

FORRESTER®

The Total Economic Impact™ Of Prevedere Intelligent Forecasting

Cost Savings And Business Benefits Enabled By
Prevedere Intelligent Forecasting

DECEMBER 2020

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ABOUT FORRESTER CONSULTING

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Executive Summary

The ability to accurately forecast demand, especially during a global pandemic, can significantly impact sales revenues and operating costs. Many companies struggle to model with accurate foresight, especially when applying models to the specific company context. Prevedere Intelligent Forecasting yields transformative benefits to customers by marrying custom modeling to the power of cloud computing to accurately identify key indicators and to help position optimally to change.

Prevedere provides a cloud-based econometric modeling solution tuned to a customer's specific economic drivers. [Prevedere Intelligent Forecasting](#) helps customers forecast business demand, provides improved visibility on the impact of emerging trends, and provides forecasts for business plans, budgets, and operations.

Prevedere commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) that enterprises may realize by utilizing Intelligent Forecasting. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of implementing the Intelligent Forecasting approach within their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed a customer with experience using Intelligent Forecasting. The customer found that Prevedere forecasts are more accurate, and they provide visibility that enables executives to make better decisions that avoid costs, anticipate changing market conditions, and foresee the impact of exogenous international economic events.

Prior to using Intelligent Forecasting, the interviewed customer relied on executive intuition combined with data from sales teams, industry publications, and existing customers. Executives made prior attempts to improve forecasts, but they yielded limited success, leaving the organization with straight-line

KEY STATISTICS



Return on investment (ROI)

345%



Net present value (NPV)

\$2.3 million

forecasts with limited visibility. As a result, the company incurred costs that are outlined in this study.

After adopting Prevedere to guide forecasts, the organization improved the quality of regular forecasting. The accuracy reduced costs related to inventory becoming obsolete and transporting raw materials between facilities. In addition, the company accurately anticipated international shifts that previously cost millions.

The vice president of operations told Forrester: "Our challenge is that production and inventory are only as strong as our sales input, which doesn't provide good visibility beyond three months. Now, with Prevedere, we are more accurate to the executive leadership team and our plant sites, and [they have] a more accurate sense of what production is coming their way. It's not too much and not too little."

KEY FINDINGS

Quantified benefits. Risk-adjusted present value (PV) quantified benefits include:

- **Improved forecast accuracy reduced inventory write-off valued at over \$2 million.** Prevedere provided the customer with improved forecast accuracy. As a result, the customer reduced production levels before market conditions resulted in excess inventory, limiting the volume of obsolete material as well as associated warehousing and financing costs.
- **Improved forecast accuracy avoided costs of transporting raw material worth \$204,677.** Improved forecast accuracy allowed the customer to anticipate the optimal locations where production would be needed, reducing the cost of shipping raw materials between facilities.
- **Reduced impact of exposure to international trade dynamics saved \$721,262.** With improved forecasting, the customer would have avoided costly market changes. In one case, a specific country dumped excess inventory into a market, which rapidly decreased prices and left the customer holding millions in obsolete inventory.

“Prevedere brings data and indicators we just have never been able to access or hadn’t even thought of in some cases. Even if we hired the two-and-a-half analysts that equal what we’re paying Prevedere, they would have just a fraction of the data. We’d have to pay for that too.”

Vice president of operations, chemical industry

“Our hires also wouldn’t have the modeling, the time series, the adjustments, or all the sophistication. Prevedere provides all of that and an ability to drive forecast correlations to our business volume in the 70 and 80 percentiles.”

Vice president of operations, chemical industry

Unquantified benefits. Benefits that are not quantified for this study include:

- **Management focus.** Prevedere Intelligent Forecasting freed management to concentrate on making strategic decisions.
- **Heightened visibility for investors.** Executives developed greater confidence in the accuracy of forecasts, which impacted direction to investors and other public, forward-looking statements.
- **Improved consistency controls and guidance across business units.** Guidance comes from a scientifically tested set of assumptions that are unique to each business unit.

Costs. Risk-adjusted PV costs include:

- **Annual subscription costs of \$250,000.** The subscription includes model building, data, and dashboards creation delivery of quarterly forecasts for the customer’s business units.
- **Implementation costs to the forecasts totaling approximately \$20,000 annually.** This is to provide background business unit data and to organize change management around findings and their implementation.

The interview and financial analysis found that this customer experiences benefits of \$3 million over three years versus costs of \$668,000, adding up to a net present value (NPV) of \$2.3 million and an ROI of 345%.



ROI
345%

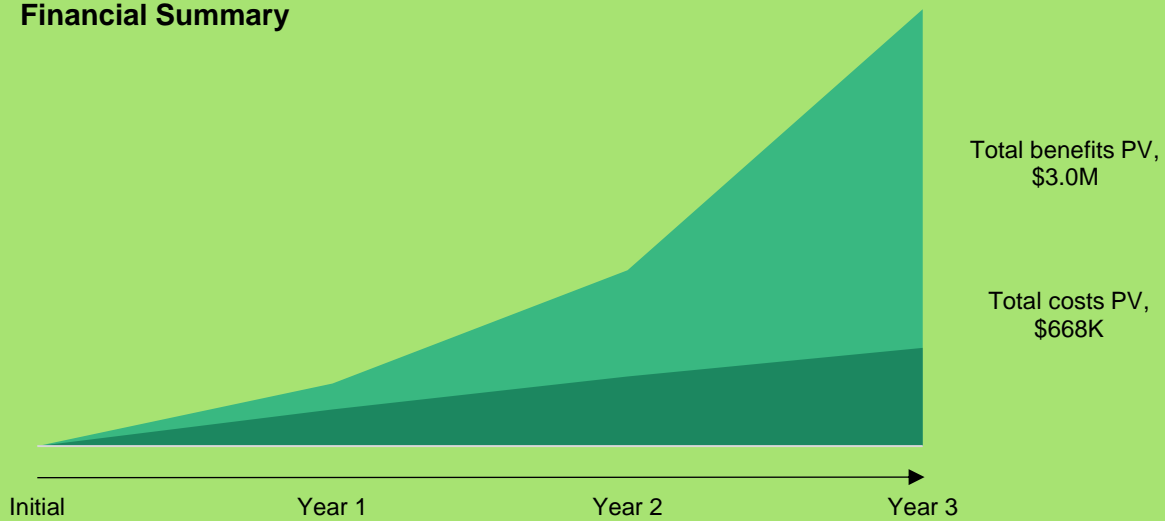


BENEFITS PV
\$3 million

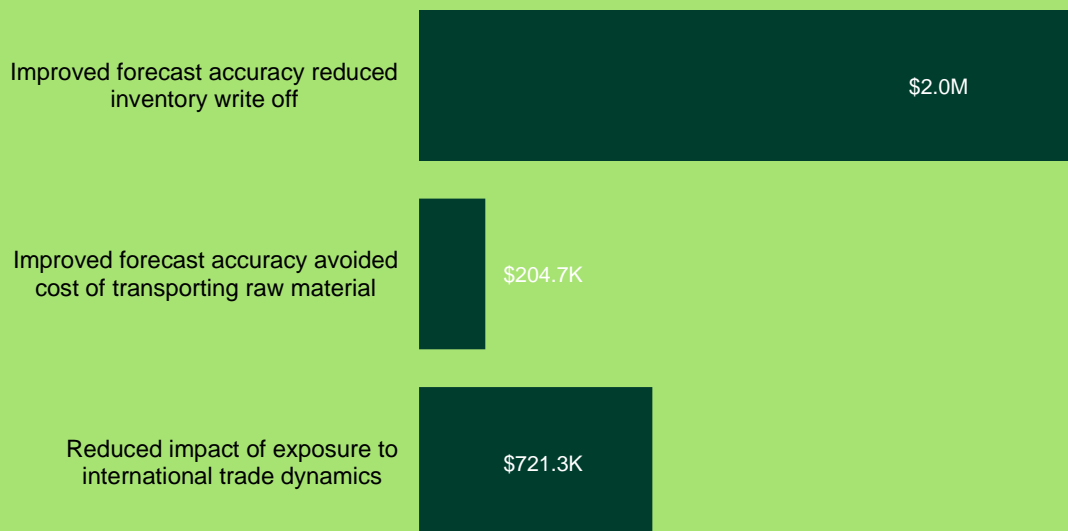


NPV
\$2.3 million

Financial Summary



Benefits (Three-Year)



TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in Prevedere Intelligent Forecasting.

The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. Forrester took a multistep approach to evaluate the impact that Intelligent Forecasting can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Prevedere and delivered by Forrester Consulting. It is not meant to be used as a competitive analysis.

Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the report to determine the appropriateness of an investment in the Intelligent Forecasting.

Prevedere reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning of the study.

Prevedere provided the customer name for the interview but did not participate in the interview.



DUE DILIGENCE

Interviewed Prevedere stakeholders and Forrester analysts to gather data relative to Prevedere Intelligent Forecasting.



CUSTOMER INTERVIEW

Interviewed decision-makers at an organization using Prevedere Intelligent Forecasting to obtain data with respect to costs, benefits, and risks.



FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interview using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewed organization.



CASE STUDY

Employed four fundamental elements of TEI in modeling the investment impact: benefits, costs, flexibility, and risks. Given the increasing sophistication of ROI analyses related to IT investments, Forrester's TEI methodology provides a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

The Prevedere Intelligent Forecasting Customer Journey

■ Drivers leading to the Prevedere Intelligent Forecasting investment

INTERVIEWED ORGANIZATION

Forrester interviewed a Prevedere Intelligent Forecasting customer with the following characteristics:

- US chemical manufacturer.
- \$3 billion annual revenue.
- Dozens of US-based production sites.
- Global operations and customers.

KEY CHALLENGES

The customer sold into cyclical markets and relied on forecasts to guide business decisions and operational planning. It relied upon input from current sales, industry publications, and general market indicators such as GDP. Executives used information that provided only short-term direction. The organization:

- **Was exposed to changing economic conditions and insufficient lead times.** Speaking of a single market shift that cost millions of dollars, the executive said, “Before Prevedere came onboard, demand moved quickly, and we didn’t understand the shift had occurred until too late.”
- **Lacked a holistic, overarching framework to identify the most important economic factors across business units.** The executive added: “Before, maybe we were getting the one main driver from an end-market forecast we purchased, but we didn’t have any correlations to our direct business. Now we have the five or six key drivers, and it’s a composite view.”
- **Struggled to forecast accurate outlooks of four months or more.** The lack of a reliable, long-term forecast resulted in painful costs and errors at important crossroads of economic change. A longer lead time allowed executives to

better prepare the company for expected change. The executive said: “Prevedere gave us drivers that showed that our business was going to slow in six months. Boy, is that powerful. It is a huge value we didn’t have.”

- **Incurred significant costs in obsolete inventory, warehouse, and finance charges.** When discussing specific costs, the executive said, “The impact of excess inventory was huge to us, and now we can estimate an annual benefit from having this forecast.”

“Instead of having a two-legged stool of my customers and my sales team telling me what the future looks like, now I have three legs. We didn’t have that third leg to guide the business prior to Prevedere.”

Vice president of operations, chemical industry

SOLUTION

The interviewed organization searched for a solution that could:

- **Identify the economic indicators most responsible demand in each business unit.** Prevedere Intelligent Forecasting built predictive models and a more accurate forecast of demand for the next four quarters, as well as a dashboard framework of these indicators for management to track.
- **Enable the customer to better understand, communicate, and manage risk by both companywide executives and business-unit leaders.**

USE CASE DESCRIPTION

The customer's engagement with Prevedere began by back-testing company data against an array of economic indicators. This yielded a custom set of key drivers that determined outcomes in each of the customer's business units with forecasts covering a predictive value upwards of 80% of the company's global demand.

These indicators became the basis of ongoing dashboard reporting on unfolding trends affecting each business unit, as well as for model updates to the customer.

Prevedere provided modeling findings and their impact in high-touch consultative briefings that included the customer's executive team and business unit directors to operationalize findings and to incorporate them into business and budget planning cycles.

With the economic disruption of the COVID-19 pandemic in 2020, Prevedere broadened its analysis beyond the baseline model to cover a full range of potential outcomes to the customer's businesses with pessimistic and optimistic growth scenarios.

Through testing and iteration, the customer gained new insight into the dynamics affecting end-market demand, a keen sense of the cost of forecast misses from prior experience, and the value of incrementally improved forecast accuracy. The application of econometric science improved the acumen of executives, added overarching cohesion to budgeting and business planning across different operating units, and deepened the organization's relationships with its own customers by sharing the operating outlook that Prevedere developed.

For this use case, Forrester modeled benefits and costs over three years.

“ Our forecast was accurate for the current quarter, but Prevedere was more accurate when looking more than three months out. ”

— Vice president of operations, chemical industry

Analysis Of Benefits

■ Quantified benefit data

Total Benefits						
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value
Atr	Improved forecast accuracy reduced inventory write-off	\$425,000	\$850,000	\$1,275,000	\$2,550,000	\$2,046,769
Btr	Improved forecast accuracy avoided cost of transporting raw material	\$42,500	\$85,000	\$127,500	\$255,000	\$204,677
Ctr	Reduced impact of exposure to international trade dynamics	\$0	\$0	\$960,000	\$960,000	\$721,262
Total benefits (risk-adjusted)		\$467,500	\$935,000	\$2,362,500	\$3,765,000	\$2,972,708

IMPROVED FORECAST ACCURACY REDUCED INVENTORY WRITE-OFF

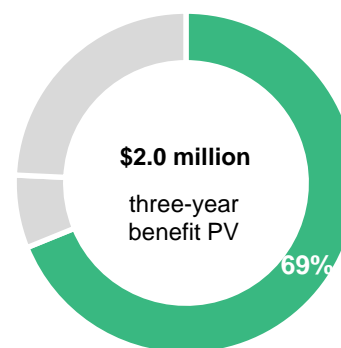
Evidence and data. The interviewed executive reported that Prevedere helped their company identify changes to key drivers, and it forecast more accurately than previous methods. Prevedere provided:

- More accurate forecasts that enabled management to take proactive steps to produce less product and carry leaner inventories.
- More accurate timing to make operational pivots (e.g., “timing the turn”) that the customer could not undertake on its own.

Modeling and assumptions. Prior to working with Prevedere, the customer assessed the cost of missing a forecast.

- The value of a change going up 5% points in forecast accuracy for the customer’s business unit has an average impact of \$5 million.
- In the model, there is a \$500,000 impact for each 1% change in forecast accuracy.

While the improved forecast was a significant asset to executives, the management team still had to make decisions and take actions to leverage opportunities for market increases or to avoid costs for market downturns. As a result, Forrester attributed 50% of the benefit from improved forecasting to the value of Prevedere.



Improved forecast accuracy reduced inventory write off: 69% of total benefits

Risks. The impact of Prevedere on any company will vary based on the accuracy of existing forecasts and the ability of the management team to respond.

To account for this, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of just over \$2 million.

Improved Forecast Accuracy Reduced Inventory Write-Off					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
A1	Forecast accuracy index before Prevedere	Interview	100	100	100
A2	Forecast accuracy index after Prevedere	Interview	101	102	103
A3	Cost of inventory obsolescence	Interview	\$5,000,000	\$5,000,000	\$5,000,000
A4	Percent of benefit attributable to Prevedere guidance		50%	50%	50%
At	Improved forecast accuracy reduced inventory write-off	$((A2-A1)/5\%)*A3*A4$	\$500,000	\$1,000,000	\$1,500,000
	Risk adjustment	↓15%			
Atr	Improved forecast accuracy reduced inventory write-off (risk-adjusted)		\$425,000	\$850,000	\$1,275,000
Three-year total: \$2,550,000			Three-year present value: \$2,046,769		

IMPROVED FORECAST ACCURACY AVOIDED COST OF TRANSPORTING RAW MATERIAL

Evidence and data. Customer executives reported that the improved forecast accuracy also avoided the cost of moving raw materials between production facilities. The interviewed customer indicated that “missing the turn” for market changes resulted in transportation costs of \$500,000 to redistribute raw material between production facilities.

Modeling and assumptions. Prior to working with Prevedere, the customer assessed the cost of missing a forecast.

- The value of a change going up 5% points in forecast accuracy for the customer’s business unit has an average impact of \$500,000.
- In the model, there is a \$50,000 impact for each 1% change in forecast accuracy.

While the improved forecast was a significant asset to executives, the management team still had to make decisions and take actions to leverage opportunities for market increases or to avoid costs for market downturns. As a result, Forrester attributed 50% of the benefit from improved forecasting to the value of Prevedere.

Risks. The impact of Prevedere on any company will vary based on the accuracy of existing forecasts and the ability of the management team to respond.

To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$204,677.

Improved Forecast Accuracy Avoided Cost Of Transporting Raw Material					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
B1	Forecast accuracy index before Prevedere	Interview	100	100	100
B2	Forecast accuracy index with Prevedere	Interview	101	102	103
B3	Cost of transporting raw material	Interview	500,000	500,000	500,000
B4	Percent of benefit attributable to Prevedere guidance		50%	50%	50%
Bt	Improved forecast accuracy avoided cost of transporting raw material	$((B2-B1)/5\%)*B3*B4$	\$50,000	\$100,000	\$150,000
	Risk adjustment	↓15%			
Btr	Improved forecast accuracy avoided cost of transporting raw material (risk-adjusted)		\$42,500	\$85,000	\$127,500
Three-year total: \$255,000			Three-year present value: \$204,677		

REDUCED IMPACT OF EXPOSURE TO INTERNATIONAL TRADE DYNAMICS

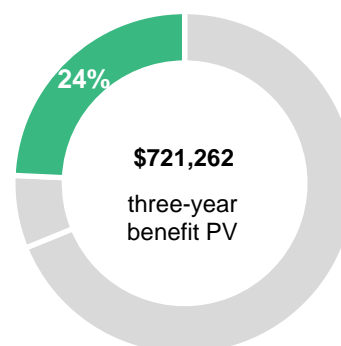
Evidence and data. The interviewed customer said Prevedere captured economic factors beyond their organization’s visibility. The executive described examples of rapidly changing international trade dynamics that incurred costs of \$20 million to \$30 million. The losses came from a surprising excess of product released into the market, which reduced the average sales price of the product and inventory that became obsolete.

Modeling and assumptions. Forrester applied a more conservative set of values, resulting in a total value of \$8 million for this benefit. The value of changes came from:

- Pricing power loss of \$2 million due to a market decrease in the average price of \$25 per unit for the 80,000 units affected.
- Inventory that became obsolete because the company could no longer sell the product. This cost \$6 million.

Risks. The impact of Prevedere on any company will vary based on the accuracy of existing forecasts and the ability of the management team to respond.

Because this example was a one-time event with significant financial implications, Forrester took a highly conservative approach in the modeling and adjusted this benefit downward by 40%, yielding a three-year, risk-adjusted total PV of \$721,262.



Reduced impact of exposure to international trade dynamics: 24% of total benefits

Reduced Impact Of Exposure To International Trade Dynamics					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
C1	Reduced price per unit	Interview			\$25
C2	Number of units affected	Interview			80,000
C3	Cost of reduced margin for product	C1*C2			\$2,000,000
C4	Obsolete Inventory write-off	Interview			\$6,000,000
C5	Potential reduced profit	C3+C4			\$8,000,000
C6	Percent of benefit attributable to Prevedere guidance				20%
Ct	Reduced impact of exposure to international trade dynamics	C5*C6	\$0	\$0	\$1,600,000
	Risk adjustment	↓40%			
Ctr	Reduced impact of exposure to international trade dynamics (risk-adjusted)		\$0	\$0	\$960,000
Three-year total: \$960,000			Three-year present value: \$721,262		

UNQUANTIFIED BENEFITS

Additional benefits that the customer experienced but was not able to quantify include:

- **Management focus.** The customer indicated that the visibility afforded by Prevedere Intelligent Forecasting freed management to concentrate on making strategic decisions instead of tactically responding to breaking changes.
- **Heightened visibility for investors.** Executives developed greater confidence in the accuracy of forecasts, which impacted not only operational decisions, but also direction provided to investors and other forward-looking public statements.
- **Improved consistency controls and guidance across business units.** Rather than have business units working with disparate sets of assumptions, guidance came from a scientifically tested set of assumptions that are unique to each business unit. The result was a more unified vision across the organization.

FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement Prevedere Intelligent Forecasting and later realize additional uses and business opportunities, including:

- **Capex planning.** The customer said Prevedere Intelligent Forecasting helped decision-makers discern future development needs in emerging markets as well as the scale and location of expansion.
- **Future merger and acquisition activity.** The executive said econometric modeling aided the effort to identify potential acquisition targets.
- Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in [Appendix A](#)).

Analysis Of Costs

■ Quantified cost data

Total Costs							
Ref.	Cost	Initial	Year 1	Year 2	Year 3	Total	Present Value
Dtr	Total Cost	\$0	\$275,000	\$270,000	\$260,000	\$805,000	\$668,482
	Total costs (risk-adjusted)	\$0	\$275,000	\$270,000	\$260,000	\$805,000	\$668,482

TOTAL COST

Evidence and data. The costs of using Prevedere Intelligent Forecasting include:

- Subscription costs totaling \$250,000 annually. This includes all data, model and relationship testing, quarterly business unit level forecasts, scenario development, and executive briefings.

- Costs for internal setup and integration totaled \$25,000 in Year 1 and steadily declined to \$20,000 in Year 2 and \$10,000 in Year 3.

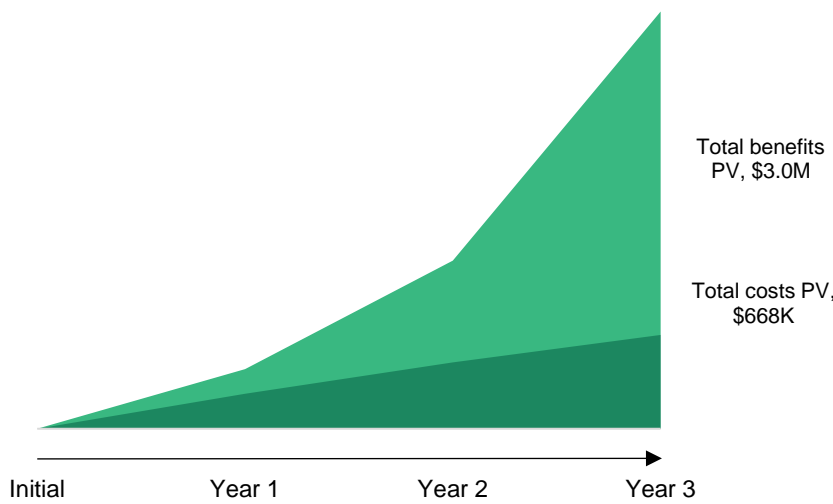
This yields a three-year, risk-adjusted total PV (discounted at 10%) of \$255,000.

Total Cost						
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
D1	Cost of Prevedere	From Prevedere		\$250,000	\$250,000	\$250,000
D2	Internal setup/alignment	Interview		\$25,000	\$20,000	\$10,000
D3	Risk adjustment					
Dt	Total cost	D1+D2	\$0	\$275,000	\$270,000	\$260,000
	Risk adjustment	0%				
Dtr	Total cost (risk-adjusted)		\$0	\$275,000	\$270,000	\$260,000
Three-year total: \$805,000				Three-year present value: \$668,482		

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Financial Summary



The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

These risk-adjusted ROI, NPV, and payback period values are determined by applying risk-adjustment factors to the unadjusted results in each Benefit and Cost section.

Cash Flow Analysis (Risk-Adjusted Estimates)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	\$0	(\$275,000)	(\$270,000)	(\$260,000)	(\$805,000)	(\$668,482)
Total benefits	\$0	\$467,500	\$935,000	\$2,362,500	\$3,765,000	\$2,972,708
Net benefits	\$0	\$192,500	\$665,000	\$2,102,500	\$2,960,000	\$2,304,226
ROI						345%

Appendix A: Total Economic Impact

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

TOTAL ECONOMIC IMPACT APPROACH

Benefits represent the value delivered to the business by the product. The TEI methodology places equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization.

Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.

Flexibility represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.

Risks measure the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the likelihood that estimates will be tracked over time. TEI risk factors are based on "triangular distribution."



PRESENT VALUE (PV)

The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total NPV of cash flows.



NET PRESENT VALUE (NPV)

The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made, unless other projects have higher NPVs.



RETURN ON INVESTMENT (ROI)

A project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.



DISCOUNT RATE

The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.



PAYBACK PERIOD

The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost.

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