



How the Washtenaw County, Michigan, Treasurer's Office used robotic process automation to save time, reduce errors and improve the timeliness of financial reporting.

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The Washtenaw County, Michigan, Treasurer's Office combined the strength of enterprise resource planning (ERP) and a robotic process automation (RPA) tool to improve the timeliness and accuracy of revenue identification and recording. Since launching its new process, the county has:

- Benefited from detailed, accurate revenue receipting that facilitates the bank reconciliation process and timely financial reporting.
- Reduced workload with a near-zero error rate.
- Freed up staff for customer-facing work and allowed Treasury personnel to better manage their transactional work.
- Used an automated content manager to provide additional proof of deposit information.

IDENTIFYING THE NEED

The Washtenaw County Treasurer manages the county's cash and investments, collects delinquent property taxes, and records the county's ever-increasing revenue deposits. The Treasurer's receipting model is built on centralized depository and disbursements functions.

Washtenaw County went live with Enterprise ERP, Cashiering, and Content

Manager from Tyler Technologies in 2017. During the implementation, staff from the Treasurer's Office designed a model of three countywide depository bank accounts, designated by tender type:

- ACH and other electronic deposits
- Credit card deposits
- Department deposits of cash and checks

This introduced new complexity, but it also set the stage for automation through the careful design of deposit numbering and labels.

The volume of county deposits has grown enormously in recent years. The pandemic accelerated the use of electronic payments by more county customers and funding agencies, and the county now uses multiple specialized online payment platforms and accepts cash, checks, wires, ACH deposits, PayPal, and more.

Getting money into the bank quickly is good for internal controls and earning interest, but it means that deposits are made before being identified and without consolidation by county staff. The county makes 70+ deposits per day, some of which represent all the transactions for a department or program that day, and others mapping to a single payment or grant receipt. Each deposit must be identified and receipted into the ERP system, often using multiple charge codes.

THE PROCESS

The county's first move was selecting RPA software. It went with Automation Anywhere, a cloud-based bot that runs its processes on local machines. The software had been used in federal agencies, and the county was able to piggyback on the federal pricing schedule. The process started with one "bot runner" license and one "bot developer" license, and the county paid for bot-builder training and assistance as it built its first bot.

The county identified deposits from its two court systems for its first automation project. The courts make multiple deposits per day with consistent description identifiers (including the bank deposit ID). Exhibit 1 shows the updated spreadsheet used to track daily bank deposits with identification logic, using VLOOKUP formulas based on bank deposit description, and more—which is better than trying to remember all the different types of deposits. There is an identification logic/list in Excel, which makes regular updates and additions easier. Exhibits 2 through 6 show detailed steps for taking data from the bank into the ERP.

THE RPA PROCESS, STEP-BY-STEP

STEP 1

The RPA tool copy/pastes downloaded bank data to a Bank Deposit Tracking Excel file (see Exhibit 2).

STEP 2

The Excel file populates additional columns based on VLOOKUP formulas (see Exhibit 3).

STEP 3

The RPA tool updates department code/identification information based on set logic (see Exhibit 4).

STEP 4

The RPA tool maps designated deposits to create a transmittal spreadsheet that assigns charge codes, G/L dates, and reference information needed for automated receipt entry (see Exhibit 5).

STEP 5

The RPA tool enters the transmittal receipts into the ERP via Payment Entry as a logged-in user (see Exhibit 6). (Note: The county plans to implement the Excel import tool in Enterprise ERP v2021.)

EXHIBIT 1 | SPREADSHEET USED TO TRACK DAILY BANK DEPOSITS WITH IDENTIFICATION LOGIC

| Unique identifier | On Is... | Location | Tender | Payment Method | Charge Code | Rev Memo | Alert | FY Charge Code | SOM |
|--------------------|---|----------|--------|----------------|-------------|----------|-------|----------------|-----|
| DEPOSITOR ID. 2800 | 18 cash deposit - Trial Court (TCCASH) | 2800 | CA | CASH | TCCASH | | | | |
| DEPOSITOR ID. 2801 | 18 cash deposit - Trial Court locker revenue (TCLOCK) | 2800 | CA | CASH | TCLOCK | | | | |
| DEPOSITOR ID. 2802 | 18 cash deposit - Trial Court jury reimbursement (TCJURY) | 2800 | CA | CASH | TCJURY | | | | |
| DEPOSITOR ID. 2851 | 18 cash deposit - 14A-1 District Court (DCA1CA) | 2851 | CA | CASH | DCA1CA | | | | |

EXHIBIT 2 | RPA TOOL COPY/PASTES DOWNLOADED BANK DATA TO EXCEL FILE

| Date | Account Name | Type | Description | Cust Ref | Amount | Dept Code | G/L Date |
|--------------|--------------------------|--------------------------|---------------------------|----------|-------------|-----------|----------|
| Apr 11, 2023 | WASHTENAW COUNTY TREASUR | Preauthorized ACH Credit | SIMPLIFILE LC REC FEE0410 | | \$21,581.20 | 1720 | |
| Apr 11, 2023 | DEPARTMENTAL DEPOSITORY | Commercial Deposit | KEY CAPTURE DEPOSIT | 1701 | \$430.00 | 1701 | |
| Apr 11, 2023 | DEPARTMENTAL DEPOSITORY | Commercial Deposit | DEPOSITOR ID. 4600 | 4600 | \$1,761.10 | 4600 | |
| Apr 11, 2023 | DEPARTMENTAL DEPOSITORY | Commercial Deposit | KEY CAPTURE DEPOSIT | 6500 | \$3,750.00 | 6500 | |
| Apr 11, 2023 | DEPARTMENTAL DEPOSITORY | Commercial Deposit | DEPOSITOR ID. 4600 | 4600 | \$18,195.91 | 4600 | |
| Apr 11, 2023 | DEPARTMENTAL DEPOSITORY | Commercial Deposit | KEY CAPTURE DEPOSIT | 6500 | \$26,006.00 | 6500 | |
| Apr 11, 2023 | DEPARTMENTAL DEPOSITORY | Commercial Deposit | DEPOSITOR ID. 4600 | 4600 | \$62,000.65 | 4600 | |

EXHIBIT 3 | EXCEL POPULATES ADDITIONAL COLUMNS


| Is probably... | MchnDate | Payment Method | Charge Code | Memo | Alert | ChgCdAuto | ChgCdOvrd | Payment |
|---|----------|----------------|-------------|------|-------|-----------|-----------|---------|
| cash deposit - Treasurer | 4/3/2023 | CASH | 0 | 0 | 0 | 0 | 0 | CASH |
| Check deposit - see "cust ref" column for location code | 4/3/2023 | CHECK | #N/A | 0 | 0 | #N/A | | CHECK |
| cash deposit - clerk register of deeds | 4/3/2023 | CASH | 0 | 0 | 0 | 0 | 0 | CASH |
| Check deposit - see "cust ref" column for location code | 4/3/2023 | CHECK | #N/A | 0 | 0 | #N/A | | CHECK |
| cash deposit - Building Inspection & Environmental Health | 4/3/2023 | CASH | 0 | 0 | 0 | 0 | 0 | CASH |

EXHIBIT 4 | RPA TOOL UPDATES DEPARTMENT CODE/IDENTIFICATION INFORMATION

| Date | Account Name | Type | Description | Cust Ref | Amount | Dept Code | G/L Date | Deposit ID | Fu |
|--------------|-------------------------|--------------------|--------------------------|------------|---------|-----------|-----------|-------------|----|
| Apr 03, 2023 | DEPARTMENTAL DEPOSITORY | Commercial Deposit | DEPOSITOR ID. 1800101635 | 1800101635 | \$5.00 | 1800 | 3/28/2023 | 1800101635 | X |
| Apr 03, 2023 | DEPARTMENTAL DEPOSITORY | Commercial Deposit | KEY CAPTURE DEPOSIT | 3000 | \$10.00 | 3000 | 3/27/2023 | SDCK032723 | X |
| Apr 03, 2023 | DEPARTMENTAL DEPOSITORY | Commercial Deposit | DEPOSITOR ID. 1720 | 1720 | \$10.00 | 1720 | 3/29/2023 | CRCA040323B | X |
| Apr 03, 2023 | DEPARTMENTAL DEPOSITORY | Commercial Deposit | KEY CAPTURE DEPOSIT | 3000 | \$55.00 | 3000 | 3/28/2023 | SDCK032823 | X |
| Apr 03, 2023 | DEPARTMENTAL DEPOSITORY | Commercial Deposit | DEPOSITOR ID. 5007 | 5007 | \$65.00 | 5007 | 3/29/2023 | 5007100424 | X |

EXHIBIT 5 | RPA TOOL MAPS DEPOSITS TO CREATE A TRANSMITTAL SPREADSHEET

| Date | Account Name | Type | Description | Cust Ref | Amount | Dept Code | G/L Date | Deposit ID | Payment |
|-----------|----------------------------|------------------------|---|----------|--------|-----------|----------|------------|-------------|
| 4/17/2023 | WASHTENAW COUNTY TREASURER | Preauthorized ACH Cred | I3VERTICALS SV9T855333366FUNDING-MANUAL | | | 1655 | 2800 | 4/17/2023 | TCACH041723 |
| 4/17/2023 | DEPARTMENTAL DEPOSITORY | Commercial Deposit | KEY CAPTURE DEPOSIT | 2800 | | 2046 | 2800 | 4/17/2023 | TCCK041723 |
| 4/17/2023 | CREDIT CARD DEPOSITORY | Preauthorized ACH Cred | CARDCONNECT MERCH DEP | | | 30 | 2800 | 4/17/2023 | TCCC041723 |
| 4/17/2023 | CREDIT CARD DEPOSITORY | Preauthorized ACH Cred | CARDCONNECT MERCH DEP | | | 660 | 2800 | 4/17/2023 | TCCC041723B |



Washtenaw County Treasurer

Munis Transmittal Advice

Version 12/9/21

Department: Trial Court 2800 A/R Code: DCGEN

Prepared by: Bot Contact Ph #: 484-9687

Date: 4/17/2023 Batch#: 42222

| Revenue Info | | Additional Description | |
|--------------|----------------------|------------------------|------------|
| TCEFIL | E-File Deposits | | \$1,655.00 |
| TCCHCK | Check Deposits | | \$2,046.00 |
| TCCRED | Credit Card Deposits | | \$30.00 |
| TCCRED | Credit Card Deposits | | \$660.00 |

Deposit Info

| Deposit Date | Tender Type | Deposit ID | Comments | Amount |
|--------------|-------------|-------------|----------|------------|
| 4/17/2023 | ACH | TCACH041723 | | \$1,655.00 |
| 4/17/2023 | CHECK | TCCK041723 | | \$2,046.00 |
| 4/17/2023 | CREDIT CARD | TCCC041723 | | \$30.00 |
| 4/17/2023 | CREDIT CARD | TCCC041723B | | \$660.00 |

| Charge Code | Description | Override Desc. | Amount |
|-------------|----------------------|----------------|--------|
| TCEFIL | E-File Deposits | | 0 1655 |
| TCCHCK | Check Deposits | | 0 2046 |
| TCCRED | Credit Card Deposits | | 0 30 |
| TCCRED | Credit Card Deposits | | 0 660 |

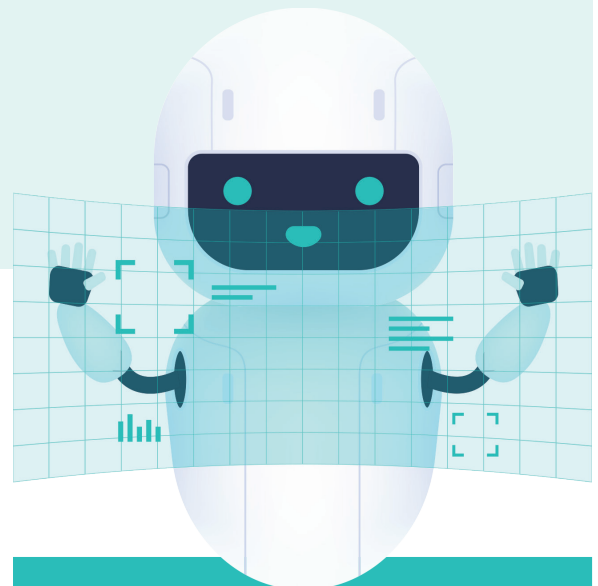


EXHIBIT 6 | RPA TOOL ENTERS TRANSMITTAL RECEIPTS INTO ERP

TransEntry_Primary

Variables

Search variables

- browser-1
- ChildrenValues
- dFilesInFolder
- errorLineNumber
- ErrorMessage
- nDepLastRow
- nDepRow
- nRevLastRow
- nRevRow
- prompt-assignment
- rDepData
- rRevData
- sAmount
- sBatchNumber
- sBotErrorImagePath
- sBotErrorLog

Flowchart

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graph TD
    Start([Start]) --> EH1[Error handler: Try]
    EH1 --> S1[Step "Check for/set up log folders"]
    S1 --> S2[Step "Start Event Log"]
    S2 --> S3[Step "Read Config File"]
    S3 --> S4[Step "Open Munis Payment Entry and set window variables"]
    S4 --> S5[Step "For each file in folder, enter into Munis"]
    S5 --> L1[Loop for each file and assign file name and extension to]
    L1 --> M1[Message box "STransPath\SdFilesInFolder(name)"]
    M1 --> I1[If string SdFilesInFolder(extension)$ Equals to(=) ".xl"]
    I1 --> E1[Excel advanced: Open "STransPath\SdFilesInF"]
    E1 --> M2[Message box "STransPath\SdFilesInFolder(nai]
    
```

THE BENEFITS OF BOTS

The process runs in a fraction of the time a person would require, with a near-zero error rate.



GET THE MOST OUT OF RPA

Look for high-volume transaction streams with identifiable descriptions for the best return on upfront automation set-up.

Expansions were added later, using the same steps for another bank account. More types of deposits were also added, starting with the high-volume deposits, and then adding more of the lower-volume but easily identified deposits. The county will slowly add the occasional volume deposits.

In the future, the county will switch the software to a virtual machine from a dedicated desktop. It will also:

- Implement the new Excel import tool for miscellaneous receipts beginning in Enterprise ERP v2021.
- Create bot-specific credentials to download bank files from file transfer protocol (FTP) sites.
- Explore working with bank data in the BAI file format (a file format for performing electronic cash management balance reporting).

MEASURING SUCCESS

Adding an RPA process takes advantage of the ERP's strengths. Charge codes map to departmental revenue accounts, deposit IDs map to real-world bank accounts (balance sheet account in the ERP system), and receipt attachments in the content management software provide additional proof of deposit

information. Detailed, accurate revenue receipting simplifies the bank reconciliation process and helps make financial reporting timely. The county also gauges its success by tracking employee time saved and comparing error rates.

Employee time savings is tracked in hours. Processes run on a separate computer in a fraction of the time a person would require, which frees staff members for other meaningful work at their own workstations. Of course, time is still needed to initiate the processes, update as needed, and troubleshoot occasional issues; there is also an investment in initial training and development.


The error rate comparison is done in percentages. The automation processes work with a near-zero error rate, and even if there are problems, they are very often quick and easy to notice and fix—the process sometimes ends either early (not complete/no receipts) or is run twice by accident (creating duplicate receipts).

SUGGESTIONS FOR OTHER ENTITIES

Processes cannot be automated successfully until they are understood

and carefully documented. Washtenaw County suggests the following steps:

- Start with a simple process as your first automation project.
- Write out the process in step-by-step detail.
- Look for high-volume transaction streams with identifiable descriptions for the best return on upfront automation set-up. Identify simple, consistent, and frequent items to get the most out of the new process.
- Work with your bank to get maximum information per deposit and to receive your daily transaction reports in the format you need (likely .csv or .bai2).
- Start small, then expand.

Once your team has done its first project, you will likely see automation opportunities everywhere. If you're working with your IT department, they may be able to identify opportunities to deploy automation for non-financial processes throughout your organization. 

Kirsten Osborn is Chief Deputy Treasurer and Keith Shoemaker is Treasury Services Manager for Washtenaw County, Michigan.