your information illegally (and expose it/act maliciously/defraud you or your customers)</p>
<b>Information availability and use</b>	<p>Inappropriate disclosure of sensitive personal information (causing reputational damage or worse)</p> <p>Failure to disclose critical information for case management/protection (at worst leading to loss of life)</p> <p>Failure to utilise the value of the information asset (leading to a waste of public money)</p> <p>Failure to allow information to get to the right people at the right times (leading your service to fail your customers)</p>



# A risk management approach

Richard Blake,  
Archives Sector Development,  
The National Archives





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## More Risk Management ...

Risk Appetite

Explosive Risks

Toxic risks

Risk and **opportunity**

Project management (Prince2)

Organisational risk register



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