

Business Tool



User Guide for Digital Value at Risk (DVAR) Calculator (Version 1.0)

1 Introduction

This User Guide is intended to be used in conjunction with Digital Value at Risk (D-VAR) Calculator from Preservica. The User Guide provides an introduction to the D-VAR Calculator, an overview of its main features, and a description of how to use it to produce a customized profile for your organization.

The D-VAR Calculator is based on digital preservation best-practice developed by Preservica over many years. It is intended as an indicative reference guide rather than a specific analysis tool, and as an aide to developing a digital preservation strategy appropriate to the needs of your organization.

2 Outline Description

The D-VAR Calculator provides the following functions

- **Risks Profile** – a customisable form which you use to you enter details on your digital record/collection type, and then select from a list of drop-down menus relating to risk factors and consequences of losing that digital record/collection type.
- **Risk Matrix** – a visualization tool that produces a graphical plot for each of the digital record/collection types, and enables you to determine if this falls into a higher risk or lower risk category

The D-VAR Calculator uses a **risk-consequence model** for profiling different types of digital record/collection. The model works by assigning a **level of risk** to any specified category of digital record/collection. This provides a level of risk for a digital record/collection being partially or completely lost during its required lifetime. The model also assigns a **level of consequence** (financial impact) relating to the loss of the digital record/collection.

The level of risk and consequence are then plotted on a graph to show the relative risk and consequence for your digital record/collection (to each other). The model also shows an **acceptable risk line** which shows the level of acceptable vs. non-acceptable risk for a typical organization profile.

3 System Requirements

To use the D-VAR Calculator you will require Microsoft Excel 2007 or later.

4 Using the D-VAR Calculator

4.1 Risks Profile

Opening the **Risks** tab will give you the following screen:

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File Home Insert Page Layout Formulas Data Review View

Cut Copy Paste Format Painter

Calibri 11 A A Wrap Text B I U Font Merge & Center Alignment Number

Conditional Formatting Table Cell Styles

Insert Delete Format Cells

AutoSum Fill Clear Sort & Find & Filter Select Editing

AutoSum Fill Clear Sort & Find & Filter Select Editing

| HERITAGE | | | | | | | | | | |
|----------------------------------|----------|----------------------------------|------------------|------------------|--------------------------------------|------------------------------------|--|---|-------------------------------|-----------------|
| Is information in Preservacio No | | | | | | | | | | |
| | | Collection Characteristics | | Risk Factors | | | | | | |
| | Title | Description | Approximate size | Retention period | Are record transfers planned? | File formats (choose most complex) | Current Preservation Strategy | Storage Technology | Metadata | Legal Liability |
| 1 | HERITAGE | Local History Records | 1Tb | Permanent | Planned and automated transfer | Legacy file formats | Save original file only | Single disk store, tape backup, no checks | Basic metadata with content | N/A |
| 2 | MPDB | Master Project database | 1Tb | <10 years | Planned and automated transfer | Office file formats (DOCX/LSFPT) | Save original file only | Managed disk and/or tape, multiple locations, no checks | Basic metadata with content | £10m |
| 3 | BDM | Births, Deaths & Marriage | 100Gb | Permanent | Planned and external manual transfer | Simple file formats (PDF/TXT) | Migration to archival format on ingest | Managed CD/DVD/Blu-ray stick | Full metadata in other system | £100k |
| 4 | MINUTES | Minutes of Key Council Meetings | 1Gb | <25 years | Planned and internal manual transfer | Office file formats (DOCX/LSFPT) | Migration to archival format on ingest | Single disk store, tape backup, no checks | Basic metadata with content | £100k |
| 5 | HR | Internal Human Resources Records | 10Gb | <10 years | Ad hoc transfers (external) | Office file formats (DOCX/LSFPT) | Migration to archival format on ingest | Managed disk and/or tape, multiple locations, no checks | Full Metadata with content | £250k |
| 6 | FINANCE | Local Finance Records | 1Gb | <5 years | Planned and internal manual transfer | Simple file formats (PDF/TXT) | Save original file only | Managed CD/DVD/Blu-ray stick | Full metadata in other system | £50k |
| 7 | ROADS | Local Roads Plans | 10Tb | Permanent | Planned and external manual transfer | Legacy file formats | Save original file only | Single copy on server, no backup, no checks | No metadata | £50k |
| 8 | EHEALTH | Environmental Health | 10Tb | <25 years | Ad hoc transfers (external) | Proprietary science / technical | Save original file only | Single disk store, tape backup, no checks | Full metadata in other system | £100k |
| 9 | WEBSITE | External Website | 100Gb | <5 years | Planned and automated transfer | Web (HTML, etc) | Save original file only | Single disk store, tape backup, no checks | No metadata | N/A |
| 10 | ENGDES | Engineering Design | 5Tb | <10 years | Ad hoc transfers (internal) | CAD / GIS | Migration to archival format on ingest | Managed disk and/or tape, multiple locations, no checks | Basic metadata with content | £5m |

Risks Risk Matrix

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4.1.1 Title/Description (Blue background)

This section enables you to enter a short description for your type of digital record/collection. You may enter up to 10 different types of digital record/collection.

| | |
|-------------|---|
| Title | Enter a text classification for your digital record type (e.g. HERITAGE) |
| Description | Enter a text description for your digital record type (e.g. Local History Record) |

4.1.2 Collection Characteristics (Red background)

This section enables you to register the size and to specify your retention policy for each type of digital record/collection.

| | |
|------------------|---|
| Approximate size | Select from the drop down menu: <ul style="list-style-type: none"> • 10Gb • 500Gb • 1Tb (1000Gb) • 5Tb • 10Tb • 50Tb • 100Tb |
|------------------|---|

| | |
|------------------|--|
| Retention period | Select from the drop down menu: <ul style="list-style-type: none"> • <5yrs • <10yrs • <25yrs • <50yrs • Permanent |
|------------------|--|

4.1.3 Risk Factors (Green background)

This section enables you to assign risk factors to each digital record/collection based on a number of key factors.

| | |
|------------------------------|---|
| Are record transfers planned | Select from the drop down menu: <ul style="list-style-type: none"> • Planned & automated transfer • Planned & internal manual transfer • Planned & external manual transfer • Ad-hoc transfers (internal) • Ad-hoc transfers (external) |
| File formats | Select from the drop down menu: <ul style="list-style-type: none"> • Simple file formats (PDF/TXT) • Office file formats (DOC/XLS/PPT) • Media (audio, video) • Image (JPEG/GIF/TIFF) • Web (HTML, etc.) • CAD/GIS • Proprietary science/technical • Database formats (PST/MDB/NSF) • Legacy file formats • Internal file formats |
| Preservation strategy | Select from the drop down menu: <ul style="list-style-type: none"> • Active preservation • Migration to archival format on ingest • Save original file only |
| Storage technology | Select from the drop down menu: <ul style="list-style-type: none"> • Managed disk and/or tape, multiple locations, live checks • Managed disk and/or tape, multiple locations, no checks • Single disk store, tape backup, no checks • Single copy on server, no backup, no checks • Single copy on laptop, no backup, no checks • Managed CD/DVD/Memory stick • Unmanaged CD/DVD/Memory stick |
| Metadata | Select from the drop down menu: <ul style="list-style-type: none"> • Full metadata & full text search • Full metadata with content • Full metadata in other system • Basic metadata with content • Basic metadata in other system • No metadata or indexing |

NOTE: If your digital record/collection falls into two (or more) attributes, then select from the **most at risk attribute** (in the above table, this is always towards the bottom of the drop down list).

For example, if your digital record/collection includes PDF/TXT and legacy file formats, then select legacy file formats from the drop down menu. The level of sensitivity within the D-VAR model assumes that if part of the digital record/collection is at risk of loss, then the entire digital record/collection is susceptible.

4.1.4 Consequences (Orange background)

This section enables you to assign a consequence of loss to each category of digital record/collection. You can customise your own list of consequences by selecting from a drop down list on the header section. This includes a designation of “Other” for any category of consequence that is specific to your organization, and is not shown on the drop down list:

| | | | Consequences | | | | | |
|----------|---|-------------------------------|------------------------------|---------------------------|----------------------|----------------|-----------------|------|
| Title | Storage Technology | Metadata | Legal challenge / Litigation | Loss of patent protection | Recreation / Re-work | Statutory fine | Regulatory fine | Loss |
| HERITAGE | Single disk store, tape backup, no checks | Basic metadata with content | Legal challenge / Litigation | N/A | N/A | N/A | £100k | N/A |
| MPDB | Managed disk and/or tape, multiple locations, no checks | Basic metadata with content | Loss of patent protection | N/A | £2m | N/A | N/A | £5m |
| BDM | Managed CD/DVD/Memory stick | Full metadata in other system | Recreation / Re-work | N/A | £500k | N/A | N/A | N/A |
| MINUTES | Single disk store, tape backup, no checks | Basic metadata with content | Statutory fine | N/A | £100k | N/A | N/A | N/A |
| HR | Managed disk and/or tape, multiple locations, no checks | Full Metadata with content | Regulatory fine | N/A | N/A | N/A | N/A | N/A |
| FINANCE | Managed CD/DVD/Memory stick | Full metadata in other system | Loss of reputation | N/A | N/A | N/A | N/A | N/A |
| ROADS | Single copy on server, no backup, no checks | No metadata | Other | N/A | N/A | N/A | N/A | N/A |
| EHEALTH | Single disk store, tape backup, no checks | Full metadata in other system | | £100k | £250k | N/A | N/A | N/A |
| WEBSITE | Single disk store, tape backup, no checks | No metadata | | N/A | £50k | N/A | N/A | £50k |
| ENGDES | Managed disk and/or tape, multiple locations, no checks | Basic metadata with content | | £10m | £1m | £1m | £2m | £2m |

For each type of consequence you can select an appropriate level of financial impact.

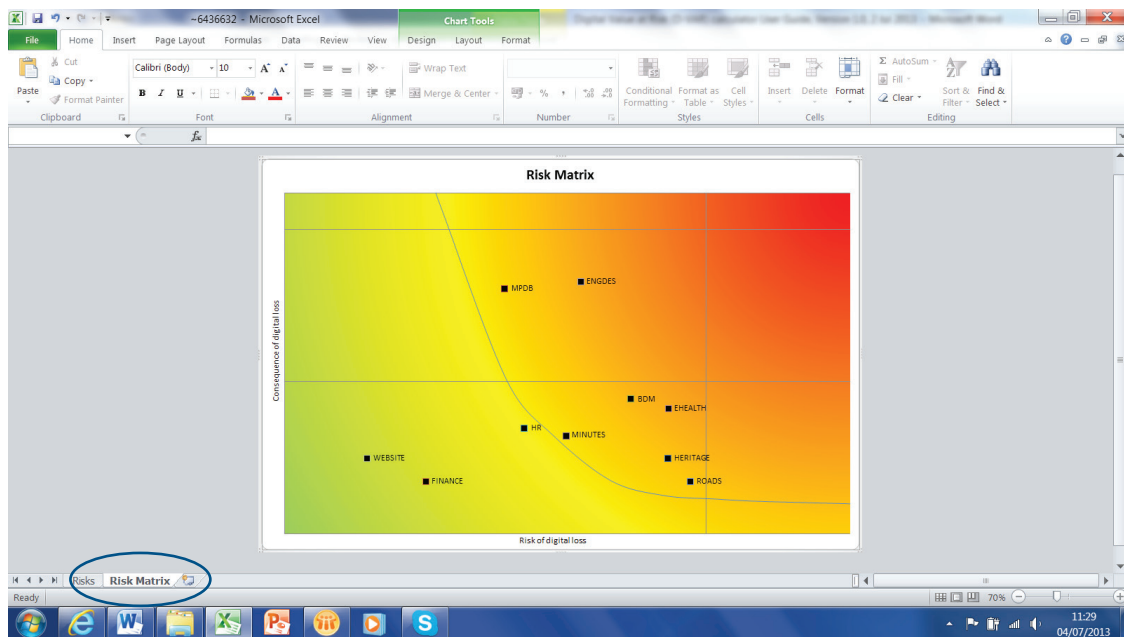
| Type of consequence | Level of financial impact |
|----------------------------|---------------------------------|
| Legal Challenge/Litigation | Select from the drop down menu: |
| Loss of patent protection | • £10k |
| Recreation/Re-work | • £30k |
| Statutory fine | • £50k |
| Regulatory fine | • £100k |
| Loss of reputation | • £250k |
| Other | • £500k |
| | • £750k |
| | • £1m |
| | • £2m |
| | • £5m |
| | • £10m |
| | • £50m |

NOTE: The level of financial impact depends on your organizations exposure to the particular type of consequence.

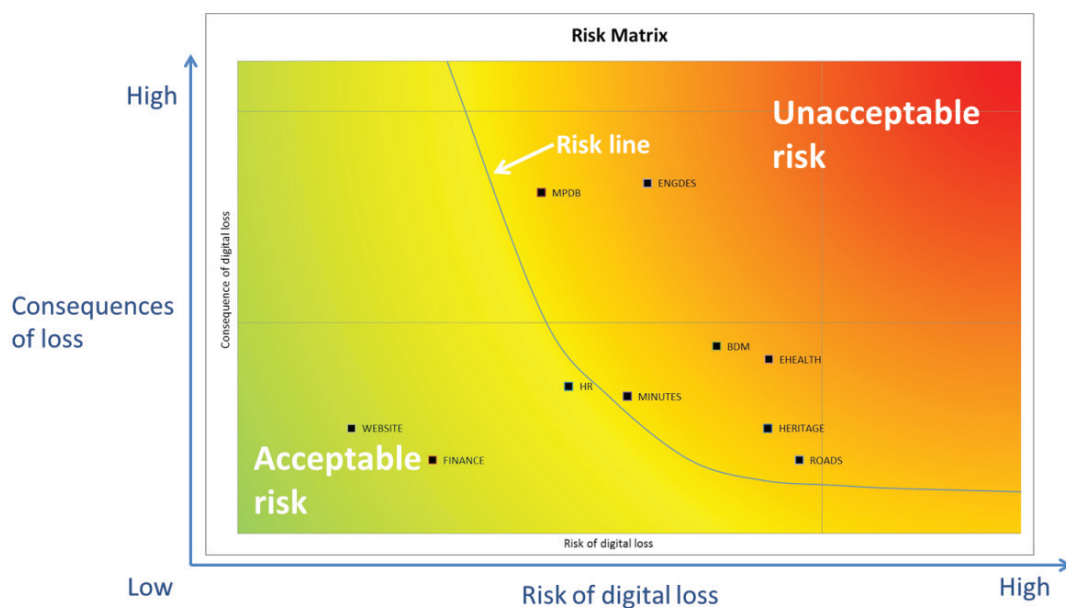
For some of the consequences, this may be partly subjective (or not fully known). You should select one of the values that best represents your **likely exposure** to that particular consequence. You should also consider whether the financial impact is one-off, or could re-occur, in which case the financial impact could be a cumulative value.

4.2 Risk Matrix

Once you have completed the Risk Profile, opening the **Risk Matrix** tab will give you the following screen:



This screen takes the data from your Risks Profile and plots it to a visualization tool to enable you to graphically see the profile of your digital record/collection against level of risk and consequence of loss. The Risk Matrix can be interpreted as follows:



In the above example:

- Local Road Plans (ROADS) are at high risk of digital loss, and low consequence of loss. (Infrastructure plans generally require permanent archiving. Without active preservation, they can be susceptible over extended time to digital loss. However, whilst loss is inconvenient, the financial damage is relatively small). **Active preservation is recommended.**
- Engineering Design Records (ENGDES) are at medium risk of digital loss and high consequence of loss. (Engineering design records are usually in special CAD/CAM formats, and are required for the lifetime of a product – perhaps up to 10 years or more. The loss of these digital records could result in a severe financial loss, for example the inability to defend a patent). **Active preservation is highly recommended.**
- Local Finance Records (FINANCE) are at low risk of digital loss, and low consequence of loss. (Financial records are usually in simple formats, and are usually stored in record management systems for a relatively short period – perhaps only up to 5 years. The loss of these records, whilst inconvenient, carries low risk of financial impact). **Active preservation is optional, but not required.**

4.2.1 Effect of an Active Preservation solution

Return to the Risk Profile screen and select “Is information in Preservica?” (Yes/No). You can see how the risk profile for your digital record/collection changes with an active digital preservation solution:

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FileHomeInsertPage LayoutFormulasDataReviewView

Clipboard

Font

Alignment

Number

Conditional Formatting

Cell Styles

Insert

Delete

Format

AutoSum

Fill

Clear

Sort & Filter

Find & Select

PreserviceSolutionF...

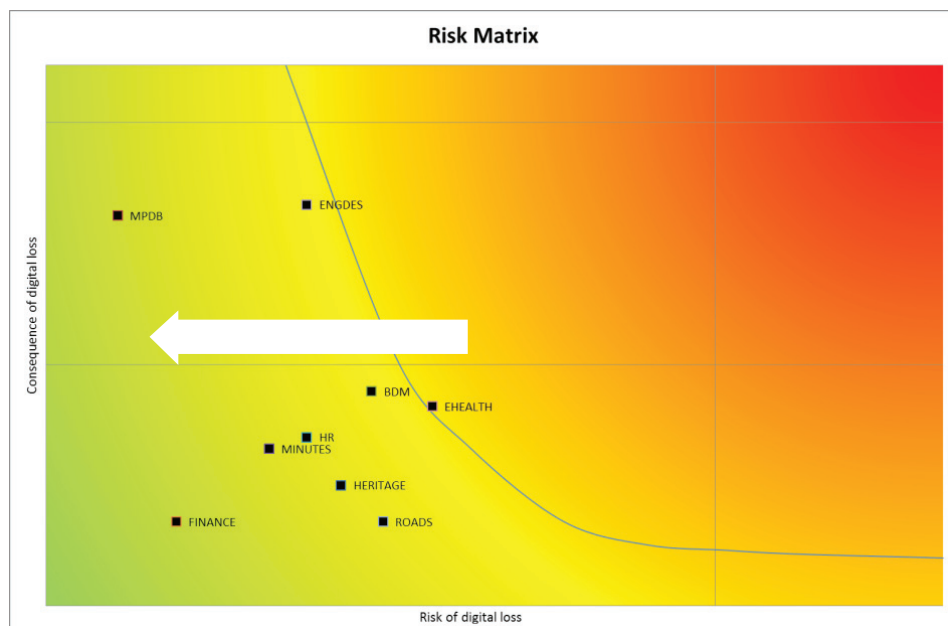
Yes

| | | | | | | | |
|----|----------|----------------------------------|------------------|------------------|--------------------------------------|------------------------------------|--------------------------------------|
| | A | B | C | D | E | F | G |
| 1 | | Is information in Preservica | Yes | | | | |
| 2 | | | No | | | | |
| 3 | | Collection Characteristics | | | Risk Factors | | |
| 4 | Title | Description | Approximate size | Retention period | Are record transfers planned? | File formats (choose most complex) | Current Preservation Strategy |
| 5 | HERITAGE | Local History Records | 1Tb | Permanent | Planned and automated transfer | Legacy file formats | Save original file only |
| 6 | MPDB | Master Project database | 1Tb | <10 years | Planned and automated transfer | Office file formats (DOC/XLS/PPT) | Save original file only |
| 7 | BDM | Births, Deaths & Marriage | 100Gb | Permanent | Planned and external manual transfer | Simple file formats (PDF/TXT) | Migration to archival form on ingest |
| 8 | MINUTES | Minutes of Key Council Meetings | 1Gb | <25 years | Planned and internal manual transfer | Office file formats (DOC/XLS/PPT) | Migration to archival form on ingest |
| 9 | HR | Internal Human Resources Records | 10Gb | <10 years | Ad hoc transfers (external) | Office file formats (DOC/XLS/PPT) | Migration to archival form on ingest |
| 10 | FINANCE | Local Finance Records | 1Gb | <5 years | Planned and internal manual transfer | Simple file formats (PDF/TXT) | Save original file only |
| 11 | ROADS | Local Roads Plans | 10Tb | Permanent | Planned and external manual transfer | Legacy file formats | Save original file only |
| 12 | EHEALTH | Environmental Health | 10Tb | <25 years | Ad hoc transfers (external) | Proprietary science / technical | Save original file only |
| 13 | WEBSITE | External Website | 100Gb | <5 years | Planned and automated transfer | Web (HTML, etc) | Save original file only |
| 14 | ENGDES | Engineering Design | 5Tb | <10 years | Ad hoc transfers (internal) | CAD / GIS | Migration to archival form |

Ready

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Selecting “Yes” in the drop down menu above gives you the following Risk Matrix screen:



NOTE: The effect of selecting “Yes” is to significantly reduce the risk of digital loss, which moves all your digital record/collections towards the left of the Risk Matrix (shown by the white arrow above). It does not reduce the consequence of loss, which remains the same. This visualization enables you to determine if your entire digital record/collection now falls within an area of acceptable risk for your organization.