# Architecture Assessment with Solutions

## MAMNJ

## 9 September 2012

The below assessment is based on the architecture structure and business needs at Mid Atlantic Mechanical of New Jersey (MAMNJ) mentioned during the meeting that was held on the 9th of September, 2012. During this meeting on business needs and architecture discussion, the below listed departments were present:

* Operations
* Drafting

In accordance with the SOW, the remaining departments that require a meeting are listed below:

* Estimating
* Accounting
* Service

SharePoint was originally developed and designed to be a collaboration portal, where employees within the intranet and external users can come to work on projects and issues together. It was not designed to be a document repository, but many environments choose to do this to help facilitate document monitoring as well as viewing a document’s revision history. As such, the maximum size of a document that in inputted into SharePoint should be limited below 50MB. Any file outside of this file size should have the implementation of another product to help facilitate the monitoring and viewing of the document outside of SharePoint.

This document holds the possible solutions and strategies that MAMNJ can begin investigating as possible avenues on a short term basis, as well as several long term ideas. Please see the below assessment for the Operations department:

### Operations

These are some of the points that were discussed as pain points for the department when handling data:

* The process of saving email is time consuming
* Email correspondence needs some sort of automation, where the emails are accessible by various people
* The indication whether emails are read is not evident, whether in the local mailbox or mobile phone
* The action of saving files in local mailbox and in the cloud is currently not available
* Everything corresponds back to emails
* 5 % everything else, letters, reports, submittals
* 70% emails
* 25% material lists
* Example, job name Novell email has to be resaved and renamed
* If possible, change the way internally on how emails are sent
* No common denominator among emails
* Payroll system is still a very manual process

#### Problems

As a result of the above mentioned pain points, I have summarized the various problems that have been identified within your environment.

**Email**

Currently, the email system has been setup to utilize either Outlook Web Access (OWA) or the Outlook program located on each user’s machine. For this reason, there utilization of access to another individual’s email is difficult and can cause future issues. Mark was looking for some way to take the data in his outlook inbox location and move it either to another folder location or to place it manually into the SharePoint Online environment for others to access. The later method was becoming tedious for him to perform and the need for the information is considered business critical. The former method would be the best, as described by both him and Meg.

**Time Entry/Timesheets**

In the current environment, Time entry has been based on either a paper submission (pen/paper) or phone dialogue between individuals in the field and the administrators in the Operations department (pen/paper). The form is then completed and arranged for the Accounting department to handle the data. As a result of this process, the Operations department and the Accounting department must allocate one individual from both departments on Mondays to complete this action. This is a problem due to the allocation of man-hours that are now being occupied through this manual process. The completed form is then kept in record in the Operations department for a set amount of time before purging the data. For this reason, this creates a large paper trail for further manual input of data.

There was also a request to be able to see the data for all workers timesheet information in a report form, based on various parameters. Currently there is no process for this and the information is not in a compiled database for the report to be created, since the data is currently in paper format. Without an electronic format available and the data compiled into a database, it would not be possible to complete the report.

**Resource Allocation**

In operations, there is a steady stream of requests for materials in the field as well as request for resources that are not always readily available. To fulfill the need, there is currently a form that is created for manual input (pen/paper) to understand what materials need to be ordered as well as knowing how many fixed resources (such as ladders). This is a tedious process for all individuals, as the action of taking the data and acting upon the data are all manual processes. This has now resulted in the loss of man-hours that the individual could have been utilizing for other business needs.

#### Solutions

As a result of the above mentioned problems that are affecting your environment, the below mentioned solutions should help resolve these items.

**Email (Out of Scope) – Short Term**

For this portion of the assessment, I have found that this is currently out of the scope of the current engagement, as the functionalities of SharePoint are currently not being employed. However, a possible solution that has been investigated would be the implementation of Exchange Public Folders, which would help alleviate some of the strain that the Operations department is experiencing. As this action is currently out of scope, we can revisit this action in the future for further dialogue.

**Time Entry/Timesheets – Short Term/Long Term**

Timesheets can be submitted directly in SharePoint. The current action of utilizing forms within SharePoint is a widely accepted practice in the SharePoint community. As related through the Operations department, the timesheet data must be easily and quickly entered into the system, allowing for the individual directly inputting the data into the SharePoint form in the shortest amount of time.

The action of taking the data in an electronic format will allow for the creation of a list in SharePoint. A List is a simple repository of line data which allows for future analysis and reporting to be done, either in a custom web part or by creating a view (a function within SharePoint). As a result, the report that is requested by Mark could be completed each Monday for viewing as a final observation before sending the data to Accounting.

We have included a mockup for how the form will look in SharePoint.

**Resource Allocation –Short Term/ Long Term**

SharePoint can help with the problem with Resource Allocation. As the same data structure as Time Entry/Timesheets, data can be placed into a form which will place the data into a List format. This data input can alert the user in Operations to create an order for the request, fill in the information quickly, and send the request to the various vendors that will supply the necessary materials. In the future, we will look to automate this entire process to help facilitate the action and minimize man hours wasted on the manual actions currently deployed in the environment.

We have included a mockup for how the form will look in SharePoint.

#### Conclusion

With the above mentioned solutions, It is my strongly suggest advise to resolve the Short Term items first, as the foundations of the data collection must first be available before any advanced reporting or results can be seen. The process will incorporate all of the necessary foundation levels to begin work on creating more advanced reports, since the data will be available and accessible in SharePoint.

### Drafting

These are some of the points that were discussed as pain points for the department when handling data:

* The ability to store drawing files on the cloud is currently not available
* There is a need to view, not edit documents once they are available
* File structure program (get the files to the cloud)
* The actions of uploading to the cloud limited to file size
  + AutoCAD drawing files (general size ~1.15GB - 34.8GB)
  + PDFs of AutoCAD files (310MB)
* Offloading data to another location
* Remote location access of file system files currently unavailable
* There is no long term storage system/archiving
* Current project naming structure determined by various criteria
  + Name
  + Construction company
  + Date
* Metadata properties and auditing functionalities
* The want for version history instead of renaming files
* There currently is no file system backup strategy

#### Problems

As a result of the above mentioned pain points, I have summarized the various problems that have been identified within your environment.

**Document Size (Out of Scope) – Long Term**

The idea behind SharePoint was to have an environment for collaboration within the organization. However, the size of the files that the Drafting department works with is significantly larger than SharePoint is able to handle. SharePoint implements the use of SQL backend to handle data. SQL databases were never intended to handle rows of BLOBs (Binary Large Objects). Since SharePoint data is placed within rows of data in SQL backend databases, even SharePoint online is not able to handle the large binary objects.

**Remote Access (Out of Scope) – Short Term/Long Term**

Currently, data is located with the file system located in the basement next to the Drafting department. The data is not accessible within the SharePoint environment. Even though the SharePoint environment is accessible outside of the office, the data with the file system is not available. In order to move the data into SharePoint online, there would need to be additional configurations set to allow such large files to enter the SharePoint online backend databases.

Since the office is locked down after evening on Friday, anyone accessing the data from the Drafting department is difficult to access until Monday morning. As a result, any individuals working in the field that need the most updated drawing will experience difficulty getting the latest information. To help facilitate this, if the information was somehow accessible externally it would help those individuals working with outdated information.

**Backup strategy (Out of Scope) – Short Term**

The data that various department utilize are currently being stored onsite in the basement next to the Drafting department. The data is currently not being backed up to any location. However, the data within the SharePoint online environment is backed up by Microsoft. Since the data is secure, it is a better solution to have the data backed up.

Currently there is no backup solution deployed in the downstairs. This is a problem in the unfortunate situation where there is a natural disaster or technical difficulty affecting the server.

**Versioning history information (Out of Scope) – Long Term**

One of the requests from Drafting was the ability to see the information on the version history of a file without a difficult and tedious naming system. At certain points of working on drawings, the version number of the file can get lost through data changes and revisions. For this reason, if the data had some innate ability to know the exact version of a file and the most up-to-date version, it would greatly help various individuals to quickly access the information.

Also, it has been noted that there are different departments that may need to most up-to-date version of the file. Currently, there is no set practice on how that information is available to users, as the permissions in the network drive where the data is stored is not available. Currently, all the functionality listed for this problem is out of scope of the initial assessment for the SharePoint environment. However, if the data had some way back into the environment, there could be some additional steps that could proceed.

**Update Master Sheet (Out of Scope) – Long Term**

There is master sheet of information that was provided by the Drafting department to understand the information and data that the department handles. In this drawing log, the information is currently manually inputted by Charlie and his team when he has time and when the information is available. However, as the department is working to create drawings for the projects, the ability to log such information into a spreadsheet has become tedious and time consuming. In addition, there is no way for the Drafting department to know when there has been a change that is necessary to log into the Drawing log spreadsheet.

#### Solutions

As a result of the above mentioned problems that are affecting your environment, the below mentioned solutions should help resolve these items.

**Document Size (Out of Scope) – Long Term**

Currently the document size issue is located within the file system attached to the server in the basement. As a result, the current project is not in the scope of the SharePoint online environment. However, data can be accessible in SharePoint by staging a local SharePoint environment on premise. This infrastructure setup will allow for a more stable environment as well as information to be readily available to other users. Currently, SharePoint Online does not have the RBS functionality, which is the main features that would allow you to access BLOBs. The solution for this particular department is to have the information available using either a

**Remote Access (Out of Scope) – Short Term/Long Term**

For this portion of the assessment, I have found that this is currently out of the scope of the current engagement, as the functionalities of SharePoint are currently not being employed. However, a possible solution that has been investigated would be the implementation of the suggest above by staging a SharePoint environment on premise, which would allow the Drafting department to access their files remotely. As this action is currently out of scope, we can revisit this action in the future for further dialogue.

**Backup strategy (Out of Scope) – Short Term**

For this portion of the assessment, I have found that this is currently out of the scope of the current engagement, as the functionalities of SharePoint are currently not being employed. However, a possible solution that has been investigated would be the implementation of a file backup system that would send the data to another location (remote DR environment) or to back up the files and send the tapes offsite (using a provider such as Iron Mountain). As this action is currently out of scope, we can revisit this action in the future for further dialogue.

**Versioning history information (Out of Scope) – Long Term**

For this portion of the assessment, I have found that this is currently out of the scope of the current engagement, as the functionalities of SharePoint are currently not being employed. In order for this to be approached, we would first need to place the data into a SharePoint environment to know the information on the version history. As this action is currently out of scope, we can revisit this action in the future for further dialogue.

SharePoint has the information and the infrastructure to keep the version history information. This is a built in function that allows users to see the latest version of the file and the past history of the file. In addition, this functionality does not require the file to be renamed, as the renaming will occur on the backend of the database. To the administrator, they can see the differences but to the end user utilizing the SharePoint environment there will be no difference.

**Update Master Sheet (Out of Scope) – Long Term**

For this portion of the assessment, I have found that this is currently out of the scope of the current engagement, as the functionalities of SharePoint are currently not being employed. Currently, the data is not available in SharePoint. As this action is currently out of scope, we can revisit this action in the future for further dialogue.

However, SharePoint has the ability to update a report so that Charlie and the department could get the information necessary to populate the fields automatically as the file is updated. In addition, the report will help other department heads to understand the current status of drawings from the Drafting department.

#### Conclusion

As stated in the above recommendations, it appears that all the items that the drafting department currently works on are currently out of scope of the original assessment. It is suggested that Drafting, as well as the other departments receive training on what SharePoint is. This should help the various departments understand how SharePoint functions and allows them to fully utilize SharePoint online as a whole.

In addition to training, it is suggested that SharePoint 2010 on premise with SharePoint Online would be the best course of action, as the data that the Drafting department requires to be accessible is unable to be uploaded to SharePoint online due to file size restriction.