

Case Study:

The Document Assembly Solution



“The time and effort required to assemble the final document is now seconds compared to the weeks it used to require.”

Publishing a single presentation from over 150 separate documents can be a long, challenging process.

That has been the case for a large Connecticut city’s budget presentation in prior years. Apart from all the writing and analysis that goes into their award-winning budget presentation, the management of content and compilation of the final document have historically required a lot of time and patience. Tracking the completion of various sections was difficult, and combining over 150 documents, spreadsheets and reports with desktop software would often result in some technical issues.

In this case study, we describe how a custom SharePoint App replaced weeks of painstaking effort with a button that produces a final, crisp document in seconds.

Let’s imagine doing.

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Background

Each year, the city produces a document that details the adopted budget for the upcoming fiscal year. This requires content contributions from city and department leaders from across the organization. The content often includes financial tables and charts from various Excel spreadsheets as well as reports generated by other systems. All of the content is reviewed and approved before being published.

In past years, there were two key impediments to producing the final document:

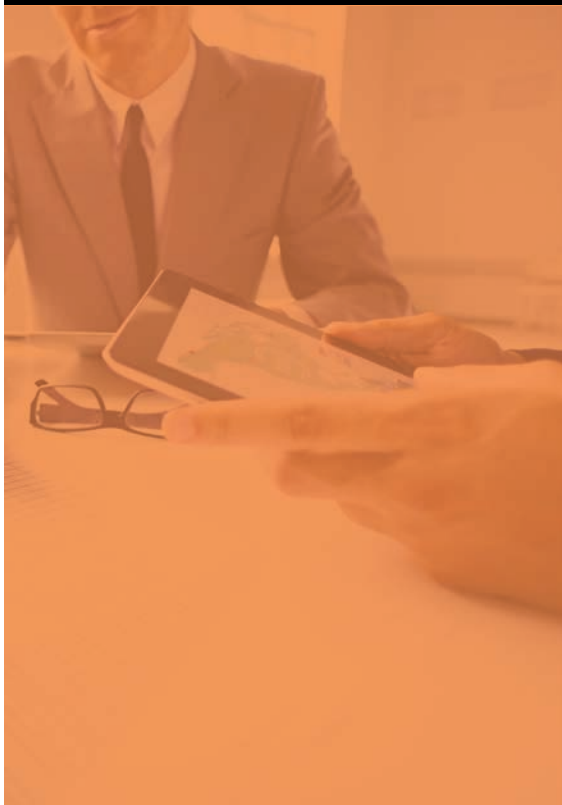
Lack of Visibility

Determining whether required sections were completed and approved had been a manual process. A way of assigning accountability for certain sections, tracking progress and approving documents was needed.

Document Merging

In order to publish a single document with page numbering and a table of contents, over 150 documents needed to be merged together. Aggregating these documents into one master Word document did not always work smoothly as the amount of content would sometimes overwhelm the desktop. The use of different versions of Microsoft Office as well as the large amount of linked data were both contributing factors. An automated assembly of a clean final document including page numbering and a table of contents was needed.

Solution: A SharePoint App



Microsoft SharePoint is ideal for developing business solutions that involve Office documents. With its native support for Office-related content, document libraries with versioning, custom lists, workflow and custom app model, it was the obvious platform to build the solution on.

BlumShapiro Consulting developed a solution that provided:

1. Lists to manage the overall structure of the document
2. Document library to upload and manage budget documents including Word, Excel, PowerPoint, and PDF documents
3. Workflow to assign review and approval tasks
4. Final assembly of the documents into a PDF with page numbering and a table of contents

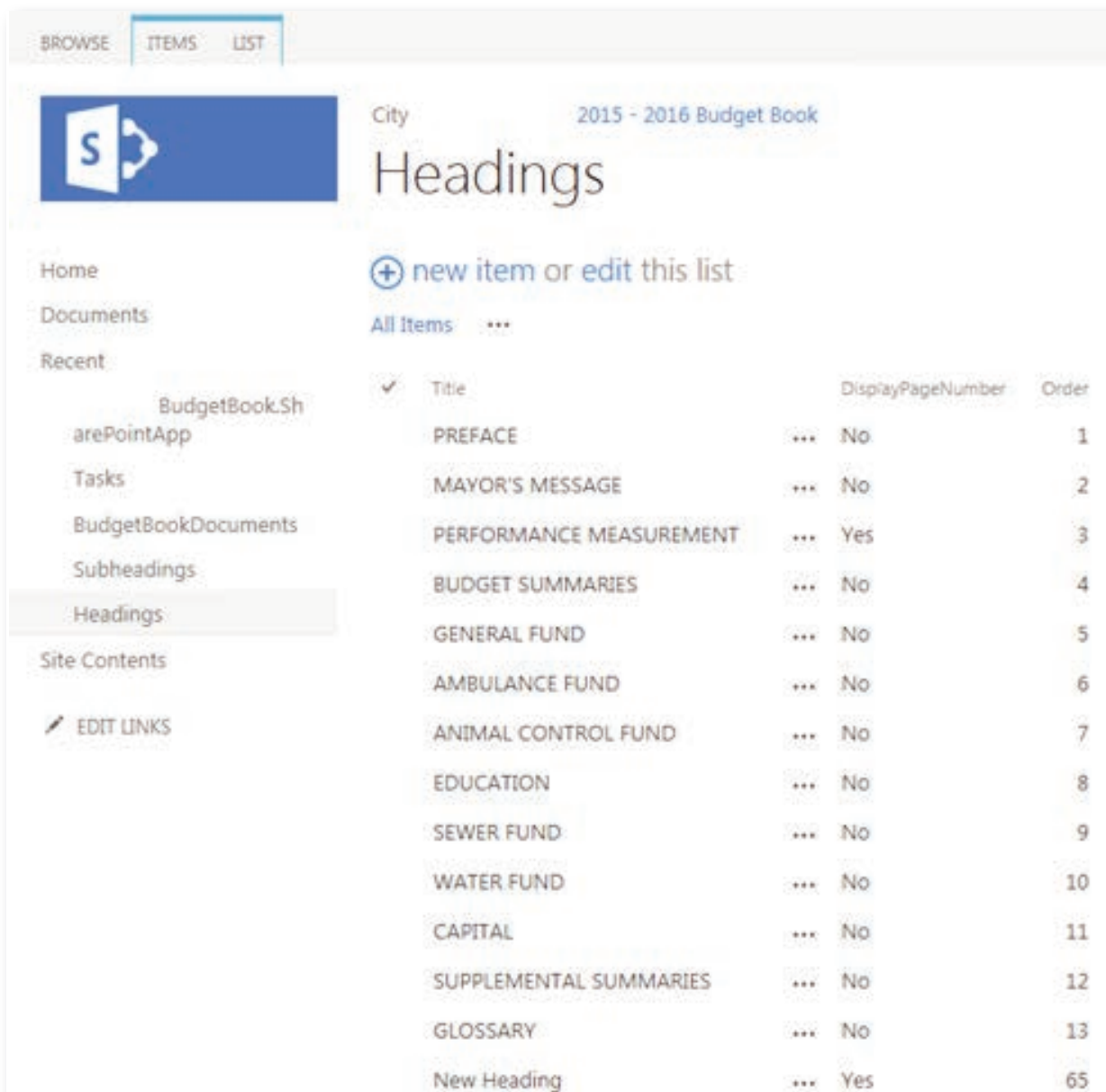
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How it Works: *Managing the Document Structure*

An administrative user creates the structure of the document by adding items to the Headings and Subheadings lists. They have the ability to indicate the order of the headings and subheadings and various options such as whether to show a page number next to the heading in the table of contents or whether the heading is “front matter”, meaning, the page numbering should be roman numerals.



The screenshot shows a SharePoint interface for a list titled 'Headings' under the 'City' site. The list contains 13 items, each with a title, a 'DisplayPageNumber' column, and an 'Order' column. The 'DisplayPageNumber' column contains either 'No' or 'Yes', and the 'Order' column contains integers from 1 to 13. A 'New Heading' item is at the bottom with 'DisplayPageNumber' set to 'Yes' and 'Order' set to 65. The interface includes a navigation pane on the left with options like 'Home', 'Documents', 'Recent', 'Site Contents', and 'EDIT LINKS'. The top navigation bar shows 'BROWSE', 'ITEMS', and 'LIST' tabs.

Title	DisplayPageNumber	Order
PREFACE	No	1
MAYOR'S MESSAGE	No	2
PERFORMANCE MEASUREMENT	Yes	3
BUDGET SUMMARIES	No	4
GENERAL FUND	No	5
AMBULANCE FUND	No	6
ANIMAL CONTROL FUND	No	7
EDUCATION	No	8
SEWER FUND	No	9
WATER FUND	No	10
CAPITAL	No	11
SUPPLEMENTAL SUMMARIES	No	12
GLOSSARY	No	13
New Heading	Yes	65

Figure 1: Headings List

Working with Documents

Department heads and other staff with access upload their files to the document library. They select the heading, optional subheading, and order for the documents. Other options are selected such as whether to show the file in the table of contents or whether to use it as a cover page. Folders are utilized to organize the files by section and to control permissions. As they make changes, a version history is maintained by SharePoint. Different views can be created easily by users. For example, the view in the image below shows all documents regardless of what folder they are in.

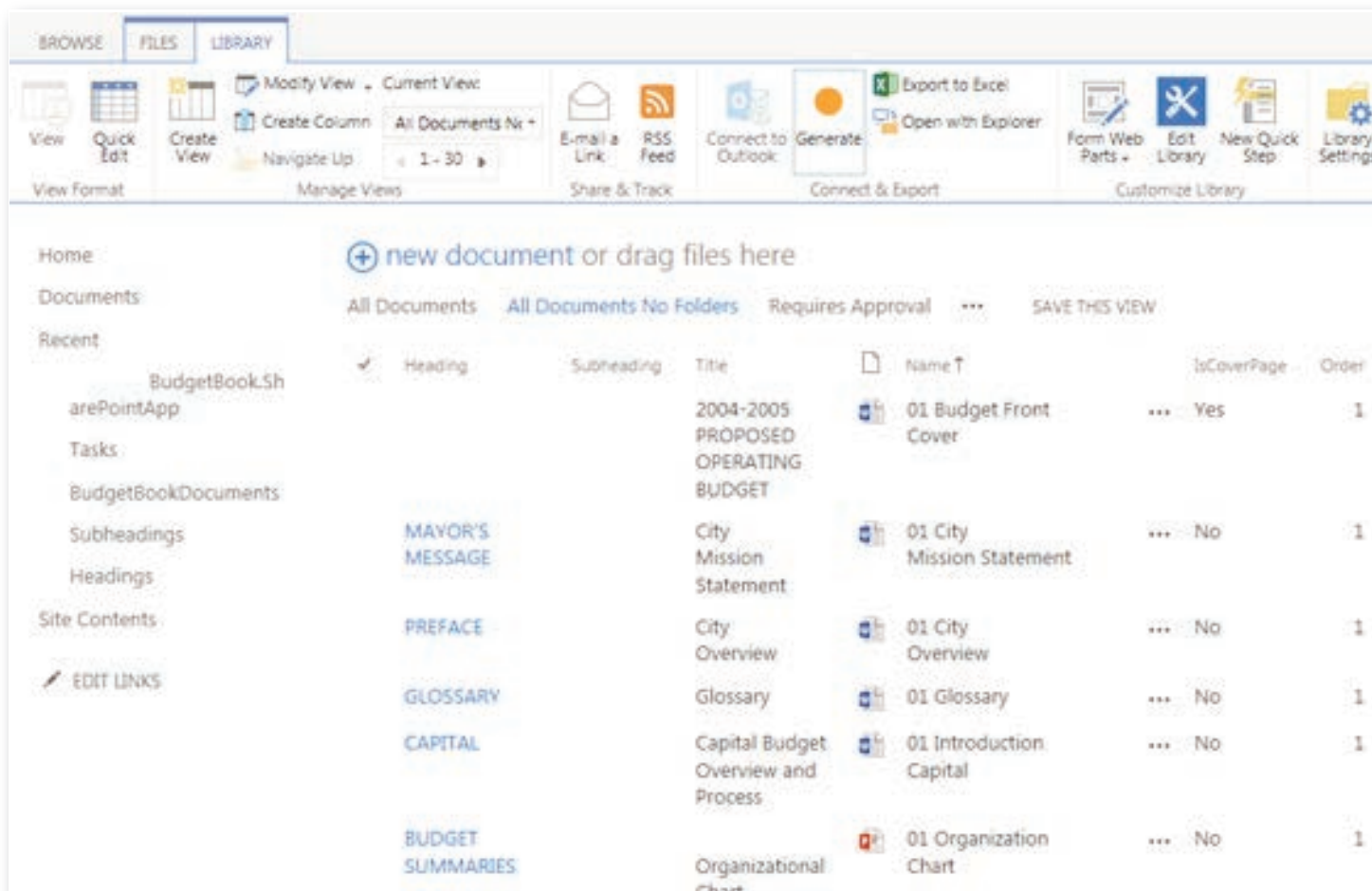


Figure 2: Budget Book Document Library

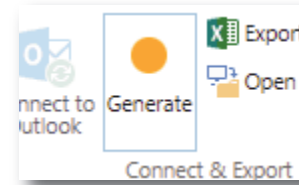
Workflow

An administrator has the ability to start a workflow for documents to ensure that a department head has reviewed them for accuracy and completeness. The workflow assigns a task to the selected individual to review the document. This task appears when the person visits the home page and is also emailed to them. Once that is completed, the administrator can then initiate a final approval workflow which is completed by the City's Director of Finance. Throughout the process, the administrator can keep track of which documents have been reviewed and approved by observing the status for each document in the library.

Assembling the Final Document

Once the administrator confirms that all the documents have been reviewed and approved, they click the “Generate” button in the SharePoint ribbon. This tells the app to assemble the final document. It does the following:

1. Converts all documents to PDF
2. Places all the documents in the correct order
3. Stamps page numbers on every page (except for cover pages)
4. Generates the table of contents
5. Combines all documents into one final PDF document



The final document is ready for the printer, complete with PDF thumbnails.

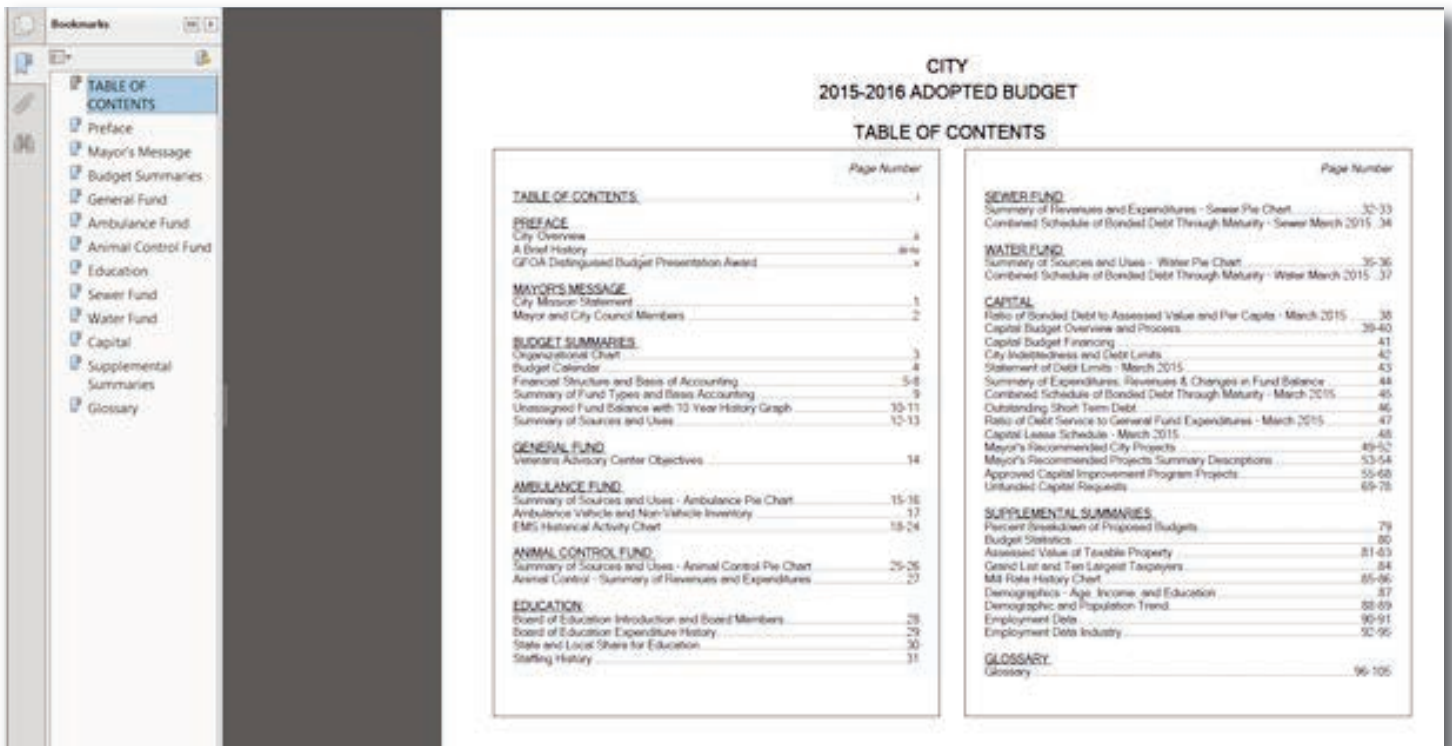


Figure 3: Budget Book

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Conclusion

For this Connecticut City, the management of content and the compilation of their budget presentation had become too cumbersome and inefficient.

Difficulty tracking the completion of various sections and document corruption caused by the aggregation of over 150 documents spurred the City to look for a solution.

BlumShapiro's technology consulting group was brought on to develop a SharePoint App to simplify the budget book process and final product.

Now, the City is utilizing the SharePoint solution to manage the content creation process for their 2015-2016 adopted budget presentation.

Since the "Generate" button produces a final, crisp document in seconds, and can be used at any time, it enabled them to generate preview copies of the assembled budget presentation for review before committing to the final version.

The time and effort required to assemble the final document is now seconds compared to the weeks it used to require. Additionally, the City now has a structure and a set of documents they can use as a starting point for following years. This means even less time to produce their budget presentation next year.

The city is now preparing to use the solution for the generation of other presentations.



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