Author

This paper is provided 'as is', for information, learning and adaptation. Developed to support specific business requirements described below, which may not be appropriate in all circumstances. The author accepts no responsibility for any action taken by the reader resulting in personal or business loss.

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November, 2014

Migration Objectives

- Migrate selected content from SharePoint 2007 to SharePoint 2013;
  - Old content remains in place for review and deletion;
- Mitigation of large database size by creating new collections for defined business areas;
  - A business area may have many collections;
  - Initial database or collection sizes should not exceed 50GB;
- Define new information management policies and Content Types to facilitate migration and ongoing management; (separate work stream)
- Move selected content from file shares to SharePoint 2013;
- Content in My Sites is not included in migration;

Summary

This paper provides selection criteria to assist discovery of products suitable for migrating content from file share and SharePoint 2007 to SharePoint 2013 or SharePoint Online.

Selection criteria is based on business requirements identified for core business which could also be applied to agencies, with refinement if necessary.

Most migration and content management products for SharePoint provide reporting. Appendix A lists potentially useful reports. The list is based on research conducted into administration and reporting tools for improving system and service governance.

Initial investigation of product suitability should include enquiry on available licencing models. Appendix B provides a simple summary of common models for this type of product, and questions about installation requirements. While prices may be negotiable, and not the place of product selection by requirements, an early indication is helpful as are potential software installation and use requirements.

Migration requirements were not fully articulated in EDRMS project requirements beyond stating 'migration software will be required'. This paper expands the basic requirement. The improvements to the SharePoint 2013 Platform has resulted in the need for additional Administration and Reporting software to proactively manage and monitor the environment as well as a migration software to facilitate the transition to the new Information Architecture.

SharePoint administration and migration software were investigated in relation to SharePoint 2007 Database remediation project, from which requirements detailed in this report have been drawn.

In addition business requirements described in this paper are also based on 'Content Migration - Options Analysis' paper provided to EDRMS project which addresses practical scenarios. The

requirements have been enhanced to address product service requirements for installation and management.

The option to engage a migration specialist contractor has not been decided upon. This would be beneficial for complex search and discovery type products which require deep understanding of options and functionality. [xxx] and [xxx] are examples where the supplier provides the product and consultancy. Selection criteria for consultancy should be addressed separately.

Contents

Background

Business propose to migrate content from SharePoint 2007 and move content from file servers to SharePoint 2013 or SharePoint Online.

Background and options detail are in 'Content Migration – Options Analysis' paper provided to EDRMS project.

Migration or moving content will need to take place quickly and efficiently as part of roll out of SharePoint service. An initial consultation with teams will be conducted and enhanced by provision of good reports and analysis of file and data holdings. Selection of files and data to be migrated, moved, archived or deleted is required which will benefit from good quality reports and ease of selection.

Following selection of files or data a transformation will be required to migrate or move items to new location, typically a project or function Team Site, with additional metadata to enhance content value.

Migration or movement of content from Exchange (Outlook) was not considered in Content Migration – Options, nor in the primary objectives of EDRMS project. Software does exist for this purpose and remain an option for the project to investigate.

Migration challenges

The task of moving content from SharePoint 2007 or file servers into SharePoint 2013 or SharePoint Online requires governance and planning to complete the task effectively, accurately and timely fashion. Specialist software facilitate these requirements by providing discovery, reports, item or block selection and transformation methods.

There is no direct 'upgrade' or 'migration' paths from SharePoint 2007 to SharePoint 2013 as the database model that defines, manages and stores the content is substantively different for each system. Microsoft have not provided a direct managed migration path that does not include additional software and protracted down time. Migration and security management software from third party providers can eliminate or alleviate this problem.

Moving or migrating web pages and web parts from SharePoint 2007 to SharePoint 2013 is not possible. The front pages of Team Sites will require attention to suit the business needs and business policy.

The hierarchy structure which exists in Team Sites is not efficient, effective, practical or optimal. It is essential to separate business areas like finance, legal and HR into separate databases and collections. This provides the opportunity to resolve issues of database size and removal of content no longer required.

The principal challenges are:

- Identifying files to be migrated;
- Detailed reporting;
- Retaining original metadata;
- Applying new metadata;
- Applying new permissions, while protecting information risk;
- Auditing process to record context change;
- Conducting migration or move out of hours;

- Testing migration or move scenario;
- Who may conduct identification, configure migration plan, and implement;

Any manual move of content from file share or SharePoint into SharePoint will lose context, versioning, security and metadata. There is no audit, the manual effort is considerable and prone to error. Loss of this valuable metadata affects life cycle records management of content and value to current and future business activities.

Ongoing management of SharePoint

While migration products are generally directed to address this important task, they often provide means for continued use as management and reporting software.

The global management of SharePoint content is not well catered for within the system. Additional software is particularly beneficial when resolving content and security management problems across multiple SharePoint databases, collections and project sites (Team Sites), enabling ease to move content between different locations without loss of metadata or security.

Therefore consideration should be given to a product or range of products that provide long term system and service management for benefit of department records and information managers, content managers, system managers and system owners.

Migration of security

Authentication to access SharePoint is conducted using Active Directory (AD). To facilitate quick adoption AD profiles are imported into SharePoint as part of setting up SharePoint servers, or when groups or individuals join an existing SharePoint environment.

SharePoint security is not automatically created on Team Sites or site collections. This must be either configured by hand, PowerShell command line script or using a software product to complete the task.

Any good SharePoint security management or migration software will perform the function of copying SharePoint permissions from one Team Site, library, folder or item to another.

However, this technique, for migration purposes, is not good practice. The migration provides opportunity to clean up permissions into rational and simple manageable model, removing old accounts and assigning new ones.

Best practice is to create permissions in the new Team Site and associated Libraries, then import the migrated content which will automatically apply the correct permissions. Anyone missing or included by mistake in the security design can be quickly added or removed by the site owner.

Never the less, content migration software should identify the source security settings and provide a suitable report that be used to infer what the target permissions will be.

Terms used:

Copy: will copy original content to new location and leave original unchanged in source location. Metadata for dates file created, last access and created by will change to the current context;

Move: will copy original content to new location and delete from original location. Metadata for dates file created, last access and created by will change to the current context;

Migration: will copy original content to new location and delete from original location. Metadata for dates file created, last access and created by will retain origin metadata;

Transform: Performs 'migration' plus adds new metadata, changes file name, applies security or other properties based on defined instruction (code, configuration or settings) provided to the software product;

Types of migration products

Selection of the most appropriate software requires an evaluation process against business requirements firstly based on product documentation and secondly on supplier responses. Testing of selected product from short list should follow paper evaluation.

A general review of the market place identifies four product groups:

1. Search and discovery with combined transformation and migration to SharePoint or other repository from many sources like SharePoint, file share, Exchange or other content repositories;
2. Discovery of content in SharePoint, transformation and migration SharePoint;
3. Discovery of content in file server, transformation and migration SharePoint;
4. Discovery of content in file server or SharePoint, transformation and migration to SharePoint;

In the above context 'search' products will look inside documents for metadata, keywords or templates which will assist fine grained identification of content. This is particularly useful in situation where the content is mixed, duplicated and unstructured. File servers are typical example, although business use of managed structured file shares has alleviated the unstructured element, assessment and structure of content must be completed prior to moving into SharePoint Libraries.

By contrast 'discovery' software usually provide simple view of the source structure (file directory tree) and metadata about files including dates, file name and permissions. An example of a simple discovery software used is Droid, provided by The National Archive (TNA), which lists files, identifies file type and standard file metadata. It does not provide information about security, metadata contained in the document, nor does it provide means to changing or move files.

For a scenario like moving from a file share to SharePoint we have 'power user' migration tools and 'IT professional' migration tools available to us. Typically the power user tools are licensed by user and while they support migrating metadata and content from the file shares, they probably don't support the ability to schedule, or create many paths/jobs for a larger migration. You may even use both for select cases, but often for simpler migration scenarios (or where it's really being 'orchestrated' from one individual) you would leverage a lower cost power user migration tool, and when it's more complex, distributed, and requires far more input and extensive planning/orchestration you would leverage the IT Professional migration tooling.

The capability of migration and content management software is continually being improved and enhanced. Licences vary considerably and, in general, are negotiable.

Power User Migration Tools

- Licensed per user or by volume migrated or assessed.
- Typically annual licence.
- Typically lower cost (if you only need one or two user licenses).
- Requires manual 'orchestration' or management of the migration.
  - This means you have to designate the target and source often each time you use the tool.

- o   Note that it still automates the actual migration of content and metadata, etc.
- Doesn't support scheduling, scripting, or automated 'orchestration' or management of the migration.

Examples of File Share to SharePoint Power User Migration Tool Vendors:

- o   ShareGate
- o   Metavis
- o   Axceler

IT Professional Migration Tools

- Often licensed by time period (annual) or size/number of content being migrated.
- Typically a scaled cost where larger migrations cost more for the tooling, but at a tiered discount rate.
- Supports scheduling, scripting, or automating 'orchestration' or management of a migration.
- Often includes comparison or reporting/assessments that can accelerate the migration and validation process.

Examples of File Share to SharePoint IT Professional Migration Tool Vendors:

- o   AvePoint
- o   Axceler
- o   Idera
- o   Metalogix

Evaluating Migration Tools and Vendors

Additionally it is important to understand the vendor, their tool, and its capabilities. What follows are some simple starting questions that are important for evaluating any technology.

- What version is the product?
- How mature is the product?
    - o   How mature is the product's supporting ecosystem and vendors?
- How extensible and customisable is the product?
- How user friendly and usable is the product?
    - o   How does the product handle exceptions?
    - o   Target user
- How difficult is it to manage and administer the product?
    - o   How do you update the product?
    - o   How complex is the installation and how complex are the dependencies?
    - o   Does it support automation? (Can you batch script or automate administrative tasks?)
- Who else is using the tool?
    - o   What is their experience of the tool like?
    - o   Do they have similar needs?
- How does the vendor perform support?
    - o   What is the vendor's support reputation?
- Product Applicability (Based On Product Proof Of Concepts/Demonstrations)
- Detailed Price Proposals (Including Estimates for Integration Costs, Support, and Training)
    - o   These should also take into account existing investments within the organisation.

Migration software functionality requirements

The following requirements are divided into selected activities to help highlight issues that may arise when addressing particular features used in SharePoint 2007 that have changed in SharePoint 2013. For example web page publishing, blog and wiki are significantly different and may not migrate easily.

SharePoint 2007 to SharePoint 2013 migration

General software functions

General functionality asks for reporting capability to aid identification of content to be migrated, deleted, cleaned up or archived.

General functional requirements	Must/Should/Could	Response
Product can be installed and used on Windows 7 x64, or using IE9 web browser See also Appendix B Installation requirements	M	Indicate if IE9 will provide full functionality or not.
Navigate to sub-site (web), list or library and report, display or discover metadata including: Permissions Versions Size of file Size of versions Content type Metadata (columns)	M	
Provide report on sub-site(s) (webs) content, features activated and activity to identify active or dormant	M	
Ability to copy items, allow check for success and delete source at later time/date	M	
Ability to perform test migration and examine report for success and potential errors	M	
Ability to convert selected or batch of documents (office file type or PDF) to PDF/A to meet digital preservation requirement	C	
Ability to identify long URLs and report potential issue	M	

General functional requirements	Must/Should/Could	Response
Schedule batch of content for migration, or test migration plan, and run out of hours	M	
Discovery of actual or potential duplicated files with reporting	M	
Ability to save and/or export reports for future use	S	
Ability to copy or synchronise based on a differential or compare report?	C	
Ability to export reports for reading in Microsoft Excel or Access database	S	
Ability to schedule predefined reports to run out of hours (reducing impact on users)	S	
Ability to move sub-sites between site collections	M	
Ability to synchronise SharePoint security groups across site collections	S	
Can the tool allow administrators to scan content based on regular expression criteria inside of files and file properties to scope the migration	S	
Does the tool support incremental or delta copy of content?	C	
Does the tool support conversion of field types? Converting a string field to a person or group field? Converting a string field or a choice field to a lookup field? Converting a string, choice, or lookup field to a Managed Metadata field?	S	

SharePoint 2007 Custom Lists as source

Custom lists are commonly used to record data associated with product or service, is updated by one or more user and may have document attachments.

SharePoint 2007 Lists as source	Must/Should/Could	Response
Ability to identify list type, columns and column type (text, number, date), filter or refine search based on list type and provide report	M	
Display or discover metadata of items attachment to lists and if they can be migrated, report and mitigation	M	
Discover custom lists and report whether they can be migrated or mitigation required	M	
Migrate list and attachments preserving metadata, dates created and modified, created by and modified by	M	
Tag or filter list items for migration by date, column value or other metadata	M	
Migrate list attachments to Library or folder retaining metadata	M	
Limit number of versions to be migrated	M	
Ability to delivery Content Types to multiple site collections, sub-sites (webs) or Libraries and Lists	M	
Ability to report document library or file share or lists highlighting where items exceed recommended limits	M	
Ability to report on file types in use, how many items, size and dates	M	
Ability to generate custom reports based on metadata values like dates, column, location or author	M	
Ability to report show potential issues with workflow, templates, content types, customisations?	S	
Ability to report potential issues with large lists or libraries, long and wide	M	

SharePoint 2007 Lists as source	Must/Should/Could	Response
Ability to compare sites, content types, columns, metadata, libraries, lists and items in different site collections	C	

SharePoint 2007 Publishing site as source

In particular intranet sites managed by Natural England and Marine Management Office.

SharePoint 2007 Publishing sites as source	Must/Should/Could	Response
Identify publishing sites and provide activity report	M	
Migrate publishing sites, pages, associated list and documents	S	
Correct broken URL links	C	

SharePoint 2007 Blogs lists as source

SharePoint 2007 Blog as source	Must/Should/Could	Response
Identify blog sites and provide activity report	M	
Migrate blog sites, pages, associated list and documents	S	
Correct broken URL links	C	

SharePoint 2007 Wiki lists as source

SharePoint 2007 Wiki as source	Must/Should/Could	Response
Identify wiki lists or sites and provide activity report	M	
Migrate wiki lists or sites, pages, associated list and documents	S	
Correct broken URL links	C	

SharePoint 2007 Document Libraries as source

Migration will entail applying new content types and metadata to content while retaining existing or injecting new metadata.

Business uses Content Types (Short, Medium, and Long) to help define item life cycles. This translates to 3 years, 7 years and 7+ years since date of last modified. The life cycle does not distinguish between major (published) or minor (draft) versions of items.

Use of Content Types (Short, Medium, and Long) is not ideal. Conversion should be to a new Document Content Type with a site column "Retention", or similar, which has the options of Short, Medium, and Long. The software must be able to provide the conversion or an alternate solution would be required.

Most requirements, listed below, also apply to move from file server into SharePoint Library.

SharePoint 2007 Document Libraries as source	Must/Should/Could	Response
Apply new content type as target on single item or group of items prior to migration	M	
Select single item or group of items for migration to Library or folder	M	
Apply additional metadata for single item or group of items prior to migration	M	
Test and report file names not suitable for migration	M	
Ability to correct file names in place or as part of migration plan without changing other metadata	M	
Ability to apply naming convention or change title and path of Library or folder either in place or as part of migration plan	M	
Ability to migrate folders, sub-folders with content	M	
Ability to incorporate new metadata drawn from sub-site title, URL or other data	S	
Migrate content to Record Centre or Document Centre applying new content type and/or additional metadata	M	

SharePoint 2007 Document Libraries as source	Must/Should/Could	Response
Expand content of archive (zip), and migrate items contained as individual items with additional metadata and content type	C	
Ability to provide csv list of source data, target and metadata	C	

File server as source

File server folders as source	Must/Should/Could	Response
See also 'SharePoint 2007 Document Libraries as source'		
Migrate folders and sub-folders maintaining structure, file metadata, applying content types and adding new metadata	M	
Utilise folder names as metadata	C	
Identify file formats suitable or unsuitable for storage in SharePoint	M	
Can the tool map NTFS properties to SharePoint fields?	M	
Can the tool auto-fix illegal characters during upload?	M	
Does the tool allow for customisation of illegal character replacement?	S	
Can the tool ignore required fields during upload?	S	
Can the tool automatically tag content during upload based on conditions?	S	
What are the conditions or tagging options available?	S	
Can the tool convert folders to document sets during upload?	C	
Does the tool support downloading files to the File System?	C	

Email as source

- What support interaction with Email and Exchange data?
- Does the tool support copying mailboxes and public folder data to SharePoint?

- Does the tool support copying multiple mailboxes and public folders to SharePoint using a CSV?
- Does the tool support copying Outlook PST Archives to SharePoint?
- Does the tool support mapping Email and Public Folder Properties to SharePoint Fields?
- Does the tool support copying Exchange Public Folder permissions to SharePoint?
- Does the tool support copying 3rd Party Mailboxes (Gmail, Yahoo, etc.) to SharePoint?

Appendix A: Typical reports

Numbers are provided as examples

Managing growth
Documents larger than 50 MB
Documents with more than 10 versions
Lists with more than 5000 items
Lists without version control setting
Lists without version count limits
Site collections and sub-sites
Storage value of collections
Storage value of sub-sites (webs)

Life cycle management
Documents that have not changed in 6 months
Lists that have not changed in 6 months
Sites that have not changed in 6 months
Sites with basic details (size, last modified, owners)

Standards management
Documents that are not Office or PDF
Documents that are images
Documents that are audio/video media
Site collections with auditing disabled
Site collections with more than one level
Site collections with SharePoint Designer enabled
Sites that do not use global navigation
Sites with space in URL
Sites with more than 3 levels
Sites with navigation different form parent
Sites without description

Security management
Show sites where user/group has permissions
Show lists where user/group has permissions
Show content where user/group has permissions
Show sites with custom permissions
Show Limited Access permissions for user/group

Appendix B: Licencing, Installation and Support

This appendix is included to provide range of questions that will be required from the vendor prior to purchasing. Responses will influence the type of product purchased and additional costs relating to installation and technical support provided by ICT service management.

Responses may differ where SharePoint on premises or SharePoint Online is supported.

SharePoint support

- What versions of SharePoint does the migration tool support?
    - SharePoint 2013, SharePoint Online (Office 365), 2010, 2007?
- What editions of SharePoint does the migration tool support?
    - Foundation, Standard, Enterprise?
- What service pack levels are required?

Licencing

What is licencing model?

Question	Response
Per annum, month, quarter, for life in service	
What is cost of different service support models? Describe support models.	
Per content size migrated or discovered or deleted/copied (£ per GB)	
Per authorised user	
Per installation (many users)	
Per SharePoint server	

Service support and product update

Question	Response
When and how is product updated?	
What support is there for SCCM for patching, updates and management?	
What happens when licence expires?	
What information or data is transmitted to software owner, either in log record or transmitted through email or internet service function?	
What general help desk service is available?	

Question	Response
What specific problem solving help is available? At what cost?	
What training is available? At what cost?	
What is impact of using software in live environment?	

Software installation requirements

Bearing in mind software purchase and installation on network computers approval and testing will be required the questions below are indicative of information required. An early indication of software installation requirements that may need additional effort and cost is helpful.

For some software a dedicated server and database may be necessary, together with appropriate service management and support.

Question	Response
Dedicated server or workstation?	-
Operating system: e.g. Windows 7 64 bit, Server 2008 R2, patch or service pack level. User desktop standard is Windows 7 64 bit	
Database requirements (if any), server and storage requirements (GBytes)	
Installation pre-requisites?	-
.Net requirement	
PowerShell requirement: Version 2 is standard.	
Java requirement	
Flash requirement	
What is minimum web browser requirement for end user or administrator, if required? IE9 is standard.	Comment if IE9 is sufficient or not
Which Microsoft Office software is supported and at what level of integration? Office 2010 x32 is standard.	
What betterment may be derived from potential future standard including IE11, Office 2013, ODF, and Windows 8.x?	
What support for potential future mobile platforms like iOS, Windows Phone or Tablet, and Android?	

Installation on SharePoint servers and file servers

Some software requires installation on SharePoint servers or some component on the file server to allow efficient operation. The business security policy will need to be factored in.

	SharePoint 2007 farm as source	SharePoint server 2013 as target	File server as source	File server as target
Software, agents installed				
What security permissions are required for efficient, least privilege, installation and operation?				
Additions or changes to SharePoint database				
Minimum SharePoint service pack required				
.Net requirement				
Estimated required RAM resource				
Permissions required				
Storage space required for installation				
Storage space for audit logs				
Requirements for effective uninstall				
Licence approval via internet or provide keys				