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153

A Study on Best Practices for a Successful SharePoint

Migration or Up-gradation

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Abstract

Demand for migration to SharePoint continues to grow as the platform rapidly becomes the standard for organizations looking for a centralized knowledge repository and collaborative workspace. However, migrating or consolidating the legacy content into the new SharePoint environment is not a simple task; and there are many things to be considered before any organization dives into a migration. This paper examines why and when to consider an Enterprise Content Management (ECM) legacy system migration to SharePoint, emphasizing the challenges, benefits and technical considerations of a SharePoint migration. The papers also focus on sharing best practices and highlighting the components needed to ensure a flawless migration process.

Keywords: *Microsoft SharePoint, SharePoint migration, Test Plan, Customizations, Up-gradations.*

1. Introduction

SharePoint, launched in 2001, experienced the fastest revenue growth in Microsoft's history, even compared to Microsoft Windows and Microsoft Office. The primary reason SharePoint has been such a successful product for organizations is simple: SharePoint [1] is deeply embedded within organizations and is content-centric software. Its greatest applicability is in heavy information environments with large numbers of knowledge workers. SharePoint usages range from intranet, extranet and portal creation to simple document management. With the new release of SharePoint 2013, organizations can even use SharePoint for widespread social networking and the App Marketplace. 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 [2] 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 has, 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 the new version of SharePoint 2013 or SharePoint [3] 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 paper focuses on outlining the planning process associated with a migration or upgrade to SharePoint. 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.

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www.IJCSI.org

154

2. Planning for a SharePoint migration or upgrade

There are many reasons to consider a migration from a currently legacy ECM system such as Annual Legacy Maintenance Fees, Internal Support Costs, Supporting Multiple Platforms and Expensive Hardware, Custom Code Associated with Legacy System, Leverage Current Technology, Predictability and Support.

The key to a successful SharePoint migration is planning and analysis. While no two migrations are alike, no matter the path chosen, the following key planning questions are vital to consider. [3]

> ➢ What is the volume of documents to be migrated?
> ➢ What retention policy is in place, if any?
> ➢ What types of documents are stored in the current system?
> ➢ Where are they stored?
> ➢ How documents are currently added to the system?
> ➢ Does the current system use foldering? How do search for documents is done? How is security handled?
> ➢ Are there multiple versions of a document? When migration is done is there a plan to carry over all versions?
> ➢ Are annotations used? How are they applied to the documents? Are they embedded or stored separately?
> ➢ Is Compound Documents used? *For example, there may be a Word document and inside that document a link to an Excel document may be present*
> ➢ Are Overlays used?
> ➢ Is there any Workflow Processes associated to documents?

Having the right expertise can make all the difference between a painful migration and a successful one. There will certainly be challenges in any migration, even with proper planning and analysis. The key is to have the expertise involved that can handle such challenges and keep the migration running smoothly.

2.1 Inventory and Audit content

A clear understanding of what content currently exists across an organization and what content should be migrated into SharePoint [4] 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 SharePoint (Windows SharePoint Services [WSS] 2.0, WSS 3.0, SharePoint Portal Server [SPS] 2003, Microsoft Office SharePoint Server 2007 [MOSS]) sites and servers
> ➢ 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.

2.2 Prepare Information

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 2013 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 2013 [4] 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,

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www.IJCSI.org

155

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 2013. While previous versions of SharePoint lacked a central store for taxonomy terms, the Enterprise Metadata Management feature in SharePoint 2010 has added this facility. [2]

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 any 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 2013 [4] is document sets, which allows SharePoint customers to form a relationship between groups 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.

2.3 Considering the Architecture Plan: SharePoint Customizations and Integration

The two topics that could require the most implementation time and effort are: customizations and integration with other systems. 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. [5] 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. 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. This functionality has been superseded by the SharePoint Business Connectivity Services (BCS) feature.

2.4 Prepare a Migration Test Plan

From a logistical perspective, planning for a test migration typically involves the creation of a designated test environment. [6] 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
➢ Custom web parts
➢ Third-party web parts
➢ Feature mapping, including deprecated features, such as SPS portal listings

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 [7] in the new environment themselves before it's accepted as production data. Ideally, the UAT [3] 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.

3. Migrating the SharePoint Content

SharePoint is a flexible and scalable framework [1] and base infrastructure that can be extended in a cost effective way to meet the needs of any enterprise. Migrating the current content management platform to a robust SharePoint-powered ECM solution will enable the organization to consolidate the technology investment to maximize the already sound investments in proven Microsoft technologies

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, it is not able to use the native Microsoft migration approaches. For example, target environments running on versions of SharePoint older than 2007 or many SharePoint [8] cloud offerings do not include built-in migration approaches, and must instead rely on third-party migration products or manual uploads of content.
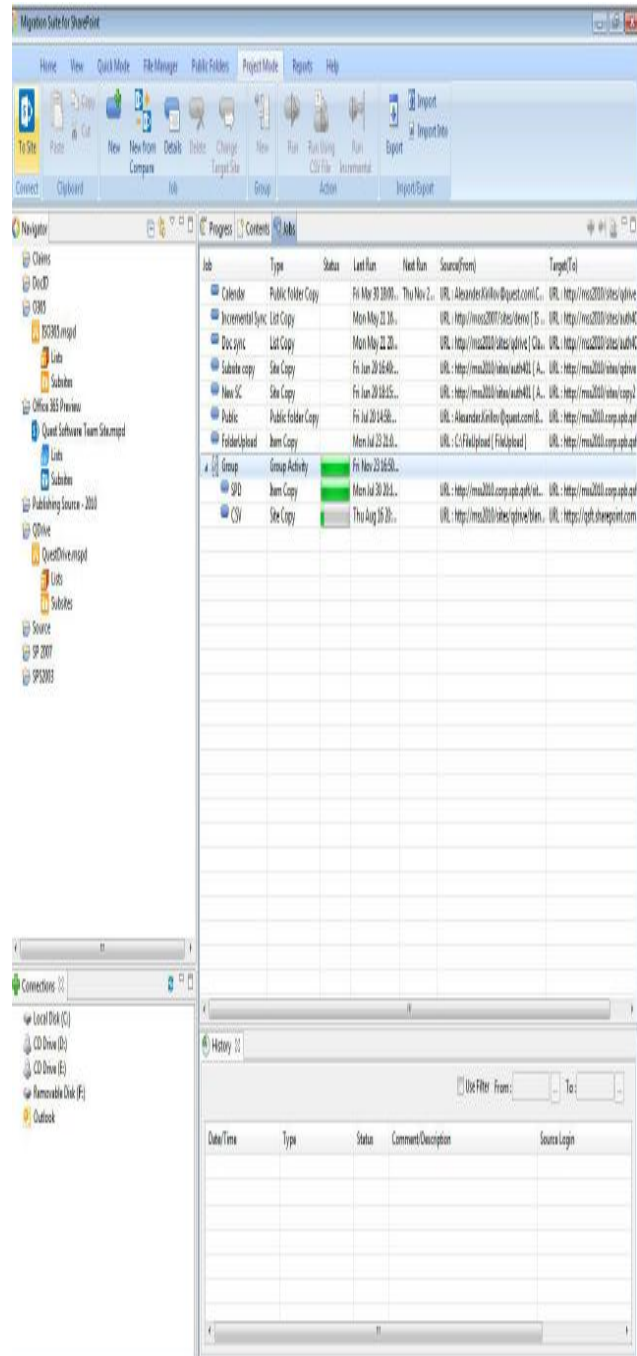
3.1 The Microsoft In-Place Upgrade Approach

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 2013. 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

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www.IJCSI.org

157

foremost, it is the riskiest migration strategy as there is no fallback strategy if there are issues. 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.

3.2 The Microsoft Database Attach Upgrade Process

The In-Place Upgrade process is too risky and limiting. However, Microsoft [8] does provide a second, more risk averse, migration approach that allows databases to be attached to a freshly built SharePoint farm and upgraded in the new environment. Granularity of migration is limited to individual content databases, which forces 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, [2] 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, and web parts), features, solutions and web services. If these are not ported properly, the upgrade may fail. [9]

3.3. 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. Migration Manager for SharePoint [9] has significant advantages over other migration solutions and techniques, allowing for flexibility of migration between versions and farms, granular migration, Power Shell 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. The SharePoint management features with Migration Manager for SharePoint includes: [10].

- 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 2013 functionality)
- Promoting sites to site collections, demoting a site collection to a site
- Migration Manager for SharePoint [11] 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.

4. 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, [12] 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.

4.1 Pre-Migration Checklist
There are several prerequisites that should be implemented to avoid any issues during the migration process. These include: [12]

- Familiarize with new SharePoint hardware and software requirements and upgrade accordingly.
- Peruse MSDN and Microsoft Knowledge Base upgrade articles to plan the upgrade and learn of potential pitfalls[13].
- Run the read-only preupgrader checker to find possible points of failure and run Power Shell – custom components to find customizations.

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www.IJCSI.org

158

➢ 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) [14]

➢ Create Power Shell 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) [4]
Set up third-party web parts and custom content types on the target server before migration

4.2 Post-Migration Checklist

Following a migration to a new SharePoint farm, the following tasks should be implemented:] [15]

➢ If a third-party migration solution is used , 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 [16].

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.

4.3 Migration Verification

After a migration has taken place, a key to the success of the project is the verification of the migrated content [17] 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.

4.4 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, [18] 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 the content on a regular basis. Products such as Metalogix Migration Manager [13] 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. [19]

5. Conclusion

The migration of existing business content to SharePoint 2013 or SharePoint Online (including Office 365) is no small task. Ideally, organizations should spend time discovering and auditing the content, then creating 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, 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.'

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159

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