Incite!Sales Opportunity Portfolio Analysis

Web Application User's Manual

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17. **Applicable law**. This Agreement shall be governed by and construed in accordance with the laws of the State of Georgia. The End User and the Provider hereby agree that the principles of the conflict of laws and the United Nations Convention on Contracts for the International Sale of Goods shall not apply. You expressly agree that any disputes or claims ensuing from this Agreement with respect to the Provider or any disputes or claims relating to use of the Software shall be settled by binding arbitration and You expressly agree to use the arbitration services of the Provider's choosing.

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This is the entire Agreement between the Provider and You relating to the Software and it supersedes any prior representations, discussions, undertakings, communications or advertising relating to the Software.

Introduction and Purpose

Welcome to the *Incite!Sales Opportunity Portfolio Analysis System* User's Manual. The purpose of this manual serves to provide you and your team a quick reference guide for the proper use and interpretation of the results from the web application and the data template required to capture the information that drives the web application simulation.

What is the *Incite!Sales Opportunity Portfolio Analysis System*?

Sales forecasts are notoriously biased for many reasons that range from personal motivations to errors in thinking to some of the cognitive illusions that have been identified by research in the field of behavioral economics. Identifying and managing these biases can affect how well you achieve sales targets, serve client needs, and maintain healthy cash flow to plan effectively and sustain the long term operation of your organization.

Personal motivations of sales agents routinely fall into two patterns based on their maturity and experience level: **Go-Getters** and **Sandbaggers**. Go-Getters are usually junior-level sales people who believe the world is theirs to conquer and want to rise quickly through the ranks. They use their overly optimistic forecasts as signals for their enthusiasm, confidence, and productivity at generating new leads. Sandbaggers, on the other hand, are usually senior level sales people who have finally learned that over-optimism leads to embarrassment when the Big Deal does not materialize as predicted, so they resort to under-estimating their forecasts. In the end, they look like heroes when their sales results exceed expectations by comparison to their conservative projections.

Common thinking traps or errors that often plague sales people are **entitlement bias** and **wishful thinking**. Entitlement bias is related to thinking that just because one has been successful in the past, possibly with important and high profile contract awards, that future success is not only possible but virtually certain. This behavior is also related to expert bias, a state of mind in which a person with extensive and often publicly recognized experience in a field of practice regards their predictions about future outcomes as incontrovertible. Wishful thinking occurs when people believe that their plans will work as they designed simply because they planned them, visualized the outcome, or because they have strong emotional investment in the outcome that they desire.

Finally, some of the common cognitive illusions that show up in sales forecasts are **availability bias** and **anchoring**. Availability bias is the tendency to use recently observed, emotionally impactful, or easily accessible information (usually gathered by "cherry picking") to justify a belief in the greatest likelihood of a given outcome or state of affairs among an alternate set of scenarios or conditions. To make a playful inversion on the warning commonly printed on rearview mirrors, availability bias drives the perception that images in the mirror are actually closer than they really are. Anchoring is the tendency of the mind to work from the first value that it conceives as a reference point for all other variation around it. Both availability bias and

anchoring drive a tendency to believe that initial impressions serve as best guesses of the most likely future outcomes.

Biases in sales forecasts impose a pernicious effect on your ability to operate a business effectively. Without bias-free estimates, it's nearly impossible to know how to allocate sales and support resources effectively to maximize the likelihood of capturing a sale and to apply those resources in the most value efficient manner. Inaccurate sales forecasts prevent you from knowing when income crunches might materialize and what you can do about them. Ultimately, inaccurate sales forecasts affect how well you can anticipate cash flow. As every business owner knows, cash is king.

It's not uncommon to discover that all of the motivations, attitudes, and illusions described above are operating together. Unfortunately, contrary to common belief, they don't just average out "in the wash" by a wisdom-of-the-crowds effect, particularly if there is an overabundance of one thinking style or experience level present in the sales organization. As one might anticipate, the effect on an organization can range from disappointing to disastrous, the latter especially so in situations in which sales and revenue forecasts help to inform required inventory levels, future capital spending levels, and strategic planning efforts. The more closely aligned an organization's perception of future income is to what it ultimately realizes, the better the organization can plan, adapt to changing needs, maintain morale and productivity, and satisfy customer requirements and expectations. For companies that experience low frequency sales of high value—professional service companies like engineering, architecture, consulting, or capital equipment manufacturers—getting this alignment as close as possible is immensely important.

The *Incite!Sales Opportunity Portfolio Analysis System* serves as a decision aiding tool to help your sales organization overcome many of the biases described here that probably frustrate your sales forecasts. Its purpose is to provide reasonably accurate predictions—controlled for bias—about the timing and value of opportunity revenues available to your organization so that you can make informed management decisions about them even though they are constrained under uncertainty. It will help you prioritize your attention and allocation of resources to capture those sales opportunities as efficiently as possible, and it can help your sales team continuously improve their forecasting abilities. Not only will the sales team eventually be happier, so will the CFO!

Incite!Sales Opportunity Portfolio Analysis System was developed especially for those companies that experience low frequency sales of high value. The web application is intended to be used by organizations with a relatively small sales group and limited budget for additional ancillary sales support, independent of outside consulting. Although not as deep and comprehensive as the "software and a service" advanced model offered separately, the web application provides a thorough set of analysis artifacts that will serve a small group well.

For larger sales organizations, Incite! Decision Technologies (and its related affiliates) offers a subscription consultative service supported by a more sophisticated model that provides

1. A more mature expertise in assessing the inputs to the model and interpretation of the results;
2. A deeper exploration into the individual sales agent performance;
3. A finer-grained assessment of the individual sales opportunity characteristics.

If you are interested in learning more about our advanced version of the system, or if you want a proprietary version of the system that conforms more to your organization's specific needs, please contact us through the channels provided in the **Contact Information** section at the end of this document.

What You Need

The *Incite!Sales Opportunity Portfolio Analysis* web application is an advanced Monte Carlo simulation model that requires its inputs to be provided in a specific format. However, the web application does not store any customer data between sessions to ensure that your proprietary sales data remains under your control. In order to satisfy the data structure requirements as well as security concerns, we require that you submit your sales opportunity data in a preformatted Excel template: '`InciteSales_Opportunity_Data.xltx`.' A link to this file will be sent to you when you subscribe to the web application, but you can always get a new one at the [Support Resources](#) page on the web site.

In addition to the data template, you will also need a license code that will be sent to you when you subscribe. The data template has a field for you to enter your unique code.

Although not necessary, there are two small web utilities that will help you use the data template more effectively. They are…

- **Subject Matter Expert Distribution Calibration**:
  http://incitesales.incitedecisiontech.com/calibrate1.shtml
- **Subject Matter Expert Discrete Probability Calibration**:
  http://incitesales.incitedecisiontech.com/calibrate2.shtml

Using the Data Template

Once you download the template, you can create new data capture files simply by double clicking the template file. Excel will create a new file with the '`.xlsx`' extension, which you must save with a new name. You can create as many data capture files as you need; e.g., one for each distinct sales group. You use the files with the '`.xlsx`' extension to capture data and upload it to the web application.

The data template is composed of eight worksheets that capture information for ten variables per sales opportunity. It's important to understand that the template structure must not be altered, and information must be supplied in in the format required or else the simulation model will not work correctly or provide results that are intelligible.

The worksheets are:

1. **Instructions** – provides very brief instructions for the use of the model.
2. **AccountInfo** – captures information about sales agents, the opportunities they are pursuing, your license code, and the number of trials that are used in the simulation.
3. **UnitPrice** – captures information about the price you will potentially negotiate with your client opportunity.
4. **UnitsSold** – captures information about the number of units you will potentially sell to your client opportunity.
5. **AwardDate** – captures information about the date by which you estimate your potential client opportunity will award you a contract. This worksheet also requires you to supply the Terms and Payments associated with each opportunity.
6. **Effort** – captures information about the number of hours that are required to reach a resolution with the client opportunity.
7. **IncidentalCost** – captures information about additional costs that may be required to reach a resolution with the client opportunity.
8. **ProbLoss** – captures your assessment for the likelihood that you will NOT be awarded a contract by the client opportunity.

More detailed information about each sheet follows here.

AccountInfo

The **AccountInfo** worksheet is where you will begin to define opportunity characteristics, your own sales organization's information, and system details.

Opp_ID	Opp_Name	Opp_Status	Assigned_Agent
1	Whiskers and Fleas	Open	Bob X.
2	Cheddar Cheese	Open	Alice M.
3	Abominable Snowman	Open	Frank C.
4	Treason on the High Seas	Open	Mimi P.
5	Pinky and the Brain	Open	Fred A.
6	Clams and Mushrooms	Open	Antonio R.
7	Concert at Red Rocks	Open	Sheila Q.
8	Fast Times at Ridgemont High	Open	Sandra D.
9	Monkey See Monkey Do	Open	Bill S.
10	Mine Eyes Have Seen the Glory	Open	Pat H.
11	Punky Brewster Lives	Open	Robbie D.
12	Live at the Magic Kingdom	Open	Mickey M.
13	House Music	Open	Mickey M.
14	Kindle Fire Truck	Open	Antonio R.
15			
16			

Agent	Wage_Rate
Bob X.	100
Alice M.	100
Frank C.	100
Mimi P.	100
Fred A.	100
Antonio R.	100
Sheila Q.	100
Sandra D.	100
Bill S.	100
Pat H.	100
Robbie D.	100
Mickey M.	100

Status Values	
Open	Still in pursuit
Lost	Opportunity said no
Closed	Opportunity awarded

Simulation Trials	1000

License Code	GeorgeBurdell201609121583361555

Throughout the template, cells are colored gray, blue, and green. Gray cells cannot be altered. They contain values that either are predefined or are the result of an underlying formula. Green cells require numerical values. Blue cells require textual values.

The first thing you will need to do is supply the names of your sales agents under the **Agent** column and their hourly wage rate under the **Wage_Rate** column. If the sales agents are compensated on an annual salary basis, the wage rate should be their fully loaded salary divided

by the total number of annual work hours. For example, if Bob X. makes a fully loaded salary of $180,000 per year and your organization observes 245 8-hour work days per year, the wage rate should be changed to $91.84 in the cell to the right of his name.

In each row in the **Opp_Name** column, supply the names of the sales opportunities that are currently being pursued by the agents. You can codify these names for an additional level of security if you feel like that is warranted. While the opportunity is being pursued or as long as revenues from an awarded project are being received, leave its **Opp_Status** as "Open." Once an opportunity is no longer receiving revenues or a contract is not awarded, change its **Opp_Status** either to "Closed" or to "Lost," respectively.

14	Kindle Fire Truck	Open	▼ tonio R.
15		Open	
16		Lost	
17		Closed	
18			

The distinction between Lost or Closed is for your historical records only and plays no role in the operation of the model other than to exclude those projects so designated from analysis.

The data template permits capturing up to 1000 sales opportunities, although the model is not designed to handle that many currently open opportunities. If you run out of space, you can simply start a new empty file with a different name to differentiate from the older file. You will be able to download a new template by going to the web application site, and clicking the link to the data template. You can also use this approach if you want to analyze separate sales groups' opportunity pursuits as separate portfolios. Simply use a differently named file for each group.

In each row in the **Assigned_Agent** column, select a name from the dropdown list for the primary agent pursuing the associated opportunity.

Opp_ID	Opp_Name	Opp_Status	Assigned_Agent
1	Whiskers and Fleas	Open	Bob X.
2	Cheddar Cheese	Open	Bob X.
3	Abominable Snowman	Open	Alice M.
4	Treason on the High Seas	Open	Frank C.
5	Pinky and the Brain	Open	Mimi P.
6	Clams and Mushrooms	Open	Fred A.
7	Concert at Red Rocks	Open	Antonio R.
8	Fast Times at Ridgemont High	Open	Sheila Q.
9	Monkey See Monkey Do	Open	Sandra D.
10	Mine Eyes Have Seen the Glory	Open	Bill S.
11	Punky Brewster Lives	Open	Pat H.
12	Live at the Magic Kingdom	Open	Robbie D.
13	House Music	Open	Mickey M.
14	Kindle Fire Truck	Open	
15			

If it's the case that multiple agents collaborate in the pursuit of an opportunity, you can supply a team name in the **Agent** column; however, for the associated **Wage_Rate**, you will need to come up with an appropriate weighted hourly rate that reflects the relative contribution of each team member.

The **Simulation Trials** field is set to 1000 by default. This value is the repeated number of trials that are run in the Monte Carlo simulation of the model. As we will explain in the **Interpreting Results** section of the user's guide, the model produces several results that represent averages of specific metrics across all the trials for a given session with the model. If you use more (or less) trials, the predicted average will vary less (or more) between sessions; however, for the same number of opportunities, the run time will increase (or decrease) proportionally. For example, suppose that for the fourteen demonstration opportunities listed above, one session of the model using 1000 trials predicts that the average portfolio value will be $10 million. The next time you run the model with the exact same opportunities and variable definitions, the average portfolio value reported might be $10.1 million, and yet a third session might report $9.89 million. If you changed the number of trials to 100, the range of reported values between sessions may get wider, although the model will run much more quickly. Likewise, if you change the number of trials to 5000, the variability of the reported averages should decrease, but the model will take five times longer to run than the 1000 trial setting and fifty times longer than the 100 trial setting. So, you should think of the Simulation Trials setting as a way to control the stability of the precision of the reported average values at the expense of run time. Having explained all this, 2000 trials provides fairly reasonable stability in precision, so you should rarely change this setting. Lowering the Simulation Trials to 500 or so might provide a reasonable tradeoff in runtime if you have significantly more than a dozen or so open opportunities. Running more than two thousand trials will probably just waste your time by not improving the precision of the forecasts to make clearer decisions about managing your portfolio of opportunities. Keep in mind, the purpose of the model is not to make predictions with 100% certainty about the outcomes; rather, it provides reasonably accurate predictions given the quality of the state of

information you possess about opportunities so that you can make informed management decisions facing uncertainty.

The **License Code** field is where you copy/paste the license code you receive when you pay for a subscription to the web application. Please note, although you will still have access to the portal if you do not have a valid license code, the simulation model will fail to run when you upload your data if the license code is invalid.

UnitPrice

The **UnitPrice** worksheet is where you assess the uncertainty associated with the negotiated price you will eventually realize with an opportunity, if you win the deal. The names for the opportunities that are recorded on the **AccountInfo** worksheet are automatically copied across and should not be altered here or any of the remaining worksheets.

Each opportunity requires that you supply five kinds of values: **LowConstr**, **0.1**, **0.5**, **0.9**, and **HighConstr**. The worksheets **UnitsSold**, **AwardDate**, **Effort**, and **IncidentalCost** also require that you supply the same kinds of values, so the explanation that follows for **UnitPrice** will apply to the other worksheets as well. The **LowConstr** represents a required lowest possible value, and the **HighConstr** represents a required highest possible value. Since you will not be paying people to take your products or services, the lowest possible value is set to $0 by default; and since you would probably not like to be limited to the amount you can price your product, the highest possible value is left open. However, if some pre-existing contractual, policy, or regulatory constraints (either upper or lower) are in effect, you should record those values in these fields. Do not, though, use values that you think represent the lowest or highest anticipated outcomes to your negotiations. The model is designed to find those limits based on the other information you will provide, namely the **0.1**, **0.5**, and **0.9**.

The last **Check** column functions as an error check for your assessments. If the values follow the order preferences correctly for an opportunity, the appropriate row cell will say "Check;" otherwise, it will say "Error."

				Unit Price [$/unit]					
Opp_ID	Opp_Name	Reasons for Low	LowConstr	0.1	0.5	0.9	HighConstr	Reasons for High	Check
1	Whiskers and Fleas		$ -	$ 82,917	$ 86,077	$ 93,190			Check
2	Cheddar Cheese		$ -	$ 97,862	$ 103,258	$ 121,645			Check
3	Abominable Snowman		$ -	$ 91,765	$ 99,357	$ 111,591			Check
4	Treason on the High Seas		$ -	$ 98,297	$ 99,006	$ 120,921			Check
5	Pinky and the Brain		$ -	$ 99,507	$ 109,394	$ 131,987			Check
6	Clams and Mushrooms		$ -	$ 77,311	$ 83,645	$ 94,931			Check
7	Concert at Red Rocks		$ -	$ 96,980	$ 101,379	$ 125,335			Check
8	Fast Times at Ridgemont High		$ -	$ 70,888	$ 71,576	$ 82,253			Check
9	Monkey See Monkey Do		$ -	$ 70,872	$ 74,455	$ 90,187			Check
10	Mine Eyes Have Seen the Glory		$ -	$ 71,470	$ 73,116	$ 89,327			Check
11	Punky Brewster Lives		$ -	$ 73,459	$ 79,735	$ 90,350			Check
12	Live at the Magic Kingdom		$ -	$ 98,061	$ 104,077	$ 127,403			Check
13	House Music		$ -	$ 10,000	$ 12,000	$ 14,000			Check
14	Kindle Fire Truck		$ -	$ 15,000	$ 17,000	$ 19,000			Check

The **0.1**, **0.5**, and **0.9** values represent specific points about the degree of belief your sales agent possesses about the range of outcome of the unit price for a given opportunity. The **0.1** value represents the number where the agent believes there is a 10% chance that the outcome could still be lower (or 90% chance that the outcome will actually be higher). The **0.9** value represents the number where the agent believes there is a 90% chance that the outcome will actually be lower (or 10% chance that the outcome could still be higher). The **0.5** value represents the number where the agent believes there is a 50% chance that the outcome could either be higher or lower (this is called the median value in statistics). What this range of values represents is the range your agent believes possesses an 80% chance of capturing the real outcome. For example, notice that the "Whiskers and Fleas" demonstration opportunity has been assessed to have UnitPrice(0.1, 0.5, 0.9) = ($82,917, $86,077, $93,190). This means that the agent believes the following about the final unit price:

- there is an 80% chance that it will fall between ~$82.9K and ~$93.1K;
- there is a 10% chance that it will be less than ~$82.9K, and a 10% chance that it will be greater than ~$93.1K;
- there is a 50% chance that it will either be lower than or higher than ~86.1K.

The agent should not be expressing a belief about the likelihood of the specific outcome that will occur or a number that represents a commitment to produce. For example, the **0.1** value ($82,917) is not their value with a 10% chance of occurring, nor is the **0.5** value ($86,077) their most likely or best guess. What you should be asking the agent for is their belief about the potential range of outcome. Given this understanding, the values must always be entered such that the **0.1** is less than or equal to the **0.5**, and the **0.5** is less than or equal to the **0.9**. If these understandings and convention are not observed, the model will not run.

As you might have guessed, this is where bias is first encountered in estimating outcomes, especially in sales organizations in which sales forecasts are treated erroneously as targets or commitments to produce. This is your opportunity to facilitate the agent to think freely and creatively about the causes of the outcome they may not have thought about before their biased inclinations manifested. To achieve this facilitation in a manner that has been repeatedly shown to reduce subject matter expert bias, follow the steps outlined here:

1. Talk to the agent about all the reasons the low outcome might occur. Have them think about the scenarios that could line up to produce this state. Record these rationales in the cell under the **Reasons for Low** column.
2. Next, repeat this step for the high outcome, and record the rationales in the cell under the **Reasons for High** column.
3. Go back to the low rationales, and ask for a number where the agent believes there is a 10% chance that the outcome could still be lower (or 90% chance that the outcome will actually be higher). This will be the **0.1** value.

4. Repeat for the high rationales, and ask for a number where the agent believes there is a 90% chance that the outcome will actually be lower (or 10% chance that the outcome could still be higher). This will be the **0.9** value.

5. Finally, ask the agent where they would be willing to bet with coin toss odds that the outcome could be higher or lower. This will be the **0.5** value.

6. I find that it helps the sales agent to get a good visual of the distribution implied by their assessments. The web utility **Subject Matter Expert Distribution Calibration** (http://incitesales.incitedecisiontech.com/calibrate1.shtml) provides a means to simulate a given distribution provided by the assessment values. Simply enter the values for the 0.1, 0.5, and 0.9 in the respective P10, P50, and P90 fields in the sidebar of the utility, then click the Results tab to see the distribution. Let the sales agent update their values (click **Run Distribution** button for each update after the first) until they are comfortable with the full distribution. Use the final values to enter in the data file.

7. Although step #1 recommends starting with the low value first, you should actually start with the value in the opposite direction the agent is motivated to see occur. Most people cherry pick the information that serves their interests. By asking the agent about events that could disconfirm their beliefs, you are helping them expand their thinking to consider previously unanticipated outcomes that could either be embarrassing or extremely fruitful.

It is absolutely imperative that you follow this sequence of events of assessing the outer values first and the interior value last, with NO exceptions. The reason for this is that by assessing the outer values first, you will be helping the agent think about events beyond their initial inclination to consider; thus, you will be avoiding availability bias. By assessing the inner value last, you will be helping the agent avoid anchoring. Unfortunately, the all too common practice for producing ranged estimates starts with a "best guess" that is then padded with a +/- X% that the forecaster believes represents a reasonable range of variation without thinking about how probable this range might actually be (it could be either grossly overstated or understated). The best guess is usually anchored in a biased direction, and the padding is just an arbitrary rule of thumb. Biased and arbitrary thinking are not mental characteristics that lead to accuracy in forecasting.

Remember, although you are seeking accuracy with the best information you have at hand, you should not try to achieve a false sense of confidence through unwarranted precision by coaxing the agent for narrower ranges rather than wider ones. In fact, the wider the range you assess, the more likely you will take into account events outside the original biased inclination. Furthermore, you should avoid unnecessarily over-working the assessments to get the numbers perfect. The goal is to set bookends to the potential range of outcomes given the quality and limits of your agents' knowledge at the time of assessment. As you revisit each assessment according to the update frequency you determine is appropriate, the assessed ranges should narrow as, and if, the agent learns more about the opportunity from the prospective client's feedback. But be prepared for surprises. Sometime conditions on the ground change in unexpected ways, increasing the ambiguity about what might actually transpire. In such cases, the range should be widened to reflect this increased level of uncertainty.

UnitsSold

The **UnitsSold** worksheet is where you assess the uncertainty associated with the number of units you will eventually deliver with an opportunity, if you win the deal. If you tend to sell just 1 unit, say, in the case of consulting engagements, just set the **Lowconstr – HighConstr** values to 1. In general, if you know you will sell a known fixed amount, set the **Lowconstr – HighConstr** values to that amount; otherwise, follow the guidance in the previous section.

		Units Sold [units]							
Opp_ID	Opp_Name	Reasons for Low	LowConstr	0.1	0.5	0.9	HighConstr	Reasons for High	Check
1	Whiskers and Fleas		0	5	6	6			Check
2	Cheddar Cheese		0	4	5	6			Check
3	Abominable Snowman		0	5	7	12			Check
4	Treason on the High Seas		0	4	6	6			Check
5	Pinky and the Brain		0	5	5	5			Check
6	Clams and Mushrooms		0	5	5	8			Check
7	Concert at Red Rocks		0	5	5	6			Check
8	Fast Times at Ridgemont High		0	5	5	6			Check
9	Monkey See Monkey Do		0	6	9	21			Check
10	Mine Eyes Have Seen the Glory		0	6	7	10			Check
11	Punky Brewster Lives		0	5	6	8			Check
12	Live at the Magic Kingdom		0	6	6	6			Check
13	House Music		0	4	6	10			Check
14	Kindle Fire Truck		0	7	10	16			Check

AwardDate

The **AwardDate** worksheet is where you assess the uncertainty associated with the date you will eventually be awarded an opportunity, if you close the deal.

		Award Date [date]						[days]	[number]	
Opp_ID	Opp_Name	Reasons for Low	LowConstr	0.1	0.5	0.9	HighConstr	Reasons for High	Terms	Payments	Check
1	Whiskers and Fleas		1/1/17	4/22/17	5/17/17	6/20/17	1/1/27		30	4	Check
2	Cheddar Cheese		1/1/17	6/15/17	7/1/17	7/29/17	1/1/27		45	4	Check
3	Abominable Snowman		1/1/17	7/24/17	7/26/17	8/6/17	1/1/27		30	4	Check
4	Treason on the High Seas		1/1/17	8/20/17	8/27/17	9/11/17	1/1/27		30	4	Check
5	Pinky and the Brain		1/1/17	9/11/17	9/21/17	9/30/17	1/1/27		45	4	Check
6	Clams and Mushrooms		1/1/17	10/7/17	10/8/17	10/15/17	1/1/27		30	4	Check
7	Concert at Red Rocks		1/1/17	12/8/17	12/14/17	12/23/17	1/1/27		30	4	Check
8	Fast Times at Ridgemont High		1/1/17	2/2/18	2/9/18	3/10/18	1/1/27		45	4	Check
9	Monkey See Monkey Do		1/1/17	3/30/18	4/24/18	5/6/18	1/1/27		30	4	Check
10	Mine Eyes Have Seen the Glory		1/1/17	5/14/18	5/23/18	6/5/18	1/1/27		30	4	Check
11	Punky Brewster Lives		1/1/17	7/1/18	7/4/18	7/24/18	1/1/27		30	4	Check
12	Live at the Magic Kingdom		1/1/17	8/18/18	9/8/18	10/12/18	1/1/27		30	4	Check
13	House Music		1/1/17	5/22/17	6/22/17	7/22/17	1/1/27		30	4	Check
14	Kindle Fire Truck		1/1/17	5/22/17	6/22/17	7/22/17	1/1/27		30	4	Check

Unlike the previous two worksheets in which the **LowConstr** is set by default to 0, the **LowConstr** here should be set to the date that the first assessment for an opportunity occurs. The **HighConstr** should be set to a date far enough into the future that it is effectively "infinitely" far away within the context of the type of engagements you sell. For example, in this demonstration sheet, the **HighConstr** is set to 10 years away from the **LowConstr**.

The two other values you will need on this worksheet for each opportunity are the **Terms** in days from the close of the deal and the timing between **Payments** if more than one payment is expected.

Effort

The **Effort** worksheet is where you assess the uncertainty associated with the number of person-hours required to achieve a final disposition on a deal, whether you win or not.

				Effort to Close [hours]					
Opp_	Opp_Name	Reasons for Low	LowConstr	0.1	0.5	0.9	HighConstr	Reasons for High	Check
1	Whiskers and Fleas		0	38	50	87			Check
2	Cheddar Cheese		0	34	50	55			Check
3	Abominable Snowman		0	28	32	68			Check
4	Treason on the High Seas		0	21	25	35			Check
5	Pinky and the Brain		0	29	36	64			Check
6	Clams and Mushrooms		0	26	26	30			Check
7	Concert at Red Rocks		0	26	36	89			Check
8	Fast Times at Ridgemont High		0	34	48	50			Check
9	Monkey See Monkey Do		0	31	39	80			Check
10	Mine Eyes Have Seen the Glory		0	23	45	54			Check
11	Punky Brewster Lives		0	28	40	68			Check
12	Live at the Magic Kingdom		0	38	47	73			Check
13	House Music		0	60	75	90			Check
14	Kindle Fire Truck		0	50	65	80			Check

IncidentalCost

The **IncidentalCost** worksheet is where you assess the uncertainty associated with any costs incurred on the way to achieve a final disposition on a deal, whether you win or not.

				Incidental Cost to Close [$]					
Opp_	Opp_Name	Reasons for Low	LowConstr	0.1	0.5	0.9	HighConstr	Reasons for High	Check
1	Whiskers and Fleas		$ -	$14,445	$29,211	$30,577			Check
2	Cheddar Cheese		$ -	$15,537	$17,709	$37,797			Check
3	Abominable Snowman		$ -	$18,142	$27,726	$33,465			Check
4	Treason on the High Seas		$ -	$17,520	$20,061	$37,040			Check
5	Pinky and the Brain		$ -	$11,769	$14,771	$31,446			Check
6	Clams and Mushrooms		$ -	$18,034	$18,382	$23,763			Check
7	Concert at Red Rocks		$ -	$19,264	$28,441	$35,962			Check
8	Fast Times at Ridgemont High		$ -	$10,595	$26,637	$29,249			Check
9	Monkey See Monkey Do		$ -	$ 5,498	$ 8,056	$39,377			Check
10	Mine Eyes Have Seen the Glory		$ -	$19,001	$22,719	$23,140			Check
11	Punky Brewster Lives		$ -	$13,529	$14,337	$30,919			Check
12	Live at the Magic Kingdom		$ -	$11,682	$29,544	$34,250			Check
13	House Music		$ -	$30,000	$40,000	$50,000			Check
14	Kindle Fire Truck		$ -	$20,000	$30,000	$50,000			Check

ProbLoss

The **ProbLoss** worksheet is where you assess the degree of belief that you will NOT be awarded a contract for a given opportunity. It may seem unconventional to assess the probability of loss, as most people assess the probability of winning. Keep in mind, though, that one of the purposes of this model is to avoid biases, one of which is wishful thinking. The unconventional wording is designed to address an overly optimistic mindset. Of course, the probability of winning is just the complement of the probability of losing (1 – probability of loss), and the model actually operates on that relationship. If you perceive that the agent is excessively pessimistic about an opportunity, conduct the assessment in terms of probability of winning.

		Probability of Loss [%]		
Opp_ID	Opp_Name	Reasons for Loss	Prob_Loss	Reasons for Award
1	Whiskers and Fleas		37	
2	Cheddar Cheese		6	
3	Abominable Snowman		13	
4	Treason on the High Seas		66	
5	Pinky and the Brain		45	
6	Clams and Mushrooms		50	
7	Concert at Red Rocks		78	
8	Fast Times at Ridgemont High		43	
9	Monkey See Monkey Do		85	
10	Mine Eyes Have Seen the Glory		92	
11	Punky Brewster Lives		79	
12	Live at the Magic Kingdom		46	
13	House Music		50	
14	Kindle Fire Truck		65	

Unlike the other worksheets that prompt you to assess uncertainty across a continuous (or nearly continuous) range of outcomes, this worksheet focuses on a binary event – either you will win the opportunity or lose it. Therefore, instead of documenting rationales for a low or high outcome, you will document rationales for why you might win or lose. Capture these rationales before assessing the actual probability.

The process for assessing probabilities of binary outcomes is a little different from assessing continuous outcomes. Here you are not assessing a range with an 80% chance of capturing the true outcome; rather, you are assessing the point of indifference an agent will express for accepting the chance of predicting the outcome versus playing a game to receive some payoff. You begin by suggesting a probability to win some amount of money, say $1000, by playing a lottery with the suggested probability or by winning the same amount of money by correctly predicting the outcome of the opportunity. If the agent prefers the lottery, this indicates they believe that the lottery is a better bet; therefore, the probability of correctly calling the outcome is lower than the suggested probability. Adjust the suggested probability down and repeat until the agent doesn't care which game they play, either the lottery or calling the outcome. This approach is conducted in the opposite direction if the agent prefers calling the outcome of the opportunity. Oftentimes, you will cycle up and down in your adjustments as you converge on the point of indifference. To avoid getting caught up in making too fine a distinction between, say, a 31% probability and a 33% probability, the template allows you to make selections of probabilities in only 5% increments. The web utility **Subject Matter Expert Discrete Probability Calibration** (http://incitesales.incitedecisiontech.com/calibrate2.shtml) provides a great means to help a sales agent visualize the meaning of probability of loss (or win).

Under no circumstances should you set the Prob_Loss to 0% during the pursuit phase unless you have an actual contract already in place. There are too many occasions to count in which people assume that the probability of loss was 0% (or conversely, the probability of win was 100%) only to be rudely embarrassed. Only in the case in which you have been awarded the contract and revenues are still being paid should you set Prob_Loss to 0%.

As an aside, you might be wondering why we assess ranges for uncertain events but only single point values for binary events. After all, you probably think you can't know the probability that

an event will occur with greater precision than you can know the range of a continuous outcome. Certainly, we should put a range on the probability, too, you might think. The reasons we don't assess ranges for a probability are the following:

1. Probabilities are not intrinsic properties of natural events. Instead, they are subjective expressions about our degree of belief that an event will occur given all the information we can bring to bear on our consideration. If we put a range around the probability that an event will occur or not, we are revealing our internal incoherence about our degree of belief. Then, if we are willing to place a degree of belief around a degree of belief, should we not also be willing to place a degree of belief around each of our bracketing degrees of belief, so on and so on? Ultimately we fall into an infinite regress that prevents us from finding a certain point of indifference between betting on two alternate lotteries of equivalent value.

2. When we assess the range of a continuous uncertainty, we can think of that range as a series of tiny little contiguous, non-overlapping, mutually exclusive buckets of outcome. If any one of the little buckets occurs, that automatically excludes the other buckets from simultaneously occurring. The probabilities we assess for the three points (0.1, 0.5, 0.9) are actually cumulative probabilities that all the little buckets up to each point can occur. If we were to perform a reverse sum of the cumulative probabilities, the differences would be the probability that a particular bucket would occur or not. Any one little bucket we focus our attention on represents a binary event, which is the limiting case of assessing the probability of any binary event. In the continuous event, we are mapping the point of alignment of all our preassigned intangible degrees of belief on a range of unknown but tangible outcomes. In the singular binary event, we are assessing the unassigned intangible degree of belief that a specific preassigned tangible outcome will occur. In either case, a bucket gets only a single probability in order for us to maintain mental coherence about measurements we make on the world.
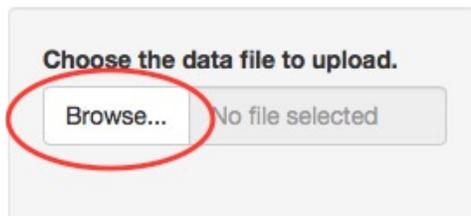
Using the Web Application

This is what you will see when you initially log into the website for the *Incite!Sales Opportunity Portfolio Analysis System* before running your analysis.
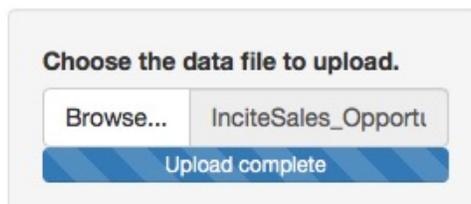
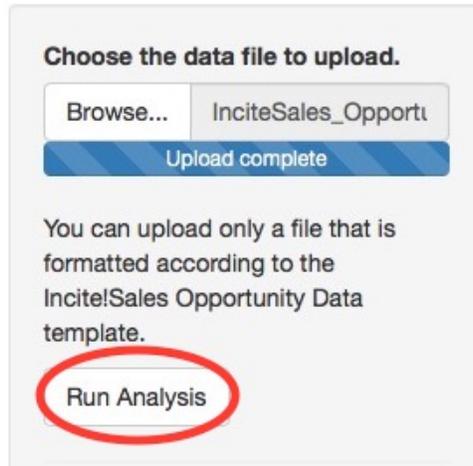For the analysis to run, you will need to upload the data you collected in the data collection file. Do this by clicking the "Browse…" button on the top left.
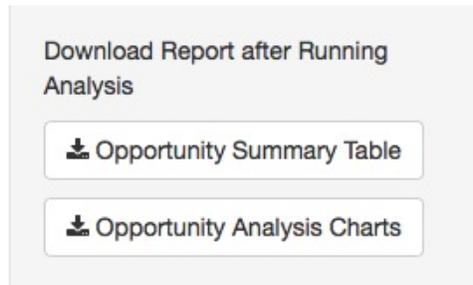

Your web browser will open up a file browser window that will allow you to locate the desired data collection file. Once that is complete, the left side panel will now display an indicator that your upload completed successfully:

Now you are ready to run the Monte Carlo simulation analysis based on the uncertainty assessments you provided in the data collection file. Simply click the "Run Analysis" button,

then wait a few moments for a Summary Table on the right to populate with results. This may take anywhere from a few seconds to a few minutes, depending on how many opportunities you assessed and how may simulation trials you run. Once your analysis has run, you can download the Opportunity Summary Table as a '`.csv`' file ('`SalesPortfolioSummary.csv`') and the analysis charts produced on each tab as a single '`.pdf`' file ('`SalesPortfolioCharts.pdf`').

If you would rather have each chart as a separate image file, just grab them from the web interface and drag them to your computer. The file format will be '`.png`'. You can use these artifacts to support further communication or analysis as needed. If you want to keep a running archive of your results, rename each file in a meaningful way to distinguish them from other analytic outputs.

Please note that if the user interface sits too long without activity, it will log out of the simulation server. If this happens, you will need to run your results again. Due to the minor variations that occur between Monte Carlo runs, you results may be slightly different when you rerun them.

Interpreting Results

As the Monte Carlo simulation runs, the web application calculates all the costs and timing results on a trial-by-trial basis. It is not merely calculating average input values and then operating on those averages. Doing so would reduce out many of the subtle insights that we can gain from

simulation. The simulation approach, by contrast, preserves all the effects of uncertainty in the input assessments and operates on them in a consistent manner so that you can explore the full range of effects on the metrics that can help you manage your sales portfolio best.

When the Monte Carlo simulation finishes its runs across the defined simulation trials, the web application then produces nine analytical results.

Summary Results

The summary page provides the following results:

1. **Average total potential revenue of all opportunities** – The average value of the sum of all the opportunity revenues (across all simulation trials) given that each opportunity is successfully awarded.
2. **Average total potential net value of all opportunities** – The average value of the sum of all the opportunity revenues less any costs that are incurred in their pursuit (across all possible simulation trials) given that each opportunity is successfully awarded.
3. **Average total risked net value of all opportunities** – The average net value of the portfolio with the probability of loss applied to each trial within each opportunity.
4. **Value of control to close all opportunities** – The difference between #1 and #3. It's the rational upper bound on how much additional cost we might incur to bring all the opportunities to a successful award state.

The summary page also provides a searchable and sortable table of the values described in items 1-3 above, but for the individual opportunities instead of the portfolio level.

Number of simulation trials: 1000
Average total potential revenue of all opportunities: 7.422 $M
Average total potential net value of all opportunities: 7.008 $M
Average total risked net value of all opportunities: 2.903 $M
Value of control to close all opportunities: 4.106 $M

Opportunity Summary: Average Values [$000]

Show 25 ⇕ entries   Search: [   ]

Opportunity	Revenue	Net Value	Risked Net Value
Whiskers and Fleas	498	468	276
Cheddar Cheese	537	508	474
Abominable Snowman	810	779	667
Treason on the High Seas	575	548	159
Pinky and the Brain	563	540	272
Clams and Mushrooms	503	480	225
Concert at Red Rocks	570	536	96
Fast Times at Ridgemont High	396	369	195
Monkey See Monkey Do	934	912	113
Mine Eyes Have Seen the Glory	597	571	18
Punky Brewster Lives	514	491	82
Live at the Magic Kingdom	660	629	306
House Music	80	33	-7
Kindle Fire Truck	184	145	26
Opportunity	Revenue	Net Value	Risked Net Value

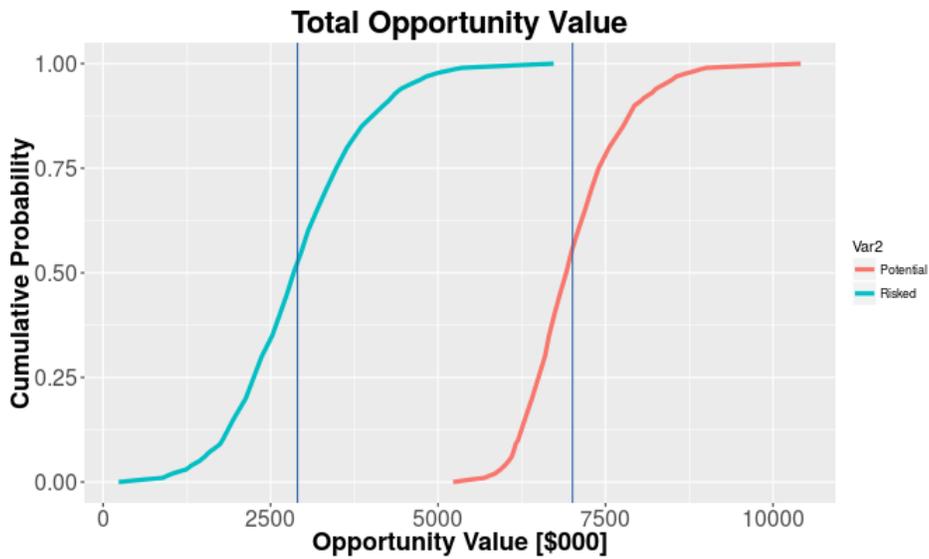Showing 1 to 14 of 14 entries   Previous **1** Next

Portfolio Risk Profile

The portfolio risk profile charts display the full range of value associated with the portfolio under two conditions:

- All of the opportunities close (orange curve)
- Some to all of the opportunities fail to close (green curve)

Each curve is a cumulative probability chart that shows how much value is possible (given our current state of information and which of the above regimes we're considering at the moment) or less for a given intersection of probability (on the y-axis) with the curve as it maps down to the value (x-axis). For example, if we pick the 80% probability on the y-axis, we draw a horizontal line over to the appropriate curve, and then draw a vertical line down to the x-axis. Whatever value is represented by the point on the x-axis, we acknowledge that there is an 80% probability that the value of the portfolio is this value or less. Conversely, we could also say there is a 20% probability that the value of the portfolio is this value or greater.
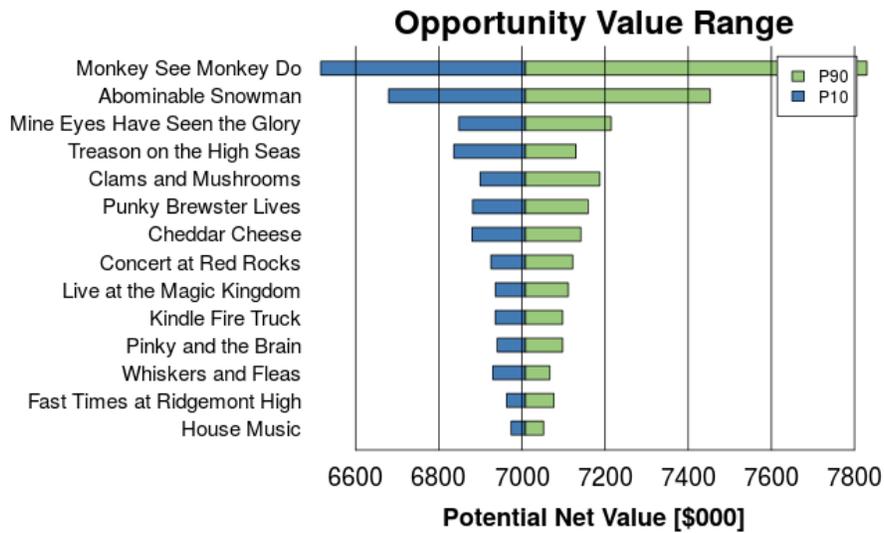
Total Opportunity Value

The difference between the average values of these two curves (indicated by the verticals lines through them) indicates the value of control for ensuring that we close all the opportunities (result #4 on the Summary page). In other words, it's the rational upper bound on how much additional cost we might incur to bring all the opportunities to a successful close.

Value Sensitivity

The value sensitivity chart (tornado chart) provides a measurement for how much the uncertainty in the forecasted potential value of a single opportunity (not including the effect of probability of loss) could affect the average portfolio value.
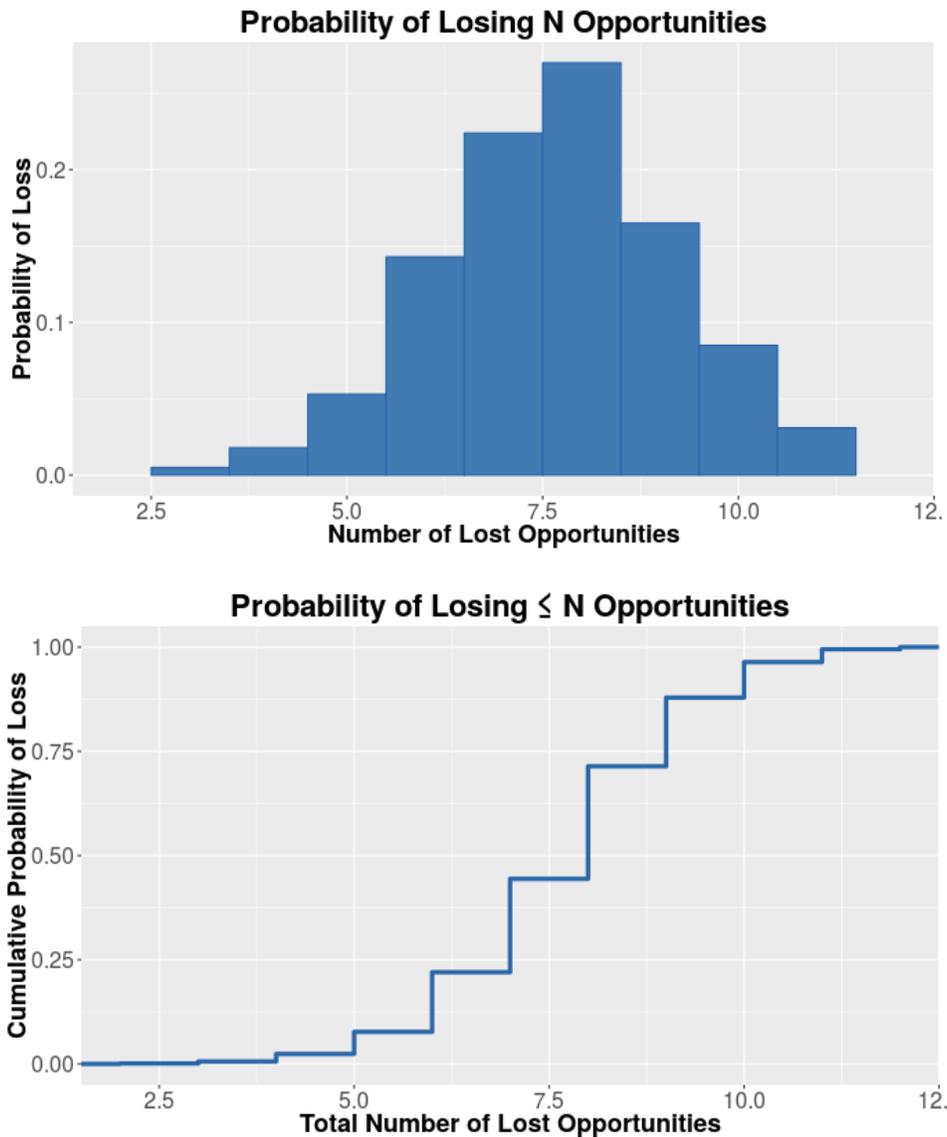
The length of a bar in the tornado chart relative to the other bars indicates the quality of information about any opportunity relative to the other opportunities. For example, if a bar for an opportunity is longer than another bar, the longer bar implies a lower quality of information relative to the shorter bar. The longer a bar is, the less certain we are about its effect on the value of the portfolio than that of shorter bars.

The end points of the bars tell us the sensitivity of the average portfolio value to the 80th percentile prediction interval of the value of the opportunities independently from each other. The tornado is then ordered from the longest bar on top to the shortest bar on the bottom, giving us a visual prioritization of which opportunities need more information to improve the precision of its forecast. It does not tell us which opportunities are more valuable than others; rather, it tells us the opportunities for which we are less certain about their final outcome.

Opportunity Losses

These charts show us how many of the current opportunities we might expect to lose given the degree of belief assigned to their failure to close. The first chart on the top gives the probability distribution that the exact number of opportunities in a given bin will fail to close. The chart on the bottom gives the cumulative probability that the number of opportunities in a given bin or less will close.

Probability of Losing N Opportunities
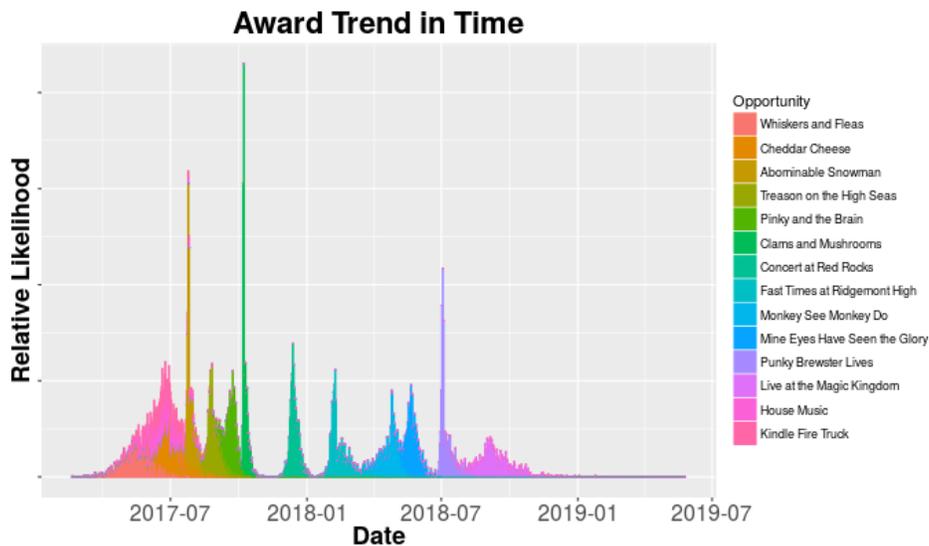

Probability of Losing ≤ N Opportunities

Based on the two charts above, we observe that the central tendency of the portfolio will be to lose about 8 of the demonstration opportunities out of the 14 in pursuit, and there is an 88% chance that the number of the lost opportunities will be 9 or less.

Both of these charts might seem like an exercise in pessimism. After all, few of us want to hear how we're going to lose. However, the purpose of these charts is not give you confidence that everything will turn out according to plan; rather, it serves to provide an instigation to begin thinking about how to turn the potential losses into wins. It's easy to find out which opportunities present the greatest threat to the value of the portfolio. Their probabilities of loss are recorded in the **ProbLoss** worksheet of the data file. If you assessed these probabilities well, you should have recorded possible reasons for winning and losing each opportunity, and this information can serve to create mitigation plans.
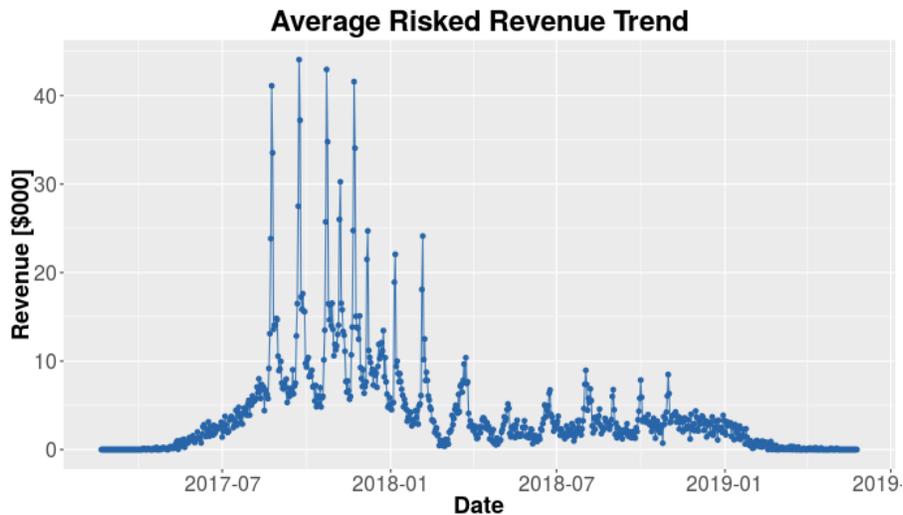
Award Trend

This chart shows a stacked overlay of the likely dates that any opportunity will close. Peaks in the total vertical distance show most likely dates. Valleys show periods in which likelihood of closure of opportunities is reduced. The goal of managing the closure dates should be to move them all as early as possible (to the left) and to flatten out the peaks and valleys to avoid shortfalls in income and delayed periods in income. The **AwardDate** worksheet should contain your rationales to help you think about why opportunities might close sooner rather than later. Using this information will help you think about how you can accelerate opportunity closure.

Revenue Trend

This chart shows the average revenue prorated over time according to the probability of success and the likely dates of closure. Peaks in the total vertical distance show when the most revenue will be coming in. Valleys show periods of reduced likelihood of accruing revenue for opportunities. The line does not show how much revenue can be anticipated on a given date; rather, it is the **probability weighted** total revenue that might be accrued on any given day.
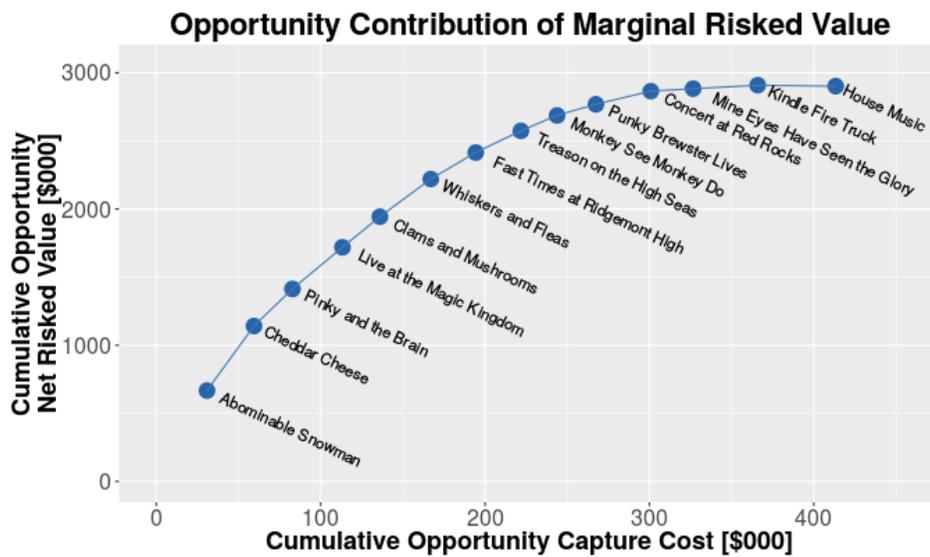
The message in this chart is that most of the revenue will likely be coming in before the end of the first quarter of 2018, and revenues accrued after that time will be from the lower valued opportunities with a longer horizon to their potential closure.

Marginal Contribution of Value

The CFO Chart demonstrates the marginal contribution of average opportunity value (weighted by probability of success) for each incremental amount of cost to close each opportunity. It shows how efficiently the pursuit of given opportunities adds value to the organization.

Opportunities on the far left typically add value at a greater rate than those on the right. In most cases, the opportunities on the far right flatten out in their effective rate of value contribution. This means that the probability weighted contribution of value declines with respect to the effort to close them. When the curve is mostly flat, the average output is approximately equal to the input. When the curve bends down from flat, the cost of the effort to close exceeds the average risked value to be gained.

Opportunity Contribution of Marginal Risked Value
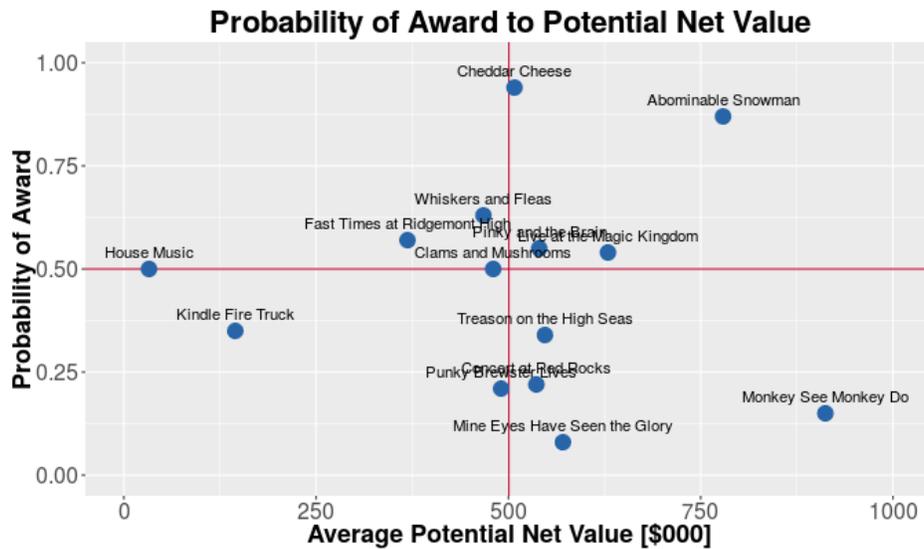
Actions for sale managers can include the following:

1. Prune opportunities on the curve that extend beyond the sales budget on the horizontal axis.
2. Almost immediately terminate any effort to close opportunities that are on the curve that bend down from a flat position. While it's not necessarily the case that these opportunities represent a real loss to close them (e.g., you could still close the opportunity at a cost that does not exceed the actual accrued value) on an average basis compared to the more productive use of limited resources, collections of these kinds of opportunities will net out to a loss over time.
3. Give some serious thought to pruning the opportunities on the value neutral flat portion of the curve as well. The cost and effort to close these opportunities might be better spent looking for more valuable opportunities or improving the probability of success of more valuable opportunities.

One of the key insights from this chart is to suggest not so much which opportunities you should continue to pursue, but which ones you should probably abandon.

Probability of Success vs. Value

The Probability of Success vs. Value chart is a scatter plot that displays our degree of belief that an opportunity will close relative to the value of the opportunity. It provides us with a visual representation about

- the priority of attention we ought to give to closing opportunities;
- where we might trade-off the effort of resources to improve the likelihood of closing more important opportunities in the portfolio.
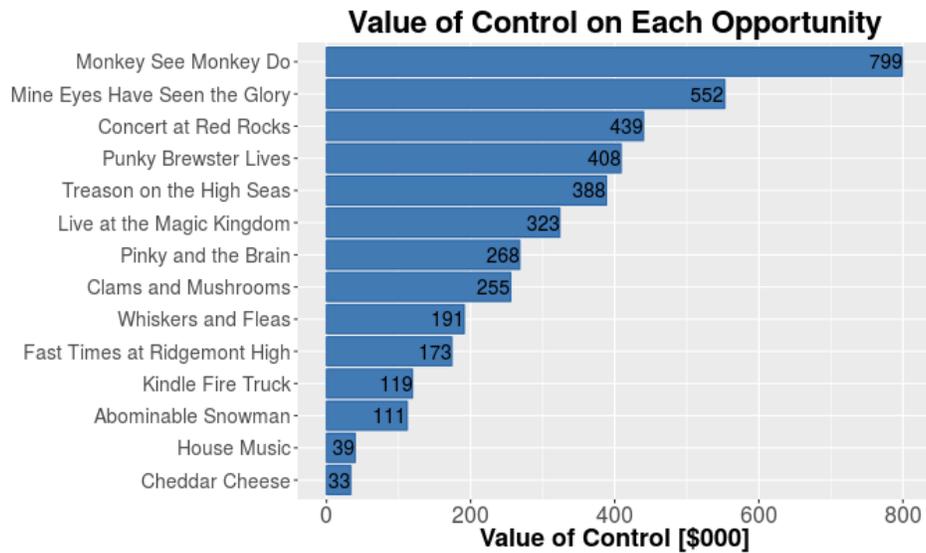
Probability of Award to Potential Net Value

The priority of attention is determined by regions of equivalent value given by the product of the probability of success and the opportunity value. We prioritize on the basis of regions of high equivalent value to lesser equivalent value.

The information provided here also supports tradeoff decisions. For example, if an opportunity presents a moderate to high probability of success and a low relative value, we can probably afford to give some thought to reassigning resources to those opportunities that present higher potential value but lower probability of success. In this chart, opportunities "House Music" and "Kindle Fire Truck" show relatively low potential value (the value you receive if you actually capture them), but The "Monkey See Monkey Do" opportunity, though, presents a good deal of value to be gained if it could be captured, more than "House Music" and "Kindle Fire Truck" combined. To improve the value of the portfolio, we might think about reallocating resources from the lower value opportunities to "Monkey See Monkey Do." Combining this observation with the location of "House Music" and "Kindle Fire Truck" on the CFO chart, leads to the inference that the reallocation decision is probably warranted.

Value of Control

The value of control shows the rational maximum value the sales team ought to be willing to spend to ensure with certainty that they win the opportunity. It does not represent an obligation to spend additional resources; rather, it suggests a budget that can help inspire ideas about how best to improve the probability of winning.

Value of Control on Each Opportunity

Opportunity	Value of Control [$000]
Monkey See Monkey Do	799
Mine Eyes Have Seen the Glory	552
Concert at Red Rocks	439
Punky Brewster Lives	408
Treason on the High Seas	388
Live at the Magic Kingdom	323
Pinky and the Brain	268
Clams and Mushrooms	255
Whiskers and Fleas	191
Fast Times at Ridgemont High	173
Kindle Fire Truck	119
Abominable Snowman	111
House Music	39
Cheddar Cheese	33

This chart shows that if we make the decision to pull resources away from "House Music" and "Kindle Fire Truck," we gain a lot more value by focusing on "Monkey See Monkey Do." The rational maximum budget we could set to closing this opportunity—the value of control—is nearly $800K. Again, we don't have to spend this level of money, but if we thought about what we could do with such a budget to close the deal, anything more than nothing and less than even ¼ the value of control would be a reasonable expense.

In Closing

After reviewing the portfolio results and deciding on areas to explore regarding which opportunities to continue pursuing or not, tradeoff decisions about how resources can be shifted to improve the probability of winning an opportunity, and ways to accelerate the date of award, you should take a duplicate of the original data file and update the appropriate assessments associated with positive actions you can take to affect them. Then, rerun the portfolio analysis to compare and contrast with the original analysis.

Contact Information

If you have concerns or questions about the *Incite!Sales Opportunity Portfolio Analysis System*, please contact us at

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