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Centralized AP Routing Solution

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CENTRALIZED AP ROUTING SOLUTION

A graduate project submitted to Dakota State University in partial fulfillment of the requirements for the degree of

Master of Science

in

Information Systems

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By
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Project Committee:

Christopher Olson
David Bishop
Ann Molstad

PROJECT APPROVAL FORM

We certify that we have read this project and that, in our opinion, it is satisfactory in scope and quality as a project for the degree of Master of Science in Information Systems.

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Master's Project Title: Centralized Accounts Payable Solution

Faculty supervisor: Chris Kloon Date: 4/26/2018

Committee member: Ann Molstad Date: 4/26/2018

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ACKNOWLEDGMENT

I would like to express my appreciation to Dan Eichacker, the primary developer for the customized solution. Without his valuable assistance, this project would not have been completed.

ABSTRACT

The approvals and processing of the Accounts Payable invoices for the remote facilities involved a manual, paper-based process that relied heavily on the individuals involved in the process to be working in the same location. Lost invoices and late payments were reoccurring issues with the process. There were numerous business objectives for the project. First, to deliver a new custom solution to reduce time spent locating an invoice and the invoice status by at least 90%. Second, to deliver a new custom solution that provides the correct people access to the invoice by at least 90%. Third, to deliver a new custom solution and business process that reduces the amount of time gathering invoice approvals by at least 80%. Fourth, to deliver a new custom solution that provides automatic routing and review processes to reduce process inconsistencies by at least 70%. The technical objective of the project was to implement a system that eliminates file duplication necessities to reduce storage space requirements, in regards to Accounts Payable invoices, by at least 80%. When completing an industry review, the common objectives that exist in the majority of the AP automation projects include the reduction of manual, paper-based AP processes in the organization to increase efficiency, visibility, and control. The automated AP systems on the market today typically focus on five key processes: procurement, invoice processing, payment/remittance, supplier communication, and analytics. The primary focus of this project is specific to invoice processing of non-PO invoices. To further define invoice processing, key sub-processes of invoice processing that organizations evaluate in automated AP systems include invoice scanning/imaging, invoice data conversion to ERP, automated workflow, and full ERP integration. After a review of available options, it was determined to expand the customized AP Routing solution that was originally designed for one entity in the organization to allow usage for multiple entities. In order accomplish this, enhancements had to be made to allow for multi-entity usage and user interface enhancements had to be developed. With the primary focus of this project related to non-PO invoices and the project being viewed as successful, it has been determined that the next features on the roadmap for this application is focused on PO invoices and 3-way matching.

DECLARATION

I hereby certify that this project constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions or writings of another.

I declare that the project describes original work that has not previously been presented for the award of any other degree of any institution.

Signed,

Teena Coad

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CHAPTER 1

INTRODUCTION

Background of the Problem

The approvals and processing of the Accounts Payable invoices for the remote facilities involved a manual, paper-based process that relied heavily on the individuals involved in the process to be working in the same location. The process at these sixteen locations included the printing of the invoice and the manual delivery of the paper-version to the correct individual(s) for approval. Tracking of the invoice approval status occurred in a spreadsheet that required the Accounts Payable Accountant to frequently check-in to get the approved invoice back. Once the approved invoice was received, the Accounts Payable Accountant would process the invoice for payment in the financial system and scan the paper invoice into the document management system. Lost invoices and late payments were reoccurring issues with the process.

Statement of the problem

With the majority of the Accounts Payable roles moving towards a direction of being shared by multiple locations, the processes related to Accounts Payable, in particular, the approval and processing of Accounts Payable invoices, could not be paper-based. Inefficiencies that resulted in lost invoices, late payments, and missed discounts would have been magnified if the manual, paper-based process was maintained.

Objectives of the project

The business objectives of the project were:

- To deliver a new custom solution to reduce time spent locating an invoice and the invoice status by at least 90%
- To deliver a new custom solution that provides the correct people access to the invoice by at least 90%

- To deliver a new custom solution and business process that reduces the amount of time gathering invoice approvals by at least 80%
- To deliver a new custom solution that provides automatic routing and review processes to reduce process inconsistencies by at least 70%

The technology objectives of the project were:

- To implement a system that eliminates file duplication necessities to reduce storage space requirements, in regards to Accounts Payable invoices, by at least 80%

CHAPTER 2

LITERATURE REVIEW

According to Ardent Partners, the most prevalent challenges that were reported in 2015 by Accounts Payable teams related to invoice processing (see Figure 1) included handling a high percentage of exceptions, lack of visibility into invoice and payment data, high invoice processing costs, processing of an invoice takes too long, and invoice/payment approvals take too long.

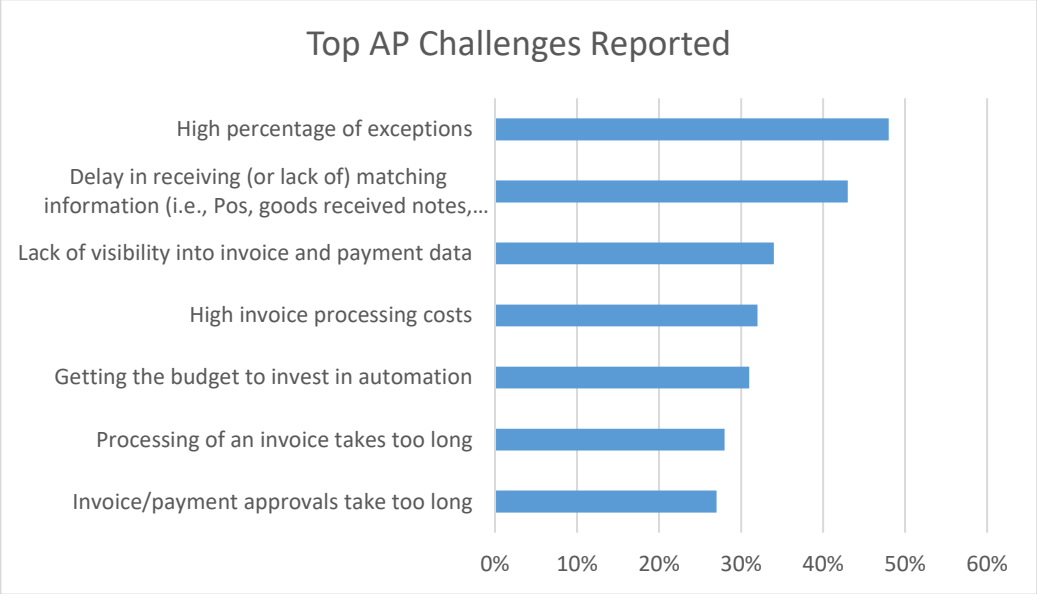

Figure 1. Top challenges reported by Accounts Payable teams in 2015

In an attempt to address these top challenges, many organizations are implementing an automated Accounts Payable (AP) system. The common objective that exists in the majority of the AP automation projects is the reduction of manual, paper-based AP processes in the organization to increase efficiency, visibility, and control. The automated AP systems on the market today typically focus on five key processes: procurement, invoice processing, payment/remittance, supplier communication, and analytics. With the objectives of this project being related to invoice processing improvements, the remainder of this section will focus on invoice processing. To further define invoice processing, key sub-processes of

invoice processing that organizations evaluate in automated AP systems include invoice scanning/imaging, invoice data conversion to ERP, automated workflow, and full ERP integration (Institue of Finance & Management, 2016).

It has been noticed that since the Sarbanes-Oxley Act in America was introduced, there has been a small focus on the accounts payable areas and processes to ensure there is compliance within Accounts Payable departments. One of the identified best practices related to Accounts Payable departments and processes include when implementing a new system or redefining processes, ensure the system or process has controls in place but also some flexibility to prevent individuals from being unable to perform the necessary task(s) due to unique scenarios. Another best practice includes finding the ability to integrate into other systems and processes is key to improve processes by providing the ability to eliminate duplication of work and data (Kaskinen, 2007).

Organizations are beginning to realize that it is impossible for their accounts payable department to be compliant with the Sarbanes – Oxley or IFRS. Because of this, many organizations are improving existing automated systems or investing in the implementation of automated systems to replace manual, paper-based processes. Many can benefit from relying on fewer resources to manage the accounts payable processes related to invoice processing while also increasing processing accuracy and optimizing the ability to take advantage of the available discounts (Goodwin, 2006).

Furthermore, the ability to identify trends in the cause of exceptions throughout the organization is limited due to metrics and necessary information to identify and address the problem is captured on paper. Improvements made in how an organization handles invoice exceptions is seen as a transformational strategy. Based on industry standards, implementation of an AP automation solution, compared to manual and paper-based methods, could contribute to reducing processing cost as much as 60-80% (Ardent Partners Ltd, 2015).

CHAPTER 3

SYSTEM DESIGN

The corporate office location has a custom-developed solution in place that has been in use for a couple of years. After review of internal and external options, it was determined to expand the current custom-developed solution to allow for usage at the additional sixteen locations. In order accomplish this, enhancements had to be made to allow for multi-entity usage and user interface enhancements had to be developed.

Multi-Entity Enhancements

The first largest objective of the project was to customize the existing solution to handle multiple entities since it was currently only in use by one entity. To accomplish this, three key enhancements had to be made to allow multiple entities to use the custom-developed solution. First, the solution had to send the transactional information to two different ERP databases, depending which entity the transaction was for, once the invoice was approved and flagged for payment. Second, the solution had to be able to handle the reuse of departments across multiple entities. Third, the solution had to be able to integrate with the multi-entity management features on the new ERP database it was connecting to.

The tracking and communication of requirements occurred in Visual Studio Team Services through the use of user stories (shown in Figure 2). Meetings occurred weekly between a select group of business users, the business analyst, and the developer. In the weekly meetings, user stories were reviewed, along with their current status and priority, by viewing them on the Kanban board (shown in Figure 3).

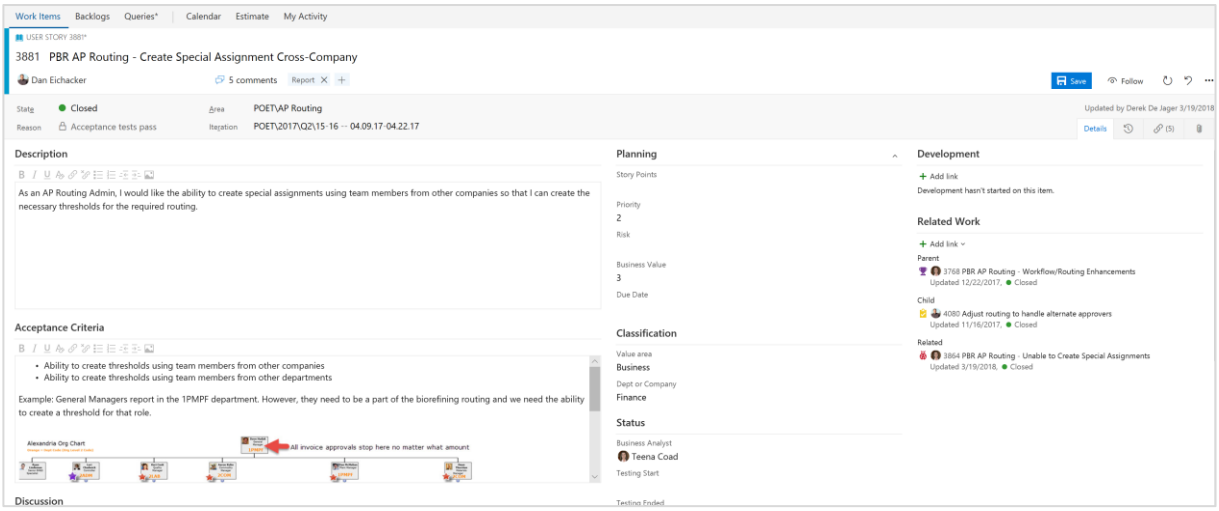

Figure 2. Example of the user story

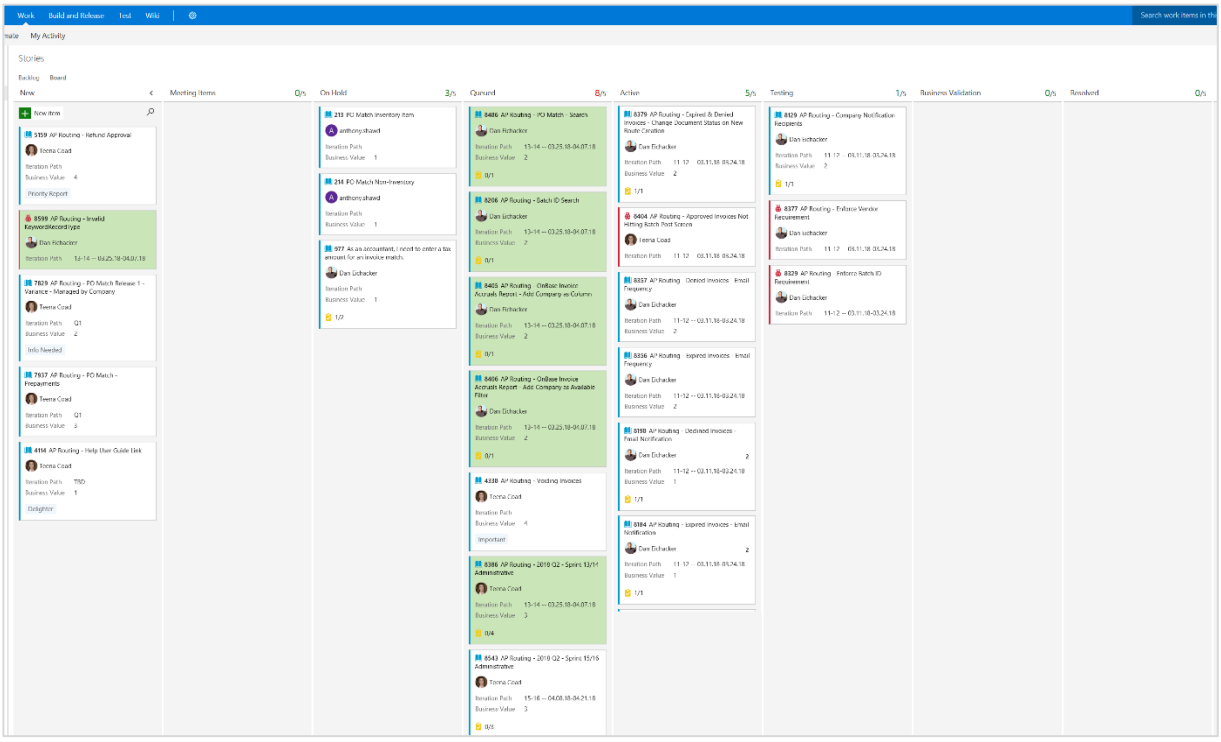

Figure 3. Example of the Kanban board used

User Interface Enhancements

The user interface enhancements were an important part of this project. The original solution was not user-friendly, and new users found the existing interface confusing which resulted in frequent errors. With the current usage of the solution limited to two users, the user interface was not initially viewed as an important aspect of the solution at the time it was built. The primary focus when the solution was first developed was on functionality. However, with the user audience growing from two users to thirty users, the user interface grew in importance. The objective was to make the screens as intuitive as possible while trying to match the ERP screens as much as possible to help reduce confusion. Additionally, it would help reduce the amount of training that team members would need when the new system was deployed.

To effectively identify the necessary user interface enhancements needed, small user group sessions were completed to review the current screens to determine the likes and dislikes of the screens. In these sessions, team members were able to provide input and suggestions for how the screens should look. The information collected in these sessions was drafted up in storyboard formats (shown in Figure 3) and provided to the developer. While the developer still had some flexibility on how the overall screen was designed, the team members were able to communicate and provide suggestions regarding the screens effectively.

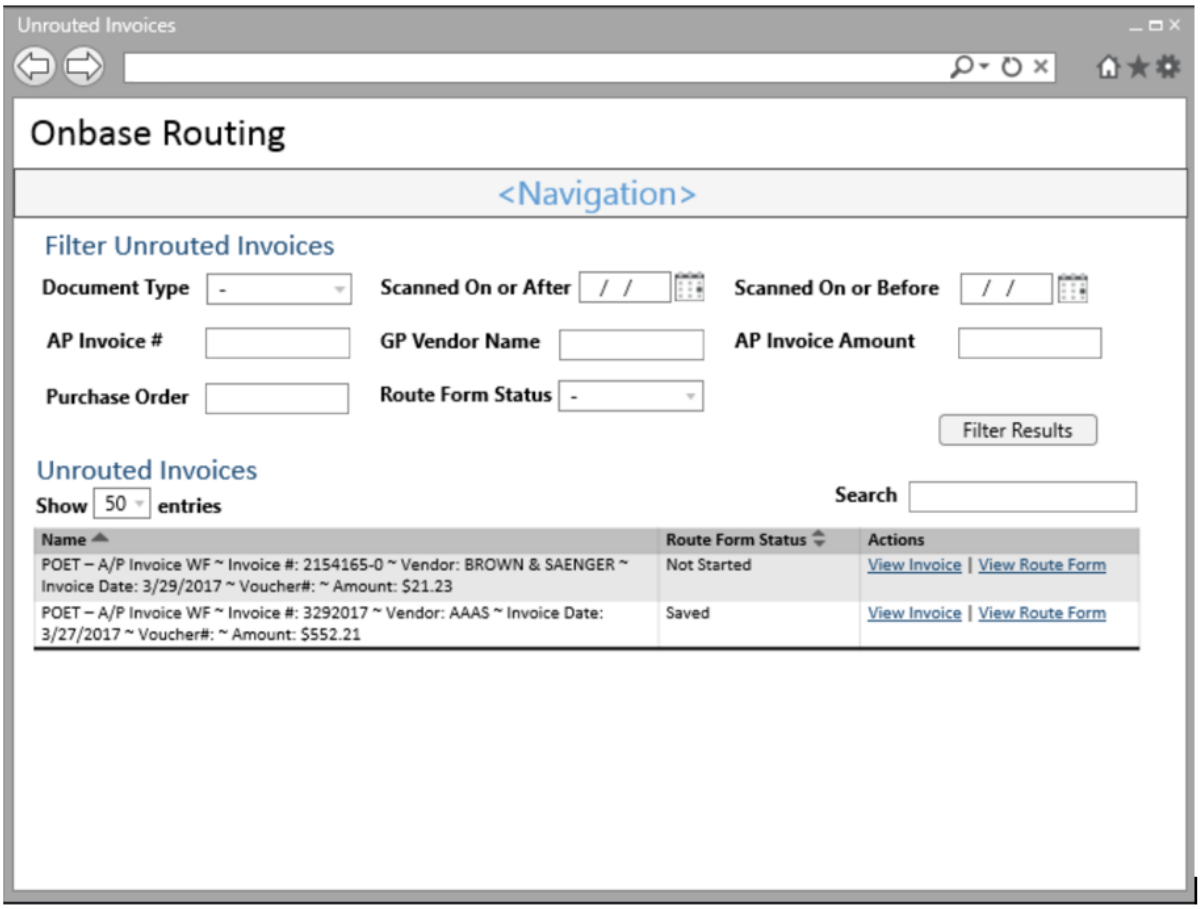

Figure 3. Storyboard example provided to the developer

CHAPTER 4

CASE STUDY

The successful implementation of the project expanded the usage of the custom-developed solution from one entity in the organization to a total of seventeen entities in the organization. With the recent changes, the current corporate users are now sharing their experience with the custom-developed solution and the added benefits it provides with the other shared service entities with the organization. There are already discussions of the usage being expanded to four more shared service entities. In the future, additional remote locations will also be easily incorporated into the system as well.

With the enhancements made to allow the sixteen remote entities to take advantage of the solution, the solution has already met the objective of reducing process inconsistencies related to review processes by at least 70%. This met objective is due to the automatic routing rules functionality built into the system. However, the system does allow the modification of the generated routing for the invoice approval to handle unique scenarios or if reviewers will be out of the office for an extended period of time. The business process outlines examples of possible scenarios on when modification of the routing is acceptable. The routing history is provided in the system at any time in case audits on invoice approvals need to occur.

The solution has also allowed these entities to reduce the time spent locating an invoice and the invoice status by about 92%. Team members can locate the invoice and status in a variety of systems. They can locate the invoice and status in the ERP system, the custom-developed system, or in the document management system where the invoice images are stored. This functionality allows quick access to the Accounts Payable team members in their frequently used applications. Having the invoice along with information on where it is at in the process, kept consistently among the entities, allows team members to assist organizations they are identified as secondary support for easily.

The two remaining objectives are close to meeting the identified objective, but since the process is still new to these entities, the objectives have not been fully met yet. First, the amount of time for gathering invoices approvals is around 60%, 20% below the identified

objective. This unmet objective is mainly due to the process being new to the reviewers, and the number of reviewers impacted. Additional communication and the frequency of the communication has been increased to outline the expectations of completing approvals promptly along with where to find the invoices to approve. Second, the objective to implement a solution that eliminates file duplication necessities to reduce storage space requirements, in regards to Accounts Payable invoices, by at least 80% has not been yet met. Since this is a new process to the Accountants, many are still keeping copies, both paper and electronic, due to some uncertainty with the new process and because they feel more comfortable knowing that they have multiple versions of the invoice saved in case an issue with the new system arises. Additional communication and training has been identified to help with the uncertainty. However, there is a reduction of the duplication of invoices as the users become more familiar and comfortable with the new system and process.

CHAPTER 5

CONCLUSIONS

While not all of the objectives have been fully met at this time, the additional enhancements made to the custom-developed solution successfully allowed the sixteen entities to implement an improved and consistent process for processing accounts payable invoices at all locations. These improved and consistent processes will allow the entities to continue to move towards the accounts payable roles being shared by multiple locations as they had originally desired at the beginning of the project. Additional training and communication has been identified to assist in reaching the objectives that have not been met yet. It is expected that the objectives will be fully met by the end of the current month with the additional communication as well as some minor enhancements to the developed solution.

The next steps for the solution is to focus on implementing 3-way matching functionality that will help reduce the amount of time to match purchase order information, to receipt of goods information, to the invoice information. Other items on the roadmap include expanded usage to two additional entities shortly without any modifications needing to be made to the current solution. An additional two entities may also be incorporated but will need some slight enhancements developed to handle job costing processes. By the end of the year, it is expected that additional remote locations will also be incorporated into the system with little-to-no customizations needed.

After a completing a post-implementation review, it was determined that the decision to custom-develop the solution in-house was the correct decision since it was unlikely to find a solution to meet some of the key requirements that had been identified throughout the project. By expanding on the custom-developed solution, the added enhancements allowed a solution to be developed that would meet the complex needs of the organization.

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APPENDICES

APPENDIX A: USERS' MANUAL

AP Routing Process Overview

AP Routing is a custom application that routes invoices indexed into OnBase under the associated A/P Invoice WF document type for the location the invoice pertains to. Approval thresholds can be identified in the AP Routing application to determine routing based on the invoice dollar amount. AP Routing will default the routing based on location, department, and initial reviewer. After all of the approvals are complete, the invoice will be listed on the Document Post Screen within the AP Routing application to provide the ability to post to Dynamics GP.

AP Routing Application Reminders:

- The AP Routing setup is based on position. If someone leaves the organization, the new person with that title will automatically replace them in the system.
- If a team member has a title change, the AP staff will have to add that position to the system through the Admin screen in the AP Routing application. See the AP Routing Administration Guide for more information.
- GL Coding has to be done before the invoice can be approved. When routing you will need to think of your approver & code as needed.

NOTE: These instructions include instructions on how to scan and index documents through the new OnBase Unity client and the OnBase Thick client. Please refer to the appropriate client section that you currently use for scanning and indexing OnBase documents.

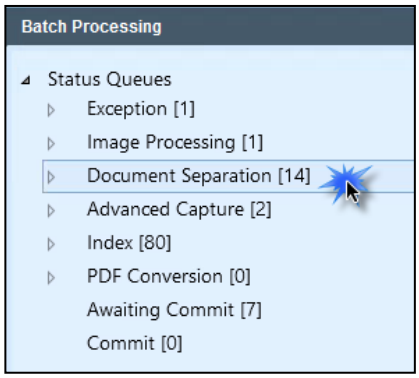
Scanning and Indexing Invoices through Unity Client

1. Open the Unity Client through a Citrix session
2. Click on the **Batch Scanning** button in the Unity ribbon
3. Select the **PBIO AP ROUTING – SCAN** scan queue
4. Click on the **Sweep** button in the Unity ribbon
5. Click **Sweep all files in a particular directory**

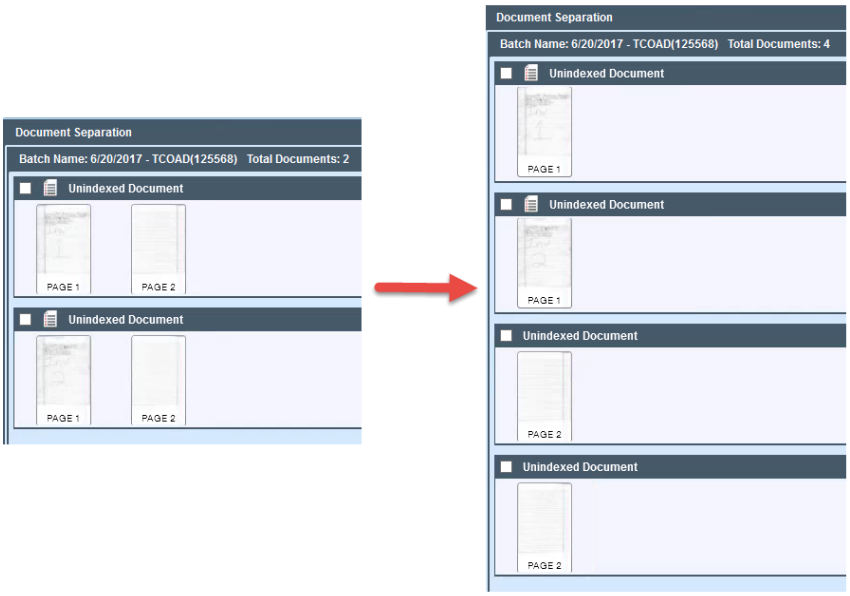
6. **IMPORTANT:** In the Sweep Directory dialog box, click the three dots to browse to the appropriate location's folder that you wish to index invoices for. Once the appropriate location folder is selected, click **OK**
7. Click **Sweep**
8. Enter in a Batch Name.

It is recommended to label the batch as <Today's Date> - <Location> AP Routing.
Example: 6/20/2017 – ALE AP Routing

9. Click **Sweep**
10. Click the **Home** tab of the ribbon and select the **Batch Processing** button
11. Click on the **Document Separation** status queue



12. Right-click on the appropriate batch and select **Perform Document Separation** from the menu
13. You can click and drag the files as necessary to separate documents as needed



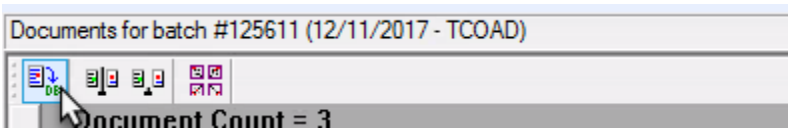
14. Click the **Save and Close All button** located in the ribbon
15. Right-click on the appropriate batch and select **Index Documents** from the menu
16. Index the documents in the batch as:
    a. **Document Type:** Select the appropriate A/P Invoice WF document type for the location the invoice pertains to
    b. **Vendor Name:** Enter the GP Vendor Name exactly as it is in Dynamics GP
    c. **Invoice #:** Enter in the Invoice Number
    d. **Invoice Date:** Enter in the Invoice Date
    e. **Amount:** Enter in the amount of the Invoice

Scanning and Indexing Invoices through Thick Client

1. Open the OnBase Client through a Citrix session
2. Click on **Processing** > **Scan/Index** in the navigation bar at the top of the client
3. Double-click on the **PBIO AP ROUTING – SCAN** scan queue
4. Right-click in the white area of the scan queue and select **Sweep Directory**
5. On the Import / Sweep dialog, click **Folder**
6. **IMPORTANT:** In the Sweep Location dialog box, click the **Browse** button to browse to the appropriate location's folder that you wish to index invoices for. Once the appropriate location folder is selected, click **OK**
7. Click **OK**
8. On the Are you sure you want to sweep the directory? prompt, click **OK**
9. Enter in a Batch Name

It is recommended to label the batch as <Today's Date> - <Location> AP Routing.
Example: 6/20/2017 – ALE AP Routing

10. Click **OK**
11. Select the **Awaiting Document Separation** queue from the scan queue list on the left of the Document Imaging window
12. Right-click on the appropriate batch and select **Perform Document Separation** from the menu
13. Separate the documents as needed
14. Click the **Save Changes and Close** button



15. On the Are you sure the documents are separated correctly? prompt, click **Yes** if the documents are separated correctly.
16. Select the **Awaiting Index** queue from the scan queue list on the left of the Document Imaging window
17. Right-click on the appropriate batch and select **Index Documents** from the menu
18. Index the documents in the batch as:
    a. **Document Type:** Select the appropriate A/P Invoice WF document type for the location the invoice pertains to
    b. **Vendor Name:** Enter the GP Vendor Name exactly as it is in Dynamics GP
    c. **Invoice #:** Enter in the Invoice Number
    d. **Invoice Date:** Enter in the Invoice Date
    e. **Amount:** Enter in the amount of the Invoice

Routing Unrouted Invoices for Approvals

1. Navigate to the AP Routing solution
2. From the Action Items menu, click **Unrouted Invoices**
3. If necessary, change your search criteria to locate the invoices you would like to work with (i.e. Document Type)
4. Click the **Route** button for the appropriate invoice you would like to route
5. Complete the Create Review Request Form. If you need to view the invoice for any of this information, you can click the blue link of the Invoice keywords located near the top of the page.
    a. **Department:** Select the department that the invoice pertains to
    b. **Doc. Date:** Should auto-fill to the Doc. Date value that was entered into OnBase
    c. **Required Date:** This will default to two weeks from today. You can change if needed.
    d. **Amount to approve:** Enter the amount you are requesting approval on if it is different from the invoice amount

e. **Tax Schedule List:** If you need to add Use Tax, select the appropriate Use Tax option
f. **PO Number:** Not currently used
g. **Vendor:** Make sure that this has information in it. If blank, use the drop-down to select the appropriate vendor.
h. **Invoice Number:** Should auto-fill in from the OnBase index values
i. **GP Invoice Description:** Enter any notes that should be carried over to Dynamics GP in the posting process.
j. **Request Remarks:** Enter any notes that should be presented to the reviewers when they complete their approval.
k. **Lock GL Splits:** Checking this box will remove the ability for reviewers to change the GL Coding when they are completing their approval.
l. **Allocations (GL Coding):** Enter in the necessary GL Coding information.
m. **Initial Reviewer:** Select the reviewer who the invoices should go to for approval first.
n. **Routing:** The system will automatically populate the routing based on the location, department, initial reviewer, and thresholds. You can make modifications to the routing for this invoice as necessary.

6. Click **Submit for Routing** to send the invoice to the initial reviewer

Posting Approved Invoices

1. Navigate to the AP Routing solution
2. From the Action Items menu, click **Batch Post**
3. Click the Edit icon for the appropriate invoice
4. Review the GL Posting Details for completion:
    a. **Batch ID:** You will enter a batch ID for the first invoice you post, then you can click Last Batch # to autofill.
    b. **Document Date:** Should autofill from Routing Form
    c. **Invoice Number:** Should autofill from Routing Form
    d. **Vendor Name:** This is the GP Vendor ID – Vendor Name
    e. **GP Invoice Details:** Will be passed to GP in the posting process
    f. **Coding:** Review coding is complete and correct

g. **Voucher ID:** Will autofill after posting is completed

Additional Actions Available on Invoices

Cancel Invoices

If you find the invoice is a duplicate or needs to be re-routed, you can change the Document Status as needed.

1. Navigate to the AP Routing solution
2. From the Action Items menu, click **Batch Post**
3. Click the Edit icon for the appropriate invoice
4. Change the Document Status to Cancelled

Create New Route

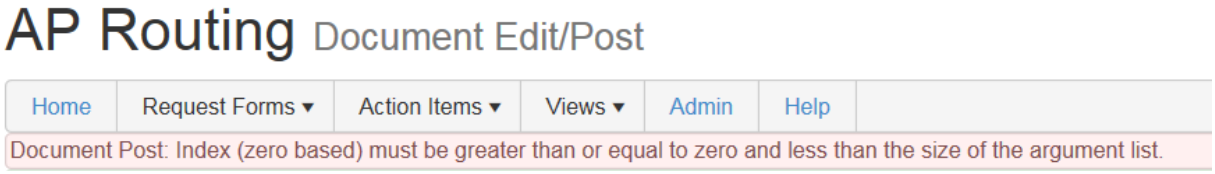
If the invoice needs to be routed through a secondary approval process:

1. Navigate to the AP Routing solution
2. From the Action Items menu, click **Batch Post**
3. Click the Edit icon for the appropriate invoice
4. Click the **Create New Route** button
5. See Routing Unrouted Invoices for Approvals for more information

APPENDIX B: SYSTEM TECHNICAL DOCUMENTATION

Common Document Post Errors

Error Message: Document Post: Index (zero based) must be greater than or equal to zero and less than the size of the argument list.



Common Cause: A GL account entered in the allocations section does not exist in GP.

Verification of Issue: When entering a GL account with the free-form option instead of the picklist, the GL account is validated and pull back the GL and Account description in the GL Account column.

Fix:

1. Update the invalid Gl Account on the Document Post screen
2. Click the **Save** button to update the preview of the distributions shown
3. After the save is successful, you will be re-direct back to the Batch Post search screen. Locate the invoice and click the Post button next to the invoice
4. Click the **Post** button on the Document Post screen

Common Web Service Errors

Error Message to User: Document Post: The application encountered an unhandled system exception. Contact your system administrator for details.

Additional Logged Details: select CreatedDate, ServiceType, ExceptionMessage from wsexceptionlog order by createddate desc

2017-05-24 08:28:33.467 Create Violation of PRIMARY KEY constraint 'PKAAG20000'. Cannot insert duplicate key in object 'dbo.AAG20000'. The duplicate key value is (167473). The statement has been terminated.

Fix: This occurs when copying the ERP production to test. Next available numbers need to be reset. Example next available Voucher#