Executive Summary

Pedal Industries is a family-owned small business specializing in custom apparel. Their business process starts with a quote to a customer, which is built in Excel. The sales rep adds line items to the quote, and creates an estimate for the customer. The estimate must be emailed out for approval. At the same time, the quote is sent to a production manager, who will then create purchase orders and send those to the correct vendors. Often, a quote will involve two vendors: a blank items vendor and a decorator.

For Pedal Industries, automation opportunities include order tracking, calculating screen printing run charges, Estimate and Purchase Order generation, and email generation. This solution confronts all of Pedal Industries' challenges through VBA code.

The user will begin with basic quote-level information: customer, vendors, in-hands date. He will then request a job number from the Master Job List workbook. Next, he will use data entry userforms to add line items to the quote. The process will first ask for the blank item type for the line, and then allow the user to enter up to 10 printing locations and color combinations for a single item.

Once the quote data is entered into the spreadsheet, the user can use ribbon buttons to accomplish the following: build estimates and purchase orders, print these to PDF in the job folder, and email PDFs to customers and vendors. Please refer to the Implementation Documentation and example workbook for more information.
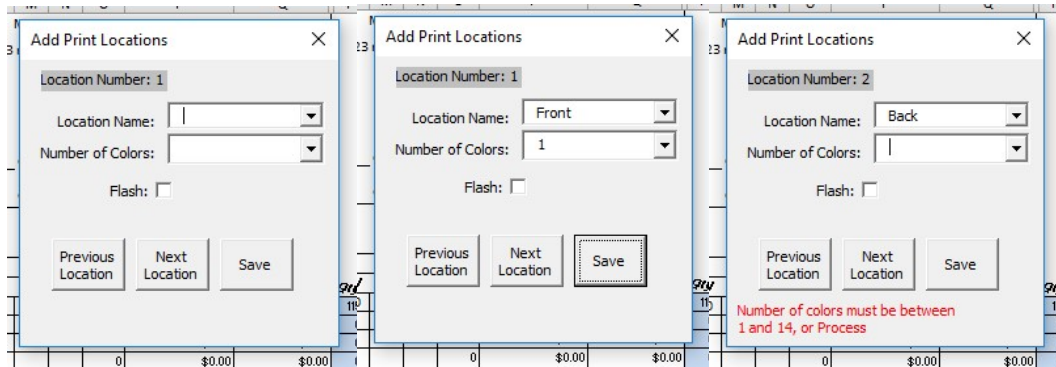
Implementation Documentation

On Workbook Open

When the Apparel Quote is opened, the user is prompted to save-as to the correct job folder, then to fill in required fields to get the quote process started. I have implemented a few safety checks to ensure that the user cannot save over the original Apparel Quote workbook, and that he cannot build forms without the required basic information input.

The Save-As catch is implemented in the BeforeSave event of the workbook object, as well as in the custom ribbon. If the filename is still "Apparel Quote.xlsm" before either of those events occur, the user will be prompted to Save-As, and he will be provided the Save-As dialogue box before proceeding.

Inputting Data into the Quote Form

To input data to the quote form, I have added hyperlinks to the left of each useable line. When the user clicks a hyperlink, it will open a userform for data entry. Some data validation checks have been implemented: there must be a number of locations for printing, and all numeric fields may only contain numeric values. For convenience, the title of the form dynamically changes depending on which line the user is editing.
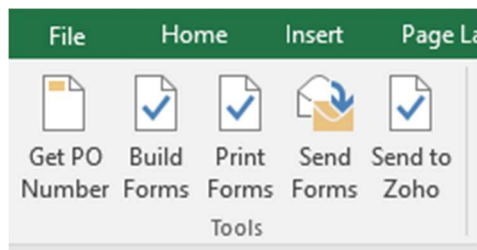
Adding Print Locations

After line information is entered for the blank products (usually t shirts), the user is prompted to add print locations for that line. Each location can have up to 14 colors, or a 4-color process, and the option for a flash screen. The user can navigate between print locations for editing purposes. A data validation check has been implemented, forcing the user to enter a valid number of colors before leaving that print location.

Run Charge Calculation

To calculate the runcharge for each line, the user would have to refer to a price sheet for each location, and add up the individual locations to get a total runcharge per line. This solution uses a 3-dimensional array, stored in 2 dimensions in worksheets, and using multiple worksheets as the third dimension. This was necessary to hold multiple colors per location, multiple locations per line, and up to 15 lines for the quote form. The calculation references the 2 dimensional array stored on the sheet "Pacific Price List". The program will find the correct price per location, based on quantity ranges, and add each location cost to the runcharge for the line.

Additionally, if the quote has multiple lines using the same imprint style, but on different blank t-shirts, the program will combine quantities for those lines to get the best pricing available from the Decorator.

Custom Ribbon Features

Once the user has entered in all quote data, it is time to send the quote to the customer and to the correct vendors. Our quote management system requires a unique job number for each quote, which will be used on the estimate, purchase orders, and invoices for the job.

Get PO Number

By clicking the "Get PO Number" button on the custom ribbon, the user will receive a unique job number for this job. The program will open a file called "Master Job List.xlsx", stored in the appropriate company-level folder in Dropbox. For the class implementation, I required that the file be stored in the same folder as the Apparel Quote (this is due to specific Pedal Industries data organization.) The program will open the master file, determine the next successive job number, write that down, and bring it back to the Apparel Quote.

Name/Ship-To Address				Estimate	
Moes Tavern 123 not a real street					

Date	Estimate #	In Hands Date	Terms	Project	
12/10/2015	25006	12/10/2015			

Item	Description	Qty	Price	Total
Apparel	Premium Crew Neck - Style: Freddy - Color: Black - Sizing: 10 XS, 20 S, 20 M, 30 L, 20 XL	100	12.67	1,266.67
Apparel	Premium Crew Neck - Style: Freddy - Color: Black - Sizing: 10 2XL	10	14.33	143.33
Apparel	Premium Crew Neck - Style: Freddy - Color: Black - Sizing: 5 3XL	5	16.00	80.00

PEDAL
I N D U S T R I E S

26080 Towne Ctr
Foothill Ranch, CA 92688

Purchase Order

Page: 1

In Hands Date
12/11/2015

Vendor:	Ship To:
Vendors Unite 123 not a real street irvine, ca 92671	Acme, inc. 123 not a real street irvine, ca 92671

Date	P.O. Number	Estimated Ship Date
12/10/2015	25006	12/10/2015

Item	Description	Quantity	Cost	Total
3301	Color: Black, Size: XS	10	4.00	40.00
3301	Color: Black, Size: S	40	4.00	160.00
3301	Color: Black, Size: M	30	4.00	120.00
3301	Color: Black, Size: L	45	4.00	180.00
3301	Color: Black, Size: XL	22	4.00	88.00
3301	Color: Black, Size: 2XL	10	5.00	50.00
3301	Color: Black, Size: 3XL	5	6.00	30.00
4101	Color: Blue, Size: S	20	4.50	90.00
4101	Color: Blue, Size: M	20	4.50	90.00

Build Forms

By clicking "Build Forms", the user will initiate three sub procedures to properly build the estimate and two purchase orders. This process gets complex, because each form is set up differently:

The Estimate to the customer needs sizes of 2XL and higher to be broken out to separate lines, because of higher blank t-shirt costs for those sizes.
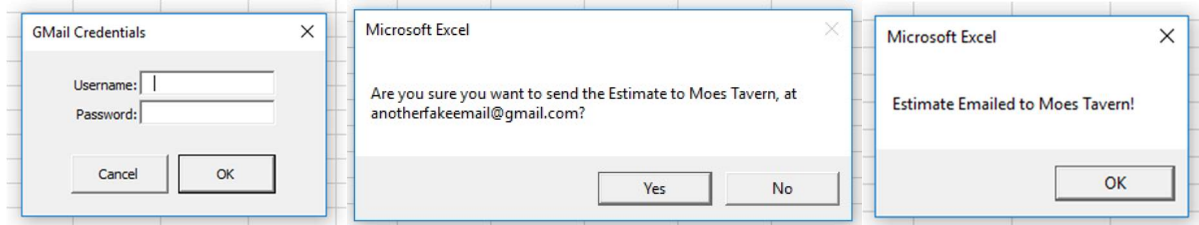
The Purchase Order to the vendor needs all sizes broken out separately, because they like to see separate lines for each product they will ship. Quote form lines which use the same blank t-shirt style and color combination are combined for the purchase order to the vendor.

The Purchase Order to the decorator can be displayed much like the quote form is, with each line mapping nicely to the purchase order.

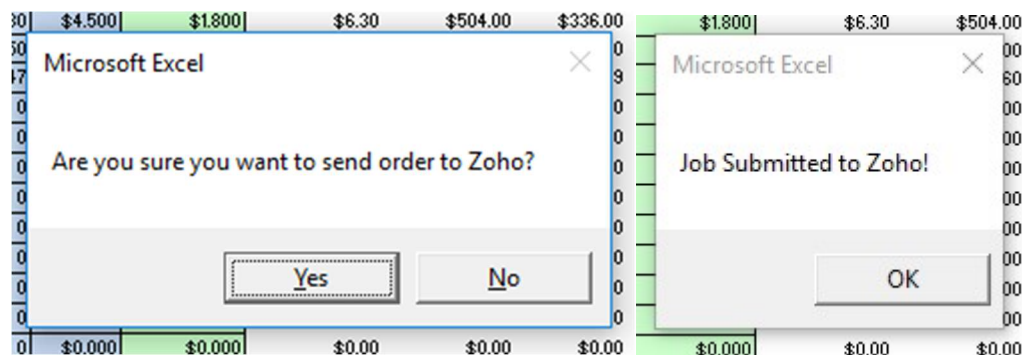|			
25006 Estimate	12/10/2015 1:18 PM	Adobe Acrobat D...	137 KB
25006 PO Decorator	12/10/2015 1:18 PM	Adobe Acrobat D...	215 KB
25006 PO Vendor	12/10/2015 1:18 PM	Adobe Acrobat D...	218 KB

Print Forms

Clicking "Print Forms" will print the estimate and purchase orders as PDFs to the folder in which the Workbook is stored. For Pedal Industries, this is will a job-level folder in Dropbox. The PDF files can be up to 5 pages each, the maximum number of lines needed to display all the possible information stored in 15 quote lines. The PDFs will print only the pages necessary to display all relevant information. For the attached example file, there is only one page per PDF.
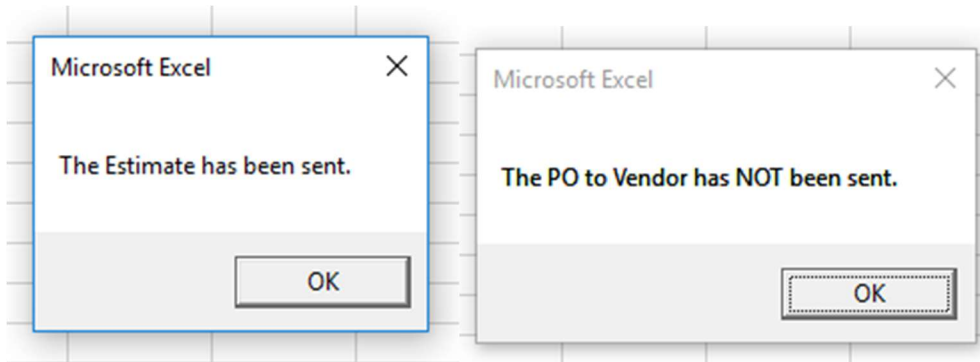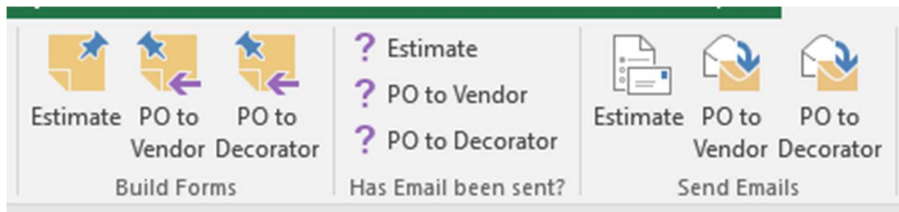

Send Forms

Clicking "Send Forms" will send scripted emails, with appropriate forms attached. The estimate will be sent to the customer, and purchase orders to the vendor and decorator. For each email sent, the user will need to input their Gmail username and password. This feature is only for example purposes. For the Pedal Industries implementation, I have chosen to save the username and password in the VBA code to make the process faster. Input boxes appear to confirm the customer, vendor, decorator, and destination email addresses before they are sent.
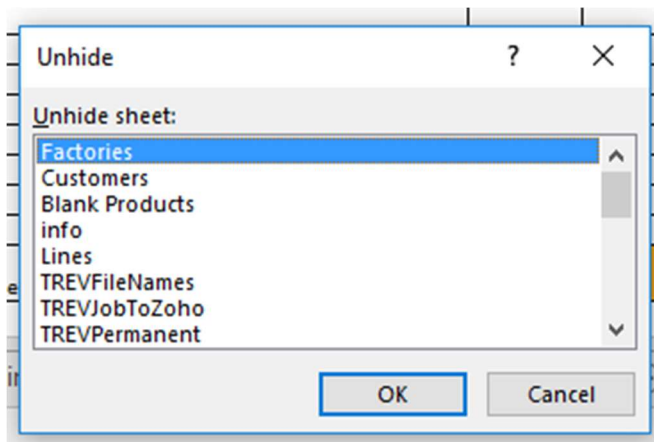

Send to Zoho

Pedal Industries uses Zoho for order tracking, and previously the user would have to manually attach the Excel Quote Form to a user-created Zoho record. In this implementation, I have created an email template which will pull relevant information from the quote form to create the Zoho record. This information is formatted to be automatically imported to Zoho. Additionally, the code will create a copy of the Excel workbook so that it can be attached to the email to Zoho.

Has Email Been Sent?

This is a convenience feature for the user to ask the program if the email has been sent. It relies on a hidden page called "TREVpermanent", where Boolean-type information is stored to record whether or not forms have been built, forms have been printed, or emails have been sent. This page also facilitates validity checks to ensure that forms are not emailed before being printed, or printed before being built, or built before essential quote information is entered on the Quote Form.

Hidden Pages

On the topic of hidden pages, there are many hidden pages to facilitate the code. These include: Customers, Factories, Pacific Price List, Blank Products, TREVfilenames, TREVpermanant, TREVjobToZoho, the liNes array, and a page for each line (line1, line2, etc.)

While not anticipated, it is a possibility that the user will need technical support. I have chosen to leave these as Hidden, instead of VeryHidden, to allow the user to make changes if needed.