

**BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, DC 20268-0001**

**RATE AND SERVICES CHANGES TO
IMPLEMENT FUNCTIONALLY EQUIVALENT
NEGOTIATED SERVICE AGREEMENT WITH
BANK ONE CORPORATION**

Docket No. MC2004-3

**DIRECT TESTIMONY
OF
LAWRENCE G. BUC
ON BEHALF OF
BANK ONE CORPORATION**

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1 **I. PURPOSE AND SCOPE**

2 The Postal Service and Bank One Corporation (“Bank One”) have entered
3 into a Negotiated Service Agreement (“NSA”), which is now the subject of this
4 proceeding. My testimony shows that Bank One witness Brad Rappaport’s “After
5 Rates” volume projections are highly credible. They are also consistent with a
6 heuristic model of marketing decisions that I constructed without reference to any
7 proprietary information. Based on the results of that model, I conclude that the
8 volume block discounts under the proposed Bank One/Postal Service NSA will
9 create incentives for Bank One to switch a substantial amount of solicitation mail
10 from Standard Mail to First-Class Mail.

11 **II. MODEL OF MARKETING DECISIONS**

12 **A. Description of the Model**

13 Witness Rappaport estimates that the After Rates volumes for Year 1 of
14 the NSA will have approximately 19 million more pieces than the Before Rates
15 volumes. The After Rates volumes for Year 2 of the NSA will have about 100
16 million pieces more than the Before Rates volumes for Year 2. Similarly, the
17 After Rates volumes for Year 3 will also have about 100 million pieces more than
18 the Before Rates volumes for Year 3. Rappaport at 5. To determine whether
19 these estimates of After Rates volumes are reasonable, I constructed a heuristic
20 model based on the fundamental economics of marketing decisions.

21 Banks, like most firms that engage in direct marketing, face economic
22 choices about how much solicitation mail to send, and what class of mail to use
23 for sending it. A firm rationally sends a solicitation to an individual only when the

1 expected benefits of the solicitation exceed its costs. For a particular marketing
2 campaign, the firm must estimate (1) the probability of response for each
3 individual on the list (“response rate”) and (2) the present value of the stream of
4 profits over the duration of that individual’s relationship with the firm (the “lifetime
5 expected value”). By multiplying the response rate by the lifetime expected
6 value, the firm can determine the expected value of the mailing for each
7 individual. The expected value can then be compared with the costs of
8 producing the marketing material and the postage charges (totaling “costs per
9 piece”) to determine whether the economic benefit from a mailing is positive (the
10 “net value”).

11 I used these principles of marketing to construct a model of marketing
12 decisions presented in Attachment 3. This model demonstrates the effect of the
13 NSA incentives on First-Class Mail volumes by comparing the net value with
14 “Before Rates” costs per piece and the net value with “After Rates” costs per
15 piece. The results show how much more Standard Mail would switch to First-
16 Class Mail if the proposed NSA discounts were implemented. The model
17 incorporates a range of plausible values for (1) response rates and (2) lifetime
18 values.

19 **1. Response Rates**

20 In the model, I assumed that Standard Mail solicitations would generate
21 response rates ranging from 0.1 percent to 0.7 percent, with a mean of 0.4
22 percent. The 0.4 percent is the average response rate for credit card solicitation

1 mailings in 2003, as published in Cardweb.com, Inc.,
2 www.cardweb.com/cardtrak/news/2004/january/28a.html.

3 For any given mailpiece and individual recipient, response rates for First-
4 Class Mail are generally higher than for Standard Mail; otherwise, mailers would
5 not incur the extra cost of mailing solicitations as First-Class Mail. The
6 incremental response from sending solicitations as First-Class Mail rather than
7 Standard Mail is called "lift." For each corresponding piece of First-Class Mail, I
8 adjusted the response rates to reflect lifts ranging from 5 percent to 10 percent.
9 For example, for a particular piece of mail, a response rate of 0.4 percent in the
10 Standard Mail model becomes 0.42 percent with a 5-percent lift and 0.44 percent
11 with a 10-percent lift. It is necessary to use these slightly higher response rates
12 for corresponding pieces of First-Class Mail to accurately reflect the increased
13 benefit of the mailing. As recognized by the practice of segmentation, response
14 rates also vary depending on the characteristics of the potential customer.

15 **2. Lifetime Value of Customer**

16 The present lifetime value of a customer varies widely from customer to
17 customer. For example, customers who pay a yearly fee, charge purchases
18 frequently, carry monthly balances, and accrue and pay late fees but still make
19 monthly payments on these balances, generally have higher lifetime values than
20 those who do not use their cards in this way. On average, however, I calculate
21 and use a present lifetime value of a customer to a credit card company of about
22 \$150. See Buc Attachment 1. The model uses lifetime values which range from
23 \$50 to \$250, with \$25 increments above and below the mean.

3. Costs of a Marketing Campaign

The direct costs of a marketing campaign include the costs of (1) producing the marketing materials and (2) postage. Production costs average 6.7 cents per piece for all mailings, and postage costs are 18.1 cents for Standard Mail (including freight) and 28.7 cents for First-Class Mail. See Buc Attachment 2. I rounded and used costs of 25 cents per piece production and mailing costs for a Standard Mail mailing and 35 cents per piece for a First-Class Mail mailing in the model. Dividing the costs per piece by the response rate produces the cost of acquiring a customer.

B. Application of the Model

The model calculates the expected value of mailings for 45 segments representing combinations of five response rates and nine lifetime values for Standard Mail and First-Class Mail. Tables 1A and 2A in the worksheet entitled “2_Simple Version” show the expected net values using Before Rates costs per piece. These combinations are then recalculated to reflect a change in a single input – the decrease in postage costs proposed by the Bank One NSA.

I apply the model in three applications, with each application aligning the model successively more closely to the proposed Bank One NSA. First, I constructed a preliminary application using uniform discounts of 2.5 cents and 5 cents to demonstrate the effects of an across-the-board discount, and to provide bounds on the results. Second, I adjusted the model to reflect discounts on *incremental* volume, such as those proposed in the declining block rates of the Bank One NSA. Finally, I tested the robustness of the model by distributing individuals (and hence mail) to segments, using a range of possible population

1 distributions. These tests show that, for a wide variation in input values, the
2 proposed discounts will create incentives for a firm to switch large volumes of
3 Standard Mail to First-Class Mail.

4 **1. Preliminary Application Using Uniform Discounts**

5 Tables 1B and 2B in the worksheet entitled “2_Simple Version” show the
6 expected net values in each segment using After Rates costs per piece. The
7 model allows the user to input various costs per piece (to incorporate discounts)
8 and response-rate lifts. The model shows that for many of the segments
9 spanning a plausible range of response rates and lifetime values of customers,
10 First-Class Mail would become economically preferable to Standard Mail if
11 postage costs were reduced by 2.5 to 5 cents per piece.

12 Summary output from the spreadsheet implementation of the model
13 appears in Exhibit 1. This exhibit summarizes First-Class Mail mailing decisions
14 in the 45 segments (or cells) represented in the model, comprised of
15 combinations of nine categories of expected lifetime value and five categories of
16 response rates. The model also displays one set of calculations for each of two
17 user-specified lifts in response rates.

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**Exhibit 1:
Spreadsheet Model Output: Percentage Of Mailing Segments in Which
First-Class Mail Is the Preferred Option**

	Lift					
	5%		7.5%		10%	
Discount	Before Rates	After Rates	Before Rates	After Rates	Before Rates	After Rates
2.5 Cents	0%	6%	13%	28%	28%	44%
5 Cents	0%	28%	13%	53%	28%	75%

4 As Exhibit 1 shows, for a 2.5-cents discount per piece, in the segments for
5 which mailing has a net benefit, the percentage of segments for which First-Class
6 Mail is the preferred option increases, from 0 percent to 6 percent in the 5-
7 percent lift model and from 28 percent of the segments to 44 percent in the 10-
8 percent lift model. For a discount of 5-cents per piece, the percentage of
9 segments for which First-Class Mail is the preferred option increases from 0
10 percent to 28 percent in the 5-percent lift model and from 28 percent of the cells
11 to 75 percent of the segments in the 10-percent lift model.

12 **2. Application Using NSA Block Discounts**

13 The proposed NSA provides discounts based on declining block rates
14 rather than uniform 2.5-cents or 5-cents discounts. To reflect the graduated
15 discount rate of the NSA, I modified the model to show the discount required to
16 turn each segment mailing by Standard Mail under the Before Rates model into a
17 segment mailing by First-Class Mail. The worksheet entitled “4_Discount to
18 Switch” in Buc Attachment 3 presents these results. Exhibit 2 shows the case of
19 a 7.5-percent lift. Results for a 5-percent or 10-percent lift can be calculated by
20 entering the lift in the appropriate spreadsheet input cell.

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**Exhibit 2:
Discount Required to Switch Mail from Standard Mail to First-Class Mail
at 7.5-Percent Lift**

Lifetime Value	Response Rate				
	0.10%	0.25%	0.40%	0.55%	0.70%
\$50	\$0.096	\$0.091	\$0.085	\$0.079	\$0.074
\$75	\$0.094	\$0.086	\$0.078	\$0.069	\$0.061
\$100	\$0.093	\$0.081	\$0.070	\$0.059	\$0.048
\$125	\$0.091	\$0.077	\$0.063	\$0.048	\$0.034
\$150	\$0.089	\$0.072	\$0.055	\$0.038	\$0.021
\$175	\$0.087	\$0.067	\$0.048	\$0.028	\$0.008
\$200	\$0.085	\$0.063	\$0.040	\$0.018	\$(0.005)
\$225	\$0.083	\$0.058	\$0.033	\$0.007	\$(0.018)
\$250	\$0.081	\$0.053	\$0.025	\$(0.003)	\$(0.031)

4 The spreadsheet model indicates that at a 7.5-percent lift, there are
5 thirteen segments (highlighted in Exhibit 2) that are uneconomic to mail even at
6 Standard Mail rates, and four segments (outlined in Exhibit 2) that, because of
7 high combinations of response rate and lifetime value, are economic to mail at
8 First-Class Mail rates even without a discount. Of the remaining 28 segments,
9 five are economic to switch from Standard to First-Class mail for the 2.5-cents
10 discount, one more is economic to switch for the 3-cents discount, another two
11 are economic to switch for the 3.5-cents discount, one additional segment is
12 economic to switch for both the 4-cents and 4.5-cents discount, and three are
13 economic to switch for the 5-cents discount. In the remaining 15 segments, no
14 discounts offered under this NSA are large enough to make a switch economic.

1 Exhibit 3 summarizes the results of Exhibit 2 by showing the percentages
2 of segments mailing Standard Mail that are provided enough incentive to switch
3 to First-Class Mail under the NSA for the three different lift values of 5, 7.5, and
4 10 percent.

5 **Exhibit 3:**
6 **Percentage of Segments Mailing Standard Mail Incented to**
7 **Switch to First-Class Mail Using NSA Discount Blocks**

Lift	5%	7.5%	10%
Segments Incented to Switch	28.1% ¹	46.4% ²	65.2% ³

8 Note 1: 9 of 32 segments mailing Standard Mail incented to switch (45 starting
9 segments minus 13 segments where it is not economic).

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11 Note 2: 13 of 28 segments mailing Standard Mail incented to switch (45 starting
12 segments minus 13 segments where it is not economic minus 4
13 segments where First-Class Mail would be justified without a discount).

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15 Note 3: 15 of 23 segments mailing Standard Mail incented to switch (45 starting
16 segments minus 13 segments where it is not economic minus 9
17 segments where First-Class Mail would be justified without a discount).

18 **3. Application Reflecting Different Population Distributions**
19 **Across the Segments**

20 The final step in applying the model is to determine the amount of
21 switching in terms of mail volumes, rather than numbers of segments. To make
22 this determination, one must distribute the individuals in the mailing list by
23 segment. The distribution of individuals is equivalent to the distribution of mail
24 volume. I made plausible assumptions about the distribution of individuals
25 across the response rates and lifetime values discussed earlier in Sections 1a
26 and 1b. I also bounded the uncertainty of the distributions, as advised by
27 Witness Panzar in MC2002-2: “[B]ounds . . . based on reasonable and clearly

1 spelled-out assumptions could be a useful exercise . . . for giving the
2 Commission some quantitative evidence.” MC2002-2, 8 Tr. 1774 (February 7,
3 2003).

4 To bound the uncertainty of the distribution of individuals, I performed the
5 analysis using two distributions: (1) a uniform distribution and (2) a normal
6 distribution. The uniform distribution assigns an identical number of individuals in
7 each segment. The results of the uniform distribution of individuals are thus the
8 same as the results described previously for the segments in Exhibit 1. Tables 5
9 and 6 in the worksheet entitled “2_Simple Version” in Buc Attachment 3 provide
10 the results for segments and the uniform distribution, respectively.

11 Alternatively, I assumed a normal distribution of individuals into the
12 segments. Table 7 provides the results. The normal distribution of individuals
13 across response rates has a mean of 0.4 percent and a standard deviation of 0.2
14 percent. The normal distribution across lifetime values has a mean of \$150 and
15 a standard deviation of \$68.

16 Exhibit 4 presents the spreadsheet model output applying the normal
17 distributions of individuals. For a 2.5-cents discount per piece, the percentage of
18 individuals (and of mail) for which First-Class Mail is the preferred option
19 increases from 0 percent to 2 percent in the 5-percent lift model, and from 19
20 percent to 38 percent in the 10-percent lift model. For a 5-cent discount, the
21 percentage of individuals (and of mail) for which First-Class Mail is the preferred
22 option increases from 0 percent to 19 percent in the 5-percent lift model, and
23 from 19 percent to 74 percent in the 10-percent lift model.

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**Exhibit 4:
Spreadsheet Model Output: Percentage of Mail Using First-Class Mail
(Using Normal Distributions of Individuals)**

	Lift					
	5%		7.5%		10%	
Discount	Before Rates	After Rates	Before Rates	After Rates	Before Rates	After Rates
2.5 Cents	0%	2%	6%	19%	19%	38%
5 Cents	0%	19%	6%	50%	19%	74%

4 Changing the focus of the application from segments to mail volume
5 requires a further refinement to incorporate the graduated volume block
6 structures. This ensures that the declining block discounts along the proposed
7 NSA schedule provide enough incentive to switch the amount of mail needed to
8 reach the volume threshold that triggers the next discount. The worksheet
9 entitled “3_Block Discounts” presents this refinement.

10 Finally, I used a Monte Carlo simulation to test the sensitivity of these
11 results to potential variations in the response-rate lifts and the distribution of
12 individuals across response rates and lifetime values. The Monte Carlo
13 simulation shows that postage discounts will still result in a significant amount of
14 mail switching to First-Class Mail, even under a wide range of possible response
15 rates and lifetime values.

16 A Monte Carlo simulation is a statistical technique used to calculate the
17 probability distribution of possible outcomes by performing a large number of trial
18 runs. For example, a Monte Carlo simulation can produce the probability of
19 rolling a seven with a pair of dice by simulating 10,000 rolls of the dice. I

1 calculated the volume shift from Standard Mail to First-Class Mail over the NSA
2 block discount schedule by performing 10,000 trials using Crystal Ball® 2000.5
3 Standard Edition, a commercially available computer program that is commonly
4 used for Monte Carlo simulations. Each of these trials employed different lifts
5 and standard deviations of the normal distributions of the individuals across
6 response rates and lifetime values. I performed the Monte Carlo simulation on
7 the model in the worksheet entitled “3_Block Discounts.” The worksheet entitled
8 “Report” presents the results and parameters of the simulation.

9 Exhibit 5 displays the results of the Monte Carlo analysis. It shows the
10 percentage of trials that calculated volume shifts greater than or equal to the
11 selected volume shift. The simulation indicates that, in 89 percent of the trials, at
12 least 100 million pieces of mail will shift from Standard Mail to First-Class Mail,
13 assuming that there are 1 billion Standard Mail solicitations Before Rates.

14 **Exhibit 5:**
15 **Monte Carlo Output: Percentage of Trials With Volume Shifts**
16 **Greater Than or Equal to the Selected Volume Shift**

Volume Shift	Percentage of Trials
50 million	91%
100 million	89%
150 million	89%

17 **III. CONCLUSION**

18 The model shows that postage discounts ranging from 2.5 cents to 5 cents
19 will provide significant incentives to switch mail from Standard Mail to First-Class
20 Mail. First, I used uniform discounts to calculate the percentage of segments that

1 would use First-Class Mail for a range of response rates and lifetime values. The
2 percentages of segments that would use First-Class Mail under these scenarios
3 range between 0 and 28 percent Before Rates to between 6 and 75 percent After
4 Rates.

5 Second, I used the block discounts schedule of the proposed NSA to
6 calculate the percentage of segments that would switch to First-Class Mail.
7 These percentages range between 28 and 65 percent.

8 Third, I modeled different population distributions across segments to
9 determine changes in mail volumes incented by uniform discounts. Using a
10 uniform distribution, the percentage of mail using First-Class Mail ranged from
11 between 0 and 28 percent Before Rates to between 6 and 75 percent After
12 Rates. Using a normal distribution, the percentage of mail using First-Class Mail
13 ranged from between 0 and 19 percent Before Rates to between 2 and 74
14 percent After Rates.

15 Finally, I performed a Monte Carlo simulation to calculate the results of the
16 proposed NSA discount schedule for a range of plausible lifts and population
17 distributions across the segments. Given a volume of a billion pieces Standard
18 Mail in the absence of the NSA, the resulting distribution of the volume shift to
19 First-Class Mail indicates that in approximately 9 out of every 10 trials, the
20 volume shift is greater than 100 million pieces.

21 Based on these analyses, I conclude that the volume block discounts
22 under the proposed NSA will create incentives to switch a substantial amount of

- 1 mail from Standard Mail to First-Class Mail and that the After Rates projections in
- 2 witness Rappaport's testimony are thus highly credible.

BANK ONE LIFETIME VALUE ANALYSIS

Buc Attachment 1

LINE ITEM DESCRIPTION

1 Years 4
 2 Discount Rate 15.0%

LINE ITEM DESCRIPTION	a	FIRM			d
	BANK ONE	J.P. MORGAN CHASE & CO.	CAPITAL ONE	MBNA	
3 Net Income	\$ 1,159,000,000	\$ 679,000,000	\$ 1,181,169,000	\$ 2,338,104,000	
4 Marketing Expense	\$ 288,607,915	\$ 131,555,809	\$ 1,118,422,000	\$ 881,557,000	
5 Subtotal: Net Income + Marketing Expense	\$ 1,447,607,915	\$ 810,555,809	\$ 2,299,591,000	\$ 3,219,661,000	
6 Number of Accounts	40,348,413	30,800,000	32,523,810	37,452,381	
7 Income per Account	\$ 35.88	\$ 26.32	\$ 70.70	\$ 85.97	
8 Annuitized Method - Lifetime Value	\$ 239.18	\$ 175.44	\$ 471.37	\$ 573.11	
9 Net Present Value - Lifetime Value	\$ 102.43	\$ 75.13	\$ 201.86	\$ 245.43	

SOURCES

- 1 Assumption.
- 2 Assumption.
- 3a Annual Report 2003, Card Services, Net Income, p. 23.
- 3b Annual Report 2003, Cardmember Services, Operating Earnings, p. 39.
- 3c Annual Report 2003, U.S. Card Net Income, p. 47.
- 3d Annual Report 2003, Net Income, p. 20.
- 4a Annual Report 2003, Distributed marketing and development expense using card services' share of total revenue, see pp. 32 and 89.
- 4b Annual Report 2003, Distributed marketing expense using cardmember services' share of total revenue, see pp. 39, 82, and 96.
- 4c Annual Report 2003, Marketing, p. 62.
- 4d Annual Report 2003, Advertising and Postage and Delivery Expenses, p. 37.
- 5 = [3] + [4].
- 6a Annual Report 2003, Credit Cards Issued, p. 44, divided by 1.26 credit cards per account, derived from The Nilson Report, #760, March 2002, p. 7.
- 6b Annual Report 2003, Total Accounts, p. 41.
- 6c Cards, The Nilson Report, #778, December 2002, p. 8, divided by 1.26 credit cards per account, derived from The Nilson Report, #760, March 2002, p. 7.
- 6d Cards, The Nilson Report, #778, December 2002, p. 8, divided by 1.26 credit cards per account, derived from The Nilson Report, #760, March 2002, p. 7.
- 7 = [5] / [6].
- 8 = [7] / [2].
- 9 Present value worksheet function: -PV([2],[1],[7]).

Buc Attachment 2

Estimated Variable Costs of Large Direct Mailing

Item		First-Class Mail	Standard Mail
Postage	[1]	\$0.287	\$0.176
Freight	[2]	\$0.000	\$0.005
Printing Production	[3]		
Litho Letter	[3a]	\$0.014	\$0.014
Outer Envelope	[3b]	\$0.017	\$0.017
Reply Envelope	[3c]	\$0.014	\$0.014
Lettershop	[4]	\$0.022	\$0.022
Total		\$0.354	\$0.248

[1] USPS Model (Adjusted to Automated, One-Ounce Pieces)

[2] Discussion With Industry Expert

[3], [4] The Direct Marketing Association's Statistical Fact Book 2003 at 44-48

Buc Attachment 3

BANK ONE RESPONSE MODEL

Notes:

- 1 The model uses macros to highlight mail class choice. Inserting rows or columns into the model could cause the macro to highlight improper cells.
- 2 Within the worksheet entitled "2_Simple Version," rows 62 through 84 are hidden for presentation purposes. These cells present flags that indicate the preferred mail class, if any. The population counts refer to these cells.
- 3 This analysis used Crystal Ball® 2000.5 Standard Edition (see www.crystalball.com) to perform a Monte Carlo simulation. The worksheet entitled "REPORT" presents the Crystal Ball reports of the forecasts and the assumptions.
- 4 The simulation defined 1 forecast on the worksheet entitled "3_Block Discounts." Crystal Ball defines forecast cells as the dependent variables that contain formulas that refer to one or more assumptions. In other words, forecast cells are the responses that you are measuring.

<u>WORKSHEET</u>	<u>CELL</u>	<u>DESCRIPTION</u>
3_Block Discounts	F254	Volume switch to First-Class Mail normally distributing the individuals to the segments

- 5 The simulation defined 3 assumptions. Crystal Ball defines assumption cells as variable value cells that have been defined as probability distributions.

<u>WORKSHEET</u>	<u>CELL</u>	<u>DESCRIPTION</u>
3_Block Discounts	G8	Response rate lift
3_Block Discounts	F182	Standard deviation of normal distribution of response rate population
3_Block Discounts	F185	Standard deviation of normal distribution of lifetime value population

LEGEND

<< Push button to execute macro >>

Highlight Mail Class Choice	Orange	Choose Standard Mail over both response rate lift scenarios.
	Yellow	Choose Standard Mail over first response rate lift scenario only.
	Lime Green	Choose Standard Mail over second response rate lift scenario only.
	Light Yellow	Choose FCM over Standard Mail in first response rate lift scenario.
	Light Green	Choose FCM over Standard Mail in second response rate lift scenario.

(1)
Before Rates
Standard Mail vs. First-Class Mail
 Cells Give Net Value for Different Consumer Types
 Highlighted Cells Indicate Mail Class Choice

TABLE 1A -- STANDARD MAIL

Costs per piece \$ 0.250

Value	Response Rate				
	0.10%	0.25%	0.40%	0.55%	0.70%
\$ 50	-0.200	-0.125	-0.050	0.025	0.100
\$ 75	-0.175	-0.063	0.050	0.163	0.275
\$ 100	-0.150	0.000	0.150	0.300	0.450
\$ 125	-0.125	0.063	0.250	0.438	0.625
\$ 150	-0.100	0.125	0.350	0.575	0.800
\$ 175	-0.075	0.188	0.450	0.713	0.975
\$ 200	-0.050	0.250	0.550	0.850	1.150
\$ 225	-0.025	0.313	0.650	0.988	1.325
\$ 250	0.000	0.375	0.750	1.125	1.500

(2)
After Rates
Standard Mail vs. First-Class Mail
 Cells Give Net Value for Different Consumer Types
 Highlighted Cells Indicate Mail Class Choice

TABLE 1B -- STANDARD MAIL

Costs per piece \$ 0.250

Value	Response Rate				
	0.10%	0.25%	0.40%	0.55%	0.70%
\$ 50	-0.200	-0.125	-0.050	0.025	0.100
\$ 75	-0.175	-0.063	0.050	0.163	0.275
\$ 100	-0.150	0.000	0.150	0.300	0.450
\$ 125	-0.125	0.063	0.250	0.438	0.625
\$ 150	-0.100	0.125	0.350	0.575	0.800
\$ 175	-0.075	0.188	0.450	0.713	0.975
\$ 200	-0.050	0.250	0.550	0.850	1.150
\$ 225	-0.025	0.313	0.650	0.988	1.325
\$ 250	0.000	0.375	0.750	1.125	1.500

TABLE 2A -- FIRST-CLASS MAIL

Costs per piece \$ 0.350
 Response rate lift 5.0%

Value	Response Rate				
	0.11%	0.26%	0.42%	0.58%	0.74%
\$ 50	-0.298	-0.219	-0.140	-0.061	0.018
\$ 75	-0.271	-0.153	-0.035	0.083	0.201
\$ 100	-0.245	-0.088	0.070	0.228	0.385
\$ 125	-0.219	-0.022	0.175	0.372	0.569
\$ 150	-0.193	0.044	0.280	0.516	0.753
\$ 175	-0.166	0.109	0.385	0.661	0.936
\$ 200	-0.140	0.175	0.490	0.805	1.120
\$ 225	-0.114	0.241	0.595	0.949	1.304
\$ 250	-0.088	0.306	0.700	1.094	1.488

Response rate lift 10%

Value	Response Rate				
	0.11%	0.28%	0.44%	0.61%	0.77%
\$ 50	-0.295	-0.213	-0.130	-0.048	0.035
\$ 75	-0.268	-0.144	-0.020	0.104	0.228
\$ 100	-0.240	-0.075	0.090	0.255	0.420
\$ 125	-0.213	-0.006	0.200	0.406	0.613
\$ 150	-0.185	0.063	0.310	0.558	0.805
\$ 175	-0.158	0.131	0.420	0.709	0.998
\$ 200	-0.130	0.200	0.530	0.860	1.190
\$ 225	-0.103	0.269	0.640	1.011	1.383
\$ 250	-0.075	0.338	0.750	1.163	1.575

TABLE 2B -- FIRST-CLASS MAIL

Costs per piece \$ 0.350 [ADJUST FOR POSTAGE DISCOUNT]
 Response rate lift 5.0%

Value	Response Rate				
	0.11%	0.26%	0.42%	0.58%	0.74%
\$ 50	-0.298	-0.219	-0.140	-0.061	0.018
\$ 75	-0.271	-0.153	-0.035	0.083	0.201
\$ 100	-0.245	-0.088	0.070	0.228	0.385
\$ 125	-0.219	-0.022	0.175	0.372	0.569
\$ 150	-0.193	0.044	0.280	0.516	0.753
\$ 175	-0.166	0.109	0.385	0.661	0.936
\$ 200	-0.140	0.175	0.490	0.805	1.120
\$ 225	-0.114	0.241	0.595	0.949	1.304
\$ 250	-0.088	0.306	0.700	1.094	1.488

Response rate lift 10%

Value	Response Rate				
	0.11%	0.28%	0.44%	0.61%	0.77%
\$ 50	-0.295	-0.213	-0.130	-0.048	0.035
\$ 75	-0.268	-0.144	-0.020	0.104	0.228
\$ 100	-0.240	-0.075	0.090	0.255	0.420
\$ 125	-0.213	-0.006	0.200	0.406	0.613
\$ 150	-0.185	0.063	0.310	0.558	0.805
\$ 175	-0.158	0.131	0.420	0.709	0.998
\$ 200	-0.130	0.200	0.530	0.860	1.190
\$ 225	-0.103	0.269	0.640	1.011	1.383
\$ 250	-0.075	0.338	0.750	1.163	1.575

POPULATION

TABLE 3 -- Uniform Distribution

Value	Response Rate (Standard Mail)					
	0.10%	0.25%	0.40%	0.55%	0.70%	
\$ 50	2.2%	2.2%	2.2%	2.2%	2.2%	11.1%
\$ 75	2.2%	2.2%	2.2%	2.2%	2.2%	11.1%
\$ 100	2.2%	2.2%	2.2%	2.2%	2.2%	11.1%
\$ 125	2.2%	2.2%	2.2%	2.2%	2.2%	11.1%
\$ 150	2.2%	2.2%	2.2%	2.2%	2.2%	11.1%
\$ 175	2.2%	2.2%	2.2%	2.2%	2.2%	11.1%
\$ 200	2.2%	2.2%	2.2%	2.2%	2.2%	11.1%
\$ 225	2.2%	2.2%	2.2%	2.2%	2.2%	11.1%
\$ 250	2.2%	2.2%	2.2%	2.2%	2.2%	11.1%
Subtotals	20.0%	20.0%	20.0%	20.0%	20.0%	100.0%

TABLE 4 -- Normal Distribution

Distribution Parameters

Response Rate

Mean 0.004
Standard Deviation 0.002

Value

Mean \$ 150
Standard Deviation \$ 68

Probability Distribution Function ("PDF") Values

PDF Value	Value	Response Rate (Standard Mail)					Subtotals
		0.10%	0.25%	0.40%	0.55%	0.70%	
0.20%	\$ 50	0.7%	1.3%	1.6%	1.3%	0.7%	5.6%
0.32%	\$ 75	1.1%	2.1%	2.5%	2.1%	1.1%	8.9%
0.45%	\$ 100	1.6%	2.9%	3.5%	2.9%	1.6%	12.4%
0.55%	\$ 125	1.9%	3.5%	4.3%	3.5%	1.9%	15.1%
0.58%	\$ 150	2.1%	3.7%	4.6%	3.7%	2.1%	16.2%
0.55%	\$ 175	1.9%	3.5%	4.3%	3.5%	1.9%	15.1%
0.45%	\$ 200	1.6%	2.9%	3.5%	2.9%	1.6%	12.4%
0.32%	\$ 225	1.1%	2.1%	2.5%	2.1%	1.1%	8.9%
0.20%	\$ 250	0.7%	1.3%	1.6%	1.3%	0.7%	5.6%
Subtotals		12.7%	23.2%	28.3%	23.2%	12.7%	100.0%

SUMMARY - PERCENTAGE MAILED BY CLASS

TABLE 5 -- Segments (Matrix Cells)

	Before Rates			After Rates			Absolute Difference		
	5%	10%	Combined	5%	10%	Combined	5%	10%	Combined
Standard	71%	51%	61%	71%	51%	61%	0.0%	0.0%	0.0%
First-Class	0%	20%	10%	0%	20%	10%	0.0%	0.0%	0.0%
None	29%	29%	29%	29%	29%	29%	0.0%	0.0%	0.0%
OF MAILING									
Standard	100%	72%	86%	100%	72%	86%	0.0%	0.0%	0.0%
First-Class	0%	28%	14%	0%	28%	14%	0.0%	0.0%	0.0%

Population

TABLE 6 -- Uniform Distribution

	Before Rates			After Rates			Absolute Difference		
	5%	10%	Combined	5%	10%	Combined	5%	10%	Combined
Standard	71%	51%	61%	71%	51%	61%	0.0%	0.0%	0.0%
First-Class	0%	20%	10%	0%	20%	10%	0.0%	0.0%	0.0%
None	29%	29%	29%	29%	29%	29%	0.0%	0.0%	0.0%
OF MAILING									
Standard	100%	72%	86%	100%	72%	86%	0.0%	0.0%	0.0%
First-Class	0%	28%	14%	0%	28%	14%	0.0%	0.0%	0.0%

TABLE 7 -- Normal Distribution

	Before Rates			After Rates			Absolute Difference		
	5%	10%	Combined	5%	10%	Combined	5%	10%	Combined
Standard	80%	64%	72%	80%	64%	72%	0.0%	0.0%	0.0%
First-Class	0%	15%	8%	0%	15%	8%	0.0%	0.0%	0.0%
None	20%	20%	20%	20%	20%	20%	0.0%	0.0%	0.0%
OF MAILING									
Standard	100%	81%	90%	100%	81%	90%	0.0%	0.0%	0.0%
First-Class	0%	19%	10%	0%	19%	10%	0.0%	0.0%	0.0%

BANK ONE RESPONSE MODEL

A. INPUT DATA

LINE ITEM

1	Marketing Costs -- Standard Mail	\$	0.250	per piece
2	Marketing Costs -- First-Class Mail	\$	0.350	per piece
3	Response Rate Lift		7.5%	[Crystal Ball® assumption]
4				
5	Standard Mail Solicitations		1,000,000,000	pieces
6				
7	VOLUME BLOCKS			
8	FROM	TO	DIFFERENCE	DISCOUNT
9	535,000,001	560,000,000	25,000,000	\$ 0.025 per piece
10	560,000,001	585,000,000	25,000,000	\$ 0.030 per piece
11	585,000,001	610,000,000	25,000,000	\$ 0.035 per piece
12	610,000,001	645,000,000	35,000,000	\$ 0.040 per piece
13	645,000,001	680,000,000	35,000,000	\$ 0.045 per piece
12	680,000,001	and above	n/a	\$ 0.050 per piece

LEGEND

<< Push button to execute macro >>

Highlight Mail Class Choice

Yellow Choose First-Class Mail over Standard Mail.

B. STANDARD MAIL vs. FIRST-CLASS MAIL

Cells Give Net Value for Different Consumer Types
 Highlighted Cells Indicate Mail Class Choice

TABLE 1 STANDARD MAIL

Lifetime Value	Response Rate				
	0.10%	0.25%	0.40%	0.55%	0.70%
\$ 50	-0.200	-0.125	-0.050	0.025	0.100
\$ 75	-0.175	-0.063	0.050	0.163	0.275
\$ 100	-0.150	0.000	0.150	0.300	0.450
\$ 125	-0.125	0.063	0.250	0.438	0.625
\$ 150	-0.100	0.125	0.350	0.575	0.800
\$ 175	-0.075	0.188	0.450	0.713	0.975
\$ 200	-0.050	0.250	0.550	0.850	1.150
\$ 225	-0.025	0.313	0.650	0.988	1.325
\$ 250	0.000	0.375	0.750	1.125	1.500

TABLE 2A FIRST-CLASS MAIL "BEFORE RATES"

Marketing Costs	\$ 0.350 per piece				
Lifetime Value	Response Rate				
	0.11%	0.27%	0.43%	0.59%	0.75%
\$ 50	-0.296	-0.216	-0.135	-0.054	0.026
\$ 75	-0.269	-0.148	-0.028	0.093	0.214
\$ 100	-0.243	-0.081	0.080	0.241	0.403
\$ 125	-0.216	-0.014	0.188	0.389	0.591
\$ 150	-0.189	0.053	0.295	0.537	0.779
\$ 175	-0.162	0.120	0.403	0.685	0.967
\$ 200	-0.135	0.188	0.510	0.833	1.155
\$ 225	-0.108	0.255	0.618	0.980	1.343
\$ 250	-0.081	0.322	0.725	1.128	1.531

TABLE 2B MAIL CLASS INDICATOR

0 NONE				
1 FIRST-CLASS MAIL				
3 STANDARD MAIL				
0	0	0	3	3
0	0	3	3	3
0	0	3	3	3
0	3	3	3	3
0	3	3	3	3
0	3	3	3	3
0	3	3	3	1
0	3	3	3	1
0	3	3	3	1
0	3	3	1	1

TABLE 3A FIRST-CLASS MAIL "AFTER RATES" (VOLUME BLOCK 1)

Incremental Discount	\$ 0.025 per piece				
Marketing Costs	\$ 0.325 per piece				
Lifetime Value	Response Rate				
	0.11%	0.27%	0.43%	0.59%	0.75%
\$ 50	-0.271	-0.191	-0.110	-0.029	0.051
\$ 75	-0.244	-0.123	-0.002	0.118	0.239
\$ 100	-0.218	-0.056	0.105	0.266	0.428
\$ 125	-0.191	0.011	0.213	0.414	0.616
\$ 150	-0.164	0.078	0.320	0.562	0.804
\$ 175	-0.137	0.145	0.428	0.710	0.992
\$ 200	-0.110	0.213	0.535	0.858	1.180
\$ 225	-0.083	0.280	0.643	1.005	1.368
\$ 250	-0.056	0.347	0.750	1.153	1.556

TABLE 3B MAIL CLASS INDICATOR

0 NONE				
1 FIRST-CLASS MAIL				
3 STANDARD MAIL				
0	0	0	3	3
0	0	3	3	3
0	0	3	3	3
0	3	3	3	3
0	3	3	3	1
0	3	3	3	1
0	3	3	1	1
0	3	3	1	1
0	3	3	1	1
0	3	1	1	1

TABLE 4A FIRST-CLASS MAIL "AFTER RATES" (VOLUME BLOCK 2)

Incremental Discount	\$ 0.030 per piece				
Marketing Costs	\$ 0.320 per piece				
Lifetime Value	Response Rate				
	0.11%	0.27%	0.43%	0.59%	0.75%
\$ 50	-0.266	-0.186	-0.105	-0.024	0.056
\$ 75	-0.239	-0.118	0.003	0.123	0.244
\$ 100	-0.213	-0.051	0.110	0.271	0.433
\$ 125	-0.186	0.016	0.218	0.419	0.621
\$ 150	-0.159	0.083	0.325	0.567	0.809
\$ 175	-0.132	0.150	0.433	0.715	0.997
\$ 200	-0.105	0.218	0.540	0.863	1.185
\$ 225	-0.078	0.285	0.648	1.010	1.373
\$ 250	-0.051	0.352	0.755	1.158	1.561

TABLE 4B MAIL CLASS INDICATOR

0 NONE				
1 FIRST-CLASS MAIL				
3 STANDARD MAIL				
0	0	0	3	3
0	0	3	3	3
0	0	3	3	3
0	3	3	3	3
0	3	3	3	1
0	3	3	3	1
0	3	3	1	1
0	3	3	1	1
0	3	3	1	1
0	3	1	1	1

TABLE 10 NORMAL DISTRIBUTION

Distribution Parameters						
Response Rate						
	Mean		0.004			
	Standard Deviation		0.002			[Crystal Ball® assumption]
Lifetime Value						
	Mean		\$ 150			
	Standard Deviation		\$ 60			[Crystal Ball® assumption]
Probability Distribution Function ("PDF") Values						
		7.6%	13.8%	16.8%	13.8%	7.6%
		Response Rate (Standard Mail)				
PDF Values	Lifetime Value	0.10%	0.25%	0.40%	0.55%	0.70% Subtotals
0.20%	\$ 50	0.7%	1.3%	1.6%	1.3%	0.7%
0.32%	\$ 75	1.1%	2.1%	2.5%	2.1%	1.1%
0.45%	\$ 100	1.6%	2.9%	3.5%	2.9%	1.6%
0.55%	\$ 125	1.9%	3.5%	4.3%	3.5%	1.9%
0.58%	\$ 150	2.1%	3.7%	4.6%	3.7%	2.1%
0.55%	\$ 175	1.9%	3.5%	4.3%	3.5%	1.9%
0.45%	\$ 200	1.6%	2.9%	3.5%	2.9%	1.6%
0.32%	\$ 225	1.1%	2.1%	2.5%	2.1%	1.1%
0.20%	\$ 250	0.7%	1.3%	1.6%	1.3%	0.7%
Subtotals		12.7%	23.2%	28.3%	23.2%	12.7%

D. MAILING RESULTS

TABLE 11 DISPOSITION OF INDIVIDUALS -- UNIFORM DISTRIBUTION

	% of Individuals By Total			% of Individuals by Mailing		% of Individuals Switching to First-Class Mail
	No Mail	Standard Mail	First-Class Mail	Standard Mail	First-Class Mail	
Before Rates	28.9%	62.2%	8.9%	87.5%	12.5%	n/a
After Rates						
Volume Block 1	28.9%	51.1%	20.0%	71.9%	28.1%	17.9%
Volume Block 2	28.9%	48.9%	22.2%	68.8%	31.3%	21.4%
Volume Block 3	28.9%	44.4%	26.7%	62.5%	37.5%	28.6%
Volume Block 4	28.9%	40.0%	31.1%	56.3%	43.8%	35.7%
Volume Block 5	28.9%	40.0%	31.1%	56.3%	43.8%	35.7%
Volume Block 6	28.9%	33.3%	37.8%	46.9%	53.1%	46.4%

TABLE 12 VOLUME SWITCH TO FIRST-CLASS MAIL -- UNIFORM DISTRIBUTION

	Individuals	Threshold	Mailed
Volume Block 1	178,571,429	25,000,000	25,000,000
Volume Block 2	214,285,714	25,000,000	25,000,000
Volume Block 3	285,714,286	25,000,000	25,000,000
Volume Block 4	357,142,857	35,000,000	35,000,000
Volume Block 5	357,142,857	35,000,000	35,000,000
Volume Block 6	464,285,714		319,285,714
Total			464,285,714

TABLE 13 DISPOSITION OF INDIVIDUALS -- NORMAL DISTRIBUTION

	% of Individuals By Total			% of Individuals by Mailing		% of Individuals Switching to First-Class Mail
	No Mail	Standard Mail	First-Class Mail	Standard Mail	First-Class Mail	
Before Rates	20.5%	74.8%	4.7%	94.1%	5.9%	n/a
After Rates						
Volume Block 1	20.5%	64.4%	15.2%	80.9%	19.1%	14.0%
Volume Block 2	20.5%	60.9%	18.7%	76.5%	23.5%	18.7%
Volume Block 3	20.5%	56.4%	23.1%	71.0%	29.0%	24.6%
Volume Block 4	20.5%	49.2%	30.3%	61.9%	38.1%	34.3%
Volume Block 5	20.5%	49.2%	30.3%	61.9%	38.1%	34.3%
Volume Block 6	20.5%	39.8%	39.7%	50.1%	49.9%	46.8%

TABLE 14 VOLUME SWITCH TO FIRST-CLASS MAIL -- NORMAL DISTRIBUTION

	Individuals	Threshold	Mailed
Volume Block 1	139,870,919	25,000,000	25,000,000
Volume Block 2	186,647,928	25,000,000	25,000,000
Volume Block 3	245,836,886	25,000,000	25,000,000
Volume Block 4	342,615,670	35,000,000	35,000,000
Volume Block 5	342,615,670	35,000,000	35,000,000
Volume Block 6	467,544,511		322,544,511
Total			467,544,511 [Crystal Ball® forecast]

Standard Mail vs. First-Class Mail
 Cells Give Discount Required to Switch Mail
 From Standard Mail To First-Class Mail

TABLE 1 -- DISCOUNT REQUIRED TO SWITCH FROM STANDARD MAIL TO FIRST-CLASS MAIL

1 Marketing Costs -- Standard Mail	\$	0.250	per piece
2 Marketing Costs -- First-Class Mail	\$	0.350	per piece
3 Response Rate Lift		5.0%	

Lifetime Value		Response Rate (Standard Mail/First-Class Mail)					
		0.10%	0.25%	0.40%	0.55%	0.70%	
		0.11%	0.26%	0.42%	0.58%	0.74%	
\$	50	\$ 0.098	\$ 0.094	\$ 0.090	\$ 0.086	\$ 0.083	
\$	75	\$ 0.096	\$ 0.091	\$ 0.085	\$ 0.079	\$ 0.074	
\$	100	\$ 0.095	\$ 0.088	\$ 0.080	\$ 0.073	\$ 0.065	
\$	125	\$ 0.094	\$ 0.084	\$ 0.075	\$ 0.066	\$ 0.056	
\$	150	\$ 0.093	\$ 0.081	\$ 0.070	\$ 0.059	\$ 0.047	
\$	175	\$ 0.091	\$ 0.078	\$ 0.065	\$ 0.052	\$ 0.039	
\$	200	\$ 0.090	\$ 0.075	\$ 0.060	\$ 0.045	\$ 0.030	
\$	225	\$ 0.089	\$ 0.072	\$ 0.055	\$ 0.038	\$ 0.021	
\$	250	\$ 0.088	\$ 0.069	\$ 0.050	\$ 0.031	\$ 0.012	

Crystal Ball Report

Simulation started on 5/28/04 at 10:11:53
 Simulation stopped on 5/28/04 at 10:12:13

Forecast: Volume Switch -- Normal Distribution

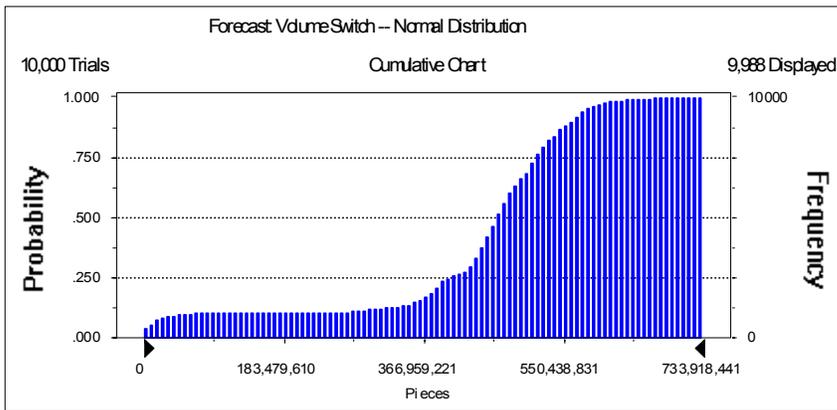
Cell: F254

Summary:

Display Range is from 0 to 733,918,441 Pieces
 Entire Range is from 0 to 753,451,075 Pieces
 After 10,000 Trials, the Std. Error of the Mean is 1,571,308

Statistics:

	<u>Value</u>
Trials	10000
Mean	430,130,218
Median	467,843,824
Mode	---
Standard Deviation	157,130,793
Variance	2E+16
Skewness	-1.71
Kurtosis	5.31
Coeff. of Variability	0.37
Range Minimum	0
Range Maximum	753,451,075
Range Width	753,451,075
Mean Std. Error	1,571,307.93



Forecast: Volume Switch -- Normal Distribution (cont'd)

Cell: F254

Percentiles:

<u>Percentile</u>	<u>Pieces</u>
0%	0
10%	64,212,441
20%	385,819,339
30%	434,494,982
40%	452,101,126
50%	467,843,824
60%	483,904,930
70%	509,439,387
80%	529,585,693
90%	567,200,871
100%	753,451,075

Frequency Counts:

Frequency:

<u>Group</u>	<u>Start Value</u>	<u>End Value</u>	<u>Prob.</u>	<u>Freq.</u>
	-Infinity	0	0.000000	0
1	0	7,339,184	0.040400	404
2	7,339,184	14,678,369	0.017400	174
3	14,678,369	22,017,553	0.017500	175
4	22,017,553	29,356,738	0.009300	93
5	29,356,738	36,695,922	0.004400	44
6	36,695,922	44,035,106	0.005200	52
7	44,035,106	51,374,291	0.004000	40
8	51,374,291	58,713,475	0.000600	6
9	58,713,475	66,052,660	0.001600	16
10	66,052,660	73,391,844	0.002300	23
11	73,391,844	80,731,029	0.001000	10
12	80,731,029	88,070,213	0.000000	0
13	88,070,213	95,409,397	0.000100	1
14	95,409,397	102,748,582	0.000600	6
15	102,748,582	110,087,766	0.000800	8
16	110,087,766	117,426,951	0.000000	0
17	117,426,951	124,766,135	0.000000	0
18	124,766,135	132,105,319	0.000000	0
19	132,105,319	139,444,504	0.000000	0
20	139,444,504	146,783,688	0.000000	0
21	146,783,688	154,122,873	0.000000	0
22	154,122,873	161,462,057	0.000000	0
23	161,462,057	168,801,242	0.000000	0
24	168,801,242	176,140,426	0.000000	0

Forecast: Volume Switch -- Normal Distribution (cont'd)

Cell: F254

<u>Group</u>	<u>Start Value</u>	<u>End Value</u>	<u>Prob.</u>	<u>Freq.</u>
25	176,140,426	183,479,610	0.000000	0
26	183,479,610	190,818,795	0.000000	0
27	190,818,795	198,157,979	0.000000	0
28	198,157,979	205,497,164	0.000000	0
29	205,497,164	212,836,348	0.000000	0
30	212,836,348	220,175,532	0.000000	0
31	220,175,532	227,514,717	0.000000	0
32	227,514,717	234,853,901	0.000300	3
33	234,853,901	242,193,086	0.000400	4
34	242,193,086	249,532,270	0.000500	5
35	249,532,270	256,871,455	0.000800	8
36	256,871,455	264,210,639	0.000600	6
37	264,210,639	271,549,823	0.001500	15
38	271,549,823	278,889,008	0.001400	14
39	278,889,008	286,228,192	0.002100	21
40	286,228,192	293,567,377	0.002400	24
41	293,567,377	300,906,561	0.003000	30
42	300,906,561	308,245,745	0.002600	26
43	308,245,745	315,584,930	0.002200	22
44	315,584,930	322,924,114	0.002500	25
45	322,924,114	330,263,299	0.002400	24
46	330,263,299	337,602,483	0.002000	20
47	337,602,483	344,941,667	0.004000	40
48	344,941,667	352,280,852	0.004300	43
49	352,280,852	359,620,036	0.007900	79
50	359,620,036	366,959,221	0.011200	112
51	366,959,221	374,298,405	0.013900	139
52	374,298,405	381,637,590	0.017500	175
53	381,637,590	388,976,774	0.021100	211
54	388,976,774	396,315,958	0.025100	251
55	396,315,958	403,655,143	0.012800	128
56	403,655,143	410,994,327	0.009300	93
57	410,994,327	418,333,512	0.008700	87
58	418,333,512	425,672,696	0.009700	97
59	425,672,696	433,011,880	0.020000	200
60	433,011,880	440,351,065	0.038000	380
61	440,351,065	447,690,249	0.041000	410
62	447,690,249	455,029,434	0.042600	426
63	455,029,434	462,368,618	0.044600	446
64	462,368,618	469,707,803	0.050700	507
65	469,707,803	477,046,987	0.048100	481
66	477,046,987	484,386,171	0.042600	426

Forecast: Volume Switch -- Normal Distribution (cont'd)

Cell: F254

<u>Group</u>	<u>Start Value</u>	<u>End Value</u>	<u>Prob.</u>	<u>Freq.</u>
67	484,386,171	491,725,356	0.030400	304
68	491,725,356	499,064,540	0.025200	252
69	499,064,540	506,403,725	0.024200	242
70	506,403,725	513,742,909	0.042900	429
71	513,742,909	521,082,093	0.037700	377
72	521,082,093	528,421,278	0.032000	320
73	528,421,278	535,760,462	0.023800	238
74	535,760,462	543,099,647	0.019900	199
75	543,099,647	550,438,831	0.026000	260
76	550,438,831	557,778,015	0.013100	131
77	557,778,015	565,117,200	0.013500	135
78	565,117,200	572,456,384	0.026600	266
79	572,456,384	579,795,569	0.021200	212
80	579,795,569	587,134,753	0.015800	158
81	587,134,753	594,473,938	0.007400	74
82	594,473,938	601,813,122	0.005600	56
83	601,813,122	609,152,306	0.004100	41
84	609,152,306	616,491,491	0.007300	73
85	616,491,491	623,830,675	0.003200	32
86	623,830,675	631,169,860	0.002400	24
87	631,169,860	638,509,044	0.001300	13
88	638,509,044	645,848,228	0.001400	14
89	645,848,228	653,187,413	0.001100	11
90	653,187,413	660,526,597	0.001500	15
91	660,526,597	667,865,782	0.001400	14
92	667,865,782	675,204,966	0.001000	10
93	675,204,966	682,544,151	0.001200	12
94	682,544,151	689,883,335	0.000800	8
95	689,883,335	697,222,519	0.001000	10
96	697,222,519	704,561,704	0.000300	3
97	704,561,704	711,900,888	0.000500	5
98	711,900,888	719,240,073	0.000600	6
99	719,240,073	726,579,257	0.000400	4
100	726,579,257	733,918,441	0.001000	10
	733,918,441	+Infinity	0.001200	12
Total:			1.000000	10000

Cumulative:

<u>Group</u>	<u>Start Value</u>	<u>End Value</u>	<u>Prob.</u>	<u>Freq.</u>
	-Infinity	0	0.000000	0
1	0	7,339,184	0.040400	404
2	7,339,184	14,678,369	0.057800	578

Forecast: Volume Switch -- Normal Distribution (cont'd)

Cell: F254

<u>Group</u>	<u>Start Value</u>	<u>End Value</u>	<u>Prob.</u>	<u>Freq.</u>
3	14,678,369	22,017,553	0.075300	753
4	22,017,553	29,356,738	0.084600	846
5	29,356,738	36,695,922	0.089000	890
6	36,695,922	44,035,106	0.094200	942
7	44,035,106	51,374,291	0.098200	982
8	51,374,291	58,713,475	0.098800	988
9	58,713,475	66,052,660	0.100400	1004
10	66,052,660	73,391,844	0.102700	1027
11	73,391,844	80,731,029	0.103700	1037
12	80,731,029	88,070,213	0.103700	1037
13	88,070,213	95,409,397	0.103800	1038
14	95,409,397	102,748,582	0.104400	1044
15	102,748,582	110,087,766	0.105200	1052
16	110,087,766	117,426,951	0.105200	1052
17	117,426,951	124,766,135	0.105200	1052
18	124,766,135	132,105,319	0.105200	1052
19	132,105,319	139,444,504	0.105200	1052
20	139,444,504	146,783,688	0.105200	1052
21	146,783,688	154,122,873	0.105200	1052
22	154,122,873	161,462,057	0.105200	1052
23	161,462,057	168,801,242	0.105200	1052
24	168,801,242	176,140,426	0.105200	1052
25	176,140,426	183,479,610	0.105200	1052
26	183,479,610	190,818,795	0.105200	1052
27	190,818,795	198,157,979	0.105200	1052
28	198,157,979	205,497,164	0.105200	1052
29	205,497,164	212,836,348	0.105200	1052
30	212,836,348	220,175,532	0.105200	1052
31	220,175,532	227,514,717	0.105200	1052
32	227,514,717	234,853,901	0.105500	1055
33	234,853,901	242,193,086	0.105900	1059
34	242,193,086	249,532,270	0.106400	1064
35	249,532,270	256,871,455	0.107200	1072
36	256,871,455	264,210,639	0.107800	1078
37	264,210,639	271,549,823	0.109300	1093
38	271,549,823	278,889,008	0.110700	1107
39	278,889,008	286,228,192	0.112800	1128
40	286,228,192	293,567,377	0.115200	1152
41	293,567,377	300,906,561	0.118200	1182
42	300,906,561	308,245,745	0.120800	1208
43	308,245,745	315,584,930	0.123000	1230
44	315,584,930	322,924,114	0.125500	1255

Forecast: Volume Switch -- Normal Distribution (cont'd)

Cell: F254

<u>Group</u>	<u>Start Value</u>	<u>End Value</u>	<u>Prob.</u>	<u>Freq.</u>
45	322,924,114	330,263,299	0.127900	1279
46	330,263,299	337,602,483	0.129900	1299
47	337,602,483	344,941,667	0.133900	1339
48	344,941,667	352,280,852	0.138200	1382
49	352,280,852	359,620,036	0.146100	1461
50	359,620,036	366,959,221	0.157300	1573
51	366,959,221	374,298,405	0.171200	1712
52	374,298,405	381,637,590	0.188700	1887
53	381,637,590	388,976,774	0.209800	2098
54	388,976,774	396,315,958	0.234900	2349
55	396,315,958	403,655,143	0.247700	2477
56	403,655,143	410,994,327	0.257000	2570
57	410,994,327	418,333,512	0.265700	2657
58	418,333,512	425,672,696	0.275400	2754
59	425,672,696	433,011,880	0.295400	2954
60	433,011,880	440,351,065	0.333400	3334
61	440,351,065	447,690,249	0.374400	3744
62	447,690,249	455,029,434	0.417000	4170
63	455,029,434	462,368,618	0.461600	4616
64	462,368,618	469,707,803	0.512300	5123
65	469,707,803	477,046,987	0.560400	5604
66	477,046,987	484,386,171	0.603000	6030
67	484,386,171	491,725,356	0.633400	6334
68	491,725,356	499,064,540	0.658600	6586
69	499,064,540	506,403,725	0.682800	6828
70	506,403,725	513,742,909	0.725700	7257
71	513,742,909	521,082,093	0.763400	7634
72	521,082,093	528,421,278	0.795400	7954
73	528,421,278	535,760,462	0.819200	8192
74	535,760,462	543,099,647	0.839100	8391
75	543,099,647	550,438,831	0.865100	8651
76	550,438,831	557,778,015	0.878200	8782
77	557,778,015	565,117,200	0.891700	8917
78	565,117,200	572,456,384	0.918300	9183
79	572,456,384	579,795,569	0.939500	9395
80	579,795,569	587,134,753	0.955300	9553
81	587,134,753	594,473,938	0.962700	9627
82	594,473,938	601,813,122	0.968300	9683
83	601,813,122	609,152,306	0.972400	9724
84	609,152,306	616,491,491	0.979700	9797
85	616,491,491	623,830,675	0.982900	9829
86	623,830,675	631,169,860	0.985300	9853

Forecast: Volume Switch -- Normal Distribution (cont'd)

Cell: F254

<u>Group</u>	<u>Start Value</u>	<u>End Value</u>	<u>Prob.</u>	<u>Freq.</u>
87	631,169,860	638,509,044	0.986600	9866
88	638,509,044	645,848,228	0.988000	9880
89	645,848,228	653,187,413	0.989100	9891
90	653,187,413	660,526,597	0.990600	9906
91	660,526,597	667,865,782	0.992000	9920
92	667,865,782	675,204,966	0.993000	9930
93	675,204,966	682,544,151	0.994200	9942
94	682,544,151	689,883,335	0.995000	9950
95	689,883,335	697,222,519	0.996000	9960
96	697,222,519	704,561,704	0.996300	9963
97	704,561,704	711,900,888	0.996800	9968
98	711,900,888	719,240,073	0.997400	9974
99	719,240,073	726,579,257	0.997800	9978
100	726,579,257	733,918,441	0.998800	9988
	733,918,441	+Infinity	1.000000	10000

End of Forecast

Assumptions

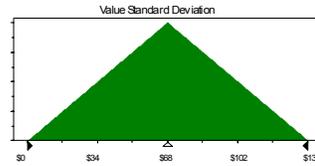
Assumption: Value Standard Deviation

Cell: F185

Triangular distribution with parameters:

Minimum	\$0
Likeliest	\$68
Maximum	\$136

Selected range is from \$0 to \$136



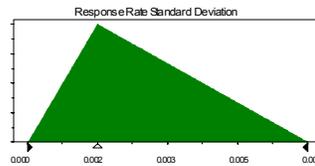
Assumption: Response Rate Standard Deviation

Cell: F182

Triangular distribution with parameters:

Minimum	0.000
Likeliest	0.002
Maximum	0.006

Selected range is from 0.000 to 0.006



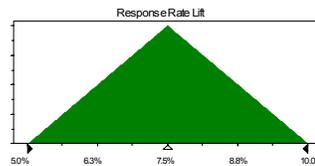
Assumption: Response Rate Lift

Cell: G8

Triangular distribution with parameters:

Minimum	5.0%
Likeliest	7.5%
Maximum	10.0%

Selected range is from 5.0% to 10.0%



End of Assumptions