Executive Summary

Purpose

The goal of this project is twofold: (1) Provide a link between an online sales database and the accounting system. (2) Using information retrieved from those databases, create, format and print payment statements to accompany monthly checks sent to merchants.

Company Background

The selected company is an online deal site similar to Groupon and Living Social with a main focus on the Utah market. Just prior to my employment at the company, it was acquired from the former owners by its primary creditor due to solvency issues.

The business model is simple (1) customers purchase discounted deals on the website and present the certificates to the merchants to receive the products (food, spa treatments, carpet cleanings, etc.). (2) Each month, the company sends a portion of the sales proceeds to the merchant to compensate them for the services offered. This payment is calculated based off the number of sales and a predetermined split per sale. All of these transactions are processed and stored on the website.

Problem

All transactions are tracked in an online database maintained by a third party, and the only access to this data is through preexisting web reports which are then manually transferred to the accounting system. This results in the accountant manually entering hundreds of entries each month. Past turnover has resulted in inconsistent treatment of monthly entries as well. Overall, the manual process resulted in a time consuming process that only muddied the economic picture due to inconsistencies. It can only be imagined that the poor state of the accounting information system was a contributing factor in the solvency issue faced by the former owners.

Solution

In order to automate the process as much as possible, I have create procedures in MS Excel which process the reports from the web portal, perform the necessary manipulations and calculations, and saves the output in a format and file type that can be updated to MAS 500, the accounting system. This includes at least one procedure for each of the following process:

- ***Creating new merchants***
- Calculating cost of goods sold and inputting vouchers into the accounting system
- Inputting debit memo vouchers for returns, calculating and recording any sales/ cost of goods sold discounts
- ***Creating statements to send with the monthly payments to vendors.***

For purposes of this project, I have chosen to focus on the *new merchant process* as well as the *creation of the monthly payments statements*.

The new merchant process extracts the merchant information for all items sold in the current month and compares it to existing vendors in the accounting system. If it is unable to match the information, it allows the user to match the merchant to an existing vendor or to mark it as a new merchant through the use of the same user form. The procedure then uses this information to

create and populate an uploadable file, which the user then uploads into the accounting system to create the new vendors.

To create the monthly payment statements, a different procedure compiles sales, refunds, and discounts information from the current month as well as prior months. This information is grouped by deal, month and subtotaled by merchant. Payment information is grouped by payment week, and the weekly subtotal by merchant equals the amount of the check scheduled to be mailed on that week.

Once the information has been compiled and sorted, the totals can be automatically compared to the scheduled payments in the accounting system. After differences have been researched and corrected, the user can then use the procedure to format the statement in an aesthetically pleasing format.

Finally, the statements are printed by the procedure in the same order that the checks will be printed in order to allow easy matching and mailing of both in the same envelope. In addition, a PDF of each statement is saved to a network location and unique subfolder based on the merchant name. This allows for easy retrieval in the event that the customer has a question about their statement or payment amount.

Result: The results of this automation process including procedures not outlined in detail are also twofold (1) Time savings were approximately 56 hours. A reduction from 60 hours to 4 hours with the majority of the existing time aimed at resolving quality assurance and accuracy issues which are flagged by the processes. (2) Increased consistency resulting in decreased merchant inquiries. Merchant inquiries decreased from 3-4 inquiries per day with 3 or 5 payment corrections each month to 2-5 inquiries per month and no payment corrections each month.

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Implementation Documentation:

To assist the user in understanding and maintaining these processes, the following outline has been prepared showing the main steps of each process. The New Merchant process is outlined first and the Payment Statement process is outlined second. In order to provide a complete understanding, steps requiring user input are in red text while steps performed automatically appear in black text.

To see/ run the macros, open the MAS 500 Macros workbook. The New Merchants Macro will run up until it saves the file as a .csv file, then it will stop prior to completing the final steps, because other files from the network drive are required for those steps.

Due to security and confidentiality concerns, I am unable to publicly provide all of the required workbooks for the Monthly Payment Statements macros to work; however, the user form can still be opened and observed, and all functions to work properly when logged onto the company server.

New Merchants:

Required files:

- Merchant report for period (.xls file downloaded from web portal)
- Vendor Name Mapping.xlsm (from network file)
- Vendor Address List exported from MAS 500 (optional)

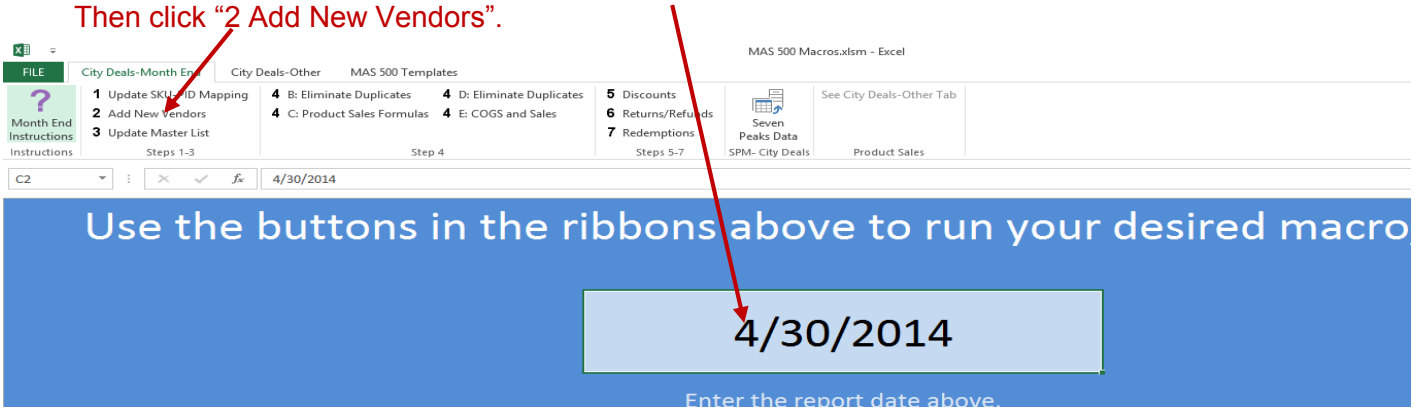
Applicable Modules:

- a_Ribbon_xml
- Global_Variables (Some portions)
- NewVendors
- Thisworkbook and database (in Vendor Name Mapping)

Main Macro Steps:

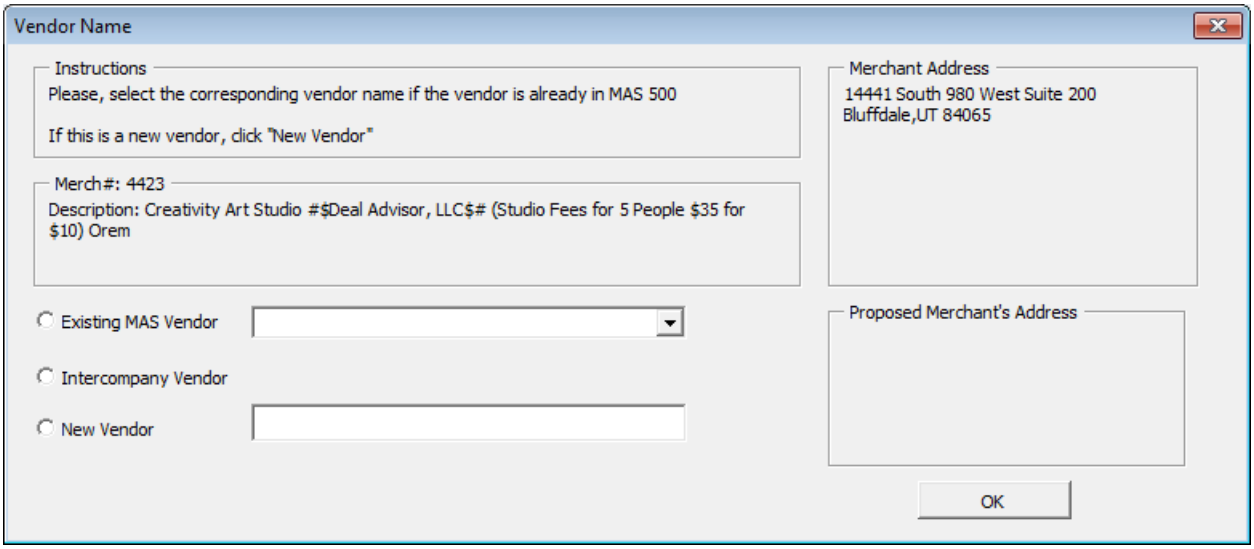
1) Download the merchant report from the online reporting portal and name it “Daily Sales-mm-dd-yy.xsl” replacing “mm-dd-yy” with the corresponding date.

2) Input the date used in naming the report above.
Then click “2 Add New Vendors”.

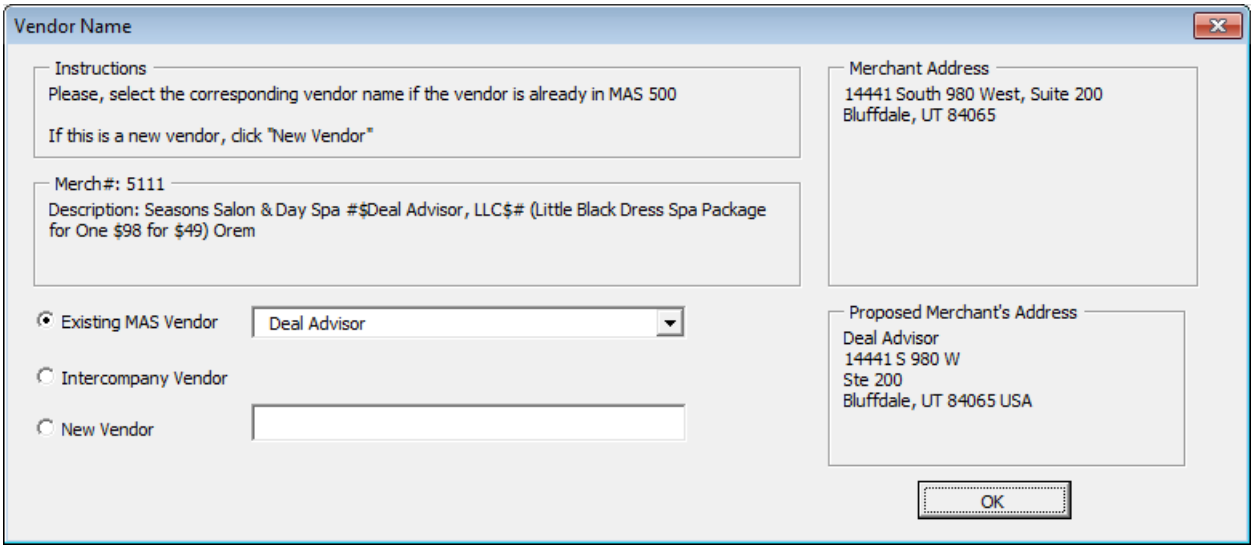


3) The macro will then take the following steps with some additional user input:

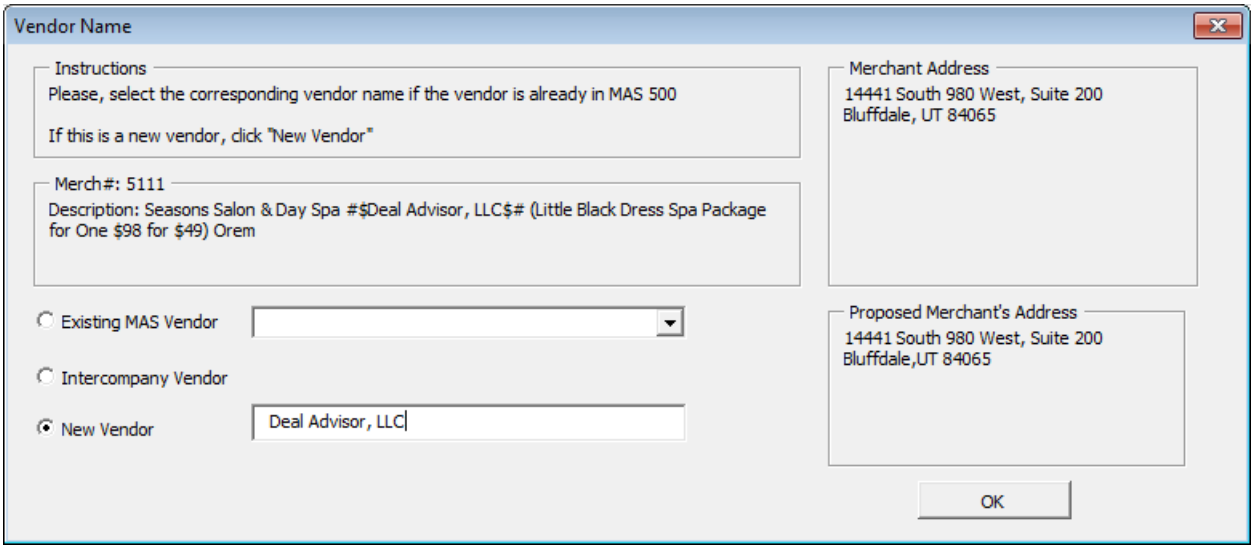
a. Open the merchant file
b. Open the Vendor Name Mapping file
    i. Click “Yes” to automatically sync to MAS 500.
    ii. This will automatically sync the Vendor Name Mapping file to the MAS 500 vendor list in the database.
        1. A status bar will appear based on the number of MAS vendors already in the Vendor Name Mapping file.
        2. If this fails, it will ask if the user would like to manually update the file.
            a. Click “Yes” to do so.
            b. This requires the user to export the vendor list from MAS to a specific location and name it “address list.xls”
c. The macro will then compare the Merchant IDs in the merchant report to the Vendor Name Mapping.
d. For any merchant IDs that are not found it will enter a “New Merchant” routine.
    i. It will extract the suggested merchant name using pre-established rules for names. This is a series of “Find and Replace” functions on the merchant name.
    ii. Using pre-established conservative criteria it will determine if the merchant relates to a sister company.
        1. If so, it will mark the vendor name as “intercompany.”
    iii. If it is not flagged as intercompany, a user form will be displayed.
        1. The user must complete the user form containing the following and click “ok”
        2. Instructions
        3. Merchant # and Merchant Name/ Description
        4. The Merchant Address as shown on the merchant report (top right corner.
        5. Three options for treating the merchant
            a. Existing Merchant with a dropdown list populated from database information from MAS 500 as well as the information for new merchants added on previous user forms.
            b. Intercompany Vendor: if merchant was not flagged as such previously but is actually an intercompany merchant.
            c. New vendor: populates with the suggested merchant name stored in the array from step d i above



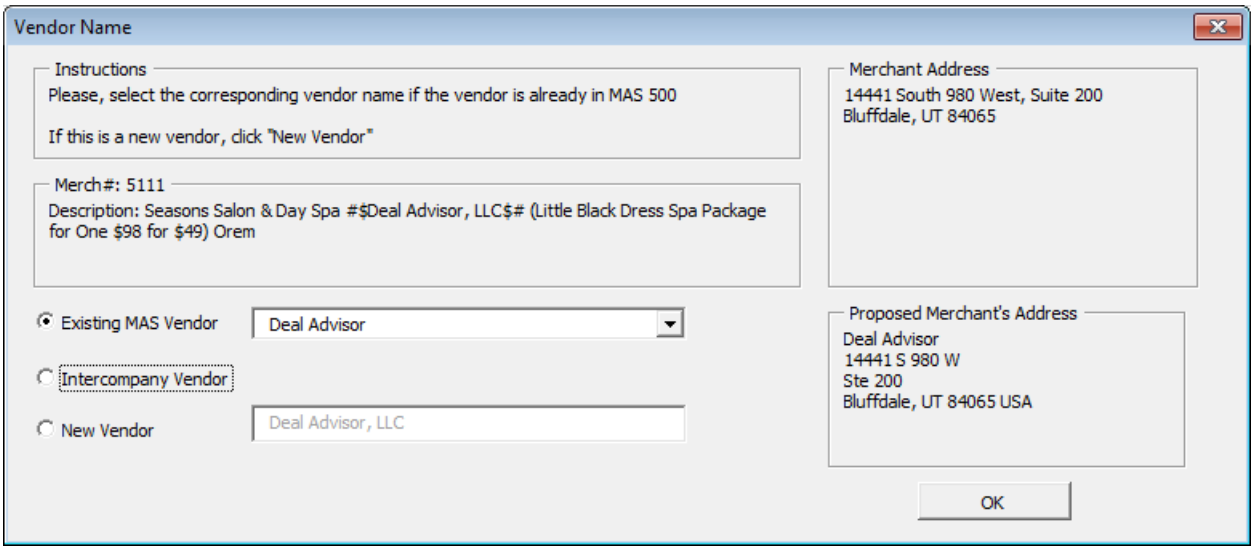
6. Once an option is selected, the proposed merchant's address will populate in the lower right frame.



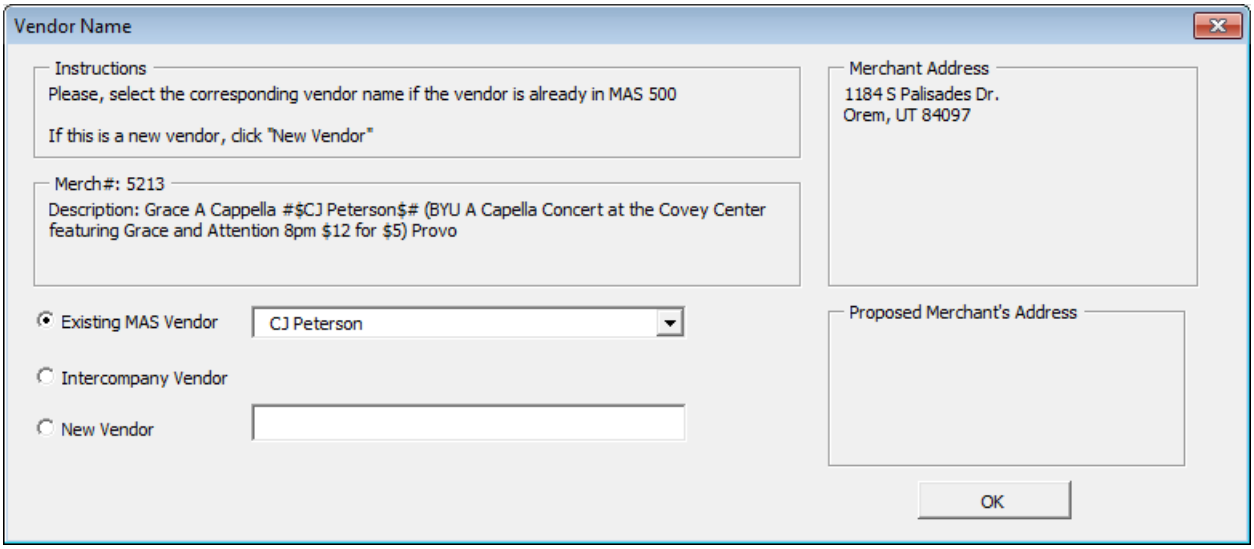
If a different option is select or deselected this frame will update accordingly.



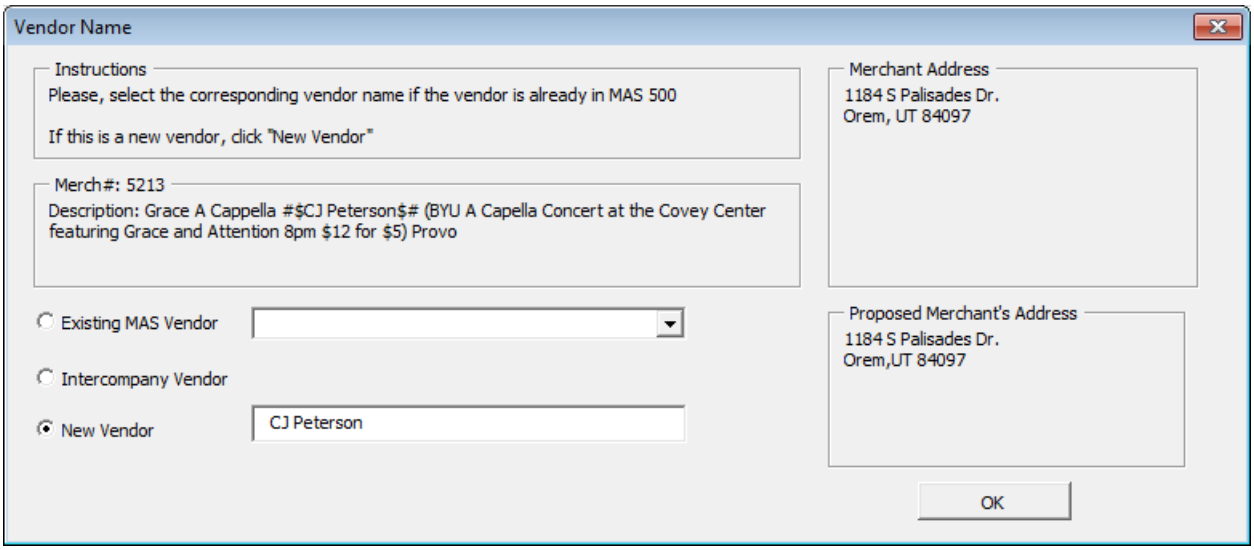
Upon reverting to a previously selected option, the address will update accordingly as well.



If a vendor does not exist in the system, no address will appear in the lower right, if that merchant's name is entered into the combo box.



If the New Vendor option in selected, then the address will appear in the lower right frame.



a. Upon exiting the form, the responses are stored into an array and the Vendor Name Mapping file is updated with the response.
b. If the form is exited by clicking the “x” then the user will be prompted if they would like to save their inputs.
    i. If so, responses are stored as if the form was exited normally.
    ii. If not, changes are discarded and the file the process will need to be rerun to be completed.

iv. If the “New Vendor” option is selected in the user form the procedure will insert the vendor information into a file that will be saved as a .csv and prepared to be uploaded to MAS 500.

v. Additionally, the procedure will check to see that no duplicate IDs exist in the system. If so, they will be saved in a workbook which is opened upon completion of the process.

e. Once all merchants have been checked and updated, the newly created New Merchants file is saved as a csv file. Prior to doing so, all commas in the file are replaced with a designated string.

f. The macro then opens a word document which opens the csv file in word and runs a find and replace procedure on the document in order to transform it from a comma separated file to a semicolon delimited file.

i. This procedure also adds the needed delimiters at the end of each row to account for blank fields which are required in MAS 500.

g. The file is then saved and the word application is closed.

h. It is then opened in Excel again, saved in the proper .del format.

i. Then the worksheet with any duplicate IDs is opened.

i. Note this has not been an issue in the past year, yet it still exists as a control if a duplicate ID were to occur

4) The Macro is then done.

5) The user then goes into MAS 500 and uploads the .del file into the system.

Payment Statements

Required files:

- Product Sales report for period (.xls file downloaded from web portal)
- Vendor Name Mapping.xlsm (from network file)
- Master List (from SharePoint location)
- SKU-Product ID Mapping (from network file)
- Start-up Fee audit worksheet (from network file)
- Ledgers Directory (from network file)

Applicable Modules:

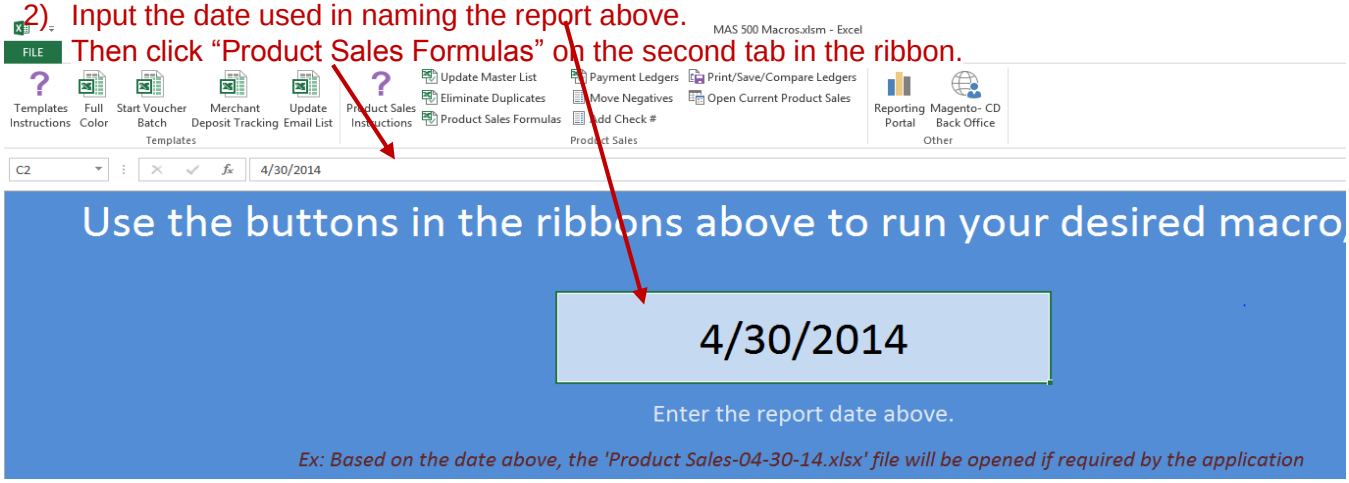
- a_Ribbon_xml
- Global_Variables (Some portions)
- Ledgers
- PaymentFile

Main Macro Steps:

(NOTE: STEPS 1-18 are the nitty gritty of compiling the information. Steps 19 and on are the interesting fun steps.)

1) Download the merchant report from the online reporting portal and name it “Daily Sales-mm-dd-yy.xsl” replacing “mm-dd-yy” with the corresponding date.

2) Input the date used in naming the report above.
Then click “Product Sales Formulas” on the second tab in the ribbon.



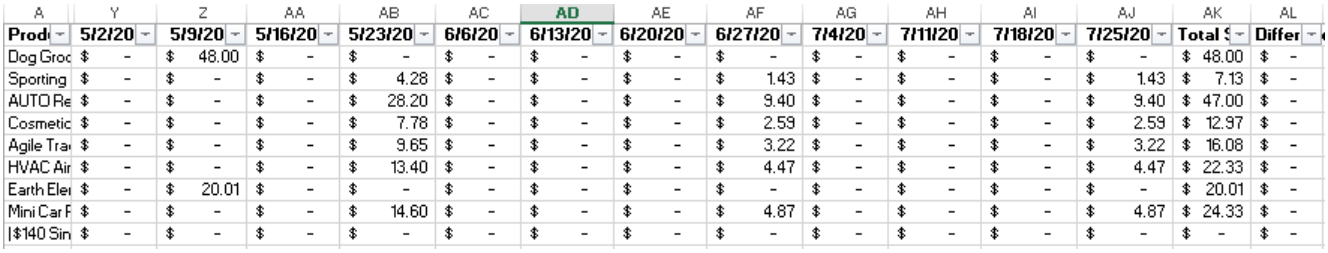
3) The macro will then open the product sales report for that date.
    a. It will look first to see if it is already open
    b. If not, it will check in the main folder where other completed product sales files are located.
        i. If it doesn’t find the .xlsx version, it will search for .xlsm or .xls version in the same folder
    c. If the file is still not found, it will check the original “Merchant Reports” folder where the files are initially downloaded from the web portal
    d. This process ensures that the most recent product sales file is used in creating the statements (based on common behavior and treatment of the file)
    e. If no file is found, it will alert the user of the matter and it will exit the sub.
4) It will then take the raw information from the tab containing the downloaded data and name that tab “Source”.
5) The source tab will be copied and the second tab will be named “Formulas”
6) On the formulas sheet columns will be inserted and the following information will be brought in from the Master List:
    a. VendorID- used to find the MAS ID
    b. ProductID- useful in manually troubleshooting discrepancies
    c. MAS ID- Used to summarize products that will be paid with the same check and to sort in the proper order.
    d. Split%- the percent of sales or fixed dollar amount per item to be paid to the merchant depending on the contract.
        i. This split amount is then compared to the calculated split based on information from the product sales file.
    e. The payment method- (sales or redemption) determines whether the merchant is paid at the time the coupon is sold or at the time the coupon is used.

1 This screenshot is of the final information after the macro has been completed. Thus, it reflects actions outlined below.

Prod	SKU	Merc	Prod	Vend	MAS	Qty	Total	Unit	COG	Store	Split	Split	Past	Diffe	Coup	Meth
Dog Groc	513252	Dog Groc	10052	4893	3197	3	60	16.6	49.8	0	0.83	0.83		0	0	Sales
Sporting	512616	Sporting	9399	4270	4270	1	12.5	7.5	7.5	0	0.6	0.6		0	0	Sales
AUTO Re	50152	AUTO Re	7401	2402	2402	2	200	50	100	50	0.5	0.5		0	50.01	Sales
Cosmetic	512916	Act Cosm	9710	4576	4576	2	21	6.8	13.6	0	0.6476	0.65		0	0	Sales
Agile Trac	513085	Agile Trac	9884	4747	4747	2	24	8.4	16.8	0	0.7	0.7		0	0	Sales
HVAC Air	512531	HVAC Air	9314	4200	4200	1	29	23.2	23.2	29	0.8	0.8		0	0	Sales
Earth Elec	512927	Aisa Man	9721	4587	3197	2	25	10.38	20.76	0	0.8304	0.83		0	0	Sales
Mini Car F	51141	Line up Y	8421	3332	3339	3	38.97	8.5	25.5	0	0.6543	8.5		0	0	Sales
I$140 Sin	50621	Aspen W	7900	2825	2826	1	69	41.4	41.4	0	0.6	0.6		0	10.35	Redempt

f. The payment schedule broken out by week
    i. Typically the payout is 60/20/20 on the 4th Friday, meaning merchants are paid 60% of the previous month's commissions on the 4th Friday of the following month. 20% on the 4th Friday of the next month and the remaining 20% on the final.
    ii. However, some vendors are paid 100% on the first week; some are paid on the second week; and yet others on the third week (mostly those paid on redemption.)
g. The date for each payment is also calculated based on the date used to name/ retrieve the file.

2 This screenshot is of the final information after the macro has been completed. Thus, it reflects actions outlined below.



A	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL
Prod	5/2/20	5/9/20	5/16/20	5/23/20	6/6/20	6/13/20	6/20/20	6/27/20	7/4/20	7/11/20	7/18/20	7/25/20	Total $	Differ
Dog Groc	$ -	$ 48.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 48.00	$ -
Sporting	$ -	$ -	$ -	$ 4.28	$ -	$ -	$ -	$ 1.43	$ -	$ -	$ -	$ 1.43	$ 7.13	$ -
AUTO Re	$ -	$ -	$ -	$ 28.20	$ -	$ -	$ -	$ 9.40	$ -	$ -	$ -	$ 9.40	$ 47.00	$ -
Cosmetic	$ -	$ -	$ -	$ 7.78	$ -	$ -	$ -	$ 2.59	$ -	$ -	$ -	$ 2.59	$ 12.97	$ -
Agile Trac	$ -	$ -	$ -	$ 9.65	$ -	$ -	$ -	$ 3.22	$ -	$ -	$ -	$ 3.22	$ 16.08	$ -
HVAC Air	$ -	$ -	$ -	$ 13.40	$ -	$ -	$ -	$ 4.47	$ -	$ -	$ -	$ 4.47	$ 22.33	$ -
Earth Elec	$ -	$ 20.01	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20.01	$ -
Mini Car F	$ -	$ -	$ -	$ 14.60	$ -	$ -	$ -	$ 4.87	$ -	$ -	$ -	$ 4.87	$ 24.33	$ -
I$140 Sin	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

7) Other information is brought in relating to refunds and discounts
    a. These are two separate process that should be run prior to the payment formulas process.
        i. However, if they have not been run, and tabs for discounts and returns do not exist, these tabs will be created, so the formulas on the "formulas" tab will be valid.
        ii. If the refunds or discounts processes are run after the fact, they will simply update the information on those tabs in the product sales file, and the formulas tab will automatically update.
        iii. One caveat is that subsequent tabs (described below) will not update with the discounts information.
            1. The solution is to simply re-run the "Payment Formulas" process once discounts and refunds processes are complete.
8) Based on all of this information, the merchant fee and total amount due are calculated using formulas.

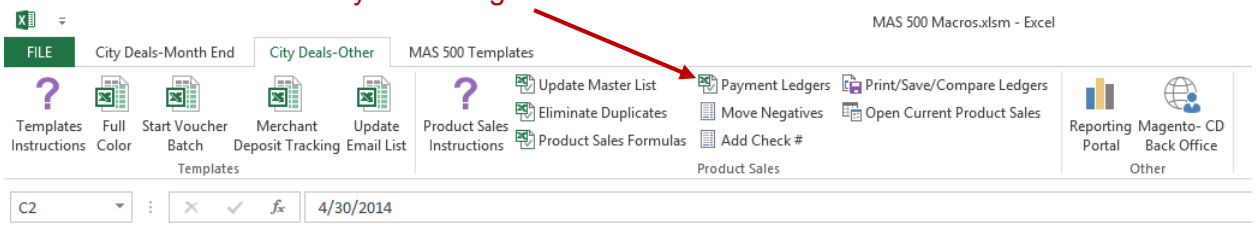
9) The payment amount for each week is calculated based on the payment schedule from the Master List and the Total Due amount on the "Formulas" sheet.

10) Once the payment amount has been calculated for each week for each item, the information is transferred to the Weekly Ledger Tabs (Week 1 Ledgers, Week 2 Ledger, Week 3 Ledger and Week 4 Ledgers).
    a. First, these 4 tabs are created

b. For each of the first 4 weeks, rows are filtered for any non-zero amounts in that week
    i. These non-zero payment amounts are copied to the appropriate Weekly Ledger Tab with their headings intact.
    ii. Since one check typically includes payment for transactions for 2-3 months, a column is inserted to the left of the cells which indicates which month the transactions relate to.

11) Users can then return to the "Formulas" tab to see if there are any significant differences from the calculated split and the split per the master list.
    a. The formula to compare the splits is smart enough to adjust accordingly for fixed fee splits versus sales percentage splits, so differences are always due to actual discrepancies between the two lists, or a renegotiation of the split amount mid-month.
    b. To verify split amounts, the original contract can be accessed and a client services representative is also knowledgeable to answer questions.
    c. If the errors in the split amount were in the calculated split (and not the Master List split) then the COGS amount should be adjusted on the "Source" tab, so the correct split is shown.
    d. The "Payment Formulas" process should be re-run once the "Source" tab has been updated.
    e. Note: the "Eliminate Duplicates" macro can be run to ensure that any changes in split information on the "Formulas" tab are also reflected on the "Source" tab; however, that macro is not included in the scope of this project, so no further detail will be provided.

12) Then the user runs the "Payment Ledgers" macro.



    i. The reason this is a separate process is to allow the user time to verify the split information and perform other actions outside the scope of this project prior to running this process.

13) This macro will perform the same process for activating/ opening the Product Sales file as does the "Payment Formulas Macro"

14) It then retrieves the Product Sales file for the preceding month and transfers any transactions that relate to the current month from the Weekly Ledgers tabs in the prior month's Product Sales to the appropriate tab on the current month's Product Sales file.
    i. The reason it only needs to go back a single month is because any transactions from prior periods will be reflected in this single file.
    b. A similar filtering and copy/paste combination is performed for each payment week to transfer each relevant line item to the new product sales file.

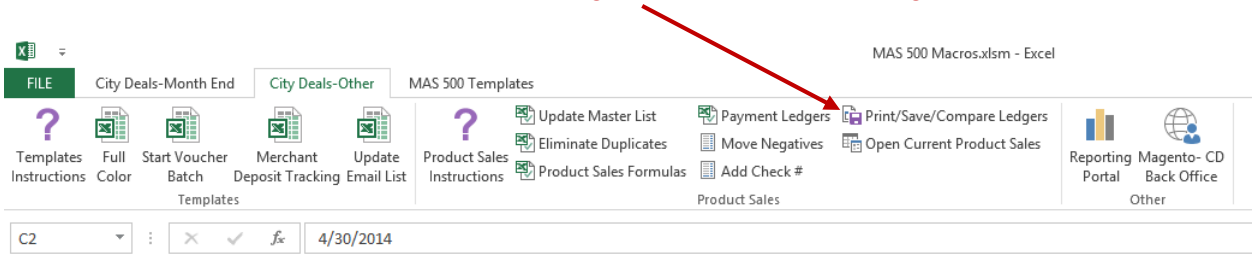
15) It also will activate the “Prior Period Returns” tab and transfer the information over for any returns from prior periods.
    i. This is because these items may not have been sold in the current month, so there is not an existing line item to subtract them in the “Returns” column, so they are shown on their own line.
    b. The month is already included in the far left column, so it is not required to be added.

16) The process then inserts a line if any listing fee is owed
    i. A listing fee is an amount charged to the merchant for the initial costs of creating their product and listing it on site. It is charged only once to each merchant, even if multiple products are listed on site.
    b. To determine if a listing fee should be charged, the “Startup Fee Audit” file is opened from the network drive.
    c. Using the MAS ID, the macro looks up the amount of any outstanding listing fee.
        i. If an amount is outstanding, a line is added to the Product Sales file, and the listing fee amount is shown as a negative in the “Total Due” column.
        ii. A formula is then added in each scheduled payment column to determine how much, if any of the listing fee due can be offset against payments for those weeks.
        iii. These amounts are then transferred back to the Startup Fee Audit file and organized by week.
    d. If the MAS ID is not found in the Startup Fee Audit file, a separate macro is run to update that file, create vouchers to upload to MAS 500, and to resume to accounting for the listing fee in the Product Sales file.
        i. Details on this macro are beyond the scope of this project.

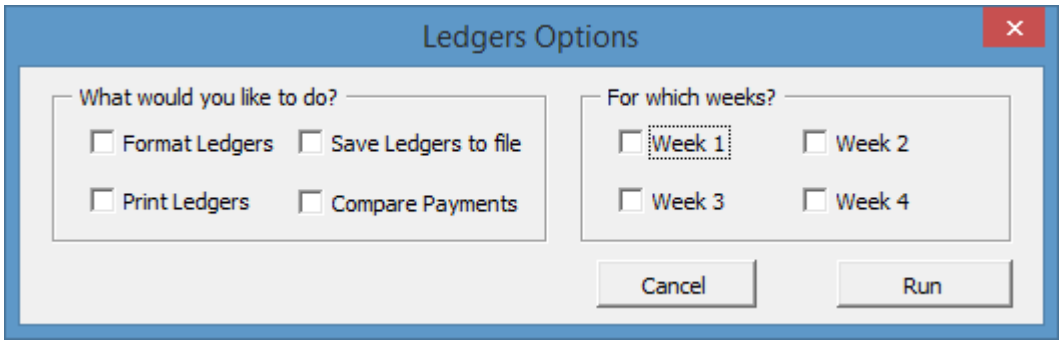
17) All of this information is then sorted and subtotaled by MAS ID (treated as text not numbers). Page breaks are also added between subtotals.
    a. Due to the complexity and size of the final workbook, I have not attempted to take screenshots of all of the parts. Instead, I have attached a sample final copy.

18) The user can now run the user form to activate the ledgers. At this point all of the information needed for the ledgers has been properly added. There are 4 additional steps that can be taken with the ledgers.

19) The user will click “Print/Save/Compare Ledgers” to run the remaining macros



20) The user form will load with 4 choices and the option to select for which weeks it will run.



21) Clicking Format Ledgers will format the ledgers to prepare them to be printed in a more professional format as shown below.

Month	Product Name	Net Sales	Adjusted COGS	Merchant Fee	PMT Due	4/25/2014	5/23/2014	6/27/2014
Mar	Tax Service|Personal Tax Preparation ($400 for $99) - 11/30/12	$ 99.00	$ 64.35	$ 2.97	$ 61.38	$ 36.83	$ 12.28	$ 12.28
Feb	Tax Service|Personal Tax Preparation ($400 for $99) - 11/30/12	$ 297.00	$ 193.05	$ 8.91	$ 184.14	$ 36.83	$ 36.83	
Jan	Tax Service|Personal Tax Preparation ($400 for $99) - 11/30/12	$ 99.00	$ 64.35	$ 2.97	$ 61.38	$ 12.28		
	Total	**$ 495.00**	**$ 321.75**	**$ 14.85**	**$ 306.90**	**$ 85.93**	**$ 49.10**	**$ 12.28**

Thank you for partnering with CityDeals.com!
If you would like to list a new deal on our site, please contact client services at clientservices@citydeals.com or 800-970-8824 option #1.

a. To arrive at this format the macro takes the following actions for the Weekly Ledgers tab for each selected week:

i. All but the minimal necessary columns are hidden.
ii. The company logo is added as a header.
iii. A custom footer is added as well.
iv. Columns are resized and text is wrapped to show all necessary text.
v. The print settings are changed as follows:
    1. Landscape orientation
    2. Print selection only
    3. Fit all columns on one page
    4. Repeat row 1 at the top of all pages (Prints titles on each page)

22) Clicking Print Ledgers will do the following for the Weekly Ledgers tab for each selected week:
    a. Automatically runs the Format Ledgers macro
    b. Copies the tab for the selected week to a new tab
    c. Deletes all information for merchants with a payment amount less than or equal to 0.
    d. Selects all remaining ledger information
    e. Sends the information to the printer to be printed.
        i. Each leger is printed on a different page because of the page breaks added with the subtotals.
    f. Deletes the copied Weekly Ledger tab, so only the original Weekly Ledger tab remains.

23) Clicking Save Ledgers to file will do the following for the Weekly Ledgers tab for each selected week:
    a. Automatically runs the Format Ledgers macro
    b. Opens the Ledgers Directory workbook which allows the user to maintain the subfolders in the selected location, so new folder will be created for newly added merchants.
        i. Additional details on this process are beyond the scope of this project
    c. Selects all information for a given MAS ID
    d. Looks up the MAS merchant name in the Vendor Name Mapping file using the MAS ID.
        i. This is used to create the file path used below.
    e. Prints this information to a PDF file saved at the file path above.
        i. This saves each ledger in a subfolder specific to the MAS merchant.
            1. This allows for easy retrieval in the case that questions arise later concerning payments.
    f. Moves on to the next MAS ID, looks up the Merchant name, creates the file path, and saves a PDF to its folder.
        i. Repeats until completed for all MAS IDs, including those with 0 or negative balances.
    g. If there is an error saving to a specific file, this information is stored in a separate log workbook which is opened upon completion.
        i. Once the user has resolved the issue, it can be removed or updated in the log. If it is not properly updated, the information will be added to the log again.

24) Clicking on Compare Payments will allow the user to compare the ledger amounts in the Product Sales file to the check amounts in MAS.
    i. Note: This macro cannot be run with the Save or Print Ledgers macros as it would not make any sense to perform those two if there was uncertainty concerning the accuracy of the ledgers.
    b. To do so, the user export the "Print Edit List" from MAS to Excel and saves it as "payment details mm-dd-yy.xls" in the payment details subfolder prior to clicking Compare Payments.
    c. The user clicks Compare Payments
    d. The macro will then open/activate the Product Sales file in the same manner as described above.
    e. The macro will run through the Weekly Ledgers tab for the selected week and store the MAS IDs and the payment amounts in an array.
        i. It identifies the total row, extracts the MAS ID and total amount and ensures the total is greater than 0.
    f. Then the Payment Details file will be opened.
    g. A formula will be used to extract the check amount and MAS ID from the crystal reports garbage in the Payment Details file.
        i. This information is copied to a new tab where empty rows are removed.
    h. The information from this tab is added to the multidimensional array created previously.
        i. If the MAS ID is not found in the array, a new item is added to the array
            1. Otherwise the payment amount is added in the third dimension of the array.
    i. A new sheet is created to summarize any differences
        i. Differences between the amounts in the array for the same MAS ID are calculated and added to the summary tab with the MAS ID
    j. On the Weekly Payment Tab, the rows are filtered so only rows containing a MAS ID with a difference is showing.
        i. This facilitates researching the discrepancies.
    k. The user then researches discrepancies, corrects them, and adjusts the Product Sales file or the MAS 500 payment information manually.
    l. The user then repeats this process until there are no differences.
25) At this point the computer is done and it is up to the user to print the checks, match them with the ledgers (which print in the same order due to the sorting in the Weekly Ledgers Tab), and to stuff them in the envelopes.

Learning and Conceptual Difficulties:

1) Learning VBA on my own.

Problem: I began this project roughly two years prior to taking a VBA class at college or even knowing one was offered. I had minimal exposure to VBA from my other classes, yet I knew it could make my life a lot easier, if I could implement it in my tasks.

Solution: Using the Macro recorder for simple tasks and google searches for more abstract tasks, I gleaned enough code to build my first VBA which in and of itself was impressive. I learned I could find nearly anything I needed by searching on google.

The further I got in the project, the more I realized that automating one part of the process would be much easier if other parts were automated too. I started by automating the main processes, and then began to automate and standardize the feeder processes. I suggested automation compatible templates to other departments of the company which they willingly accepted because they saw the benefits for their own department.

Over time, I continued to push my learning of VBA, and I eventually took ISYS 520 at BYU. Within a month, I had completed the required readings and implemented nearly all of the new concepts into portions of my automated processes.

2) Saving the file as a semicolon delimited file with a .del extension.

Problem: To upload files to MAS 500, files must be in a semicolon delimited file. In addition, MAS 500 requires a semicolon for every field in the upload, even if the last 10 fields are blank. Excel only saves commas up to the last field with data in it.

Solution: I saved the file as a .csv file, opened it in word and ran a "Find and Replace" on it replacing all commas with semicolons. This proved difficult for a novice programmer, yet I came up with what I deemed an ingenious solution at the time: I created a permanent word file which contained the required code for the find and replace formula. My Excel VBA opened this file in MS Word which ran an "Open" macro which in turn opened the .csv file containing the upload, performed the "Find and Replace", and saved and closed the upload file. Because the file may contained commas as string literals, I performed an additional find and replace prior to and after the main find and replace in order to preserve these commas as string literals.

3) Selecting information from a database using domain windows credentials rather than a username and password.

Problem: Previously, vendor information had to be manually exported from MAS 500 by running a report and saving it as an .xls file. This approach took a minimum of 5 minutes, could easily lead to inaccuracies if neglected and required properly naming the file in order for the VBA procedure to find it. However, I did not know how to access the information in the database.

Solution: Using information from class, newfound access granted by our Director of IT, and several google searches, I discovered a simple way to update the information from the database. I found a way to call the windows authentication by using the "Integrated Security=SSPI" argument when establishing a database connection.

4)

Assistance: Because I began this project year before starting this class, the main sources of help for this project were online Excel forums including mrexcel.com and ozgrid.com. Two technical parts required some external help for non-VBA issues. Bryan Hollaway, who is a consult brought on to assist in the implementation of Sage MAS 500 and other Sage software products, assisted in providing me with example upload templates in semicolon delimited

format. I was able to use mimic their format with my output in order to create upload compatible files.

Additionally, Michael Stahle the new Director of IT at the parent company assisted me by providing access to the data warehouse through MS SQL server and teaching me the basics of that software. I was then able to search through the various tables and fields to find the information I needed. I built the queries in MS SQL server to get the syntax for the SQL, and copied the SQL over to my VBA file.