

# INVESTING IN CUSTOMER ANALYTICS STRATEGIES

Balancing supply-side and  
demand-side investments

*by Robin Way*



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# Background

As the opportunity for enterprises to invest in data-driven analytics strategies becomes more commonplace, and as the number of stakeholders involved in those investment decisions grows, clients often ask for our assistance in formalizing how to recognize the financial costs and benefits of such investments. Much like investing in a new building or developing a new product, there is substantial uncertainty in the payback of an investment focused on predicting the behavior of customers based on data and analytic assets. Unlike those more traditional investments, the end result being built in a customer analytics strategy is often not well-understood outside of the domain of the analytics practice or the line of business, and there are few standard practices for valuing those assets.

One recent client, whose role is in the discipline of marketing sciences, asked me to help them educate senior management on the value of an analytic solution for customer next best actions, and the investment options and strategies that make sense for such investments, with emphasis on approaching the company's CFO. It's our objective to provide senior leadership throughout the management team of our clients and colleagues to understand how to evaluate an investment strategy, and its full implication for indirect costs, profit and loss, and cash management.

We also want to right some wrongs of the traditional practice around analytics strategy investment presented by solution vendors. The traditional practice is to focus myopically only on the direct expenses and direct returns of the solution itself, from the context of the line of business, and not the enterprise. The typical presentation is "If you buy our product today, you can earn a 35% ROI in 2 years." What gets missed in this traditional approach are the indirect costs for supporting this investment as infrastructure (e.g., technology, program management, system integration, testing, and change management) and as a financial opportunity for which there are multiple competing investments, each with their own internal rate of return, impacts on the broader P&L, and on cash.

## Developing the supply-side and demand-side viewpoints for analytics investments

Among our experience in helping clients evaluate the investment potential for an analytics-based strategy, one of the most influential was with the CFO's office for a top 20 US bank to conduct a comprehensive cost analysis of an analytics strategy investment. We jointly developed a thoughtful analysis of all costs and all investment impacts, more so than any other client in my 30 year experience. In parallel, we worked with the Chief Marketing Officer's team to develop a portfolio view of their customer segments, all their product-based offers, and the profit-and-loss potential for every direct marketing offer strategy. By merging together these analyses, we were able to develop an integrated view of the supply-side (e.g., Finance) decisions and the demand-side (e.g., Marketing and Sales) decisions and identify the sweet spots for their portfolio.

We've since used that approach multiple times, and combined yet again our experience in delivering these solutions for customer analytics, so that we could vet the financial metrics across a host of engagements, customer types, bank portfolio types and analytics targeting approaches. We've transformed those analyses into a set of tools for evaluating these investments by other firms.

## Supply-side capital investment model

We've developed a simple, scenario-based financial model for analytics investments in customer strategy. Our process starts by specifying some essential planning assumptions that describe the current state of the firm and its capabilities, the roadmap they are on to enhance their decision-making capabilities via analytics, and their financial treatment of assets to be constructed through this investment.

In this paper, we've used a common scenario that is characterized by the following situation:

1. The client organization, which is the Marketing team within a bank, has a very basic marketing analytics platform that was funded through the Marketing operational expense budget with limited technology support. The Marketing team faces some tactical recurring costs to support that platform. They want to expand and enhance their capabilities because the current approach isn't yielding the marketing team the return they need to produce in terms of profitable customer growth.
2. The Marketing team is looking to make an investment in a new analytics platform that will help them acquire new business and cross-sell to customers more effectively without increasing their costs, measured both by their direct marketing and sales costs, and their corporate-wide cost of funds. The marketing team also wants to retain the business of customers at-risk of being poached by competing banks.
3. The enterprise is interested in either a) an on-premise solution that involves a large software stack implementation, data integration, analytic asset build and campaign execution and measurement, with full support from the company's Technology team, with the investment treated as a capital asset, or b) a hosted analytics solution with the same capabilities, implemented at the vendor's data center, wherein the bank will securely ship the vendor some of their customer data, the vendor implements their strategies, and charges them a monthly subscription for a minimum term, where there is no capital asset on the company's books.

## SCENARIO ANALYSIS

In the scenario analysis, we are analyzing two decision scenarios, one where the investment is a traditional on-premise implementation of a solution treated by the Finance team as a capital asset, and a second scenario where the investment is in a hosted analytic solution treated by Finance as an operational expense with no up-front cash outlay. For each decision scenario, there are two states: business as usual ("BAU"), where there are no changes in the company's ability to target their customers for the appropriate next best action, and the solution investment, where both the company's investment and resulting income rises together. In these scenarios, we're evaluating a 3-year planning horizon to keep the presentation succinct, although many companies amortize capital assets of this kind over a 5-year schedule.

This scenario analysis is relatively small, where we are focused on only one retail bank portfolio, with one loan product and one deposit product. The overall net income and NPV of the investment will be a lot stronger as you add more portfolios and offers to the analysis, so the results for this particular scenario analysis are going to be relatively tactical in comparison.

## FINANCIAL DRIVERS

The financial revenue assumptions convert loan and deposit volumes into income, by way of yield, cost of funds and spread assumptions. Yield is the gross revenue generated by selling a dollar of loan, minus the cost of funds for borrowing that capital from a central bank, resulting in the spread or net revenue before factoring in operational expenses. We believe we can target more profitable customers, so the yield for deposits and loans rises via the solution compared to BAU. The financial assumptions also account for loan loss reserves and net charge offs for lending products, which reflects the bank's assumptions, which in turn reflect a very conservative lending strategy. Other banks set a significantly larger loan loss reserve because they have to, being more aggressive on to whom they lend money and assume a higher net charge off rate as well.

Scenario: Hosted NLO Investment			
	Year 1	Year 2	Year 3
<b>Financial revenue assumptions</b>			
Loan yield	3.75%	3.85%	3.95%
Loan funding cost	1.25%	1.25%	1.25%
Loan spread	2.50%	2.60%	2.70%
Loan loss reserve	3.00%	3.00%	3.00%
Loan net charge off	0.50%	0.50%	0.50%
Deposit yield	2.00%	2.05%	2.05%
Deposit funding cost	0.05%	0.05%	0.05%
Deposit spread	1.95%	2.00%	2.00%
Income Tax Rate	35.00%	35.00%	35.00%

## INCOME GENERATION

Income from retail loans is a combination of new acquisition and cross-sell of loans to prospects and customers, as well as retention of loans that are at risk of prepayment, repricing by another bank (i.e., "off-us") or default. Note that the volume per customer of these loans is small to medium, and reflects secured and unsecured loans and lines of credit, such as for a car, home repair (perhaps a small HELOC), boat or other small retail loan; this does not reflect larger mortgages and HELOC products.

This analysis assumes that the lead volumes of both scenarios will be the same, but the close rate for the solution will be stronger over time by finding the best customers and offers for those customers. In practice, the field results tend to be a lot stronger than as depicted in this scenario, so we are being conservative. We're also setting the loan volume per loan the same as in BAU, since we don't really want to inflate cost of funds as a function of the loan size, only by writing more loan accounts.

We use similar assumptions for the retained revenue analysis: the same number of at-risk accounts, but our save rate is larger, though our loan volume per account is the same. We're earning greater revenue by focusing on a stronger save rate, that's all. Note that protected loan margins use the BAU loan yield calculation, since these are existing customers, not new customers.

Scenario: Hosted NLO Investment				
	Year 1	Year 2	Year 3	Total (nominal)
<b>Income from Retail Loans</b>				
<b>Leads Development</b>				
Leads	400,000	400,000	400,000	1,200,000
Close Rate	0.20%	0.25%	0.30%	
New Loan Accts	800	1,000	1,200	3,000
Volume Per Loan Acct	\$ 200,000	\$ 200,000	\$ 200,000	\$ 600,000
Total Loan Volume	\$160,000,000	\$ 200,000,000	\$ 240,000,000	\$ 600,000,000
Yield	\$ 6,000,000	\$ 7,700,000	\$ 9,480,000	\$ 23,180,000
Cost Of Funds	\$ 2,000,000	\$ 2,500,000	\$ 3,000,000	\$ 7,500,000
New Loan Margin	\$ 4,000,000	\$ 5,200,000	\$ 6,480,000	\$ 15,680,000
<b>Revenue Protection</b>				
Total Households	50,000	50,000	50,000	
Loan Volume Per Household	\$ 200,000	\$ 200,000	\$ 200,000	
Households At Risk Rate	10.00%	10.00%	10.00%	
Protected Rate	35.00%	40.00%	45.00%	
Protected Loan Volume	\$350,000,000	\$ 400,000,000	\$ 450,000,000	\$ 1,200,000,000
Protected Loan Margin	\$ 8,750,000	\$ 10,000,000	\$ 11,250,000	\$ 30,000,000
Loan Income	\$ 12,750,000	\$ 15,200,000	\$ 17,730,000	\$ 45,680,000
Loan Loss Reserve	\$ 15,300,000	\$ 18,000,000	\$ 20,700,000	\$ 54,000,000
Net Charge Off	\$ 2,550,000	\$ 3,000,000	\$ 3,450,000	\$ 9,000,000

Similar assumptions are used for the deposits scenarios; we can acquire and cross-sell more effectively through targeting and through stronger yields per new customer.

Scenario: Hosted NLO Investment				
	Year 1	Year 2	Year 3	Total (nominal)
<b>Income from Retail Deposits</b>				
<b>Leads Development</b>				
Leads	500,000	500,000	500,000	1,500,000
Close Rate	2.50%	2.75%	3.00%	
New Deposit Accts	12,500	13,750	15,000	41,250
Volume Per Deposit Acct	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500
Total Deposit Volume	\$ 31,250,000	\$ 34,375,000	\$ 37,500,000	\$ 103,125,000
Yield	\$ 625,000	\$ 704,688	\$ 768,750	\$ 2,098,438
Cost Of Funds	\$ 15,625	\$ 17,188	\$ 18,750	\$ 51,563
Margin	\$ 609,375	\$ 687,500	\$ 750,000	\$ 2,046,875
<b>Revenue Protection</b>				
Total Households	200,000	200,000	200,000	
Deposit Volume Per Household	\$ 2,500	\$ 2,500	\$ 2,500	
Households At Risk Rate	25%	25%	25%	
Protected Rate	35%	40%	45%	
Protected Deposit Volume	\$ 43,750,000	\$ 50,000,000	\$ 56,250,000	\$ 150,000,000
Protected Deposit Margin	\$ 853,125	\$ 1,000,000	\$ 1,125,000	\$ 2,978,125
Deposit Income	\$ 1,462,500	\$ 1,687,500	\$ 1,875,000	\$ 5,025,000
Retail Non Interest Income	\$ 2,058,750	\$ 2,448,750	\$ 2,847,000	\$ 7,354,500

Retail non-interest income reflects fee income which is estimated as 15% of loan income plus 10% of deposit income.

## OPERATING EXPENSES

The business as usual scenario, as mentioned above, includes a nominal investment to support a legacy analytics application in use by the marketing team, which requires software licensing for upgrades and maintenance, as well as some support from IT to maintain the application and provide corporate support. The marketing team also has non-capitalized expenses to pay for data licenses from consumer and business data providers, for media buying and demand generation (i.e., pay-per-click, search engine optimization, social channels) as well as for marketing team member FTEs.

Scenario: Hosted NLO Investment				
	Year 1	Year 2	Year 3	Total (nominal)
<b>Operating expenses</b>				
<b>Technology Non-Capitalized Expenditure</b>				
Computer Equipment	\$ 15,000	\$ 15,000	\$ 15,000	\$ 45,000
Software	\$ 100,000	\$ 100,000	\$ 100,000	\$ 300,000
IT And PMO FTE	\$ 175,000	\$ 175,000	\$ 175,000	\$ 525,000
Total	\$ 290,000	\$ 290,000	\$ 290,000	\$ 870,000
<b>Marketing Non-Capitalized Expenditure</b>				
Incumbent Software Licenses	\$ -	\$ -	\$ -	\$ -
Incumbent Data Providers	\$ 200,000	\$ 200,000	\$ 200,000	\$ 600,000
Media Buying And Demand Generation	\$ 300,000	\$ 300,000	\$ 300,000	\$ 900,000
Marketing FTE	\$ 450,000	\$ 450,000	\$ 450,000	\$ 1,350,000
Total	\$ 950,000	\$ 950,000	\$ 950,000	\$ 2,850,000

## INVESTMENT SCHEDULES FOR CAPITAL ASSETS AND OPERATIONAL EXPENSES

The amortization schedule for the two solution investment scenarios appears on a companion worksheet. In this model, the bank uses a 60-month amortization schedule for assets of this class. Please note the difference in the amortization schedule and the planning horizon for the solution investment. By effectively omitting costs for the amortized capital investment for years 4 and 5 from the solution investment comparison between on-premise and hosted solutions, the NPV for both solutions is a lot closer than if all costs had been compared. However, many strategic investments that include software licenses are for 3-year terms, and a 5-year planning horizon for a line of business solution is often ready to be upgraded by year 3.

The on-premise solution scenario assumes that there is a \$1.5mm investment in software licenses, a \$1.5mm investment in professional services to implement the software and build analytics assets for the bank using that software, \$0.5mm investment in hardware and supporting software (e.g., operating systems, databases, backup, storage, security, etc.), and \$0.75mm investment in internal technology support to support the professional services team and to provide long-run support for the investment. This represents a \$4.25mm up-front cash outlay, which will be amortized over 60 months, at \$0.85mm per year. In addition to these capitalized costs, there will also be ongoing software licenses costs for maintenance, which are not typically capitalized, as well as IT costs for upfront design, architecture and provisioning support, which are also not capitalized. Finally, because of the extensive work required to onboard the new solution, perform iterative design and knowledge transfer between the professional services team and the technology team, testing and validation, the on-premise solution will require roughly a year to start producing results in production for the bank (if not longer).

In comparison, the hosted solution will not incur any capital expenses. The bank will leverage the capital which the solutions provider has already deployed, plus will rely on the solutions provider to supply a single environment and team to maintain the solution for the bank. The start-up time is substantially faster as well, and the assumption is that the solution can be ready to start producing results in the same fiscal year as the purchase decision. Bank technology will still need to vet the solution provider's capabilities, management controls and compliance with standards, and will need to provide a data feed to the solution provider. In many cases, because the solution provider is leveraging their reduced costs of using their own environment, they can pass some of these savings along to the bank in terms of reduced software licensing costs and professional services costs.

Amortization schedule						
On-premise solution: Capitalized expenses	Upfront amount	Year 1	Year 2	Year 3	Year 4	Year 5
NLO solution software licenses, 3 year term	\$ 1,500,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000
Professional services implementation	\$ 1,500,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 300,000
Hardware and operating systems	\$ 500,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000
IT staff	\$ 750,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000
Upfront cash outlay	\$ 4,250,000					
Amortization		\$ 850,000	\$ 850,000	\$ 850,000	\$ 850,000	\$ 850,000
On-premise solution: Non-capitalized expenses						
NLO solution software maintenance		\$ -	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000
IT expenses		\$ 200,000	\$ -	\$ -	\$ -	\$ -
Total non-capitalized expenses		\$ 200,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000
Total on-premise solution expenses		\$1,050,000	\$1,100,000	\$1,100,000	\$1,100,000	\$1,100,000
Hosted solution						
Upfront amount	Year 1	Year 2	Year 3	Year 4	Year 5	
NLO solution licenses	\$ -	\$ 360,000	\$ 360,000	\$ 360,000		
Professional services	\$ -	\$ 480,000	\$ 480,000	\$ 480,000		
Internal IT expenses	\$ -	\$ 50,000	\$ 15,000	\$ 15,000		
Upfront cash outlay	\$ -					
Total hosted solution expenses		\$ 890,000	\$ 855,000	\$ 855,000		

## INCOME STATEMENT

The next section of the worksheet is the income statement. This starts with net interest margins, calculated as the sum of margin on loans and deposits, minus incremental costs for larger loan loss reserves and net charge offs that accrue due to larger loan volumes. Adding non-interest margin (i.e., fee income) produces the total revenue for the income statement. Total expenses are the sum of business-as-usual expenses plus solution-incurred expenses. BAU expenses include non-capitalized expenses for the business unit and technology, to which we add solution expenses for amortized capital plus non-capitalized expenses in each year.

After subtracting expenses from revenues and applying the 35% income tax provision on gross income, we can finally calculate net income for the various scenarios. The upfront investment in capital plus the delayed start in producing customer-driven results for the bank means that the on-premise solution will produce a drag on net income in year 1, but will quickly accelerate in years 2 and 3 to produce substantial incremental net income. The hosted solution will produce even larger net income, in part due to the faster start-up time to produce results, and the reduced capital investment.

Scenario: Hosted NLO Investment				
	Year 1	Year 2	Year 3	Total (nominal)
<b>Income and Cash Flow Statements</b>				
<b>Revenue</b>				
Margin On Loans	\$ 12,750,000	\$ 15,200,000	\$ 17,730,000	\$ 45,680,000
Margin On Deposits	\$ 1,462,500	\$ 1,687,500	\$ 1,875,000	\$ 5,025,000
Change to Net Charge Off	\$ (600,000)	\$ (800,000)	\$ (1,000,000)	\$ (2,400,000)
Sum: Net Interest Margin	\$ 13,612,500	\$ 16,087,500	\$ 18,605,000	\$ 48,305,000
Non-Interest Income	\$ 2,058,750	\$ 2,448,750	\$ 2,847,000	\$ 7,354,500
Sum: Total Revenue	\$ 15,671,250	\$ 18,536,250	\$ 21,452,000	\$ 55,659,500
<b>Business-as-Usual (BAU) Expenses</b>				
Non-Capitalized Salaries And Benefits	\$ 625,000	\$ 625,000	\$ 625,000	\$ 1,875,000
Non-Capitalized Other Expenses	\$ 615,000	\$ 615,000	\$ 615,000	\$ 1,845,000
Total BAU Expenses	\$ 1,240,000	\$ 1,240,000	\$ 1,240,000	\$ 3,720,000
<b>Solution expenses</b>				
Amortization on capitalized assets	\$ -	\$ -	\$ -	\$ -
Total non-capitalized expenses	\$ 890,000	\$ 855,000	\$ 855,000	\$ 2,600,000
Total solution expenses	\$ 890,000	\$ 855,000	\$ 855,000	\$ 2,600,000
Total expenses	\$ 2,130,000	\$ 2,095,000	\$ 2,095,000	\$ 6,320,000
Pre-Tax Operating Income	\$ 13,541,250	\$ 16,441,250	\$ 19,357,000	\$ 49,339,500
Income Tax	\$ 4,739,438	\$ 5,754,438	\$ 6,774,950	\$ 17,268,825
<b>Net Income</b>	\$ 8,801,813	\$ 10,686,813	\$ 12,582,050	\$ 32,070,675



## CASH FLOW STATEMENT

The cash flow statement is also useful in reflecting on the impact of the upfront cash outlay for the on-premise solution, which still impacts cash regardless of the amortization schedule. Cash flow starts with the net income, then adds in book-level depreciation on the assets that have been capitalized, since these are not a cash item. From this, the net cash outlay for the solution investment and the post-tax portion of the incremental loan loss allowance is subtracted from the income plus depreciation amount. This yields total cash flow for the investment.

Scenario: Hosted NLO Investment			
	Year 1	Year 2	Year 3
<b>Income and Cash Flow Statements</b>			
<b>Revenue</b>			
<b>Cash Flow</b>			
Net Income	\$ 8,801,813	\$ 10,686,813	\$ 12,582,050
Book Depreciation	\$ -	\$ -	\$ -
Project Cash Outlays (Negative)	\$ (890,000)	\$ (855,000)	\$ (855,000)
Change To After-tax Loan Loss Reserve	\$ (2,340,000)	\$ (3,120,000)	\$ (3,900,000)
Total Cash Flow	\$ 5,571,813	\$ 6,711,813	\$ 7,827,050
<b>Net Present Value</b>	\$15,918,680		

The on-premise solutions produces a cash hit in year 1 as expected, but rebounds in years 2 and 3. The hosted solution exhibits a cash hit more due to the incremental loan loss allowance expectation due to increasing loan exposures faster and larger than with the on-premise solution, but since there is no upfront cash outlay for software, hardware and other technology costs, the year 1 cash impact is positive rather than negative.

The net present value of the net income stream, discounted at the cost of funds for loans (which we use since it represents the significantly larger proportion of net income earned from lending compared to deposits, and is more conservative financially) over a 3 year period, is \$10mm for the on-premise solution and \$15mm for the hosted solution.

Some key drivers of this impact include: the startup time for the on-premise solution is slower than for the hosted solution; the loan loss reserve rate is larger than the loan spread rate; the income from deposits is substantially smaller than for lending; most importantly, the income derived from this solution is only for a single lending portfolio and a single deposit portfolio, and relatively small ones at that. More and larger lending and deposit portfolios, as well as wealth management portfolios, will enjoy the benefits of scaling the same investment across more customers, prospects and bank products.

## Demand-side investment model

Once we've determined the capital investment strategy to implement a next best action customer analytics strategy, and what sort of solution platform to use, the next question is, which customers, which offers and when should we execute these next best actions. This is the role of the marketing and sales leaders, and our advice with these leaders is to focus on the execution strategies that will earn the company the greatest return given how the company earns that income, linked back to both top-down executive leadership direction around income and cost of funds drivers, as well as the customer behavior that indicates where the best bottom-up opportunities present themselves.

Portfolio	Product	Offer	Priority	Eligible contacts 2017	Offers to be sent	Conversion rate (cumulative)	Deposits per conversion	Loan margin \$ per conversion	Fee \$ per conversion	Income	Marketing cost per contact	Variable marketing costs	Net income
1: Retail	DDA	New customer onboarding	A	20,000	20,000	4.0%	\$ 2,000	\$ -	\$ -	\$ 40,000	\$ 1.00	\$ 20,000	\$ 20,000
1: Retail	DDA	Access checking acquisition	A	500,000	75,000	2.0%	\$ 500	\$ -	\$ -	\$ 125,000	\$ 0.50	\$ 37,500	\$ 87,500
1: Retail	DDA	Rewards checking acquisition	A	250,000	50,000	1.0%	\$ 1,000	\$ -	\$ 50	\$ 181,250	\$ 0.50	\$ 25,000	\$ 156,250
1: Retail	DDA	Platinum checking acquisition	A	100,000	50,000	1.0%	\$ 2,000	\$ -	\$ 50	\$ 97,500	\$ 0.50	\$ 25,000	\$ 72,500
1: Retail	DDA	Checking retention	A	150,000	25,000	10.0%	\$ 5,000	\$ -	\$ -	\$ 281,250	\$ 0.05	\$ 1,250	\$ 280,000
1: Retail	DDA	Online banking activation	B	80,000	80,000	5.0%	\$ 200	\$ -	\$ -	\$ 20,000	\$ 0.02	\$ 1,600	\$ 18,400
1: Retail	DDA	Online billpay activation	B	50,000	50,000	2.0%	\$ 1,000	\$ -	\$ 30	\$ 28,500	\$ 0.02	\$ 1,000	\$ 27,500
1: Retail	TDA	CD/MMA acquisition	C	300,000	-	0.0%	\$ 3,000	\$ -	\$ -	\$ -	\$ 0.50	\$ -	\$ -
1: Retail	Credit	Rewards credit acquisition	B	500,000	100,000	1.0%	\$ 5,000	\$ 200	\$ 25	\$ 1,018,750	\$ 0.50	\$ 50,000	\$ 968,750
1: Retail	Credit	Cashback credit acquisition	B	500,000	100,000	1.0%	\$ 5,000	\$ 200	\$ 25	\$ 1,018,750	\$ 0.50	\$ 50,000	\$ 968,750
1: Retail	Credit	Travel credit acquisition	B	300,000	50,000	1.0%	\$ 3,000	\$ 200	\$ 25	\$ 611,250	\$ 0.50	\$ 25,000	\$ 586,250
1: Retail	Credit	Platinum credit acquisition	B	100,000	200,000	1.5%	\$ 1,500	\$ 350	\$ 50	\$ 543,750	\$ 0.50	\$ 100,000	\$ 443,750
1: Retail	Credit	College/secured credit acquisition	C	30,000	-	0.0%	\$ -	\$ 150	\$ 75	\$ -	\$ 0.50	\$ -	\$ -
1: Retail	Credit	Credit activation	B	25,000	20,000	10.0%	\$ -	\$ 100	\$ 15	\$ 260,625	\$ 0.02	\$ 400	\$ 260,225
1: Retail	Credit	Credit sales stimulation	B	50,000	150,000	5.0%	\$ -	\$ 150	\$ -	\$ 337,500	\$ 0.10	\$ 15,000	\$ 322,500
1: Retail	Credit	Credit retention: balance	B	20,000	10,000	5.0%	\$ -	\$ 500	\$ 15	\$ 69,638	\$ 0.05	\$ 500	\$ 69,138
1: Retail	Credit	Credit retention: spend	B	20,000	10,000	3.0%	\$ -	\$ 300	\$ 15	\$ 25,583	\$ 0.05	\$ 500	\$ 25,083
1: Retail	Credit	Credit retention: account	B	20,000	5,000	5.0%	\$ -	\$ 300	\$ 25	\$ 44,063	\$ 0.02	\$ 100	\$ 43,963
1: Retail	LOC	Unsecured LOC	B	10,000	20,000	1.0%	\$ 100	\$ 500	\$ 800	\$ 78,000	\$ 0.05	\$ 1,000	\$ 77,000
1: Retail	LOC	Secured LOC	B	10,000	30,000	1.0%	\$ 100	\$ 500	\$ 50	\$ 96,000	\$ 0.05	\$ 1,500	\$ 94,500
1: Retail	Real estate	HELOC	B	60,000	125,000	2.0%	\$ -	\$ 750	\$ -	\$ 810,000	\$ 0.50	\$ 62,500	\$ 747,500
1: Retail	Real estate	Mortgage	B	50,000	30,000	0.5%	\$ 250	\$ 500	\$ 200	\$ 613,125	\$ 5.00	\$ 150,000	\$ 463,125
1: Retail	Insurance	Auto/home insurance acquisition	C	75,000	-	0.0%	\$ -	\$ -	\$ 300	\$ -	\$ 0.05	\$ -	\$ -
1: Retail	Insurance	HSA acquisition	C	50,000	-	0.0%	\$ -	\$ -	\$ 150	\$ -	\$ 0.10	\$ -	\$ -

## OFFER INVESTMENT PRIORITIES

A simple way to start this priority-setting exercise, at the strategic level, is to evaluate which customer segments, products and offers will generate returns, given the eligible market and the income generation potential via deposits, loans, fees, and the cost implications of the channels through which the offers are delivered, as well as the response rate to those offers and the intensity of offer distribution. The next best offer engine will determine the offer allocation at the most granular level of analysis, but the role of the marketing and sales executives should focus on the question: out of hundreds of potential offers, what are the 20 to 30 offers with which we should start our analysis?

For this reason, we built a second decision-making tool, focused on the middle-out decision to pair marketing execution budgets with offers that will generate suitable returns on that investment. We know that when working at the aggregate level like this, we will lose a certain degree of precision and granularity, but the purpose of this tool is to stack-rank products and offers into high, medium and low potential, versus determining a very precise estimate of the return per offer. This serves as a high-level P&L analysis of each offer compared with every other offer. The drivers of this analysis include eligible market size, aggregate conversion rate, the conversion of deposit, loan and non-interest revenue sources into income estimates, and the subtraction of marketing execution costs from revenue to determine an aggregate income generation potential per offer.

The results of this exercise return a simple list of high, medium and low potential offers. The next step is for the marketing leadership to take the analysis to the next level of detail, for the high potential offers, within a fully-fledged next best offer analysis. The approach for this next best offer analysis is covered in detail in the Corios RedPaper, "Next Best Offer Campaigns: Lessons Learned from a Decade of Marketing Optimization."

# Appendix 1: Example of complete supply-side investment model

In the initial section of this RedPaper, we presented small portions of the supply-side investment model in the interest in focus and simplicity. However, the full structure of the supply-side model, for a single retail loan and deposit portfolio, is also available on the following page. It's useful for anyone reading this RedPaper on-screen, although it's admittedly difficult to read when printed on paper.

The first page presents the supply-side investment model for the hosted analytics scenario, and the second page presents the same investment model for an on-premise analytics solution.

We encourage our readers to request the digital format of the supply-side model, so that we can mutually apply it to an investment you anticipate making in the near term. Email Robin Way at [president@coriosgroup.com](mailto:president@coriosgroup.com) and we'll be happy to share it with you.

	Scenario: Business as usual				Scenario: Hosted NLO Investment			
	Year 1	Year 2	Year 3	Total (nominal)	Year 1	Year 2	Year 3	Total (nominal)
<b>Financial revenue assumptions</b>								
Loan yield	3.75%	3.75%	3.75%		3.75%	3.85%	3.95%	
Loan funding cost	1.25%	1.25%	1.25%		1.25%	1.25%	1.25%	
Loan spread	2.50%	2.50%	2.50%		2.50%	2.60%	2.70%	
Loan loss reserve	3.00%	3.00%	3.00%		3.00%	3.00%	3.00%	
Loan net charge off	0.50%	0.50%	0.50%		0.50%	0.50%	0.50%	
Deposit yield	2.00%	2.00%	2.00%		2.00%	2.05%	2.05%	
Deposit funding cost	0.05%	0.05%	0.05%		0.05%	0.05%	0.05%	
Deposit spread	1.95%	1.95%	1.95%		1.95%	2.00%	2.00%	
Income Tax Rate	35.00%	35.00%	35.00%		35.00%	35.00%	35.00%	
<b>Income from Retail Loans</b>								
<b>Leads Development</b>								
Leads	400,000	400,000	400,000	1,200,000	400,000	400,000	400,000	1,200,000
Close Rate	0.05%	0.05%	0.05%		0.20%	0.25%	0.30%	
New Loan Accts	200	200	200	600	800	1,000	1,200	3,000
Volume Per Loan Acct	\$ 200,000	\$ 200,000	\$ 200,000	600,000	\$ 200,000	\$ 200,000	\$ 200,000	600,000
Total Loan Volume	\$ 40,000,000	\$ 40,000,000	\$ 40,000,000	120,000,000	\$ 160,000,000	\$ 200,000,000	\$ 240,000,000	600,000,000
Yield	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	4,500,000	\$ 6,000,000	\$ 7,700,000	\$ 9,480,000	23,180,000
Cost Of Funds	\$ 500,000	\$ 500,000	\$ 500,000	1,500,000	\$ 2,000,000	\$ 2,500,000	\$ 3,000,000	7,500,000
New Loan Margin	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	3,000,000	\$ 4,000,000	\$ 5,200,000	\$ 6,480,000	15,680,000
<b>Revenue Protection</b>								
Total Households	50,000	50,000	50,000		50,000	50,000	50,000	
Loan Volume Per Household	\$ 200,000	\$ 200,000	\$ 200,000		\$ 200,000	\$ 200,000	\$ 200,000	
Households At Risk Rate	10.00%	10.00%	10.00%		10.00%	10.00%	10.00%	
Protected Rate	25.00%	25.00%	25.00%		35.00%	40.00%	45.00%	
Protected Loan Volume	\$ 250,000,000	\$ 250,000,000	\$ 250,000,000	750,000,000	\$ 350,000,000	\$ 400,000,000	\$ 450,000,000	1,200,000,000
Protected Loan Margin	\$ 6,250,000	\$ 6,250,000	\$ 6,250,000	18,750,000	\$ 8,750,000	\$ 10,000,000	\$ 11,250,000	30,000,000
Loan Income	\$ 7,250,000	\$ 7,250,000	\$ 7,250,000	21,750,000	\$ 12,750,000	\$ 15,200,000	\$ 17,730,000	45,680,000
Loan Loss Reserve	\$ 8,700,000	\$ 8,700,000	\$ 8,700,000	26,100,000	\$ 15,300,000	\$ 18,000,000	\$ 20,700,000	54,000,000
Net Charge Off	\$ 1,450,000	\$ 1,450,000	\$ 1,450,000	4,350,000	\$ 2,550,000	\$ 3,000,000	\$ 3,450,000	9,000,000
<b>Income from Retail Deposits</b>								
<b>Leads Development</b>								
Leads	500,000	500,000	500,000	1,500,000	500,000	500,000	500,000	1,500,000
Close Rate	2.00%	2.00%	2.00%		2.50%	2.75%	3.00%	
New Deposit Accts	10,000	10,000	10,000	30,000	12,500	13,750	15,000	41,250
Volume Per Deposit Acct	\$ 2,500	\$ 2,500	\$ 2,500		\$ 2,500	\$ 2,500	\$ 2,500	
Total Deposit Volume	\$ 25,000,000	\$ 25,000,000	\$ 25,000,000	75,000,000	\$ 31,250,000	\$ 34,375,000	\$ 37,500,000	103,125,000
Yield	\$ 500,000	\$ 500,000	\$ 500,000	1,500,000	\$ 625,000	\$ 704,688	\$ 768,750	2,098,438
Cost Of Funds	\$ 12,500	\$ 12,500	\$ 12,500	37,500	\$ 15,625	\$ 17,188	\$ 18,750	51,563
Margin	\$ 487,500	\$ 487,500	\$ 487,500	1,462,500	\$ 609,375	\$ 687,500	\$ 750,000	2,046,875
<b>Revenue Protection</b>								
Total Households	200,000	200,000	200,000		200,000	200,000	200,000	
Deposit Volume Per Household	\$ 2,500	\$ 2,500	\$ 2,500		\$ 2,500	\$ 2,500	\$ 2,500	
Households At Risk Rate	25%	25%	25%		25%	25%	25%	
Protected Rate	25%	25%	25%		35%	40%	45%	
Protected Deposit Volume	\$ 31,250,000	\$ 31,250,000	\$ 31,250,000	\$ 93,750,000	\$ 43,750,000	\$ 50,000,000	\$ 56,250,000	150,000,000
Protected Deposit Margin	\$ 609,375	\$ 609,375	\$ 609,375	1,828,125	\$ 853,125	\$ 1,000,000	\$ 1,125,000	2,978,125
Deposit Income	\$ 1,096,875	\$ 1,096,875	\$ 1,096,875	\$ 3,290,625	\$ 1,462,500	\$ 1,687,500	\$ 1,875,000	5,025,000
Retail Non Interest Income	\$ 1,197,188	\$ 1,197,188	\$ 1,197,188	\$ 3,591,563	\$ 2,058,750	\$ 2,448,750	\$ 2,847,000	7,354,500
<b>Operating expenses</b>								
<b>Technology Non-Capitalized Expenditure</b>								
Computer Equipment	\$ 15,000	\$ 15,000	\$ 15,000	\$ 45,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 45,000
Software	\$ 100,000	\$ 100,000	\$ 100,000	\$ 300,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 300,000
IT And PMO FTE	\$ 175,000	\$ 175,000	\$ 175,000	\$ 525,000	\$ 175,000	\$ 175,000	\$ 175,000	\$ 525,000
Total	\$ 290,000	\$ 290,000	\$ 290,000	\$ 870,000	\$ 290,000	\$ 290,000	\$ 290,000	\$ 870,000
<b>Marketing Non-Capitalized Expenditure</b>								
Incumbent Software Licenses	\$ 250,000	\$ 250,000	\$ 250,000	\$ 750,000	\$ -	\$ -	\$ -	\$ -
Incumbent Data Providers	\$ 200,000	\$ 200,000	\$ 200,000	\$ 600,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 600,000
Media Buying And Demand Generation	\$ 300,000	\$ 300,000	\$ 300,000	\$ 900,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 900,000
Marketing FTE	\$ 450,000	\$ 450,000	\$ 450,000	\$ 1,350,000	\$ 450,000	\$ 450,000	\$ 450,000	\$ 1,350,000
Total	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 3,600,000	\$ 950,000	\$ 950,000	\$ 950,000	\$ 2,850,000
<b>Income and Cash Flow Statements</b>								
<b>Revenue</b>								
Margin On Loans	\$ 7,250,000	\$ 7,250,000	\$ 7,250,000	\$ 21,750,000	\$ 12,750,000	\$ 15,200,000	\$ 17,730,000	\$ 45,680,000
Margin On Deposits	\$ 1,096,875	\$ 1,096,875	\$ 1,096,875	\$ 3,290,625	\$ 1,462,500	\$ 1,687,500	\$ 1,875,000	\$ 5,025,000
Change to Net Charge Off	\$ -	\$ -	\$ -	\$ -	\$ (600,000)	\$ (800,000)	\$ (1,000,000)	\$ (2,400,000)
Sum: Net Interest Margin	\$ 8,346,875	\$ 8,346,875	\$ 8,346,875	\$ 25,040,625	\$ 13,612,500	\$ 16,087,500	\$ 18,605,000	\$ 48,305,000
Non-Interest Income	\$ 1,197,188	\$ 1,197,188	\$ 1,197,188	\$ 3,591,563	\$ 2,058,750	\$ 2,448,750	\$ 2,847,000	\$ 7,354,500
Sum: Total Revenue	\$ 9,544,063	\$ 9,544,063	\$ 9,544,063	\$ 28,632,188	\$ 15,671,250	\$ 18,536,250	\$ 21,452,000	\$ 55,659,500
<b>Business-as-Usual (BAU) Expenses</b>								
Non-Capitalized Salaries And Benefits	\$ 625,000	\$ 625,000	\$ 625,000	\$ 1,875,000	\$ 625,000	\$ 625,000	\$ 625,000	\$ 1,875,000
Non-Capitalized Other Expenses	\$ 865,000	\$ 865,000	\$ 865,000	\$ 2,595,000	\$ 615,000	\$ 615,000	\$ 615,000	\$ 1,845,000
Total BAU Expenses	\$ 1,490,000	\$ 1,490,000	\$ 1,490,000	\$ 4,470,000	\$ 1,240,000	\$ 1,240,000	\$ 1,240,000	\$ 3,720,000
<b>Solution expenses</b>								
Amortization on capitalized assets	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total non-capitalized expenses	\$ -	\$ -	\$ -	\$ -	\$ 890,000	\$ 855,000	\$ 855,000	\$ 2,600,000
Total solution expenses	\$ -	\$ -	\$ -	\$ -	\$ 890,000	\$ 855,000	\$ 855,000	\$ 2,600,000
Total expenses	\$ 1,490,000	\$ 1,490,000	\$ 1,490,000	\$ 4,470,000	\$ 2,130,000	\$ 2,095,000	\$ 2,095,000	\$ 6,320,000
Pre-Tax Operating Income	\$ 8,054,063	\$ 8,054,063	\$ 8,054,063	\$ 24,162,188	\$ 13,541,250	\$ 16,441,250	\$ 19,357,000	\$ 49,339,500
Income Tax	\$ 2,818,922	\$ 2,818,922	\$ 2,818,922	\$ 8,456,766	\$ 4,739,438	\$ 5,754,438	\$ 6,774,950	\$ 17,268,825
Net Income	\$ 5,235,141	\$ 5,235,141	\$ 5,235,141	\$ 15,705,422	\$ 8,801,813	\$ 10,686,813	\$ 12,582,050	\$ 32,070,675
<b>Cash Flow</b>								
Net Income	\$ 5,235,141	\$ 5,235,141	\$ 5,235,141		\$ 8,801,813	\$ 10,686,813	\$ 12,582,050	
Book Depreciation	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	
Project Cash Outlays (Negative)	\$ -	\$ -	\$ -		\$ (890,000)	\$ (855,000)	\$ (855,000)	
Change To After-tax Loan Loss Reserve	\$ -	\$ -	\$ -		\$ (2,340,000)	\$ (3,120,000)	\$ (3,900,000)	
Total Cash Flow	\$ 5,235,141	\$ 5,235,141	\$ 5,235,141		\$ 5,571,813	\$ 6,711,813	\$ 7,827,050	
Net Present Value	\$ 15,918,680				\$ 15,918,680			



	Scenario: Business as usual				Scenario: Capitalized NLO Investment			
	Year 1	Year 2	Year 3	Total (nominal)	Year 1	Year 2	Year 3	Total (nominal)
<b>Financial revenue assumptions</b>								
Loan yield	3.75%	3.75%	3.75%		3.75%	3.85%	3.95%	
Loan funding cost	1.25%	1.25%	1.25%		1.25%	1.25%	1.25%	
Loan spread	2.50%	2.50%	2.50%		2.50%	2.60%	2.70%	
Loan loss reserve	3.00%	3.00%	3.00%		3.00%	3.00%	3.00%	
Loan net charge off	0.50%	0.50%	0.50%		0.50%	0.45%	0.40%	
Deposit yield	2.00%	2.00%	2.00%		2.00%	2.05%	2.05%	
Deposit funding cost	0.05%	0.05%	0.05%		0.05%	0.05%	0.05%	
Deposit spread	1.95%	1.95%	1.95%		1.95%	2.00%	2.00%	
Income Tax Rate	35.00%	35.00%	35.00%		35.00%	35.00%	35.00%	
<b>Income from Retail Loans</b>								
<b>Leads Development</b>								
Leads	400,000	400,000	400,000	1,200,000	400,000	400,000	400,000	1,200,000
Close Rate	0.05%	0.05%	0.05%		0.05%	0.20%	0.25%	
New Loan Accts	200	200	200	600	200	800	1,000	2,000
Volume Per Loan Acct	\$ 200,000	\$ 200,000	\$ 200,000	600,000	\$ 200,000	\$ 200,000	\$ 200,000	600,000
Total Loan Volume	\$ 40,000,000	\$ 40,000,000	\$ 40,000,000	120,000,000	\$ 40,000,000	\$ 160,000,000	\$ 200,000,000	400,000,000
Yield	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	4,500,000	\$ 1,500,000	\$ 6,160,000	\$ 7,900,000	15,560,000
Cost Of Funds	\$ 500,000	\$ 500,000	\$ 500,000	1,500,000	\$ 500,000	\$ 2,000,000	\$ 2,500,000	5,000,000
New Loan Margin	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	3,000,000	\$ 1,000,000	\$ 4,160,000	\$ 5,400,000	10,560,000
<b>Revenue Protection</b>								
Total Households	50,000	50,000	50,000		50,000	50,000	50,000	
Loan Volume Per Household	\$ 200,000	\$ 200,000	\$ 200,000		\$ 200,000	\$ 200,000	\$ 200,000	
Households At Risk Rate	10.00%	10.00%	10.00%		10.00%	10.00%	10.00%	
Protected Rate	25.00%	25.00%	25.00%		25.00%	40.00%	45.00%	
Protected Loan Volume	\$ 250,000,000	\$ 250,000,000	\$ 250,000,000	750,000,000	\$ 250,000,000	\$ 400,000,000	\$ 450,000,000	1,100,000,000
Protected Loan Margin	\$ 6,250,000	\$ 6,250,000	\$ 6,250,000	18,750,000	\$ 6,250,000	\$ 10,000,000	\$ 11,250,000	27,500,000
Loan Income	\$ 7,250,000	\$ 7,250,000	\$ 7,250,000	21,750,000	\$ 7,250,000	\$ 14,160,000	\$ 16,650,000	38,060,000
Loan Loss Reserve	\$ 8,700,000	\$ 8,700,000	\$ 8,700,000	26,100,000	\$ 8,700,000	\$ 16,800,000	\$ 19,500,000	45,000,000
Net Charge Off	\$ 1,450,000	\$ 1,450,000	\$ 1,450,000	4,350,000	\$ 1,450,000	\$ 2,520,000	\$ 2,600,000	6,570,000
<b>Income from Retail Deposits</b>								
<b>Leads Development</b>								
Leads	500,000	500,000	500,000	1,500,000	500,000	500,000	500,000	1,500,000
Close Rate	2.00%	2.00%	2.00%		2.00%	2.75%	3.00%	
New Deposit Accts	10,000	10,000	10,000	30,000	10,000	13,750	15,000	38,750
Volume Per Deposit Acct	\$ 2,500	\$ 2,500	\$ 2,500	75,000	\$ 2,500	\$ 2,500	\$ 2,500	75,000
Total Deposit Volume	\$ 25,000,000	\$ 25,000,000	\$ 25,000,000	75,000,000	\$ 25,000,000	\$ 34,375,000	\$ 37,500,000	96,875,000
Yield	\$ 500,000	\$ 500,000	\$ 500,000	1,500,000	\$ 500,000	\$ 704,688	\$ 768,750	1,973,438
Cost Of Funds	\$ 12,500	\$ 12,500	\$ 12,500	37,500	\$ 12,500	\$ 17,188	\$ 18,750	48,438
Margin	\$ 487,500	\$ 487,500	\$ 487,500	1,462,500	\$ 487,500	\$ 687,500	\$ 750,000	1,925,000
<b>Revenue Protection</b>								
Total Households	200,000	200,000	200,000		200,000	200,000	200,000	
Deposit Volume Per Household	\$ 2,500	\$ 2,500	\$ 2,500		\$ 2,500	\$ 2,500	\$ 2,500	
Households At Risk Rate	25%	25%	25%		25%	25%	25%	
Protected Rate	25%	25%	25%		25%	30%	35%	
Protected Deposit Volume	\$ 31,250,000	\$ 31,250,000	\$ 31,250,000	\$ 93,750,000	\$ 31,250,000	\$ 37,500,000	\$ 43,750,000	\$ 112,500,000
Protected Deposit Margin	\$ 609,375	\$ 609,375	\$ 609,375	\$ 1,828,125	\$ 609,375	\$ 750,000	\$ 875,000	\$ 2,234,375
Deposit Income	\$ 1,096,875	\$ 1,096,875	\$ 1,096,875	\$ 3,290,625	\$ 1,096,875	\$ 1,437,500	\$ 1,625,000	\$ 4,159,375
Retail Non Interest Income	\$ 1,197,188	\$ 1,197,188	\$ 1,197,188	\$ 3,591,563	\$ 1,197,188	\$ 2,267,750	\$ 2,660,000	\$ 6,124,938
<b>Operating expenses</b>								
<b>Technology Non-Capitalized Expenditure</b>								
Computer Equipment	\$ 15,000	\$ 15,000	\$ 15,000	\$ 45,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 45,000
Software	\$ 100,000	\$ 100,000	\$ 100,000	\$ 300,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 300,000
IT And PMO FTE	\$ 175,000	\$ 175,000	\$ 175,000	\$ 525,000	\$ 175,000	\$ 175,000	\$ 175,000	\$ 525,000
Total	\$ 290,000	\$ 290,000	\$ 290,000	\$ 870,000	\$ 290,000	\$ 290,000	\$ 290,000	\$ 870,000
<b>Marketing Non-Capitalized Expenditure</b>								
Incumbent Software Licenses	\$ 250,000	\$ 250,000	\$ 250,000	\$ 750,000	\$ -	\$ -	\$ -	\$ -
Incumbent Data Providers	\$ 200,000	\$ 200,000	\$ 200,000	\$ 600,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 600,000
Media Buying And Demand Generation	\$ 300,000	\$ 300,000	\$ 300,000	\$ 900,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 900,000
Marketing FTE	\$ 450,000	\$ 450,000	\$ 450,000	\$ 1,350,000	\$ 450,000	\$ 450,000	\$ 450,000	\$ 1,350,000
Total	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 3,600,000	\$ 950,000	\$ 950,000	\$ 950,000	\$ 2,850,000
<b>Income and Cash Flow Statements</b>								
<b>Revenue</b>								
Margin On Loans	\$ 7,250,000	\$ 7,250,000	\$ 7,250,000	\$ 21,750,000	\$ 7,250,000	\$ 14,160,000	\$ 16,650,000	\$ 38,060,000
Margin On Deposits	\$ 1,096,875	\$ 1,096,875	\$ 1,096,875	\$ 3,290,625	\$ 1,096,875	\$ 1,437,500	\$ 1,625,000	\$ 4,159,375
Change to Net Charge Off	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (540,000)	\$ (640,000)	\$ (1,180,000)
Sum: Net Interest Margin	\$ 8,346,875	\$ 8,346,875	\$ 8,346,875	\$ 25,040,625	\$ 8,346,875	\$ 15,057,500	\$ 17,635,000	\$ 41,039,375
Non-Interest Income	\$ 1,197,188	\$ 1,197,188	\$ 1,197,188	\$ 3,591,563	\$ 1,197,188	\$ 2,267,750	\$ 2,660,000	\$ 6,124,938
Sum: Total Revenue	\$ 9,544,063	\$ 9,544,063	\$ 9,544,063	\$ 28,632,188	\$ 9,544,063	\$ 17,325,250	\$ 20,295,000	\$ 47,164,313
<b>Business-as-Usual (BAU) Expenses</b>								
Non-Capitalized Salaries And Benefits	\$ 625,000	\$ 625,000	\$ 625,000	\$ 1,875,000	\$ 625,000	\$ 625,000	\$ 625,000	\$ 1,875,000
Non-Capitalized Other Expenses	\$ 865,000	\$ 865,000	\$ 865,000	\$ 2,595,000	\$ 615,000	\$ 615,000	\$ 615,000	\$ 1,845,000
Total BAU Expenses	\$ 1,490,000	\$ 1,490,000	\$ 1,490,000	\$ 4,470,000	\$ 1,240,000	\$ 1,240,000	\$ 1,240,000	\$ 3,720,000
<b>Solution expenses</b>								
Amortization on capitalized assets	\$ -	\$ -	\$ -	\$ -	\$ 850,000	\$ 850,000	\$ 850,000	\$ 2,550,000
Total non-capitalized expenses	\$ -	\$ -	\$ -	\$ -	\$ 200,000	\$ 250,000	\$ 250,000	\$ 700,000
Total solution expenses	\$ -	\$ -	\$ -	\$ -	\$ 1,050,000	\$ 1,100,000	\$ 1,100,000	\$ 3,250,000
Total expenses	\$ 1,490,000	\$ 1,490,000	\$ 1,490,000	\$ 4,470,000	\$ 2,290,000	\$ 2,340,000	\$ 2,340,000	\$ 6,970,000
Pre-Tax Operating Income	\$ 8,054,063	\$ 8,054,063	\$ 8,054,063	\$ 24,162,188	\$ 7,254,063	\$ 14,985,250	\$ 17,955,000	\$ 40,194,313
Income Tax	\$ 2,818,922	\$ 2,818,922	\$ 2,818,922	\$ 8,456,766	\$ 2,538,922	\$ 5,244,838	\$ 6,284,250	\$ 14,068,009
Net Income	\$ 5,235,141	\$ 5,235,141	\$ 5,235,141	\$ 15,705,422	\$ 4,715,141	\$ 9,740,413	\$ 11,670,750	\$ 26,126,303
<b>Cash Flow</b>								
Net Income	\$ 5,235,141	\$ 5,235,141	\$ 5,235,141		\$ 4,715,141	\$ 9,740,413	\$ 11,670,750	
Book Depreciation	\$ -	\$ -	\$ -		\$ 850,000	\$ 850,000	\$ 850,000	\$ 2,550,000
Project Cash Outlays (Negative)	\$ -	\$ -	\$ -		\$ (4,450,000)	\$ (250,000)	\$ (250,000)	\$ (5,000,000)
Change To After-tax Loan Loss Reserve	\$ -	\$ -	\$ -		\$ -	\$ (2,340,000)	\$ (3,120,000)	\$ (5,460,000)
Total Cash Flow	\$ 5,235,141	\$ 5,235,141	\$ 5,235,141		\$ 1,115,141	\$ 8,000,413	\$ 9,150,750	
Net Present Value					\$ 10,081,321			



# Conclusion

Do you need help with evaluating the investment value of an analytics-oriented customer strategy? Give Robin a call at [503.295.1685](tel:503.295.1685) or email him at [president@coriosgroup.com](mailto:president@coriosgroup.com).



# About the Author

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*Robin Way*

Robin Way is the Lead Faculty Member for Banking at the International Institute of Analytics, and is the founder and CEO of the management analytics consultancy, Corios. He has over 25 years of experience in the design, development, execution, and improvement of applied analytics models for clients in the credit, payments, lending, brokerage, insurance and energy industries. Robin was previously employed with SAS® Institute's Financial Services Business Unit as a managing analytics consultant for 12 years, in addition to another 10+ years in analytic management roles for several client-side and consulting firms.

Robin's professional passion is devoted to democratizing and demystifying the science of applied analytics. His contributions to the field correspondingly emphasize statistical visualization, analytical data preparation, predictive modeling, time series forecasting, mathematical optimization applied to marketing, and risk management strategies. Robin's undergraduate degree from the University of California at Berkeley and his subsequent graduate-level coursework emphasized the analytical modeling of human and consumer behavior.

# About Corios

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Corios is a leader in the discipline of management analytics consulting focused on helping clients across industries to bridge the gap between their data and their business decisions. The company's custom offerings provide analytical solutions for risk management and compliance, marketing, pricing, and big data initiatives. Corios' solutions have identified business improvements worth hundreds of millions of dollars for corporations across North America.

Corios believes that data-driven techniques are the key to making profitable business decisions, and that data should be simple, approachable, and implementable for both analysts and decision makers. The Corios team is persistent in their efforts to promote transparency and common process across the analytical discipline.

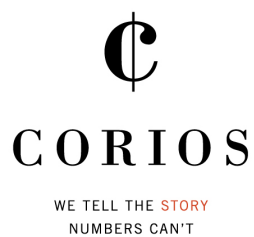
To learn more about how Corios is bridging the gap between data and business decisions, please visit [coriosgroup.com](http://coriosgroup.com).



Investing in Analytic Strategies:  
Balancing supply-side and  
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