The Organisation As A System

The Old Geek

Structured Coherent Design

14. Document Management – Security

The slide deck set:

<u>1. Introduction</u> – document management, why do it

The Operating Environment

- <u>2. Document Life Cycle</u> Documents have lives of their own...
- 3. The Building Blocks Its all about the architecture
- 4. Documents Are Packages Document files have form, function and purpose beyond just the content
- <u>5. Legal Considerations</u> You are all international lawyers now
- 6. <u>Infrastructure</u> You need to find a home, one that is safe.....
- 7. Meta Data. "Data" about data.
- <u>8. Naming Convention</u> Privacy by design starts here

The Architecture

- <u>9. Document Design.</u> If there is a requirement to tap into documents for data analysis purpose.. They must be designed.
- <u>10. Corporate Dictionary</u> –Not as many words as you think
- <u>11. Location</u> Location, if you do not know where something should be, it may as well not be there!
- <u>12. Writing with style</u>, People do what people do, therefore, with the lightest touch, let them do that, but order their work.
- <u>13. The Tool Architecture</u> No one tool can cover it all and cookies? They don't count.
- <u>14. Security Considerations</u> you can't ignore the "S" word.
- <u>15. Key Players</u> People do what people do.
- 16. Closing Summary Wrap up..

Revision

Viewers who have not done so may find is useful to review the following slide decks in the series

- <u>2. Document Life Cycle</u>— Documents have lives of their own...
- 4. Document Are Packages Nowadays document files are composites.
- 11. Location Location, if you do not know where something should be, it may as well not be there!
- 13. The Tool Architecture No one tool can cover it all and cookies? They don't count.

Introduction

Document Management has security implications. This deck, supported by the others in the series, set out the need for a document management security policy, but does so within the context of an ISO 27001 compliant Information Security Management System (ISMS) or something similar

Caveats

This slide deck does not attempt to address the full scope of the security risk and associated policy and governance issues and instead focusses on some guidance on matters to do with document security specifically.

This deck has its basis in the Microsoft Windows series of operating systems. What is described and referred to in this deck will have their equivalents with the other majors.

The Security Risk

The security risk is multi dimensional and multi impact, the impact being felt and seen in the rise in computer related crime. So much so that, as an indicator, insurance costs are rising with the assessment of risk making insurance untenable for many as the LinkedIn post available here indicates

The security risk is multi dimensional and multi impact, the impact being felt and seen in the rise in computer related crime. So much so that, as an indicator, insurance costs are rising with the assessment of risk making insurance untenable for many as the LinkedIn post available here indicates

Arguably, above all, failure to secure your information is a commercial risk, an existential one at that.

The ISMS

Document Management policy is subordinate to security policy. Where there is any conflict of interest, Security Policy will take precedence.

End of!

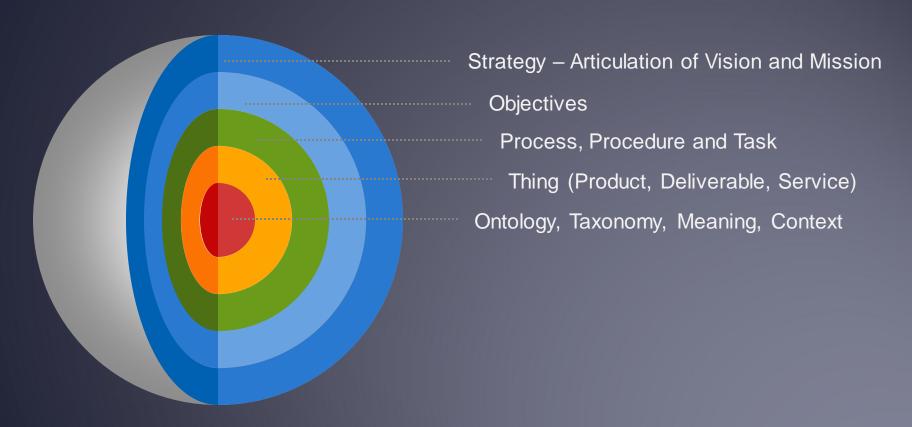
Supporting this series of decks and templates is an ISO 27001:2013 template library available on request. The front page of which can be viewed here

Writing an ISMS is an evolutionary process, one that should be subject to regular review and revision.

Policy and Governance

1. Document Management - Introduction

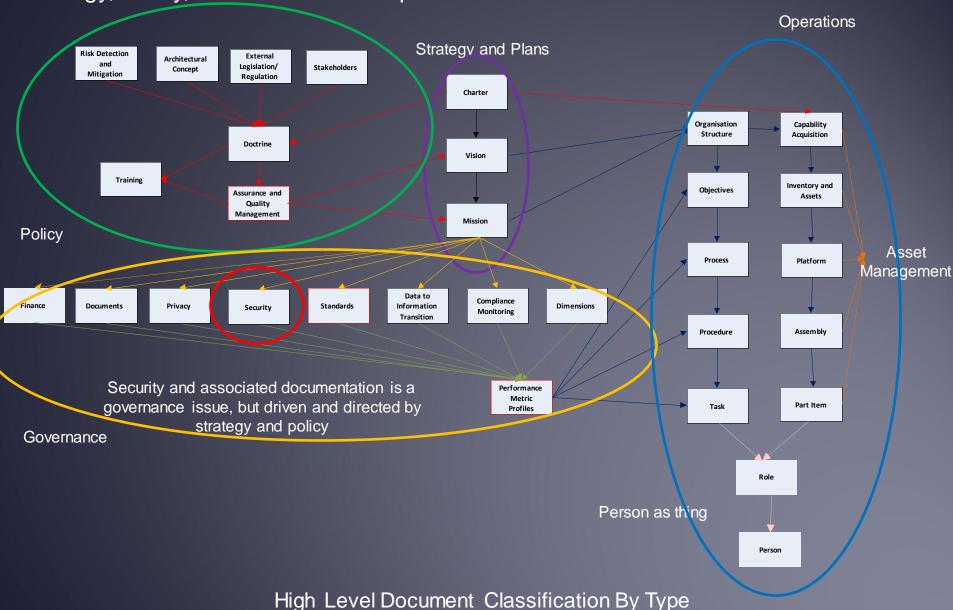
Your Documents Are Part Of A Layered Information Management Architecture



A set of conceuptual architectural schematics is available <u>here</u>

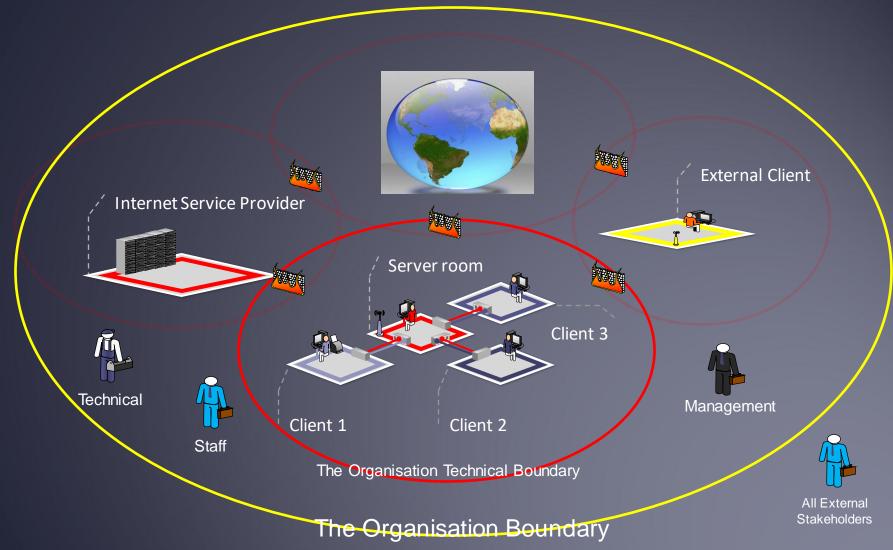
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Strategy, Policy, Governance and Operations



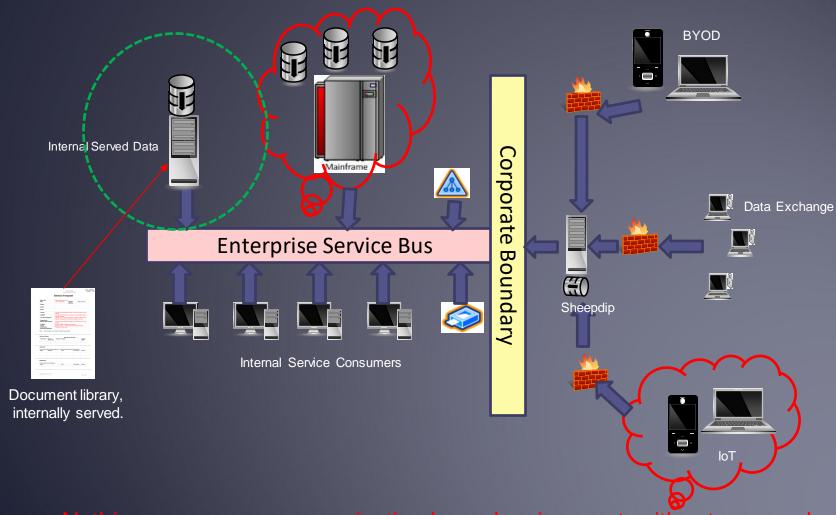
Security And The Organisation Boundary

The Organisation Boundary



Nothing should cross your organisation boundary without the knowledge and approval of the organisation or its knowledge of such transfers

Internal Boundaries



Nothing crosses your organisation boundary in or out, without approval

Security And The Organisation Boundary

14. Document Management – SecuritySecurity Marking of Documents

The next three slides outline the nature of a document design that seeks to specify a means to profile a document properly in an operating environment in which legal compliance and security requirements are mutually dependent and supportive.

What is presented here is not THE way to do anything, just "a" way driven by the application of several key best practice methodologies and tools. The result of applying those methods and standards being a library of templates, the catalogue of which can be viewed here

A copy of a base, or general template on which to design others, can be found <u>here</u>.

14. Document Management – Security Security and Privacy Policy Documentation

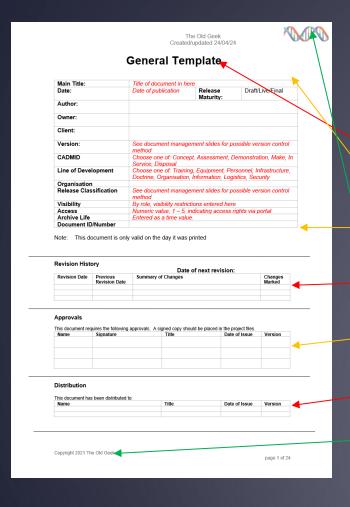


Security policy and governance are stored as reference documents in the central library, in this case posited on the ida of "though life management planning".

The security policy folder structure is illustrated to the left.

An illustrative he security policy folder document manifest is provided <u>here</u>. Some 97 files of various kinds in all

Security Marking of Documents



For the purposes of this exercise, the written content is proceded by the following with the aim of establishing the means to treat a document as a database record and provide the means to add a rich set of sensitivity markings. The part of the template for "profile record keeping" section is presented in this slide.

Main Document Title

Document profile containing version, visibility and ownership markings

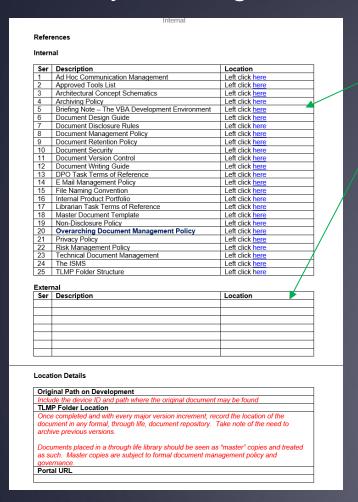
Document revision history providing an indication of version change and reasons for same

Approvals – Amendment sign off history

Distribution List – By role, who has received a copy of the document

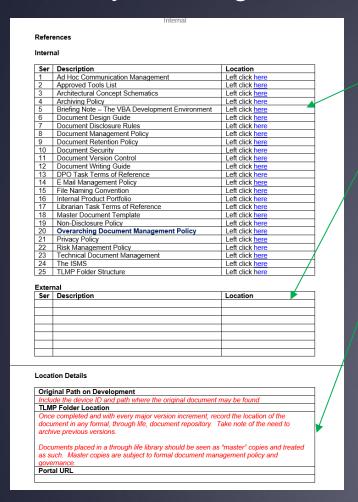
Copyright and logo markings (on each page)

Security Marking of Documents



Page two, internal and external references, linked to those references by hyperlink

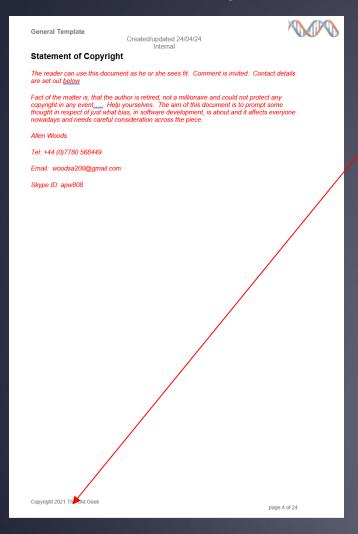
Security Marking of Documents



Page two, internal and external references, linked to those references by hyperlink

File Storage Location

Security Marking of Documents



Page 3. An explicit statement of copyright to establish ownership.

With the statement of copyright reinforced by markings on ech page

Note, pages 1, 2, and 3 would not normally be distributed to outside agencies

Security Marking of Documents



The last two pages of each document explicitly stating quality assurance measures taken followed by final sign off

14. Document Management – SecuritySecurity Marking of Documents

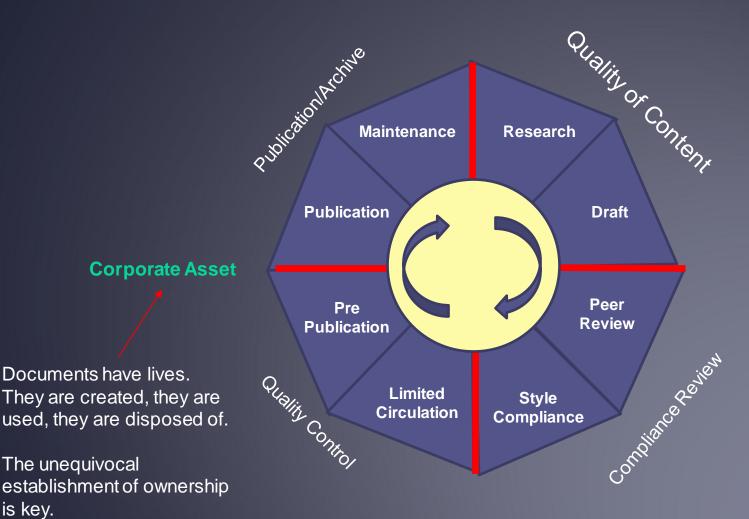
The design presented here is not "MUST DO" for everything, it is a judgement call when such rigor needs to be applied.

It needs to be understood that the reasons for going to this length are to establish ownership, protect content and, in the event that an external auditor comes to call, the organisation can demonstrate that there was and is, an assurance regime in place.

Your call, your risk...

Security And The Document Life Cycle As Focus

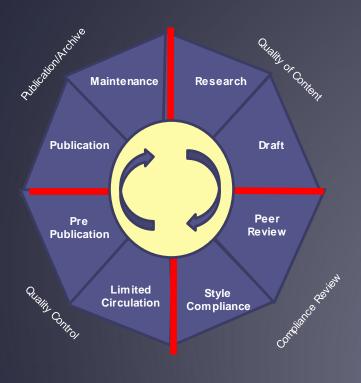
Document Life Cycle – Security Key Stages



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is key.

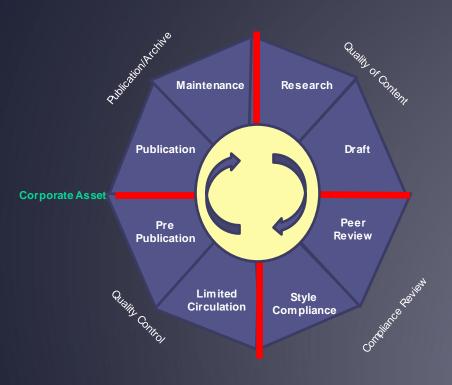
Pre Publication



At pre-publication documents should be fully formatted, with the document profile properly completed. Style guide followed and quality of content checked.

All signed off ready for submission into the organisation library

Establishment of Ownership

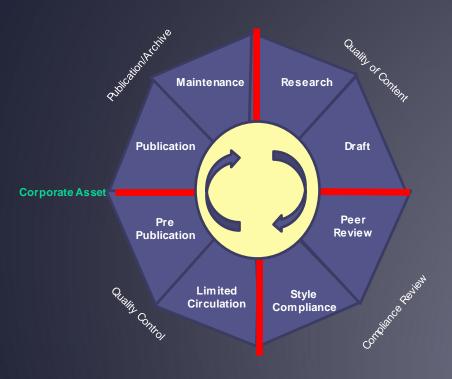


Once accepted into the library, a document becomes a corporate asset. Version increment is applied and the document stored in the correct place in the library.

At this point, for official business purposes, copies for internal and external use should only be drawn from the library.

It is an internal decision as to whether or not "work in progress" documents should be retained and for how long.

Publication



In publication, document copies for internal and external distribution should only be supplied from the library and drawn though the relevant portal.

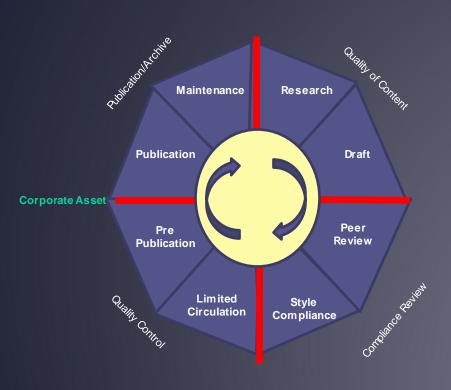


At the portal gateway, requests for documents to be logged by job role or stakeholder title (as opposed to the individual). Access and visibility controls applied here



Documents may be presented on subject matter expert intranet or external site pages, but referenced back to the TLMP library. All document download requests to be logged by job role or stakeholder title

Maintenance



Authorised changes to document content recorded on the indicated listings below



Document revision history providing an indication of version change and reasons for same

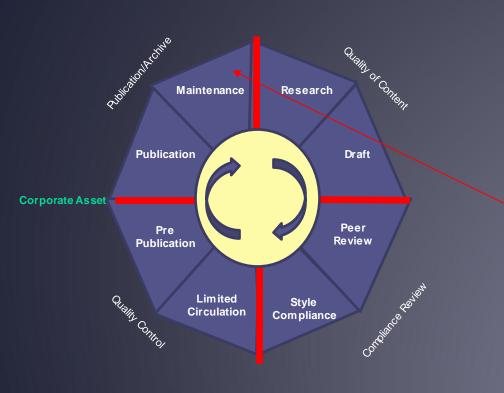
Approvals – Amendment sign off history

Distribution List – By role, who has received a copy of the document

More than 10 modifications and reviews should trigger a quality assurance review with the aim being to decide if a new version needs to be written.

Triggering a new version will eventually bring about a version increment on release of the new version into the library. On new release, all existing releases to be archived.

Archive and Disposal



Archiving and disposal is driven, in no small measure, by the need to comply with legislative requirements.

At the time of writing a "hot topic" in information management generally was the EU GDPR and similar legislation elsewhere in the world.

However, the GDPR is not the only regulation that counts and it will be the case that a balance must be struck, based on the concept of "legitimate interest". With archiving policy and governance being derived from that operating principle.

The Security Risks (an overview)

Considerations

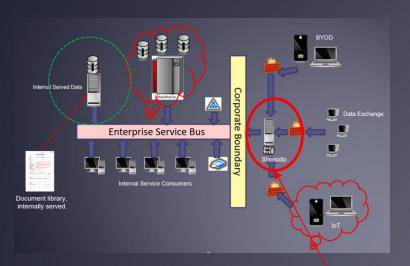
What follows is a series of slides that set out, in overview some issues to be consider in respect of document security.

It is not possible to be specific, given the generalist nature of IT use nowadays which suggests that what is presented here will not be complete and nor would recommendations to address issues raised would be appropriate for everyone.

In short, you must plan your own security approach, but within the context of an overall security plan of the kind that the <u>ISO 27000</u> family of standards would bring about.

Note too, that given incidents like "<u>sunburst</u>" and other "hacks", not to mention the rise of computer related crime generally and its <u>estimated financial hit</u>, just in the UK, failure to address security issues is an existential commercial risk.

Document Receipt



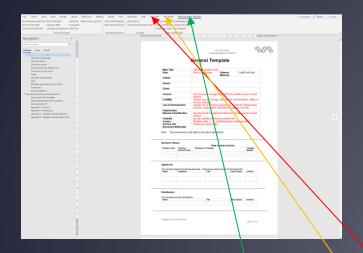
Documents are packages, an early slide deck in this series illustrates the idea that document files are in fact composite files that contain a number of file based components. It is possible to "unzip" or decompress files to expose the constituent parts

Needless to say it is possible to insert items into the packages which become a constituent part of the file structures if those considering it know how to execute an insertion.

One of the more extreme forms of insertion being the "sunburst" hack a few years ago. For that particular exercise, part of the package was for the malignant element of the incursion, to remain dormant for a few days before its ful effect was deployed.

"Sheep dipping", holding files coming into an organisation on a sanitised machine for detailed checking of files should be an active consideration

MS Office Inserts



To facilitate controlled document management and access a number of "add ins" were built with the aim of implementing co-ordinated security management from "desk top to server".

The add-ins were deployed locally. Three core components:

An external hyperlink librarian

A series of controlled portal gateways

Enhanced document management capabilities



Which were themselves supported by other special to task portfolio tools, the aim of which was to enhance document management security capabilities

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Bring Your Own Device (BYOD)

Bring Your Own Device is a common practice nowadays, but...

By definition a BYOD device is not a corporate asset.

BYOD devices can be easily connected into a corporate network by a variety of methods both directly (via USB, say) or indirectly.

There is no control over the nature of the device and as a result, each BYOD device may introduce security integration issues from operating system on up over which there is no corporate control

There is no "ownership" of such devices and as a result, in the event of a compromise of security of any kind, device owners can refuse an audit.

Go figure...

USB Ports and Devices

Following on from BYOD, a fortress is only as secure as its gateways. A USB port is a gateway. Learn how to disable them as part of a security review.

A video available <u>here</u> explains how to disable USB ports at the operating system level through the Windows registry.

A second method of disabling USB ports is through the device "basic input output services" may be applied.

ANY DEVICE, ANY DEVICE AT ALL, that may be connected via a USB port should be a corporate asset, properly managed as company asset and reviewed on the basis of a network integration plan or process.

Given that USB memory sticks are for sale now that can store 2Tb of data and many organisations do not hold that volume, then placing an entire corporate information architecture on such a device is a significant risk.

Release – General Policy

Nothing should cross your organisation boundary without the knowledge and approval of the organisation or its knowledge of such transfers

A "<u>Document Disclosure</u>" policy should be developed for the release of sensitive documents

Given the complexity of some kinds of disclosure requests (A GDPR DSA for example), it is also prudent to develop a suitable "initial response letter" and for each such complex request maintain a release file manifest.

A review of external regulation should be executed in order to determine a legally sound definition of "legitimate interest".

Release - Watermarking



All copies of released sensitive documentation should be watermarked, where possible as a "certified true copy" using whatever term to describe the integrity of the copy that the organisation has supplied.

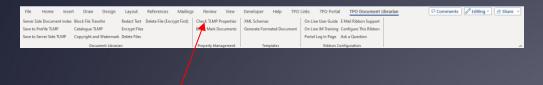
Release - Encryption



Where agreed and appropriate, sensitive documents despatched to external recipients should be encrypted.

The MS Office add-ins illustrated above supported several encryption methods.

Release – Password Protection and a Sealed "Wrapper"



Where agreed and appropriate, sensitive documents despatched to external recipients should be password protected.

Release documents should also be converted and wrapped in a form different to the original document, for example from "WORD" to "PDF", the aim being to ensure, in the best way possible, the integrity of the content

Personal Data Protection



Where document content contains sensitive material, such as the personal details of third parties, the boy of the text should be redacted.

In this case of the add in, redaction was executed by opening the original file, taking a copy and then searching the copy for sensitive text w and replacing it with the word "redacted" followed by a date time group of the redaction exercise.

The redacted copy being sent for despatch in due course

Deletion



Enhanced File Deletion

It is the case that the form of "deletion" in a windows operating environment is typically a two stage process:

Place a file in a "trash can"

At some point, empty the trash can

However, as described <u>here</u>, when the "trash can" is emptied the storage space a a file occupies is only marked as "free" or "blank" space and until the space is overwritten, document content can still be read (through a "<u>hex</u>" editor), or recovered. So..

The deletion capability indicated in the office add-ins supported the following, optional deletion techniques:

1. Password protect, then encrypt as a whole file then delete.

Or

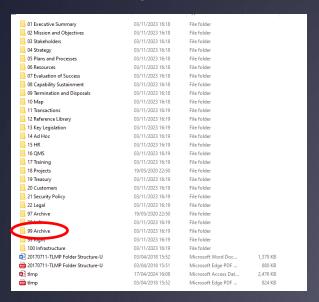
2. Open a document file encrypt the content, close the file, password protect and then encrypt at fie level.

Or...

3. Open a document file at the absolute disk level and encrypt, byte by byte. This last option taking quite some time to execute given document file storage requirements nowadays.

With each file, once dealt with, marked for deletion at operating system level.

Archiving



An archive folder should be located within the corporate document library, or Elsewhere as defined by corporate governance rules.

The archive folder falls under the direct control of the organisation librarian. Documents placed in archive should only be released on request and the request logged when documents are issued

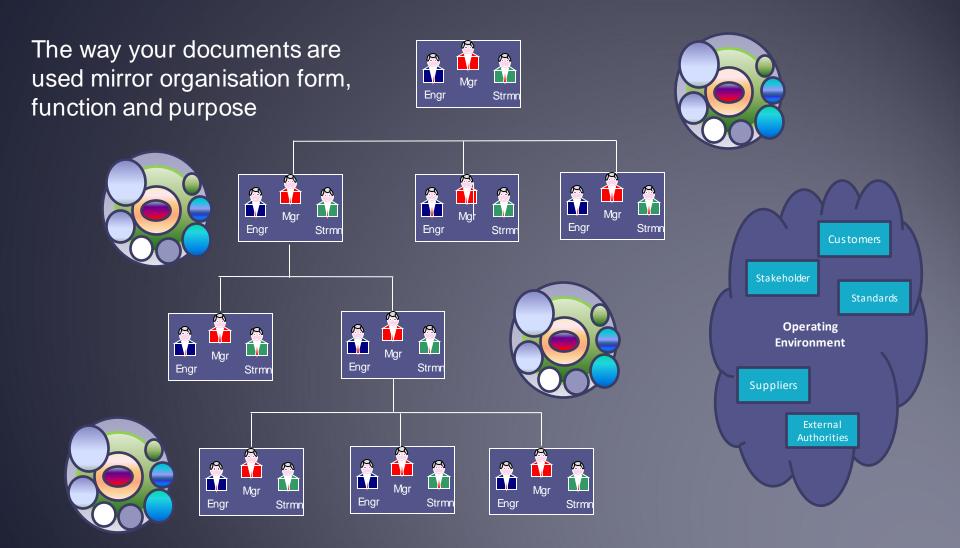
For consistency of location management, the sub folder structure of the archive folder should mirror the overarching library folder structure

Archived documents should be secured by password with the original content "wrapped" in a machine readable format different to the original form.

Archived documents should be held for the minimum period required consistent with any regulatory requirements (which could be for quite some time.

An appropriate archiving policy and governance regime will need to be developed. A sample can be read here

Cleanse Locally On File Deletion and Archive



There will be more than one document store

Cleanse Locally On File Deletion and Archive



There will therefore be a need to regularly cleanse local stores wherever they may be on organisation or system owned assets.

Two corporate events require corporate cleansing of data stores where they exist:

Archiving – with the aim being to delete redundant document files

Deletion from the main library – with the aim of ensuring integrity of content

As a consequence, the MS office add ins and a supporting document spider were deployed to every desk top device on internal networks when the opportunity and need arose

The Insider Risk

Do not underestimate the scale and scope of the insider risk.

Plan carefully, the end of employment departure of key staff, particularly those with a high level of access to corporate information stores of any kind.

Lock visitor technology in a secure area on entry to your organisation, return it to them on departure

The insider risk is diverse, most recently the ability of some generative AI capabilities, that have the means to write computer code have had the effect of democratising sophisticated hacking techniques

For just one example of the impact of the insider risk, review the UK Supreme Court judgement available here. Noting there will be others.....

Software Asset Management

Software Asst Management (SAM) is a many splendored phrase, it sounds like it refer to running an asset register for your software inventory, which indeed is what it is about in part. After all organisations and individuals do buy software, install it, register it and then go on to use it.

However, what rarely happens is that those doing the using rarely read the Terms and Conditions (T&C). That failure to read them is a mistake.

T&C are a contract, they impose conditions, set by the owner of the rights to the software, on the end users. The basic aim, to protect vendor/owner intellectual property rights and grant end users limited use rights. Limited by virtue of the fact that as much responsibility and liability as possible associated with safe use is shifted client side. T&C change frequently, often if there are legislative changes being applied.

Note too that T&C are written under the jurisdiction of the vendor and compliance with that law rather than yours.

Finally, as a licensed asset, that you or your organisation may use, bear in mind the IP owner will choose to exercise their right to audit your platform of IT device, as they see fit, to make sure that you and your organisation are not contravening licence conditions.

Microsoft Licence Audit Information can be viewed here. The Oracle equivalent here. The others too will have similar SAM licensing terms. Make sure someone in your organisation understand your major vendor SAM rules. It is an expensive mistake not to.

Finally folks...

The next deck? The key players

That's all folks.....

The original deck and others, are available on request, free, using any of these means to get in touch:

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