Best Practices for a Successful SharePoint Migration or Upgrade

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CONTENTS

Introduction........................................................................................................................2
Planning for a SharePoint Migration or Upgrade ..........................................................2
  Inventory and Audit Content ......................................................................................3
  Prepare an Information Architecture Plan .................................................................3
  Consider SharePoint Customizations and Integration ..............................................4
  Prepare a Migration Test Plan .....................................................................................5
Migrate SharePoint Content ...........................................................................................6
  Understanding the Microsoft In-Place Upgrade Approach ......................................7
  Using the Microsoft Database Attach Upgrade Process ............................................7
Understanding Best Practices to Improve the Migration Process ...............................8
  Pre-Migration Checklist .............................................................................................8
  Post-Migration Checklist ...........................................................................................9
  Migration Verification ..................................................................................................9
  Ongoing Re-Organization of Content .......................................................................10
Conclusion ......................................................................................................................10
Resources....................................................................................................................10
INTRODUCTION

Microsoft’s SharePoint products and technologies have enjoyed explosive growth over the past decade, with the majority of organizations now utilizing the SharePoint platform in one way or another. Various versions of SharePoint are used as critical document management repositories, customer extranets, knowledge bases, web content management sites, business reporting tools, and many other use cases. A recent research study conducted by Enterprise Strategy Group, commissioned by Metalogix, identified that 65% of large organizations believe that SharePoint will be one of their top five mission critical business applications in two years’ time. For these organizations, the SharePoint release cycle requires that they upgrade to the latest version to be able to take advantage of new functionality. In addition, projects to consolidate multiple SharePoint farms into a single centralized environment may be required to reduce organizational cost or administrative complexity. Finally, some organizations may desire to migrate their on-premises SharePoint environment to a SharePoint Online cloud provider, such as Microsoft’s Office 365 service.

Successfully completing a migration to SharePoint 2010 or SharePoint Online from an older SharePoint platform requires careful planning and analysis. There are many types of migration activities, each with their own unique types of data to be migrated and requiring a different approach. However, it is vital for organizations to be aware that they do not have to be constrained by a limited migration approach; migration and upgrade projects are an opportunity to free SharePoint content so that end-users, developers and administrators can all benefit from improved information architecture and functionality.

This migration white paper focuses on outlining the planning process associated with a migration or upgrade to SharePoint 2010. It covers the range of topics typically faced during document or Enterprise Content Management (ECM) migrations and discusses potential solutions and best practices that have been developed over years of successful SharePoint migrations.

PLANNING FOR A SHAREPOINT MIGRATION OR UPGRADE

The most critical part of a SharePoint migration or upgrade project involves planning for the migration itself. At the same time, the fundamental principles of project management still apply; these include clear ownership of the project, a well-defined scope, and the use of a project plan with clear milestones. Planning for the technical challenges of a SharePoint migration can be perplexing. The sheer number of variables involved and the limitations of out-of-the-box migration approaches can complicate the project and introduce unacceptable risk. It is critical to plan a SharePoint migration carefully and fully take into account all variables involved in the migration process.

INVENTORY AND AUDIT CONTENT

A clear understanding of what content currently exists across an organization and what content should be migrated into SharePoint is vital to the success of a migration project. This can include content from a variety of sources, such as the following common locations:

- File shares
- Exchange Public Folders
- Legacy document management systems
- Legacy ECM systems

The existing information architecture and taxonomy of the organization’s systems should also be audited. This includes documenting and auditing the following key areas:

- Permissions
- Users
- Features
- Customizations (including custom code)
- Integration with other systems

The key is to identify where the critical data lies. It’s counterproductive to migrate content to SharePoint that will never be used—the concept of ‘Garbage In, Garbage Out’ most definitely applies. It is equally important to determine the critical document stores in an organization and audit access to that content so the security model can be carried forward into the SharePoint farm.

PREPARE AN INFORMATION ARCHITECTURE PLAN

Since information architecture encompasses key areas, such as features, taxonomy, permissions, customizations, and integration with other systems, it’s important to document how each of these considerations will be handled during the project. The plan should also make it clear who the key contacts will be for each facet of the migration and how each will be planned, handled and tested.

SharePoint 2010 and SharePoint Online allow for much more sophisticated information architecture than was possible in previous versions or in other systems. The migration process gives organizations an ideal opportunity to re-architect and restructure the information architecture. For example, it is much more effective to use SharePoint 2010 metadata filtering to organize documents rather than rely on SharePoint folders to organize content. Metadata filtering does not suffer from the limitations of the folder approach, which is simplistic, does not scale well, and is not flexible enough to be able to categorize content in multiple ways. In short, it’s crucial that organizations consider how the information architecture could benefit and improve from the new feature sets. Taking advantage of new features is one of the keys to freeing SharePoint content and maximizing the return on investment of an organization’s SharePoint farm.
SharePoint taxonomy is a particularly interesting consideration for organizations migrating or upgrading to SharePoint 2010. While previous versions of SharePoint lacked a central store for taxonomy terms, the Enterprise Metadata Management feature in SharePoint 2010 has added this facility.

Planning how to get taxonomy information properly added to documents that are migrated to SharePoint is only half of the battle—getting the information architecture to be properly used and data to be tagged according to the information governance policy of your organization is critical as well. Long-term information architecture governance can help to improve this scenario and result in content being better organized and searchable. Migrations that simply dump data into a loosely-defined structure or migrate into existing data structures are often considered failures because they lack any type of defined governance plan and often suffer from low adoption rates as users can’t easily find the data they need.

Another key improvement for content management in SharePoint 2010 is document sets, which allows SharePoint customers to form a relationship between a group of documents. If a SharePoint server is being upgraded, it is also important to review the new list and site template options and consider which content should be migrated into sites or lists using the new functionality provided by the latest version.

**CONSIDER SHAREPOINT CUSTOMIZATIONS AND INTEGRATION**

No SharePoint upgrade or migration project plan would be complete without the two topics that could require the most implementation time and effort: customizations and integration with other systems. Even if a SharePoint environment is not using a great deal of customizations, such as custom templates or add-ons like custom web parts, there are still important considerations. Any web part or customization could be utilized extensively.
in the existing platform, as part of a document workflow process or as a method of displaying critical data in a particular way. Because of this, cataloging and understanding what customizations are in use is a critical part of the planning process.

Another key example is the case where content is being migrated to SharePoint from other ECM systems. Do all the elements of the source system map to an object within SharePoint? If not, it may be necessary to transform the data during the migration or potentially add some sort of customization to the target system.

A consideration that can be as important as customizations is the integration of SharePoint with other systems. It is common to find the MOSS Business Data Catalog (BDC) feature in use in existing MOSS 2007 farms. This functionality has been superseded by the SharePoint Business Connectivity Services (BCS) feature within SharePoint Server 2010. Major differences between the old and new version include the fact that the BDC was a read-only interface, whereas BCS provides both read and write functionality. This allows organizations to read and write information to and from external data sources, such as CRM databases, sales tables, and other useful business systems. The data from these systems can therefore be displayed and manipulated within SharePoint.

Of course, there are other means to integrate SharePoint with external systems. Just like BDC or BCS integrations, these custom solutions have to be thoroughly evaluated before a migration project can begin. In fact, it’s best to do this step as early in the process as possible so as to avoid scope creep late in the project.

PREPARE A MIGRATION TEST PLAN

The ability to test the migration process is critical from a risk management perspective—“test early and test often” should be a mantra during any complicated project. Migration options that don’t allow testing to be performed in advance are likely to suffer from much more serious issues than those where problems can be found quickly and worked out. In addition to general migration testing, it is important to create a test plan that also takes into account the following variables:

- Custom code that needs to be ported
- Custom list templates
- Custom site templates, such as the “Fab 40” templates (these are notoriously difficult to migrate)
- Custom web parts
- Third-party web parts
- Feature mapping, including deprecated features, such as SPS portal listings

From a logistical perspective, planning for a test migration typically involves the creation of a designated test environment. This would definitely apply to any scenario that calls for an in-place upgrade (this approach is discussed in detail in the next section). However, since most organizations are wary of in-place upgrade approaches (due to risk), many times a new SharePoint 2010 farm can be built in advance and can initially be used for the test environment. Many organizations choose to build a new farm in any case because it usually means less overall risk during the migration process. If there is a problem, the fallback plan simply involves turning off the new server and turning on the old server. Regardless, migrations should always involve the creation of a test environment and a test of the migration process.
In addition to the test environment, the test plan should always include a User Acceptance Testing (UAT) phase, which allows users to test the migrated data in the new environment themselves before it’s accepted as production data. Ideally, the UAT users should be chosen from a subset of the members across an organization to ensure they properly represent the type of users expected in the system. A UAT allows for issues to be identified and for the migration process itself to be fully vetted in advance.

MIGRATE SHAREPOINT CONTENT

After a plan has been created, information governance plans are enacted and the migration process has been tested, the process of migrating content from source to the target can commence. Depending on the source and target, you may or may not be able to use the native Microsoft migration approaches. For example, target environments running on versions of SharePoint older than 2007 or many SharePoint cloud offerings do not include built-in migration approaches, and must instead rely on third-party migration products or manual uploads of content.

For those organizations migrating content directly from SharePoint 2007 to SharePoint 2010, Microsoft does provide for two migration approaches out of the box. There are some significant limitations to these approaches, discussed below, so they would only be possible in specific circumstances.

UNDERSTANDING THE MICROSOFT IN-PLACE UPGRADE APPROACH

The in-place upgrade approach—provided by Microsoft—is a method by which an individual server is upgraded in place with all content to SharePoint 2010. The process upgrades the version of SharePoint and all site content on the server at the same time.

There are multiple, significant limitations to the in-place upgrade approach. First and foremost, it is the riskiest migration strategy as there is no fallback strategy if there are issues. Several other key challenges with this strategy exist:

- Migration of content to SharePoint Online (including Office 365) is not supported.
- The in-place upgrade process can only be used to migrate from WSS 3.0 to SharePoint Foundation or from MOSS 2007 to SharePoint Server 2010. No older versions are supported. This means that there is no way to migrate SharePoint 2003 content, including WSS 2.0 and SharePoint Portal Server 2003 directly to SharePoint 2010.
- The environment is completely down during the process.
- If the process is interrupted due to a problem such as a power failure, running out of disk space or some other issue, the environment could be left in an unstable and unsupported state.
- The server must have minimum software requirements as follows:
  - Windows Server 2008 x64 or Windows Server 2008 R2 Operating System
• Database running on either SQL Server 2005 x64 SP3 w/CU3 or SQL Server 2008 x64 SP1 w/CU2. Note that it cannot be running on a 32-bit SQL Server. SharePoint 2010 only supports 64-bit hardware.

- The user account running the upgrade must have full local admin rights to all servers in the farm, including the SQL Server databases. This can go against the security best practice of isolation of service accounts.
- If, after the upgrade, site functionality is undesirable, there is no way to return to the pre-upgrade state except via a complete restore of the farm.

**USING THE MICROSOFT DATABASE ATTACH UPGRADE PROCESS**

For the vast majority of customers, the In-Place Upgrade process is too risky and limiting. However, Microsoft does provide a second, more risk averse, migration approach that allows databases to be attached to a freshly built SharePoint 2010 farm and upgraded in the new environment. While an improvement over the in-place option, there are still serious limitations with this process that must be examined before implementing it as a migration strategy:

- Migration of content to SharePoint Online (including Office 365) is not supported.
- Migration of SharePoint 2003 content (WSS 2.0 or SPS 2003) directly to SharePoint 2010 is not supported.
- Granularity of migration is limited to individual content databases, which forces you to effectively migrate everything within that content database at the same time. Since many environments have all or the majority of the content in a single or a small number of content databases, this effectively means that all content must be migrated at once for those environments.

The upgrade process often leaves site collections with broken navigation elements, strange formatting, and malfunctioning web parts. The process itself, while designed to be flexible, cannot take into account all of the factors and variations in SharePoint 2007 sites, so migrated sites can often have a strange look and feel after the process is complete; the result of this is referred to as “Frakensites.” This is particularly the case for “unghosted” sites or sites that have been modified by common tools, such as Microsoft SharePoint Designer or Microsoft FrontPage.

- All settings in the new farm must exactly match the settings in the original farm, and must be manually configured. This includes managed paths, web applications, email settings, quota templates, and alternate access mapping (AAM) settings. If some settings are missing, the upgrade may fail.
- All customizations must be manually transferred, including language packs custom elements (such as site definitions, style sheets, list templates, site templates, web parts), features, solutions and web services. If these are not ported properly, the upgrade may fail.

**USING THIRD-PARTY MIGRATION PRODUCTS**

Organizations that require the freedom to migrate their content at a granular level without the constraints of the out-of-the-box migration approaches should investigate the possibility of using a third-party product for their SharePoint migrations and upgrades. For example, Metalogix Migration Manager for SharePoint was specifically developed to help address these types of migration challenges and allows organizations to directly migrate from legacy SharePoint versions to SharePoint 2010, SharePoint Online, Office 365, or as a
consolidation project between multiple SharePoint farms. Migration Manager for SharePoint has significant advantages over other migration solutions and techniques, allowing for flexibility of migration between versions and farms, granular migration, PowerShell support, reorganization of sites, templates, and databases during the process, and many other enhanced capabilities. Unlike some content migration products, Migration Manager does not use undocumented direct writes to the SharePoint database, so using the product will not affect support agreements with Microsoft.

Using Migration Manager for SharePoint allows organizations to embrace the opportunity to improve its information architecture during a SharePoint server migration or upgrade. Migration Manager also allows users to maintain an information architecture governance plan in the long term—well after any migration or upgrade has taken place. The SharePoint management features with Migration Manager for SharePoint includes:

- Reorganizing servers for better information management, performance, search or usability
- Merging lists or splitting lists
- Item level restructuring
- Re-templating (e.g., to take advantage of SharePoint 2010 functionality)
- Promoting sites to site collections, demoting a site collection to a site

Migration Manager for SharePoint can also assist with the creation of a migration test plan as it allows for the migration to take place in phases—with the ability to perform full blown test migrations that don’t affect production performed in advance.

UNDERSTANDING BEST PRACTICES TO IMPROVE THE MIGRATION PROCESS

The smoothest migrations are typically the ones where the most diligence has been placed into the migration process itself. This includes critical migration planning, as discussed, but also using pre and post-migration checklists to ensure that issues that commonly occur are addressed in advance and that certain best practices are followed.

PRE-MIGRATION CHECKLIST

Before beginning any SharePoint migration, there are several prerequisites that should be implemented to avoid any issues during the migration process. These include:

- Familiarize yourself with new SharePoint hardware and software requirements and upgrade accordingly
- Peruse MSDN and Microsoft Knowledge Base upgrade articles to plan your upgrade and learn of potential pitfalls
- Run the read-only preupgraderchecker to find possible points of failure and run PowerShell – customcomponents to find customizations
- Install all custom components in the target environment
When possible, build out site structures ahead of time to reduce migration time and overhead

When possible, import users to reduce migration time overhead

Create jobs/logic to split apart large content databases and site collections to move back within Microsoft stated limitations and reconsider site structure/taxonomy as necessary for business units

Create incremental jobs if users will still be active in the source environment and no downtime is possible (if necessary)

Create PowerShell jobs and scheduled jobs to run at specified time

Based on the functionality of the SharePoint API, the checked-out status of documents cannot be preserved during a migration using third-party products, so it is recommend that all documents be checked-in before they are copied

On the target SharePoint server(s), configure the following:

- Configure SharePoint to accept all file types to be migrated (e.g., by default .EXE files cannot be uploaded to SharePoint)
- Configure SharePoint to accept the largest file size to be migrated (the default maximum size is 50 MB)
- Set up third-party web parts and custom content types on the target server before you migrate. If you want your sites to look as similar as possible, you should set up any customized templates, workflows and themes on the target. Create any custom site columns that you need on the target server. If using Migration Manager for SharePoint, it will automatically migrate columns added to lists on the source, but the column type must exist on the target.

**POST-MIGRATION CHECKLIST**

Following a migration to a new SharePoint farm, the following tasks should be implemented:

- If you are using a third-party migration solution, copy alerts from the source to the target environment so that they don’t fire off events during the actual migration
- Run any incremental jobs created pre-migration
- Send automated e-mail to site owners or site collection administrators after the site migration completes
- Review content with site owners to ensure a smooth transition

While not all of these variables will apply to every migration, it is important to review them before, during, and after the migration to ensure the process is smooth.

**MIGRATION VERIFICATION**

After a migration has taken place, a key to the success of the project is the verification of the migrated content in the new environment. The ability to compare the source and target environments is critical, particularly if troubleshooting whether or not a document successfully made it to the new platform.
There are very few native approaches that can be used with SharePoint 2010 to validate whether or not content has been migrated. Spot checking that data exists doesn’t allow for metadata, version history, and other key information to be ascertained from the source and target copies. Third-party tools like Migration Manager for SharePoint, on the other hand, allow for a comparison to be performed, validating that the source and target environments have been correctly migrated and that all metadata and versions have been preserved.

ONGOING RE-ORGANIZATION OF CONTENT

A migration of content from source to target is a point-in-time activity that may take place within an organization only once every few years. However, ongoing restructuring of content is much more commonplace. This is particularly the case with a SharePoint environment, as SharePoint reorganization is complicated and relatively inflexible without the benefit of third-party solutions. It is therefore important to factor into the business discussion whether third-party tools should be utilized to allow for re-organization of your content on a regular basis. Products such as Metalogix Migration Manager for SharePoint allow for ongoing restructuring of content, before, during, and after a migration has taken place. This extends their value well beyond the initial migration related costs.

CONCLUSION

The migration of existing business content to SharePoint 2010 or SharePoint Online (including Office 365) is no small task. Ideally, organizations should spend time discovering and auditing the content, then creating an ideal information architecture to improve upon existing models. Finally, whenever possible, comprehensive testing before and after the migration should be performed to minimize risk. Major factors such as SharePoint customizations and external system integration need to be fully fleshed out before the migration work can begin.

While Microsoft provides two built-in migration options, there are major limitations to those approaches, including lack of version to version flexibility, limited testing capabilities, no gradual or partial migrations, and no options to migrate to SharePoint Online or Office 365. Using a product such as Metalogix Migration Manager for SharePoint can greatly improve this situation and frees organizations to more easily and safely migrate or upgrade their document management environments. In addition, Migration Manager for SharePoint can be used on an ongoing basis to help restructure the environment, manage “SharePoint sprawl,” collapse unused site collections, and enforce information governance in the long run.

RESOURCES

- SharePoint field specific migration limitations: http://mystepstones.wordpress.com/2007/05/18/10/
Migration Manager for SharePoint features page:
http://www.metalogix.com/Products/SharePoint-Upgrade/Migration-Manager-SharePoint-Upgrade.aspx

Migration Manager for SharePoint short video demos:
http://www.metalogix.com/Products/SharePoint-Upgrade/SharePointUpgradeDemos.aspx

Four Practical Solutions to Free Your Content with SharePoint:

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ABOUT METALOGIX

Metalogix is the trusted provider of innovative content lifecycle management solutions for Microsoft SharePoint, Exchange and Cloud platforms. We deliver high-performance solutions to scale and cost-effectively manage, migrate, store, archive and protect enterprise content. Metalogix provides global support to thousands of customers and strategic partners and is a Microsoft Gold Partner, a managed partner in Microsoft’s High Potential ISV Group and GSA provider. Metalogix is a privately held company backed by Insight Venture Partners and Bessemer Venture Partners.