

MOHOPO COLLECTIONS INC.

Decision Support Using Microsoft Excel

PREVIEW

As a new summer intern, you have been assigned to create a forecasting tool to estimate funds required in 2017 by Mohopo Collections, an agency that helps credit card companies collect money from overdue accounts. In this case, you will use Microsoft Excel to provide your management team a look into the future.

PREPARATION

- Review spreadsheet concepts discussed in class and in your textbook.
- Complete any exercises that your instructor assigns.
- Complete any part of Tutorial C that your instructor assigns. You may need to review the use of If statements and the section called “Cash Flow Calculations: Borrowing and Repayments.”
- Review file-saving procedures for Windows programs.
- Refer to Tutorials E and F as necessary.

BACKGROUND

You were selected for the coveted summer internship at Mohopo Collections Inc. On your first day, you are welcomed to the company’s campus by CEO Steve Hyde, who is excited to have you on board. He explains that your main task for the summer will be to create a forecast modeling tool with Excel that allows the company to make budget requisitions and determine how different scenarios would affect the department’s budget. Your work will help the Finance department forecast its 2017 budget needs so it can request working capital from the Board of Directors.

Mohopo is a world leader in the design and execution of campaigns that help credit card companies collect money from overdue accounts through the use of alternative channel communications. Alternative channel collection is a method of sending communications to customers who are past due on their accounts. Mohopo’s communication channels include the United States Postal Service (USPS), email, and texting. The company sells its services to credit card companies and regional banks in the mid-Atlantic area. Mohopo offers these three options to its customers to suit their needs:

- The USPS option is the most expensive because of the size and composition of the jumbo envelope Mohopo uses. This 8- by 10-inch envelope is made of a thin, cardboard-like material, much like a priority envelope used by the USPS. This option offers clients a more official look than smaller paper envelopes and has proven to provide great results.
- Texting, or SMS, is an important part of the collections strategy since the proliferation of mobile devices. Although a less expensive alternative than a traditional letter, it still carries a significant cost. There is no unlimited texting plan for this type of message.
- Email is by far the most economical option, given its low execution cost. However, not every account in the collections portfolio has an email address, so clients must use a blend of options to reach their customers.

Steve says your work will be important for planning the 2017 budget requisition, which will cover three campaigns planned during 2017:

- Cabal Credit Card will use the USPS and texting options for one campaign.
- Regional Bank will use USPS and email for a campaign.
- Oak Knoll Securities will use email and texting for a third campaign.

Steve also provides several important numbers that you will need for your forecasts:

- The cost of a jumbo envelope
- The first-class postage rate for mail
- A discount rate for high-volume mailings
- Starting envelope stock
- The text message rate
- The cost per thousand (CPM) for emails
- 2016 annual costs
- Possible USPS postage credit forecast

Assignment 1 contains information you need to write the formulas for the Calculations section, including formulas for inventory, campaign costs, and mail volumes. Steve has been working with the USPS to obtain a postage credit of \$15,000 for invoice mistakes made during the past five years. However, it's not guaranteed that Mohopo will receive the credit in 2017. Steve also thinks Mohopo might be able to receive a discount for high-volume campaigns. Finally, he tells you he has been in conversations with Regional Bank to do additional mailings in February, March, and April 2017 if the January campaign yields positive results.

You will use Excel to determine how different scenarios would affect Mohopo's 2017 cost forecast. Your scenarios will focus on the following amounts and the answers to two important questions:

- 2017 campaign costs
- 2017 traditional letter, text messaging, and email volumes
- A potential postage credit from the USPS
- Will you have enough envelopes to finish 2017?
- Will you have enough funds to finish 2017?

In summary, your decision support system (DSS) will include the following inputs:

- Annual mail volume required to earn a postage discount from the USPS
- Whether the postage credit will be received in 2017
- Additional mail volume from Regional Bank if the company approves additional mailings in February, March, and April 2017

Your DSS model must account for the effects of the preceding three inputs on costs, inventory, and mail volumes. If you design the model well, it will let you develop "what-if" scenarios with all the inputs, see the results, and show how they fit into the budget for the Board of Directors.

ASSIGNMENT 1: CREATING A SPREADSHEET FOR DECISION SUPPORT

In this assignment, you will produce a spreadsheet that models Mohopo's campaigns budget for 2017. In Assignment 2, you will write a memorandum that documents your analysis and findings. In Assignment 3, you will prepare and give an oral presentation of your analysis and conclusions to the CEO.

First, you will create the spreadsheet model of the budget. The model's budget covers one year (2017). This section helps you set up each of the following spreadsheet components before entering cell formulas:

- Constants
- Inputs
- Summary of Key Results
- Calculations

A discussion of each section follows. The spreadsheet skeleton for this case is available for you to use; it will save you time. To access the spreadsheet skeleton, locate Case 6 in your data files and then select **Mohopo Collections Inc.xlsx**.

Constants Section

Your spreadsheet should include the constants shown in Figures 6-1 and 6-2. An explanation of the line items follows each figure.

1	MOHOPO COLLECTIONS INC.	
2		
3	CONSTANTS	2017
4	Jumbo Envelope Cost	\$ 1.00
5	First Class Postage	\$ 0.49
6	Jumbo Envelope Starting Stock	90,000
7	Discount Rate	5.0%
8	Text Message Cost	\$ 0.35
9	E-mail Cost (CPM)	\$ 20.00
10	2016 Annual Costs	\$ 200,000
11	USPS Postage Credit	\$ 15,000

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FIGURE 6-1 Constants section

- Jumbo Envelope Cost—The unit cost per envelope to the Marketing department.
- First Class Postage—The cost of a single envelope's postage.
- Jumbo Envelope Starting Stock—Starting inventory levels in 2017 for jumbo envelopes.
- Discount Rate—The percentage discount for high-volume mailing campaigns.
- Text Message Cost—The unit cost per text message sent.
- Email Cost (CPM)—The unit cost per 1000 emails sent.
- 2016 Annual Costs—The final costs for 2016, used for comparison against the 2017 budget.
- USPS Postage Credit—The credit amount retroactively requested from the USPS based on past invoice mistakes and reconciliations.

The second part of the Constants section lists volume information for the key campaigns Mohopo has planned for 2017.

13	Expected Campaign Volumes	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
14	Cabal Credit Card USPS	15,000	-	15,000	-	15,000	-	15,000	-	15,000
15	Cabal Credit Card Texting	5,000	-	5,000	-	5,000	-	5,000	-	5,000
16	Regional Bank USPS	30,000	-	-	-	-	30,000	-	-	-
17	Regional Bank E-mail	20,000	-	-	-	-	20,000	-	-	-
18	Oak Knoll Securities Texting	20,000	-	-	-	-	20,000	-	-	-
19	Oak Knoll Securities E-mail	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000

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FIGURE 6-2 Constants section, continued

- Cabal Credit Card USPS—The campaign requires 15,000 mail pieces in January, March, May, July, September, and November.
- Cabal Credit Card Texting—The campaign requires 5,000 text messages in January, March, May, July, September, and November.
- Regional Bank USPS—The campaign requires 30,000 mail pieces in January and June.
- Regional Bank Email—The campaign requires 20,000 email messages in January and June.
- Oak Knoll Securities Texting—The campaign requires 20,000 text messages in January, June, and December.
- Oak Knoll Securities Email—The campaign requires 10,000 email messages each month of the year.

Inputs Section

As Steve explained earlier, Mohopo must answer three important questions for the upcoming year. First, Mohopo has been in negotiations with the USPS to receive a volume discount. You know that the discount will be 5 percent of postage costs, but you don't know how many mailings are required per campaign to obtain the discount because the negotiations are not complete. Also, to correct past invoice mistakes from the USPS, the company is expecting to receive a \$15,000 postage credit, possibly in 2017. Finally, your model must account for the possibility of additional mail volume for the Regional Bank campaign.

Your spreadsheet should include the following inputs, as shown in Figure 6-3.

21	INPUTS	2017		
22	Annual Volume Required For Discount			
23	Postage Credit From USPS ("Y" = Yes, "N" = No)			
24		Feb-17	Mar-17	Apr-17
25	Additional Regional Bank USPS Campaign			

Source: Microsoft product screenshots used with permission from Microsoft Corporation.

FIGURE 6-3 Inputs section

- Annual Volume Required For Discount—The threshold amount of mailings required by the USPS to obtain the postage discount.
- Postage Credit From USPS (“Y” = Yes, “N” = No)—A value to represent the expected response from the USPS.
- Additional Regional Bank USPS Campaign—Starting in February 2017, the mail volume for each additional month requested by Regional Bank. The expected campaign volumes should match the additional required volume in each scenario.

Summary of Key Results Section

Your spreadsheet should include the results shown in Figure 6-4. An explanation of each item follows the figure.

27	SUMMARY OF KEY RESULTS	Year End
28	Yearly Cost Grand Total	\$ 237,253
29	Yearly Mail Volume	150,000
30	Year End Jumbo Envelope Inventory	(60,000)
31	Reorder Jumbo Envelopes?	Yes
32	Yearly Text Messaging Volume	90,000
33	Yearly E-mail Volume	160,000
34	Costs Over 2016 values?	Yes

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FIGURE 6-4 Summary of Key Results section

At the end of the year, your spreadsheet should calculate values for the yearly cost grand total; yearly mail, text, and email volumes; year-end inventory levels for the jumbo envelopes; a Yes or No value for whether the company will need to reorder jumbo envelopes; and a comparison to determine whether 2017 estimates are greater than 2016 costs. The Yearly Cost Grand Total value should be formatted as currency with zero decimals. The inventory and volume cells should be formatted numbers with zero decimals, and the reorder cells should be formatted as text. All of these values are computed elsewhere in the spreadsheet and should be echoed here.

Calculations Section

To create an accurate forecasting tool, you should calculate intermediate results that will be used to determine the year-end numbers needed for budgeting. The calculations shown in Figures 6-5, 6-6, 6-7, and 6-8 are based on expected monthly values for 2017. When necessary, use absolute referencing properly. Values must be computed by cell formula; hard-code numbers in formulas only when you are told to do so. Cell formulas should not reference a cell with a value of “NA” (not applicable).

An explanation of each item in this section follows the figure in which the item is shown.

37	Calculations									
38	Inventory	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
39	Total Jumbo Envelopes Used	45,000	-	15,000	-	15,000	30,000	15,000	-	15,000
40										
41		Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
42	Remaining Jumbo Envelopes	45,000	45,000	30,000	30,000	15,000	(15,000)	(30,000)	(30,000)	(45,000)
43	Reorder Jumbo Envelopes?	No	No	No	No	Yes	Yes	Yes	Yes	Yes

Source: Microsoft product screenshots used with permission from Microsoft Corporation.

FIGURE 6-5 Inventory section of calculations

- Total Jumbo Envelopes Used—The sum of all jumbo envelopes used per month for all campaigns. Format cells for numbers with zero decimals.
- Remaining Jumbo Envelopes—The amount of jumbo envelopes remaining at the end of each month. For January, this value would be the amount remaining as of January 1, 2017, minus the amount used in January. For the rest of the year, this value would be the amount remaining at the end of the previous month minus the amount used in the current month. Format cells for numbers with zero decimals.
- Reorder Jumbo Envelopes?—When the remaining number of jumbo envelopes is less than or equal to what is required for the next month's mailings, this cell will display "Yes." Otherwise, the cell will display "No." Format the cell as text.

	A	B	C	D	E	F	G	H	I	J
45	USPS Campaign Costs									
46	Envelopes	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
47	Cabal Credit Card USPS	\$ 15,000	\$ -	\$ 15,000	\$ -	\$ 15,000	\$ -	\$ 15,000	\$ -	\$ 15,000
48	Regional Bank USPS	\$ 30,000	\$ -	\$ -	\$ -	\$ -	\$ 30,000	\$ -	\$ -	\$ -
49										
50	Postage	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
51	Cabal Credit Card USPS	\$ 7,350	\$ -	\$ 7,350	\$ -	\$ 7,350	\$ -	\$ 7,350	\$ -	\$ 7,350
52	Regional Bank USPS	\$ 14,700	\$ -	\$ -	\$ -	\$ -	\$ 14,700	\$ -	\$ -	\$ -
53										
54	Text Messaging									
55	SMS	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
56	Cabal Credit Card Texting	\$ 1,750	\$ -	\$ 1,750	\$ -	\$ 1,750	\$ -	\$ 1,750	\$ -	\$ 1,750
57	Oak Knoll Securities Texting	\$ 7,000	\$ -	\$ -	\$ -	\$ -	\$ 7,000	\$ -	\$ -	\$ -
58										
59										
60	E-mail	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
61	Regional Bank E-mail	\$ 400	\$ -	\$ -	\$ -	\$ -	\$ 400	\$ -	\$ -	\$ -
62	Oak Knoll Securities E-mail	\$ 200	\$ 200	\$ 200	\$ 200	\$ 200	\$ 200	\$ 200	\$ 200	\$ 200
63										
64	Total Campaign Costs	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
65	Cabal Credit Card	\$ 24,100	\$ -	\$ 24,100	\$ -	\$ 24,100	\$ -	\$ 24,100	\$ -	\$ 24,100
66	Regional Bank	\$ 45,100	\$ -	\$ -	\$ -	\$ -	\$ 45,100	\$ -	\$ -	\$ -
67	Oak Knoll Securities	\$ 7,200	\$ 200	\$ 200	\$ 200	\$ 200	\$ 7,200	\$ 200	\$ 200	\$ 200

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FIGURE 6-6 Costs section of calculations

- Envelopes
 - Cabal Credit Card USPS—The total cost of jumbo envelopes for the Cabal Credit Card campaign. Format the cell for currency with zero decimals.
 - Regional Bank USPS—The total cost of jumbo envelopes for the Regional Bank campaign. Format the cell for currency with zero decimals.
- Postage
 - Cabal Credit Card USPS—The total cost of postage for the Cabal Credit Card campaign. Format the cell for currency with zero decimals.
 - Regional Bank USPS—The total cost of postage for the Regional Bank campaign. Format the cell for currency with zero decimals.
- Text Messaging
 - Cabal Credit Card Texting—The text messaging cost for the Cabal Credit Card campaign. Format the cell for currency with zero decimals.
 - Oak Knoll Securities Texting—The text messaging cost for the Oak Knoll Securities campaign. Format the cell for currency with zero decimals.
- Email
 - Regional Bank Email—The email messaging cost for the Regional Bank campaign. Format the cell for currency with zero decimals. Keep in mind that you were given the CPM.
 - Oak Knoll Securities Email—The email messaging cost for the Oak Knoll Securities campaign. Format the cell for currency with zero decimals. Keep in mind that you were given the CPM.
- Total Campaign Costs
 - Cabal Credit Card—The sum of all costs of all channels used for Cabal Credit Card. Format the cell for currency with zero decimals.
 - Regional Bank—The sum of all costs of all channels used for Regional Bank. Format the cell for currency with zero decimals.

- Oak Knoll Securities—The sum of all costs of all channels used for Oak Knoll Securities. Format the cell for currency with zero decimals.

69		Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17
70	Monthly Grand Total (Minus Applicable Discount)	\$ 55,453	\$ 200	\$ 24,300	\$ 200	\$ 24,300	\$ 52,300	\$ 24,300	\$ 200	\$ 24,300

Source: Microsoft product screenshots used with permission from Microsoft Corporation.

FIGURE 6-7 Monthly totals section of calculations

- Monthly Grand Total (Minus Applicable Discount)—The sum of all campaign costs for each month, including postage, envelopes, and messaging costs. If a high-volume discount is applicable, it should be calculated here as well. Keep in mind that two conditions must be met before the discount can be calculated: The discount threshold must be greater than zero and the Yearly Total Mail Volume value must be greater than the threshold.

72	Yearly Cost Grand Total	\$ 237,253
73	Yearly Total Mail Volume	150,000
74	Yearly Total Text Volume	90,000
75	Yearly Total E-mail Volume	160,000

Source: Microsoft product screenshots used with permission from Microsoft Corporation.

FIGURE 6-8 Yearly totals section of calculations

- Yearly Cost Grand Total—The sum of monthly costs for the year. If the USPS invoice reconciliation efforts were successful in 2017, this cell should reflect the amount of the credit.
- Yearly Total Mail Volume—The sum of monthly mail volumes for the year.
- Yearly Total Text Volume—The sum of monthly text messages for the year.
- Yearly Total Email Volume—The sum of monthly email messages for the year.

ASSIGNMENT 2: USING THE SPREADSHEET FOR DECISION SUPPORT

Complete the case by (1) using the spreadsheet to answer Steve’s questions and (2) documenting your findings in a memo.

Steve wants to minimize the funds he needs to request from the Board, so you and he are interested in the following four test scenarios. The scenario names are based on the possible outcomes.

1. Optimist High—Assume that the threshold required for a high-volume discount is 50,000 units, the USPS credits you for old invoices, and Regional Bank decides to mail 15,000 units a month during February, March, and April.
2. Optimist Low—Assume that the threshold required for a high-volume discount is 75,000 units, the USPS credits you for old invoices, and Regional Bank decides to mail 5,000 units a month during February, March, and April.
3. Normal—Assume that the threshold required for a high-volume discount is 100,000 units, the USPS doesn’t credit you for old invoices, and Regional Bank will not request additional direct-mail campaigns.
4. Pessimist—Assume that the threshold required for a high-volume discount is 150,000 units, the USPS doesn’t credit you for old invoices, and Regional Bank will not request additional direct-mail campaigns.

Management will need to know the range of funds it should request from the Board for the upcoming year.

Assignment 2A: Using the Spreadsheet to Gather Data

You have built the spreadsheet to model several possible situations. For each of the four test scenarios, you want to know the yearly costs and volumes, whether you will need to order more envelopes at the end of the year, and whether your costs are greater than those in 2016.

You will run “what-if” scenarios with the four sets of input values using Scenario Manager. (See Tutorial C for details on using Scenario Manager.) Set up the four scenarios. Your instructor may ask you to use conditional formatting to make sure your input values are proper. Note that in Scenario Manager you can enter noncontiguous cell ranges, such as C19, D19, C20:F20.

The relevant output cells are Yearly Cost Grand Total, yearly volumes, the year-end inventory level for jumbo envelopes, and cells that report whether you need to reorder envelopes and whether your costs are greater than those in 2016. All of these cells are shown in the Summary of Key Results section. Run Scenario Manager to gather the data in a report. When you finish, print the spreadsheet with the input for any of the scenarios, print the Scenario Manager summary sheet, and then save the spreadsheet file a final time.

Assignment 2B: Documenting Your Results in a Memo

Use Microsoft Word to write a brief memo that documents your analysis and results. You can address the memo to the Board of Directors of Mohopo. Observe the following requirements:

- Set up your memo as described in Tutorial E.
- In the first paragraph, briefly state the business situation and the purpose of your analysis.
- Next, describe the four scenarios tested and indicate how well Mohopo fared in each.
- State your conclusions. Do any scenarios indicate a need for management action?
- Support your statements graphically, as your instructor requires. Your instructor may ask you to return to Excel and copy the results of the Scenario Manager summary sheet into the memo. You should include a summary table built in Word based on the Scenario Manager summary sheet results. (This procedure is described in Tutorial E.)

Your table should have the format shown in Figure 6-9.

	Optimist High	Optimist Low	Normal	Pessimist
Yearly Cost Grand Total				
Yearly Mail Volume				
Year End Jumbo Envelope Inventory				
Reorder Jumbo Envelopes?				
Yearly Text Messaging Volume				
Yearly E-mail Volume				
Costs Over 2016 Values?				

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FIGURE 6-9 Format of table to insert in memo

ASSIGNMENT 3: GIVING AN ORAL PRESENTATION

Your instructor may ask you to explain your analysis and results in an oral presentation. If so, assume that Mohopo’s Board of Directors wants the presentation to last 10 minutes or less. Use visual aids or handouts that you think are appropriate. See Tutorial F for tips on preparing and giving an oral presentation.

DELIVERABLES

Your completed case should include the following deliverables for your instructor:

- A printed copy of your memo
- Printouts of your spreadsheet and scenario summary
- Electronic copies of your memo and Excel DSS model