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The Total Economic Impact™ Of Alacra Concordance

In Financial Institutions

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Executive Summary

In June 2007, Alacra commissioned Forrester Consulting to examine the total economic impact and potential return on investment (ROI) enterprises may realize by implementing Alacra Concordance. Alacra Concordance ties together multiple forms of reference data including company, security, and industry identifiers. This study illustrates the financial impact of implementing Alacra Concordance in a financial institution.

The challenge for financial services firms like the Alacra customers who participated in this study is to “connect all the dots” in assembling disparate data and information in the pursuit of existing account management or new business development. Providers of market data such as Moody’s, D&B, Thomson, Factiva, and many others, all use proprietary identifiers for the corporate entities that comprise the content they sell. These must be matched with public keys (exchange ticker, ISIN, SEDOL, CIK) and to other external and internal identifiers. The alphabet soup of identifiers is even more complex because distinctions must be made for the different identity levels — such as issuer (the corporate entity) or the specific security (stock, various bonds, warrants). The map changes when corporate actions — mergers, acquisitions or divestitures — cause the identifiers to change, so any concordance or mapping table must be updated regularly. A banker working on a transaction that involves scores of names can face a tedious albeit critical challenge in assembling the correct entity identifiers to pull together the correct information from market data vendors and match it with the bank’s own records. Alacra Concordance enables the integration of external, vendor-supplied content with internal proprietary information.

In conducting in-depth interviews with four of Alacra’s financial services industry customers, Forrester found that these companies achieved significant value from Alacra Concordance in several areas. First, all of the participants of the study described greater productivity for high-value investment bankers, commercial bankers, portfolio managers, and analysts resulting from greater accuracy and timeliness of data used by these decision-makers on important investment opportunities.

Second, each of the study participants described very labor-intensive processes for manually concording entity identifiers that were eliminated with the implementation of Alacra Concordance. Each customer discovered that Concordance was a cost-effective response to the time, cost, and errors associated with manual concording and provided both front- and back-office utility.

Finally, Alacra Concordance provides a foundation for the creation and exercise of future flexibility options — to expand the value of Concordance to more users in the organization, to consolidate data silos, or to create new tools that can bring competitive advantage to bankers’ analyses and ultimately in client service or investing on behalf of one’s own firm.

Purpose

The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Alacra Concordance on their organizations. Forrester’s aim is to clearly show all calculations and assumptions used in the analysis. Readers should use this study to better understand and communicate a business case for investing in Alacra Concordance.

Methodology

Alacra selected Forrester for this project because of Forrester’s industry expertise in master data management, understanding of technology for customer hubs, and its Total Economic Impact (TEI) methodology. TEI not only measures costs and cost reduction (areas that are typically accounted

for within IT) but also weighs the enabling value of a technology in increasing the effectiveness of overall business processes.

For this study, Forrester employed four fundamental elements of TEI in modeling the value of Alacra Concordance:

1. Costs and cost reduction.
2. Benefits to the entire organization.
3. Risk.
4. Flexibility.

Given the increasing sophistication that enterprises have regarding cost analyses related to IT investments, Forrester's TEI methodology serves a valuable purpose by providing a complete picture of the total economic impact of purchase decisions. Please see Appendix B for additional information on the TEI methodology.

Approach

Forrester used a five-step approach for this study:

1. Forrester gathered data from existing Forrester research relative to Alacra Concordance, including master data management and the CRM technology market, in general.
2. Forrester interviewed Alacra marketing and sales personnel to fully understand the value proposition of the Concordance solution.
3. Forrester conducted a series of in-depth interviews with four organizations currently using Alacra Concordance.
4. Forrester constructed a financial model representative of the interviews. This model can be found in the TEI Framework section below.
5. Forrester created a composite organization based on the interviews and populated the framework using data from the interviews as applied to the composite organization.

Key Findings

Forrester's study yielded several key findings:

- **ROI.** Based on interviews with four existing customers, Forrester constructed a TEI framework for a composite organization (see Appendix A), and the associated return on investment (ROI) analysis illustrating the financial impact areas. As seen in Table 1, the risk-adjusted ROI for the composite company is 402% with a breakeven point (payback period) of two months after deployment.
- **Benefits.** Forrester found two areas of significant benefit, in the form of: a) productivity improvements for high-value banking personnel, and b) the internal labor cost savings from manually "concording" or indexing entity identifiers and matching those with a firm's own data, information, and knowledge.

- **Costs.** Key cost categories for deploying Alacra Concordance described in this study are: a) setup fee; b) annual maintenance fee; and c) internal labor to integrate Concordance with an organization's existing data architecture. Pricing for startup and maintenance depends on the number of entities to be concorded, the number and type of identifiers, and the state of hygiene of the original data.

Table 1 illustrates the risk-adjusted cash flow for the composite organization, based on data and characteristics obtained during the interview process. Forrester risk-adjusts these values to take into account the potential uncertainty that exists in estimating the costs and benefits of a technology investment. The risk-adjusted value is meant to provide a conservative estimation, incorporating any potential risk factors that may later impact the original cost and benefit estimates. For a more in-depth explanation of risk and risk adjustments used in this study, please see the Risk section.

The risk-adjusted ROI in this study is uncharacteristically higher than the original ROI estimate. This is because the greatest uncertainty exists in the upside estimates of productivity and labor cost savings, as explained in more detail below.

Table 1: Composite Company ROI, Risk-Adjusted

Summary financial results	Original estimate	Risk-adjusted
ROI	339%	402%
Payback period (months)	2	2
Total costs (present value)	(\$473,867)	(\$474,907)
Total benefits (present value)	\$2,078,171	\$2,383,642
Total (net present value)	\$1,605,850	\$1,911,163

Source: Forrester Research, Inc.

Disclosures

The reader should be aware of the following:

- The study is commissioned by Alacra and delivered by the Forrester Consulting group.
- Alacra reviewed and provided feedback to Forrester, but Forrester maintained editorial control over the study and its findings and did not accept changes to the study that contradicted Forrester's findings or obscured the meaning of the study.
- The customer names for the interviews were provided by Alacra.
- Forrester makes no assumptions as to the potential return on investment that other organizations will receive. Forrester strongly advises that readers should use their own estimates within the framework provided in the report to determine the appropriateness of an investment in Alacra Concordance.
- This study is not meant to be used as a competitive product analysis.

Alacra Concordance: Overview

According to Alacra, the company's Concordance solution ties together multiple forms of reference data including company, security, and industry identifiers. By leveraging both public keys (e.g., exchange ticker, CIK, SEDOL, etc.) and proprietary keys (e.g., D-U-N-S Number, CUSIP, Thomson ID, S&P Issuer ID, and more), Alacra Concordance provides a comprehensive identifier map for global public companies, private companies, subsidiaries and divisions, including all agency-rated corporate entities. Alacra Concordance meets the needs of global financial institutions and professional service firms that need a means to de-dupe client lists, obtain external content identifiers, create a single view of customers and prospects, or build a central authority file.

By using Alacra Concordance, an organization can:

- Clean and de-dupe its list of entities to drive standardization across disparate databases.
- Create a central company authority file to serve as the foundation for multiple applications.
- Join internal systems together.
- Integrate disparate content from both external and internal sources.
- Create a single view of a client or prospect for sales, risk management, or regulatory compliance.
- Ensure that all corporate actions are captured with continuous updates.
- Cross-reference information at the company and security level.

The Alacra Concordance process:

- Uses sophisticated software algorithms to de-dupe, cleanse, match, and append client entities.
- Involves a team of research professionals dedicated to reviewing results generated by its software algorithms for false positives and resolving entities that are not automatically matched.
- Applies a stringent maintenance regimen whereby all Concordance is reviewed daily — new entity identifiers are added, defunct companies are deleted, and changes related to corporate actions are reflected immediately.

Analysis

The financial analysis presented in this study is based mainly on: a) the avoided labor cost of manually matching entity identifiers, and b) an estimate of the productivity improvement experienced by high-value investment professionals when they are not hindered by errors in matching entities or gaps in information at their disposal. These benefit categories refer to checking and correcting the entity identifiers that an organization uses to connect data and information from disparate sources in assembling the information and knowledge to advance its core business activities.

Forrester's approach to evaluating the impact that implementing Alacra Concordance can have on an organization included the following steps:

- Interviews with Alacra marketing and sales personnel.
- In-depth interviews of four organizations currently using Concordance.
- Construction of a common financial framework for the implementation of Concordance.
- Construction of a composite organization based on characteristics of the interviewed organizations.

Interview Highlights

Interviews with four corporations were conducted for this study, involving representatives from the following companies that have implemented Alacra Concordance:

1. The investment management group of a European commercial bank with assets of approximately €300 billion. Five sub-units within the group invest funds for the bank in credit investments, structured tax products, private equity, public finance, and alternative investments (hedge funds). Staff is based in New York, London, Dublin, and Tokyo. A group responsible for research and analytics led the implementation of Concordance which was being used as the core mapping table in a larger project to build a series of proprietary investment information applications. The research and analytics group supports all aspects of pre- and post-investment decisions and monitoring. The bank's Concordance implementation was part of a collection of internal application-building projects to support the investment management group's pre- and post-investment activities. Concordance provides a base of that and allows the applications to "connect all the dots," mapping the proprietary identifiers from a host of market data providers.
2. The corporate investment banking (CIB) division of one of the largest commercial banks in the United States with assets of approximately \$700 billion. The bank provides a broad range of banking, asset management, wealth management, and corporate and investment banking services. The bank operates in more than 20 states, six Latin American countries, and through more than 40 offices around the world. Concordance implementation in this company was part of a large data framework initiative — developing the infrastructure for integrating content from market data providers with the CIB's securities and client data. The goal of Concordance in this project was to eliminate the need to hire new staff or use existing people to manually map identifiers, while reducing the error rate, in a growing securities information system.

3. The knowledge services team within the global banking division at one of the world's preeminent financial services companies, a multibank holding company operating in scores of countries. The division, which includes investment and corporate banking units, implemented Concordance as part of a major initiative to unify market data on desktop applications, via an Internal portal, across the global banking organization. This capability was being expanded to other business units at the time of the interviews.
4. The CRM services group at a large financial holding company. The CRM services group maintains databases containing the systems of record for all clients of the bank's global corporate and investment banking (GCIB) business. The group is also charged with how the GCIB organization procures and consumes market data. Alacra Concordance was licensed in order to support a portal for the investment banking and risk management personnel. The portal brings together 14 internal systems and content from seven market data vendors and ratings services with a 360-degree view of clients.

The four in-depth interviews uncovered that:

- Concurring data is a critical data activity that financial services firms must do to run key business processes regularly. Concurring must be done well so that the information is valid and must be maintained on an ongoing basis. Organizations interviewed for this study viewed the cost of Alacra Concordance as much lower than the cost to perform the work in-house, with better results than if a bank assigned staff to do the work manually. Also, concurring is not an activity that these companies want to do.
- A challenge faced by each of the interviewed companies is making sense of all of the existing relevant market data in the bank by aggregating and presenting it internally together with the company's own records in the context of the investment decisions to be made.
- For organizations like those interviewed for this study, value can be achieved by using Concordance to connect all the market data currently being purchased so that users can plug the market data into any number of analysis tools that will synthesize and aggregate results in the desired context to present intelligence to the banker or investment professional.
- For most financial services firms, different departments own and manage their own market data, much of which overlaps market data purchased and managed by other departments in the bank. Market data contracts are negotiated by each department, maintained in silos, and seldom connected across departments. The value of Concordance can be spread to many groups that struggle to piece together disparate sources of data and information.
- Corporate actions drive the demand for regular updates to any entity identifier matching process. When one company buys another, or divests a subsidiary, the change in identifiers needs to be captured in a timely manner. This is seldom the case with in-house, manual matching, which leads to errors, confusion, and an unsustainable process. The cost of not having the correct ratings assigned for an issuer, for example, is measured in a) the time needed to correct the mismatch, b) bad investment decisions taken, and c) risk of violating compliance regulations. Regular updates of Alacra Concordance capture timely changes to the market identifiers including those generated as a result of corporate actions.
- Organizations chose Alacra for the concordance piece of information integration projects because Alacra is not among the large market information vendors and is perceived to be

“data agnostic.” Interviewees explained to Forrester that Alacra has demonstrated its ability to work with the data vendors to map both public and proprietary identifiers on behalf of the customer who has licensed access to those vendors’ data products.

- All of the organizations that participated in the study voiced high levels of organizational frustration with the data anarchy inherent in the process of manual matching identifiers for thousands of entities. “Before you know it,” explained one interviewee, “you’ve got people all over the organization mapping all sorts of data sets, none of it timely, none of it consistent — you’ve got a mess on your hands.”

TEI Framework

Introduction

From the information provided in the in-depth interviews, Forrester has constructed a TEI framework for those organizations considering implementation of Concordance. The objective of the framework is to identify the cost, benefit, risk factors, and flexibility that impact the investment decision.

Composite Organization

Based on the interviews with four of the existing customers provided by Alacra, Forrester constructed a TEI framework, a composite company, and an associated ROI analysis that illustrates the areas impacted financially. The composite organization that Forrester synthesized from these results represents a \$30 billion diversified financial services company that provides a broad range of banking and brokerage, asset and wealth management, and corporate and investment banking products and services. This organization has a dedicated data research team of 10 individuals that is responsible for regularly compiling publicly-available financial data and news on 65,000 entities, the results of which are used by executives throughout the company as a basis for time-critical corporate investment decisions. See Appendix A for more details on the composite organization.

Framework Assumptions

Table 2 lists the discount rate used in the PV and NPV calculations and time horizon used for the financial modeling.

Table 2: General Assumptions

General assumptions	Value
Discount rate	8%
Length of analysis	Three years

Source: Forrester Research, Inc.

Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are urged to consult with their respective organization’s finance department to determine the most appropriate discount rate to use within their own organizations.

Costs

The key cost categories associated with the Concordance solution are: 1) an initial setup fee; 2) an annual maintenance fee; and 3) labor costs associated with the internal team responsible for implementing and maintaining the solution. The project is measured on a three-year basis. The following are the cost inputs to the financial analysis.

Initial Setup Fee

The setup fee covers initial data integration from external information providers, cleansing and normalization of the customer's entity data, and entity matching and ID assignment. This one-time cost also includes initial proof-of-concept and testing to satisfy data accuracy requirements. The result of these processes is a single lookup file that contains a unique identifier for each entity, mapped to identifiers specific to data providers. The setup fee for the composite company is assumed to be \$50,000 based on the experience of the Alacra customers interviewed for this study.

Annual Maintenance Fee

The largest cost item in this project is the annual maintenance fee for the Concordance service. The fee covers ongoing regular support and maintenance — Alacra updates the file regularly to include recent corporate actions. The maintenance fee is highly dependent on the number of entities, number of identifiers and/or data providers, the quality of the customer's existing data set, and the frequency (daily or weekly). Forrester found the fee charged to Alacra customers interviewed for this study ranged from \$50,000 to \$300,000. The composite company requires concording of publicly-available financial data and news on 65,000 entities using 16 different public and proprietary identifiers (including, for example, exchange ticker symbol, SIC and NAIC codes, URLs, D-U-N-S Number, RIC, Factiva ID, Markit Red Code and Moody's Issuer ID). At a cost of \$0.15 per field per entity (based on the data requirements and condition of the customer's data inputs), the maintenance fee amounts to \$156,000 (16 x 65,000 x \$0.15).

Table 3: Annual Maintenance Fee

Ref.	Metric	Calculation	Per period	Year 1	Year 2	Year 3	Total
A1	Number of fields/data providers		16				
A2	Number of entities		65,000				
A3	Annual cost per field per entity		\$0.15				
At	Concordance annual fee	$A1 * A2 * A3$	\$156,000				
Ato	Total			\$156,000	\$156,000	\$156,000	\$468,000

Source: Forrester Research, Inc.

Internal Labor Costs

Forrester has found that organizations can maximize the value that Concordance provides by having a team of dedicated professionals for internal data support activities. Each of the customers Forrester interviewed had a team that worked on making changes to the data architecture and infrastructure to facilitate data consolidation across department silos and roll-out results from Concordance implementation to the greatest number of users throughout the firm. For an organization like the composite company, Forrester estimates a team of one project manager, one data architect, and three database administrators would be needed for six months on a part-time basis to carry out such activities. Using market rates for fully-loaded compensation estimates, internal implementation labor costs would amount to \$21,840.

Table 4: Internal Labor Costs

Ref.	Metric	Calculation	Initial cost	Year 1	Year 2	Year 3	Total
B1	Number of PMs/architects		2				
B2	Hourly rate of PM/architect	\$125,000/52/40	\$60				
B3	Number of hours (Concordance portion of project)	2 hours per week for 26 weeks	52				
B4	Number of DBAs		3				
B5	Hourly rate of DBAs	\$95,000/52/40	\$50				
B6	Number of hours	4 hours per week for 6 months	104				
Bt	Internal implementation labor costs	$B1*B2*B3 + B4*B5*B6$	\$21,840				
Bto	Total		\$21,840	\$0	\$0	\$0	\$21,840

Source: Forrester Research, Inc.

Total Costs

The costs described above are summarized in Table 5.

Table 5: Total Costs

Costs	Initial	Year 1	Year 2	Year 3	Total
Initial setup fee	50,000				50,000
Concordance annual fee		156,000	156,000	156,000	468,000
Internal implementation labor costs	21,840				21,840
Total	\$71,840	\$156,000	\$156,000	\$156,000	\$539,840

Source: Forrester Research, Inc.

Benefits

It's really not about coming up with new information. All of the information and market data that anyone in the bank could want is out there. But how it is aggregated and presented internally with the company's own books and records, with the company's own investment decisions, with the company's own opinion on stuff, that's where the value add is. It's the context of how you present information. Unless you present market data in the context of your own investment picture and your own investment strategy, attached to your own book of business and portfolio, it's useless. We want to make sure that any piece of information that's going to matter in the investment decision is readily available, real time, and can be presented in the context that can affect the decision. Any model that we build, any analysis that we run using market data, feeds off of that [Concordance] base of identifiers (Vice President, Research & Analysis Investment Management Group, European Commercial Bank)

The Alacra customers interviewed for this study described a range of benefits that they have experienced from their Concordance implementations and the development of proprietary tools and programs built upon the Concordance solution. The most significant benefit described to Forrester was a major leap in the overall accuracy and timeliness of data used by key decision-makers on important investment and deal advisory opportunities. Within an investment banking environment, for example, bankers and managers regularly need up-to-the-minute information based on accurate market data from a variety of sources. By enabling the integration of external, vendor-supplied content into internal proprietary information frameworks, Concordance enables investment decision-makers, in this case, to quickly retrieve information from the various market data providers to whose content the firm has licensed access using a common identifier. One customer interviewed by Forrester reported that Concordance was able to reduce the time to deliver a fully-completed analysis to a senior banker from a week, using a manual process, to 15 minutes with the help of Concordance. "Concordance saves the time a senior banker spends analyzing partially obsolete data and reduces the time it takes to make a decision because of more real-time accurate data," noted one interviewee. Another explained to Forrester that, "a typical underwriter will spend one to three hours to pull recent data for an existing client even if we have a credit history on him. But if it's a new client, it can take up to a day to get various data sources. With the benefit of Concordance it takes just minutes."

Improved Efficiency For Investment Professionals

Based on the experience of the financial institutions interviewed for this study, Forrester estimated the time saved by 50 investment professionals from faster access to more data with greater accuracy. This benefit category is associated with what one study participant termed “banker interruption” and the reduction of such obstacles to efficiency that result from implementing Alacra Concordance. Forrester conservatively estimates that for an organization like the composite company, each professional in the investment management or investment banking department would save 2 hours per week from manually retrieving information and from not having to correct errors from, for example, including the wrong corporate entity in an analysis. Forrester adds an additional conservative factor by including only 75% of that freed time in the benefit calculation, assuming that not all of the recovered time will be converted into actual productive time. Assuming a fully-loaded compensation rate of \$120 per hour, the time saved would calculate to an estimated value of \$432,000 annually.

Table 6: Improved Efficiency For Investment Professionals

Ref.	Metric	Calculation	Per period	Year 2	Year 3	Total
C1	Number of investment professionals		50			
C2	Hourly rate per decision-maker		\$120			
C3	Number of hours saved per week	Error correction, vetting accuracy	2.0			
C4	Weeks		48			
C5	Percent captured		75%			
Ct	Incremental output per investment professional — time saved by Concordance	$C1 * C2 * C3 * C4 * C5$	\$432,000			
Cto	Total (original)		\$432,000	\$432,000	\$432,000	\$1,296,000

Source: Forrester Research, Inc.

Labor Cost Avoidance From Manual Entity Matching And ID Assignment (Concording)

Prior to the implementation of Alacra Concordance, each of the customers Forrester interviewed had been manually concording data: retrieving data, matching entities, and assigning identifiers to report results. All of the customers expressed the following frustrations with the manual concordance process:

- Labor-intensive and time-consuming, regularly tying-up talented resources on low-grade technical tasks such as data clean-up and identifier matching.
- Delays in generating results, which, because of constantly-changing market conditions, could become obsolete by the time they were read.
- Unacceptable rates of error, causing the team managing the process to lose credibility and trust across the firm.

The Total Economic Impact™ Of Alacra Concordance

Ultimately, each customer discovered that the time and cost associated with manual concording demanded a more cost-effective response to the organization's concording requirements. The organizations interviewed for this study explained that even senior staff too frequently had to be involved in mapping data, as they were ultimately responsible for their portfolios. And the process would back up when delegated to junior staff, as one participant noted: "We actually relied on the bankers to tell us when their codes were producing errors, which is not a great place to be if we want to provide a good service and support." This work can be so time-consuming that at least one financial services firm focused only on each banker's top 50 clients for accurate data mapping, when most senior bankers were responsible for as many as 100 clients.

Forrester conservatively estimates for an organization like the composite company, 25 data analysts would be needed, each for 8 hours per week, to conduct the manual concording processes. Using an estimate of \$36.00 for the fully-loaded compensation rate, Forrester calculates the composite company would spend \$375,000 annually to maintain manual concordance processes, as shown in Table 7 below.

Table 7: Labor Cost Avoidance From Manual Entity Matching And ID Assignment

Ref.	Metric	Calculation	Per period	Year 2	Year 3	Total
D1	Number of data analysts		25			
D2	Hourly rate per data analyst		\$36			
D3	Number of hours per week		8			
D4	Weeks		52			
Dt	Labor cost avoidance - manual concording activity	$D1 * D2 * D3 * D4$	\$374,400			
Dto	Total (original)		\$374,400	\$374,400	\$374,400	\$1,123,200

Source: Forrester Research, Inc.

Total Benefits

The benefits described in the tables above are summarized in Table 8 below.

Table 8: Total Benefits

Benefits	Initial	Year 1	Year 2	Year 3	Total
Incremental output per investment professional — time saved by Concordance		432,000	432,000	432,000	1,296,000
Labor cost avoidance — manual concording activity		374,400	374,400	374,400	1,123,200
Total		\$806,400	\$806,400	\$806,400	\$2,419,200

Source: Forrester Research, Inc.

Benefits Not Quantified

Forrester believes that the benefits described above are those that are the most immediately quantifiable. In constructing an overall assessment of the benefits of Alacra Concordance for their own organizations, users of this study should also consider benefits articulated by the participating organizations that Forrester does not quantify for this study, namely, improved quality of decision-making in a financial institution. As one interviewee explained to Forrester, “[Concordance] saves time across the board. But then how do you quantify the benefit of having the investment information and the decision to make . . . , even a decision not to make an investment? That time saved by a senior portfolio manager, it’s not just the time that they’re working, but also time saved for them to now move on to the next deal. I think the more important question is, ‘What’s the cost of not having the correct ratings assigned with an issuer?’ or ‘What’s the cost of not having the correct loan portfolio map into a client when you’re doing an analysis on a client?’”

Risk

Risk is the third component within the TEI model; it is used as a filter to capture the uncertainty surrounding different cost and benefit estimates. If a risk-adjusted ROI still demonstrates a compelling business case, it raises confidence that the investment is likely to succeed because the risks that threaten the project have been taken into consideration and quantified. The risk-adjusted numbers should be taken as “realistic” expectations, since they represent the expected values considering risk. In general, risks affect costs by raising the original estimates, and they affect benefits by reducing the original estimates.

Forrester risk-adjusts cost and benefit estimates to better reflect the level of uncertainty that exists for each estimate. The TEI model uses a triangular distribution method to calculate risk-adjusted values. To construct the distribution, it is necessary to first estimate the low, most likely, and high values that could occur for the key assumptions. The risk-adjusted value is the mean of the distribution of those points.

For example, in the case of the benefit calculation for greater efficiency among investment professionals (see Table 6 above); the \$432,000 annual benefit value used in this analysis can be considered the “most likely” value. This benefit will vary based on several factors, including the number of errors occurring in results generated from the manual concordance process, the severity of those errors, and the number of hours spent by the investment professional correcting these errors and vetting accuracy. Since variability in the number of hours saved correcting errors takes into account each of these factors, a high and a low estimate are used instead of the more-complex triangular distribution to estimate risk.

This method typically has the effect of increasing the cost estimates to take into account the fact that original cost estimates are more likely to be revised upward than downward, while it has the opposite effect on benefits — risk adjustments for benefits reduce the original benefits estimates — resulting in a conservative filter for financial assumptions. In this study, however, the risk-adjusted ROI is higher than the original ROI estimate. This is because the greatest uncertainty exists in the upside estimates of productivity and labor cost savings.

The following tables show the values used to adjust for uncertainty in cost and benefit estimates. Different costs and benefits estimates have different levels of risk adjustments. Readers are urged to apply their own risk ranges based upon their own degrees of confidence in the cost and benefit estimates.

The Total Economic Impact™ Of Alacra Concordance

Costs

The following assumptions have been used to calculate the low, most likely, high, and mean cost amounts.

Initial Setup Fee

Forrester assumes this amount has been determined by contract, so no risk adjustment is applied.

Annual Maintenance Fee

Forrester assumes this amount has been determined by contract, so no risk adjustment is applied.

Internal Implementation Labor Costs

Internal labor costs can range from a low of \$10,920 to a maximum of \$35,880, with a most likely value of \$21,840. This variability is driven by the uncertainty in the number of hours that data architects and database administrators would need to spend weekly on making changes to the data architecture and other internal data support activities. The table below summarizes these differences in hours. Organizations with highly complex data architecture and infrastructures should expect their internal labor hours to be closer to the high estimate, whereas those organizations with less complex systems should experience internal labor hours to be closer to the low estimate.

Table 9: Risk Adjustment — Internal Implementation Labor

Ref.	Metric	Calculation	Per period	Year 1	Year 2	Year 3	Total
E1	Number of PMs/architects		2				
E2	Hourly rate of PM/architect	\$125,000/52/40	\$60				
	<i>Variable low</i>	1 hour per week for 26 weeks	26				
E3	Number of hours (Concordance portion of project)	2 hours per week for 26 weeks	52				
	<i>Variable high</i>	4 hours per week for 26 weeks	104				
E4	Number of DBAs		3				
E5	Hourly rate of DBAs	\$95,000/52/40	\$50				
	<i>Variable low</i>	2 hours per week for 26 weeks	52				
E6	Number of hours	4 hours per week for 26 weeks	104				
	<i>Variable high</i>	6 hours per week for 26 weeks	156				
	<i>Equation low</i>	$E1 \cdot E2 \cdot 26 + E4 \cdot E5 \cdot 52$	\$10,920				
Et	Internal implementation labor costs	$E1 \cdot E2 \cdot E3 + E4 \cdot E5 \cdot E6$	\$21,840				
	<i>Equation high</i>	$E1 \cdot E2 \cdot 104 + E4 \cdot E5 \cdot 156$	\$35,880				
Eto	Total (original)		\$21,840	\$0	\$0	\$0	\$21,840
Etr	Total (risk-adjusted)	Average (orig, low, high)	\$22,880	\$0	\$0	\$0	\$22,880
Etl	Total (low)		\$10,920	\$0	\$0	\$0	\$10,920
Eth	Total (high)		\$35,880	\$0	\$0	\$0	\$35,880

Total Costs

The three-year risk-adjusted costs are summarized in the following table.

Table 10: Risk Adjustment — Total Costs

Costs	Initial	Year 1	Year 2	Year 3	Total
Initial setup fee	50,000				50,000
Concordance annual fee		156,000	156,000	156,000	468,000
Internal implementation labor costs	22,880				22,880
Total	\$72,880	\$156,000	\$156,000	\$156,000	\$540,880

Source: Forrester Research, Inc.

Benefits

The following assumptions have been used to calculate the low, most likely, high, and mean benefit amounts.

Greater Efficiency Among Investment Professionals

Based on the number of errors occurring in results generated from the manual concordance process and the severity of those errors, Forrester estimates the amount of time each investment professional saves correcting errors and vetting accuracy can range from 1 to 4 hours per week, with a most likely value of 2 hours per week. Taking into account this variability, the dollar equivalent of the time saved can range from \$216,000 to \$864,000 annually, with a most likely amount saved being \$432,000. The risk-adjusted mean value is \$504,000.

Table 11: Risk Adjustment — Investment Staff Efficiency

Ref.	Metric	Calculation	Per period	Year 2	Year 3	Total
F1	Number of investment professionals		50			
F2	Hourly rate per decision-maker		\$120			
	<i>Variable low</i>		1			
F3	Number of hours saved per week	Error correction, vetting accuracy	2			
	<i>Variable high</i>		4			
F4	Weeks		48			
F5	Percent captured		75%			
	<i>Equation low</i>	$F1 * F2 * F3 * F4 * F5$	\$216,000			
Ft	Incremental output per investment professional — time saved by Concordance	$F1 * F2 * F3 * F4 * F5$	\$432,000			

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	<i>Equation high</i>	$F1 * F2 * F3 * F4 * F5$	\$864,000			
Fto	Total (original)		\$432,000	\$432,000	\$432,000	\$1,296,000
Ftr	Total (risk-adjusted)	Average (orig, low, high)	\$504,000	\$504,000	\$504,000	\$1,512,000
Ftl	Total (low)		\$216,000	\$216,000	\$216,000	\$648,000
Fth	Total (high)		\$864,000	\$864,000	\$864,000	\$2,592,000

Source: Forrester Research, Inc.

Cost Avoidance From Manual Entity Matching And ID Assignment (Manual “Concording”)

The labor cost avoidance savings from manual concording activities is dependent on several factors that affect the number of hours an organization can expect each of its data analysts to spend carrying out requisite tasks:

- The number of fields and entities that need to be concorded,
- The frequency with which the concordance file needs to be updated,
- The technical and quantitative skill levels of each of its data analysts, and
- The complexity of the corporate data architecture and infrastructure.

Based on these factors, Forrester estimates the amount of time each data analyst can save as 2 to 16 hours per week during a year-long assignment, with the typical value being 8 hours per week. For a team consisting of 25 analysts earning \$36 per hour, the savings estimates of not having to continue the manual concordance process varies from a low of \$140,625 to a high of \$750,000 per year, with an original estimate of the savings of \$375,000. The risk-adjusted mean value is \$421,875.

Table 12: Risk Adjustment — Cost Avoidance From Manual Entity Matching

Ref.	Metric	Calculation	Per period	Year 2	Year 3	Total
G1	Number of data analysts		25			
G2	Hourly rate per data analyst		\$36			
	<i>Variable low</i>		3			
G3	Number of hours per week		8			
	<i>Variable high</i>		16			
G4	Weeks		52			
	<i>Equation low</i>	$G1 * G2 * 3 * G4$	\$140,400			
Gt	Labor cost avoidance — manual concording activity	$G1 * G2 * 8 * G4$	\$375,000			
	<i>Equation high</i>	$G1 * G2 * 16 * G4$	\$748,000			
Gto	Total (original)		\$374,400	\$374,400	\$374,400	\$1,123,200

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Gtr	Total (risk-adjusted)	Average (orig, low, high)	\$420,933	\$420,933	\$420,933	\$1,265,025
Atl	Total (low)		\$140,400	\$140,400	\$140,400	\$421,875
Ath	Total (high)		\$748,000	\$748,000	\$748,000	\$2,250,000

Source: Forrester Research, Inc.

Total Benefits

The three-year risk-adjusted benefits and their present values are summarized in the following table.

Table 13: Risk Adjustment — Total Benefits

Benefits	Initial	Year 1	Year 2	Year 3	Total
Incremental output per investment professional — time saved by Concordance		\$504,000	\$504,000	\$504,000	\$1,512,000
Labor cost avoidance — manual concording activity		\$420,933	\$420,933	\$420,933	\$1,265,025
Total		\$925,933	\$925,933	\$925,933	\$2,777,025

Source: Forrester Research, Inc.

Flexibility

“Concordance gives you a base of information that lets you build and extend your tentacles, so to speak, for both analyses and system development. It takes off the boundaries of what you can do.” (Director of database analytics)

Flexibility, as defined by Forrester’s TEI methodology, represents an investment in additional capacity or capability today that could be turned into future business benefits for some future additional cost. Flexibility benefits typically increase with the scalability of the technology investment. This provides an organization with the “right” or the ability to engage in future initiatives but not the obligation to do so.

As explained earlier, Concordance enables faster access to more data with greater accuracy. Since the potential benefits significantly improve the quality and scalability of the corporate data infrastructure, Forrester believes that the range of flexibility options available to an organization is only limited by what it can do with better market data. “It’s going to affect all parts of the bank,” noted one interviewee in a bank that had recently implemented Concordance. Because of their investment in Concordance, the Alacra customers who Forrester interviewed recognized the following flexibility options:

- The development of data-rich sophisticated applications and tools that empower financial professionals with better data. These tools would likely run off of results generated by Concordance. As one participant described, “You can build something that has value for just about anybody in the bank for probably one tenth the price of a Bloomberg terminal.”

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- The ability to quickly expand the range of data services to any number of end users. Since Concordance makes it easy to increase the number of entities and/or data fields at any time after the initial implementation, an organization can quickly scale up its data reporting services without any significant additional effort or cost.
- The reduction of overall data inconsistency and consolidating corporate data stores. Because organizations can easily expand the scope of concordance activities, there will be less of a need to manage other manual concordance activities that support access to disparate, standalone databases throughout the firm. Consolidating data silos can lead to significant cost reductions.

These flexibility options do not promise immediate benefits and likely will be captured later. The existence of the option to capture these benefits has a present value that can be estimated. Yet each of these flexibility options is highly variable for each customer, and calculating their value using the industry standard Black-Scholes option pricing model would require inputs that were not available in the course of this study. Forrester therefore has not included the value of these options in the ROI calculations demonstrated throughout this study. These values exist in addition to the risk-adjusted benefits described in this analysis.

TEI Framework: Summary

Considering the financial framework constructed above, the results of the costs, benefits, and risk sections using the representative numbers can determine a return on investment, net present value, and payback period. Table 16 shows the consolidation of the numbers for the composite organization.

Tables 14 and 15 show the risk-adjusted values after applying the risk-adjustment method indicated in the Risk section above.

Table 14: Total Risk-Adjusted Costs

Costs	Initial	Year 1	Year 2	Year 3	Total	Present value
Initial setup fee	50,000				50,000	50,000
Concordance annual fee		156,000	156,000	156,000	468,000	402,027
Internal implementation labor costs	22,880				22,880	22,880
Total	\$72,880	\$156,000	\$156,000	\$156,000	\$540,880	\$474,907

Source: Forrester Research, Inc.

Table 15: Total Risk-Adjusted Benefits

Benefits	Year 1	Year 2	Year 3	Total	Present value
Incremental output per investment professional — time saved by Concordance	504,000	504,000	504,000	1,512,000	1,298,857
Labor cost avoidance — manual concurring activity	420,933	420,933	420,933	1,265,025	1,084,785
Total	\$924,933	\$924,933	\$924,933	\$2,777,025	\$2,383,642

Source: Forrester Research, Inc.

Note that values used throughout the TEI Framework are based on in-depth interviews with four organizations and the resulting composite organization built by Forrester. Forrester makes no assumptions as to the potential return that other organizations will receive within their own environment. Forrester strongly advises that readers use their own estimates within the framework provided in this study to determine the expected financial impact of implementing Alacra Concordance.

Study Conclusions

The financial analysis provided in this study illustrates the framework by which an organization can evaluate the value proposition of Alacra Concordance. Based on information collected in four customer interviews, Forrester calculated a three-year risk-adjusted ROI of 402% for the composite organization with a payback period of two months. All final estimates are risk-adjusted to incorporate potential uncertainty in the calculation of costs and benefits.

Based on these findings, Forrester believes that companies looking to implement Alacra Concordance can see significant productivity gains for high-value staff as well as labor cost for support staff. Using the TEI framework, many companies may find the potential for a compelling business case to make such an investment.

Table 16: Composite Company ROI, Risk-Adjusted

Summary financial results	Original estimate	Risk-adjusted
ROI	339%	402%
Payback period (months)	2	2
Total costs (PV)	(\$473,867)	(\$474,907)
Total benefits (PV)	\$2,078,171	\$2,383,642
Total (NPV)	\$1,605,850	\$1,911,163

Source: Forrester Research, Inc.

Appendix A: Composite Organization Description

Based on the interviews with four existing customers provided by Alacra, Forrester constructed a composite company, which we will call “Global Investment and Banking Corporation” (GIBC), to serve as the focal point for the multi-company case study. A TEI financial framework and an associated ROI analysis will be created around the composite company. By aggregating the findings from the customer interviews and portraying a composite organization that is achieving value from Alacra Concordance, this Forrester study illustrates the financial impact for a typical customer.

GIBC is a \$30 billion, diversified financial services company that provides a broad range of banking and brokerage, asset and wealth management, and corporate and investment banking products and services. It has 75,000 employees spread across 500 offices in the Americas, Europe, and Asia, with significant investment banking operations centered in New York, London, Tokyo and Hong Kong.

Context And Current Environment

GIBC’s dedicated data research team of 10 individuals provides data modeling, due diligence, and other general research services that affect pricing, monitoring, and investment decision-making.

- This team is responsible for regularly compiling publicly-available financial data and news on 65,000 entities, the results of which are used by banking professionals throughout the company as a basis for time-critical corporate investment decisions. This requires data feeds from 16 different data vendors.
- The goal of the Concordance project is to develop an automated and cost-effective service that accurately maintains identifiers for each entity in a single, lookup file, and to:
 - Integrate disparate content from both external and internal sources.
 - Capture changes resulting from corporate actions in regular updates.
 - Assist in providing a single view of the firm’s clients.

Reasons For Investment In Alacra Concordance

- Improve the quality of research and the speed with which it is delivered to key decision-makers.
- Eliminate the manual effort, and attendant errors, from manually matching identifiers with entities, thus freeing resources for other tasks

Cost Of Alacra Concordance

- 16 fields x 65,000 entities x \$0.15 per field per entity = \$156,000.

Appendix B: Total Economic Impact™ Overview

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.

The TEI methodology consists of four components to evaluate investment value: benefits, costs, risks, and flexibility. For the purpose of this analysis, the impact of flexibility was not quantified.

Benefits

Benefits represent the value delivered to the user organization — IT and/or business units — by the proposed product or project. Often product or project justification exercises focus just on IT cost and cost reduction, leaving little room to analyze the effect of the technology on the entire organization. The TEI methodology and the resulting financial model place 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. Calculation of benefit estimates involves a clear dialogue with the user organization to understand the specific value that is created. In addition, Forrester also requires that there be a clear line of accountability established between the measurement and justification of benefit estimates after the project has been completed. This ensures that benefit estimates tie back directly to the bottom line.

Costs

Costs represent the investment necessary to capture the value, or benefits, of the proposed project. IT or the business units may incur costs in the forms of fully-burdened labor, subcontractors, or materials. Costs consider all the investments and expenses necessary to deliver the proposed value. In addition, the cost category within TEI captures any incremental costs over the existing environment for ongoing costs associated with the solution. All costs must be tied to the benefits that are created.

Risk

Risk measures the uncertainty of benefit and cost estimates contained within the investment. Uncertainty is measured in two ways: the likelihood that the cost and benefit estimates will meet the original projections and the likelihood that the estimates will be measured and tracked over time. TEI applies a probability density function known as "triangular distribution" to the values entered. At a minimum, three values are calculated to estimate the underlying range around each cost and benefit.

Flexibility

Within the TEI methodology, direct benefits represent one part of the investment value. While direct benefits can typically be the primary way to justify a project, Forrester believes that organizations should be able to measure the strategic value of an investment. Flexibility represents the value that can be obtained for some future additional investment building on top of the initial investment already made. For instance, an investment in an enterprise-wide upgrade of an office productivity suite can potentially increase standardization (to increase efficiency) and reduce licensing costs. However, an embedded collaboration feature may translate to greater worker productivity if activated. The collaboration can only be used with additional investment in training at some future point in time. However, having the ability to capture that benefit has a present value that can be estimated. The flexibility component of TEI captures that value.

Appendix C: Glossary

Discount rate: The interest rate used in cash flow analysis to take into account the time value of money. Although the Federal Reserve Bank sets a discount rate, companies often set a discount rate based on their business and investment environment. Forrester assumes a yearly discount rate of 8% for this analysis. Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are urged to consult their organization to determine the most appropriate discount rate to use in their own environment.

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.

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

Payback period: The breakeven point for an investment at which net benefits (benefits minus costs) equal initial investment or cost.

Return on investment (ROI): A measure of a project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits minus costs) by costs.

A Note On Cash Flow Tables

The following is a note on the cash flow tables used in this study. The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1. Those costs are not discounted. All other cash flows in Years 1 through 3 are discounted using the discount rate at the end of the year. Present value (PV) calculations are calculated for each total cost and benefit estimate. Net present value (NPV) calculations are not calculated until the summary tables and are the sum of the initial investment and the discounted cash flows in each year.

Appendix D: About the Project Team

Jeffrey North, Senior Consultant

Jeffrey North is a senior consultant with Forrester's Total Economic Impact (TEI) consulting practice. The TEI methodology focuses on measuring and communicating the value of IT and business decisions and solutions as well as providing a business case based on the costs, benefits, risk, and flexibility of investments.

Jeff came to Forrester with consulting and operating experience, notably working with fast-growth companies. He was a founding member of the digital strategy practice at Cambridge Technology Partners, where he specialized in business value justification of technology investments and customer advocacy. As a director in the international and catalog business units at Staples, Jeff built and managed metrics and reporting programs in North America and Europe as the company experienced significant growth. He has also consulted in a business-IT capacity to retailers and life sciences companies.

Jeff holds a B.A. from St. Lawrence University and an M.B.A. with concentrations in international management and finance from the Thunderbird School of Global Management.

Amit Diddee, Consultant

Amit Diddee is a consultant with Forrester's Total Economic Impact (TEI) consulting practice. Amit specializes in developing complex financial analytic models and decision-support systems to help clients solve business challenges around financial justification of investments.

Amit's past experience spans a wide variety of industries and functional areas. Amit came to Forrester from the Monitor Group, where he advised top Fortune 500 companies on high-profile projects focused on corporate and growth strategy, marketing and sales, IT, and performance improvement. Prior to the Monitor Group, Amit worked at EMC Corporation implementing process improvement projects to increase customer satisfaction levels and business productivity. He was also a senior technical analyst at Business Forecast Systems, where he provided demand management and supply chain consulting services.

Amit holds a B.S. in Neuroscience and Psychology from Brandeis University and a M.S. in Computer Science with a concentration in Knowledge Discovery and Data Mining from Worcester Polytechnic Institute.