

A Forrester Total Economic  
Impact™ Study  
Commissioned By  
Digital Reasoning

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# The Total Economic Impact™ Of Digital Reasoning Conduct Surveillance

Improved Security And Savings  
Enabled By Digital Reasoning  
Conduct Surveillance

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### ABOUT FORRESTER CONSULTING

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## Executive Summary

Digital Reasoning commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) that enterprises may realize by deploying Conduct Surveillance. Conduct Surveillance is a next-generation electronic communications surveillance solution that organizations can use to identify manipulation, collusion, unauthorized trading, and unethical practices. This solution is built on Digital Reasoning's cognitive computing platform, which uses machine learning techniques and contextual analysis across a comprehensive array of structured and unstructured data. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Conduct Surveillance on their organizations.

To better understand the benefits, costs, and risks associated with Conduct Surveillance, Forrester interviewed an existing customer with over a year of experience using Conduct Surveillance. The organization is an investment management firm based in the United States with over \$10 billion in assets under management (AUM).

Prior to Conduct Surveillance with Digital Reasoning, the customer was using a legacy surveillance solution and was challenged by the prohibitively large volume of alerts that it was required to process from this legacy solution. As part of its initiative to mitigate risk and implement a next-generation surveillance solution, the customer evaluated a number of vendors and chose Digital Reasoning after running a proof of concept (POC). "It's all about being a better asset management company. With Digital Reasoning, we are better able to protect IP. We've improved our accuracy and improved security," one associate director on the surveillance and compliance team noted. By using Conduct Surveillance, the firm was able to reduce its false positives by over 50%. The firm also saw increased operational efficiency, productivity savings, and a reduction in risk of sanctions.

**Digital Reasoning Conduct Surveillance can help reduce the costs of managing an e-surveillance process, improve accuracy, and reduce risk.**

**A number of benefits for the organization that Forrester interviewed are:**

- **Reduction of false positives by 50%.**
- **Security analyst productivity savings: \$945,000.**
- **Downtime reduction savings: \$181,000.**
- **Reduced costs of legacy applications: \$1.18 million.**
- **Front-office time savings: \$452,000.**
- **Reduced security risk: \$632,000.**

### DIGITAL REASONING CONDUCT SURVEILLANCE DRIVES COST AVOIDANCE SAVINGS AND REDUCES RISK

Forrester's interview with a Conduct Surveillance customer found that the organization experienced the risk-adjusted ROI, benefits, and costs shown in Figure 1.<sup>1</sup> The financial analysis shows that the organization benefited from avoided costs of more than \$3.39 million compared with incurred costs of approximately \$1.68 million. The final results are a net present value (NPV) of more than \$1.7 million and an ROI of 102%.

**FIGURE 1**  
**Financial Summary Showing Three-Year Risk-Adjusted Results**

**Return:**  
**2.02X**

**NPV:**  
**\$1.7 million**

**Payback:**  
**4 months**

**Reduction in  
false positives:**  
**50%**

Source: Forrester Research, Inc.

› **Benefits.** The organization experienced the following risk-adjusted net present value benefits:

- **Analyst productivity savings with more efficient processes.** Prior to Digital Reasoning, the firm had to review 10,000 alerts per day. The firm gained more efficient review processes and also saw a 50% reduction in false positives through its Digital Reasoning Conduct Surveillance implementation. As a result, the interviewed organization was able to restructure its surveillance team and save \$945,004 over three years.
- **Savings from reduced downtime.** By moving to the Digital Reasoning platform from its previous legacy solution, the organization was able to reduce downtime incidents by 10 days over the course of a year. This reduction in downtime saved the firm \$181,731 over three years.
- **Direct cost avoidance from discontinuing legacy systems.** The organization also discontinued use of its legacy compliance system, saving it \$1.18 million in fees over three years.
- **Front-office time savings.** Apart from productivity savings for the compliance and surveillance team, investment professionals in the front office saw time savings with the improved research intelligence and aggregation enabled by Digital Reasoning Conduct Surveillance. These savings are quantified at \$451,938 over three years.
- **Reduction of security risk, resulting in lower probability of sanctions.** With Digital Reasoning Conduct Surveillance, the organization gained the improved ability to identify noncompliance and prevent incidents that could lead to regulatory sanctions. Cost avoidance savings from this increased security and reduction of risk are quantified at \$632,231 over the three-year analysis.
- Other qualitative benefits cited by the interviewed organization include improved visibility, increased accuracy, and increased business agility.

**Costs.** The organization experienced the following risk-adjusted costs:

- **Digital Reasoning Conduct Surveillance costs.** The organization allocated over \$1.3 million over three years in Digital Reasoning fees for the Conduct Surveillance solution as well as associated consulting services. Use of Digital Reasoning consulting services are optional and dependent on the resources and requirements of each individual organization.
- **Additional infrastructure and internal administration cost.** While the organization already had pre-existing infrastructure for its big data environment, it also acquired additional servers for its Conduct Surveillance implementation. The total cost of additional infrastructure and internal administration for the solution is \$277,615 over three years.
- **Internal labor cost to implement Conduct Surveillance.** The firm spent six months on development and user acceptance testing (UAT) for its Digital Reasoning Conduct Surveillance implementation. The total cost of internal labor for this initial implementation is quantified at \$58,850 for the interviewed organization.

## Disclosures

The reader should be aware of the following:

- › The study is commissioned by Digital Reasoning 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 Digital Reasoning Conduct Surveillance.

- › Digital Reasoning 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.
- › Digital Reasoning provided the customer names for the interviews but did not participate in the interviews.

## TEI Framework And Methodology

### INTRODUCTION

From the information provided in the interviews, Forrester constructed a Total Economic Impact (TEI) framework for those organizations considering implementing Digital Reasoning Conduct Surveillance. The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision, to help organizations understand how to take advantage of specific benefits, reduce costs, and improve the overall business goals of winning, serving, and retaining customers.

### APPROACH AND METHODOLOGY

Forrester took a multistep approach to evaluate the impact that Digital Reasoning Conduct Surveillance can have on an organization (see Figure 2). Specifically, we:

- › Interviewed Digital Reasoning marketing, sales, and product executives, along with Forrester analysts, to gather data relative to Conduct Surveillance and the marketplace for enterprise security and compliance solutions.
- › Interviewed an organization in financial services currently using Digital Reasoning Conduct Surveillance to obtain data with respect to costs, benefits, and risks.
- › Constructed a financial model representative of the interview using the TEI methodology. The financial model is populated with the cost and benefit data obtained from the interview.
- › Risk-adjusted the financial model based on issues and concerns the interviewed organization highlighted in the interview. Risk adjustment is a key part of the TEI methodology. While the interviewed organization provided cost and benefit estimates, some categories included a broad range of responses or had a number of outside forces that might have affected the results. For that reason, some cost and benefit totals have been risk-adjusted and are detailed in each relevant section.

Forrester employed four fundamental elements of TEI in modeling Digital Reasoning Conduct Surveillance's service: benefits, costs, flexibility, and risks.

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

**FIGURE 2**  
**TEI Approach**



Source: Forrester Research, Inc.

## Analysis

### INTERVIEW HIGHLIGHTS

Forrester interviewed an investment firm based in the US with over \$10 billion in assets under management and under 1,000 employees.

#### Background And Problems

Prior to using Digital Reasoning Conduct Surveillance, the interviewed organization was struggling to:

- › Process a volume of alerts from its legacy e-surveillance system that was prohibitively high, at approximately 10,000 alerts daily. The firm noted that its analysts could not investigate these alerts thoroughly because they were looking at thousands of alerts every day.
- › Manage a legacy e-surveillance system that had, on average, 10 days of downtime per year.
- › Find a solution that would meet its high-level needs. The interviewed firm noted that “most e-surveillance tools are pretty basic” and that it was very hard to reduce false positives with these kinds of tools. The firm conducted an extended survey of vendors and decided on Digital Reasoning after carrying out a proof of concept.

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*“In terms of compliance, with Digital Reasoning we are spending less time on false positives and more time on real issues.”*

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~ Associate director, surveillance and compliance team, interviewed company

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#### Solution

The organization implemented Digital Reasoning Conduct Surveillance as its e-surveillance platform. With Digital Reasoning's cognitive computing approach, the firm found the Conduct Surveillance solution to be a sophisticated, flexible, and easy-to-use tool for its needs. The interviewed customer has an on-premises deployment for Conduct Surveillance. It uses the Digital Reasoning platform to ingest all electronic communications and integrate them with structured data. Conduct Surveillance processes an average of 300,000 messages every day on email, fax, BlackBerry, and other methods of electronic communication. The surveillance and compliance team then reviews all alerts and identifies messages that require compliance review. In reviewing alerts, the analysts have the capability to look at historical data. Digital Reasoning Conduct Surveillance also provides profiles where the analysts can glean summary information on different entities such as employees, individuals, network connections and relationships, and linking relationships.

#### Results

The interview revealed that using Digital Reasoning Conduct Surveillance:

- › **Increased operational efficiency, resulting in savings for the surveillance and compliance team.** The Digital Reasoning Conduct Surveillance implementation significantly cut down on the number of false positive alerts that the team had to analyze by 50%. The firm also highlighted the ease of use of the tool, as well as the efficiency of the workflow processes embedded in the solution. As a result, the organization was able to restructure the surveillance and compliance teams, leading to cost savings. In addition, replacing its legacy e-surveillance tool with Digital Reasoning Conduct Surveillance led to reduced downtime and associated time savings.
- › **Improved business agility and saved time for the front office.** The organization now has the improved ability to reduce the threat of IP and confidential information leaks with Digital Reasoning Conduct Surveillance, as it can work more on

actual compliance issues versus handling a burdensome number of false positive alerts. The sophistication of the Conduct Surveillance solution also led to time saved for investment professionals and staff, as the surveillance and compliance team can now aggregate its investigative touchpoints with these front-office roles.

- › **Reduced security risk.** Better protection of confidential information and intellectual property of the investment firm through Digital Reasoning Conduct Surveillance reduced the risk of incidents that may result in regulatory penalties.
- › **Improved visibility.** The interviewed organization also noted that it benefited from improved visibility with its Conduct Surveillance implementation when compared with its previous legacy vendor. It has two full-time embedded support technicians from Digital Reasoning included in its agreement, and the organization benefits greatly from having the business users interact with these support technicians onsite. “With [the previous system], it was closed and we had no transparency. But with Digital Reasoning, we have better responsiveness if there is something wrong with the system,” the firm said.
- › **Increased accuracy.** A consistent theme in the interview was the sophistication of Digital Reasoning’s Conduct Surveillance solution when compared with other e-surveillance tools. The organization now has a better ability to discover compliance risks when compared with its previous environment. The firm benefited from the improved accuracy of the tool, noting that Digital Reasoning employs natural language processing for unstructured text, compared with other tools that do not have the ability to understand language and whose alerts are just based on keywords and lexicons. Digital Reasoning’s cognitive computing platform allows it to correlate insights from unstructured data with structured data sources. The firm added, “It can look at all kinds of things; you can connect two people that have an indirect relationship in Digital Reasoning, and we couldn’t do that with [our previous tool].”

## BENEFITS

The organization was able to gain benefits from Digital Reasoning Conduct Surveillance in five areas:

- › Analyst productivity savings with more efficient processes.
- › Savings from reduced downtime.
- › Direct cost avoidance from discontinuing legacy systems.
- › Front-office time savings.
- › Reduced security risk, resulting in lower probability of sanctions.



### Analyst Productivity Savings With More Efficient Processes

The organization currently ingests all electronic communication through Digital Reasoning and integrates that with primary structured data for its compliance platform. Prior to Digital Reasoning Conduct Surveillance, the firm was using a legacy compliance solution that the head of the intelligence team characterized as “a point-in-time system that was less user friendly [compared with Conduct Surveillance].” The firm’s compliance team could not investigate incidents thoroughly because the compliance analysts were receiving thousands of alerts.

With the move to Digital Reasoning, the organization was able to reduce the number of false positives received by half. The number of alerts went from over 2% of total messages processed to a little under 1%. Digital Reasoning was also easier to use than its previous legacy compliance solution, with efficient workflow processes embedded in the tool. As a result, the firm was able to restructure its compliance team as it increased the efficiency of its compliance personnel. The firm previously had four analysts who were solely focused on surveillance. With Digital Reasoning, it was able to distribute the responsibilities of these four compliance



analysts to an existing team. At an annual fully loaded compensation of \$100,000, the firm was able to save \$400,000 a year. These analyst productivity savings are valued at \$1.2 million over the three-year analysis.

Forrester risk-adjusted this benefit downward by 5% to account for the variability in the pre-Digital Reasoning environment and the range in the number of security resources saved. The risk-adjusted benefit totaled more than \$1.14 million over three years.

**TABLE 1**  
**Analyst Productivity Savings**

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
A1	Number of security analysts (saved)		4	4	4
A2	Yearly rate per person		\$100,000	\$100,000	\$100,000
At	Analyst productivity savings	A1*A2	\$400,000	\$400,000	\$400,000
	Risk adjustment	↓ 5%			
Atr	Analyst productivity savings (risk-adjusted)		\$380,000	\$380,000	\$380,000

Source: Forrester Research, Inc.



### Cost Avoidance Savings From Reduced Downtime

Another benefit of the Digital Reasoning Conduct Surveillance cited by the interviewed firm was the increase in operational efficiency as a result of its move to Digital Reasoning from its legacy solution. The interviewed firm noted, “The system is more reliable because we have a vetted service with Digital Reasoning.” By moving to Digital Reasoning, the organization no longer had to contend with the average of 10 days of downtime a year that it was experiencing with its legacy compliance solution.

This system downtime affected four security analysts at headquarters and an additional 16 compliance officers worldwide. Each of these personnel avoided the cost of 80 hours of downtime a year with the Conduct Surveillance implementation. At an average fully loaded compensation of \$48.08 per hour for these resources, the total cost avoidance savings due to reduced downtime is quantified at \$230,769 over the three-year analysis.

Forrester risk-adjusted this benefit downward by 5% to account for the variability in downtime savings. The risk-adjusted benefit totaled \$219,231 over three years.

**TABLE 2**  
**Savings From Reduced Downtime**

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
B1	Downtime incidents reduced per year (days)		10	10	10
B2	Security analysts affected		4	4	4
B3	Security analyst compensation (per hour)	\$100,000/ 2,080 hours	\$48.08	\$48.08	\$48.08
B4	Compliance officers affected		16	16	16
B5	Compliance officer compensation (per hour)	\$100,000/ 2,080 hours	\$48.08	\$48.08	\$48.08
Bt	Savings from reduced downtime	$B1 \times 8 \text{ hrs.} \times ((B2 \times B3) + (B4 \times B5))$	\$76,923	\$76,923	\$76,923
	Risk adjustment	↓ 5%			
Btr	<b>Savings from reduced downtime (risk-adjusted)</b>		<b>\$73,077</b>	<b>\$73,077</b>	<b>\$73,077</b>

Source: Forrester Research, Inc.



### Cost Savings — Reduction Of Legacy Applications

By moving from its legacy compliance solution to Digital Reasoning, the firm also saved the cost of the annual fees paid for this solution. With fees of \$500,000 per year, the firm saved \$1.5 million over three years.

Because other organizations may have different legacy applications with varying license costs, Forrester risk-adjusted this benefit down by 5%, resulting in a risk-adjusted, three-year savings of more than \$1.4 million. See the section on Risks for more detail.

**TABLE 3**  
**Cost Avoidance Savings — Reduction Of Legacy Applications**

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
C1	Annual cost of legacy systems		\$500,000	\$500,000	\$500,000
Ct	Direct cost avoidance — legacy systems	C1	\$500,000	\$500,000	\$500,000
	Risk adjustment	↓ 5%			
Ctr	<b>Direct cost avoidance — legacy systems (risk-adjusted)</b>		<b>\$475,000</b>	<b>\$475,000</b>	<b>\$475,000</b>

Source: Forrester Research, Inc.



### Front-Office Time Savings

Apart from security and compliance roles, other roles within the organization saw benefit from the increased operational efficiency from the firm's Digital Reasoning Conduct Surveillance implementation. With the dramatic decrease in the number of false positives, compliance analysts spent less time investigating these alerts and subsequently reduced the frequency that they reached out to investment analysts and staff to follow up on them. As one associate director at the firm noted, "Instead of bothering an investment professional every time, we are touching them about once a quarter." The firm also noted that the improved research intelligence and aggregation of the Digital Reasoning Conduct Surveillance solution gave the organization the ability to look at trends of noncritical violations over time. This historical view, in turn, meant that the compliance team could address these alerts with investment professionals during quarterly reviews and retraining instead of, as in some cases, meeting once a week as each alert surfaced.

To quantify the benefit of time saved for investment professionals, Forrester assumes that only 10% of the 350 investment professionals at the firm will save an hour a week as a result of the improved aggregation and accuracy of the Digital Reasoning Conduct Surveillance solution. In these calculations, the average fully loaded compensation of investment professionals is conservatively estimated at \$250,000 a year. The total quantified benefit of front-office time savings to the firm is \$201,923 annually, or \$605,769 over the three-year analysis.

Forrester risk-adjusted this benefit down by 10% to account for the range of front-office roles that would be affected by the reduction in alerts. This resulted in a risk-adjusted, three-year total benefit of \$545,192.

**TABLE 4**  
**Front-Office Time Savings**

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
D1	Number of investment professionals		350	350	350
D2	Percentage affected		10%	10%	10%
D3	Time savings (hours)	1 hour per week	48	48	48
D4	Average compensation per employee (per hour)	\$250,000/ 2,080 hours	\$120.19	\$120.19	\$120.19
Dt	Front-office time savings	$D1 \times D2 \times D3 \times D4$	\$201,923	\$201,923	\$201,923
	Risk adjustment	↓ 10%			
Dtr	<b>Front-office time savings (risk-adjusted)</b>		<b>\$181,731</b>	<b>\$181,731</b>	<b>\$181,731</b>

Source: Forrester Research, Inc.



### Reduced Security Risk, Leading To Reduced Probability Of Sanctions

The organization's Digital Reasoning Conduct Surveillance implementation brought increased security, as the compliance team achieved more accurate results with the solution. With Digital Reasoning, the number of alerts went from 2% of the messages processed to below 1%. This meant that, as one intelligence analyst noted: "We are spending less time on false positives and more time on real issues. We can reduce the threat of IP and confidential information leaks." This 50% reduction in false positives and improved operational efficiency for the firm's compliance and surveillance team led to an improved ability to identify noncompliance and prevent incidents leading to sanctions.

To quantify the benefit of this improved security and reduced risk of sanctions through Digital Reasoning, Forrester considers the cost of regulatory penalties from leaks in IP and confidential information, such as insider trading incidents. In 2014, the Harvard Law School Forum noted that the pattern of imposing massive fines and extracting huge financial settlements from companies has continued unabated in the regulatory enforcement landscape.<sup>2</sup> The average value of penalties imposed on corporate entities in insider trading prosecutions and SEC enforcement actions in 2014 was approximately \$360 million.<sup>3</sup> Forrester estimates the probability of exposure to regulatory penalties due to a compliance incident at 0.5% for one incident over a three-year analysis. With Digital Reasoning Conduct Surveillance, the firm was able to improve compliance and reduce this incident probability by 50%. In Table 5 below, this results in cost avoidance savings of \$900,000 due to improved compliance and reduction of risk of regulatory penalties. To be conservative, Forrester does not include costs to remediate a compliance incident outside of regulatory penalties, which may include litigation fees, corporate communication, and potential customer loss, in this analysis.

Forrester risk-adjusted this benefit down by 15% to account for the wide range of regulatory penalties faced by corporations in compliance incidents such as insider trading. This resulted in a risk-adjusted, three-year total cost avoidance savings of \$765,000.

**TABLE 5**  
**Reduced Security Risk, Leading To Reduced Probability Of Sanctions**

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
E1	Regulatory penalties for corporate violations		\$0	\$360,000,000	\$0
E2	Probability of IP and confidential information incident		\$0	0.5%	\$0
E3	Reduction in incident probability with improved compliance through DR compared with previous solution		\$0	50%	\$0
Et	Reduced security risk with lower probability of sanctions	$E1 * E2 * E3$	\$0	\$900,000	\$0
	Risk adjustment	↓ 15%			
Etr	<b>Reduced security risk with lower probability of sanctions (risk-adjusted)</b>		\$0	<b>\$765,000</b>	\$0

Source: Forrester Research, Inc.

Readers of this study are encouraged to use their own assumptions for potential penalty amounts and probability according to their particular business environment.



### Total Benefits

Table 6 shows the total of all benefits as well as associated present values, discounted at 10%. Over three years, the organization expects all benefits to total a net present value of more than \$3.39 million.

**TABLE 6**  
**Total Benefits (Risk-Adjusted)**

Ref.	Benefit Category	Initial	Year 1	Year 2	Year 3	Total	Present Value
Atr	Analyst productivity savings	\$0	\$380,000	\$380,000	\$380,000	\$1,140,000	\$945,004
Btr	Savings from reduced downtime	\$0	\$73,077	\$73,077	\$73,077	\$219,231	\$181,731
Ctr	Direct cost avoidance — legacy systems	\$0	\$475,000	\$475,000	\$475,000	\$1,425,000	\$1,181,255
Dtr	Increased business agility — front-office time savings	\$0	\$181,731	\$181,731	\$181,731	\$545,193	\$451,938
Etr	Reduced security risk with lower probability of sanctions	\$0	\$0	\$765,000	\$0	\$765,000	\$632,231
	<b>Total benefits (risk-adjusted)</b>	<b>\$0</b>	<b>\$1,109,808</b>	<b>\$1,874,808</b>	<b>\$1,109,808</b>	<b>\$4,094,424</b>	<b>\$3,392,159</b>

Source: Forrester Research, Inc.

## COSTS

The organization experienced a number of costs associated with its Digital Reasoning implementation:

- › Cost of Conduct Surveillance.
- › Cost of additional infrastructure and IT administration
- › Cost to implement Conduct Surveillance.

These represent the mix of internal and external costs experienced by the organization for initial planning, implementation, and ongoing maintenance associated with the solution.



### Allocated Cost Of Digital Reasoning Conduct Surveillance

The organization pays \$533,333 in annual fees for its Conduct Surveillance solution with Digital Reasoning. This represents the percentage of the Digital Reasoning contract allocated to the respective business unit for Conduct Surveillance. Fees paid by the organization for other solutions (such as Advanced Analytics) on the Digital Reasoning platform are not included in this analysis. This contract is a three-year agreement and includes Digital Reasoning services consulting. Over three years, the total Conduct Surveillance fees paid to Digital Reasoning are \$1.6 million.

Forrester risk-adjusted this cost upward by 5% to account for variability. The risk-adjusted total over three years was \$1.68 million.

**TABLE 7**  
**Cost Of Digital Reasoning Conduct Surveillance**

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
F1	Digital Reasoning fees (for Conduct Surveillance)			\$533,333	\$533,333	\$533,333
Ft	Cost of Conduct Surveillance	F1		\$533,333	\$533,333	\$533,333
	Risk adjustment		↑ 5%			
Ftr	<b>Cost of Conduct Surveillance (risk-adjusted)</b>			<b>\$560,000</b>	<b>\$560,000</b>	<b>\$560,000</b>

Source: Forrester Research, Inc.



### Cost Of Additional Infrastructure And Administration

The firm already had an investment in big data infrastructure prior to its Digital Reasoning deployment. For its on-premises Digital Reasoning Conduct Surveillance implementation, the firm added an additional cluster of 20 servers. At \$5,000 per server, this cost the firm \$150,000 initially. Apart from this infrastructure investment, the firm has two full-time equivalents (FTEs) from the compliance team and two FTEs from the IT team working 4 hours a week each on administration of the Digital Reasoning solution. At an average fully loaded cost of \$55.29 per hour for these resources, the total cost of administration of the Digital Reasoning Conduct Surveillance solution is \$46,000 per year. The total cost over three years for additional infrastructure and administration is \$238,000.

Forrester risk-adjusted this cost upward by 5% to account for variability. The risk-adjusted total over three years was \$249,900.

**TABLE 8**  
**Cost Of Additional Infrastructure And IT Administration**

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
G1	Number of servers for Conduct Surveillance		20			
G2	Cost per server		\$5,000			
G3	Hours allotted for administration	4*4 hours*52 weeks		832	832	832
G4	Average compensation per resource	\$115,000/2,080 hours		\$55.29	\$55.29	\$55.29
Gt	Additional infrastructure and administration	$(G1*G2)+(G3*G4)$	\$100,000	\$46,000	\$46,000	\$46,000
	Risk adjustment		↑ 5%			
Gtr	<b>Additional infrastructure and IT administration (risk-adjusted)</b>		<b>\$105,000</b>	<b>\$48,300</b>	<b>\$48,300</b>	<b>\$48,300</b>

Source: Forrester Research, Inc.



### Internal Labor Cost To Implement Conduct Surveillance

To architect and implement Digital Reasoning Conduct Surveillance at the organization required a team of approximately seven people working over a period of six months. Three IT engineers allocated 20% of their time to the Digital Reasoning implementation. This is equivalent to 0.6 of one IT FTE during that period. One lead compliance analyst spent 15% of their time managing the project and leading a team of three junior compliance analysts for approximately 10 hours a week for eight weeks. This is equivalent to 0.38 total compliance FTEs for that six-month time period. Total Digital Reasoning Conduct Surveillance implementation costs are \$53,500.

Forrester risk-adjusted this cost upward by 5% to account for the possible variation in the implementation cost, which resulted in a final risk-adjusted cost of \$58,850.

**TABLE 9**  
**Internal Labor Cost To Implement Conduct Surveillance**

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
H1	Length of implementation (months)		6			
H2	Number of IT resources		0.6			
H3	IT resource compensation		\$115,000			
H4	Number of compliance resources		0.38			
H5	Compliance analyst compensation		\$100,000			
Ht	Implementation – internal labor	$H1*((H1*H3/12)+(H4*H5/12))$	\$53,500	\$0	\$0	\$0
	Risk adjustment	↑10%				
Htr	<b>Implementation – internal labor (risk-adjusted)</b>		<b>\$58,850</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

Source: Forrester Research, Inc.

### Total Costs

Table 10 shows the total of all costs as well as associated present values, discounted at 10%. Over three years, the organization expects costs to total a net present value of approximately \$1.68 million.

**TABLE 10**  
**Total Costs (Risk-Adjusted)**

Ref.	Benefit	Initial	Year 1	Year 2	Year 3	Total	Present Value
Ftr	Digital Reasoning Conduct Surveillance costs	\$0	\$560,000	\$560,000	\$560,000	\$1,680,000	\$1,392,637
Gtr	Additional infrastructure and administration	\$105,000	\$48,300	\$48,300	\$48,300	\$249,900	\$225,115
Htr	Implementation – internal labor	\$58,850	\$0	\$0	\$0	\$58,850	\$58,850
	<b>Total costs (risk-adjusted)</b>	<b>\$163,850</b>	<b>\$608,300</b>	<b>\$608,300</b>	<b>\$608,300</b>	<b>\$1,988,750</b>	<b>\$1,676,602</b>

Forrester Research, Inc.



## FLEXIBILITY

Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into business benefit for some future additional investment. This provides an organization with the “right” or the ability to engage in future initiatives but not the obligation to do so. There are multiple scenarios in which a customer might choose to implement Digital Reasoning and later realize additional uses and business opportunities. Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in Appendix B).

The organization is currently planning two initiatives to extend its Digital Reasoning Conduct Surveillance use cases. One initiative is to build the ability to process foreign language messages for alerts. The second initiative involves building an insider threat protection solution. The organization also plans to build additional key performance metrics into its current monitoring system and integrate more data sources into the system. All these initiatives may bring additional benefits to the firm in such areas as productivity savings, improved efficiency, and reduced risk. It should be noted that when evaluating the benefit value of these initiatives, the cost of implementing these projects should also be considered.

While this particular study does not explicitly account for dollar impacts of flexibility in the ROI calculations, the value of flexibility is unique to each organization, and the willingness to measure its value varies from company to company.

## RISKS

Forrester defines two types of risk associated with this analysis: “implementation risk” and “impact risk.” Implementation risk is the risk that a proposed investment in Conduct Surveillance may deviate from the original or expected requirements, resulting in higher costs than anticipated. Impact risk refers to the risk that the business or technology needs of the organization may not be met by the investment in Conduct Surveillance, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for cost and benefit estimates.

Quantitatively capturing implementation risk and impact risk by directly adjusting the financial estimates results provides more meaningful and accurate estimates and a more accurate projection of the ROI. In general, risks affect costs by raising the original estimates, and they affect benefits by reducing the original estimates. The risk-adjusted numbers should be taken as “realistic” expectations since they represent the expected values considering risk.

Table 11 shows the Forrester-estimated values used to adjust for risk and uncertainty in the cost and benefit estimates for the organization. Readers are urged to apply their own risk ranges based on their own degree of confidence in the cost and benefit estimates.

**TABLE 11**  
**Benefit And Cost Risk Adjustments**

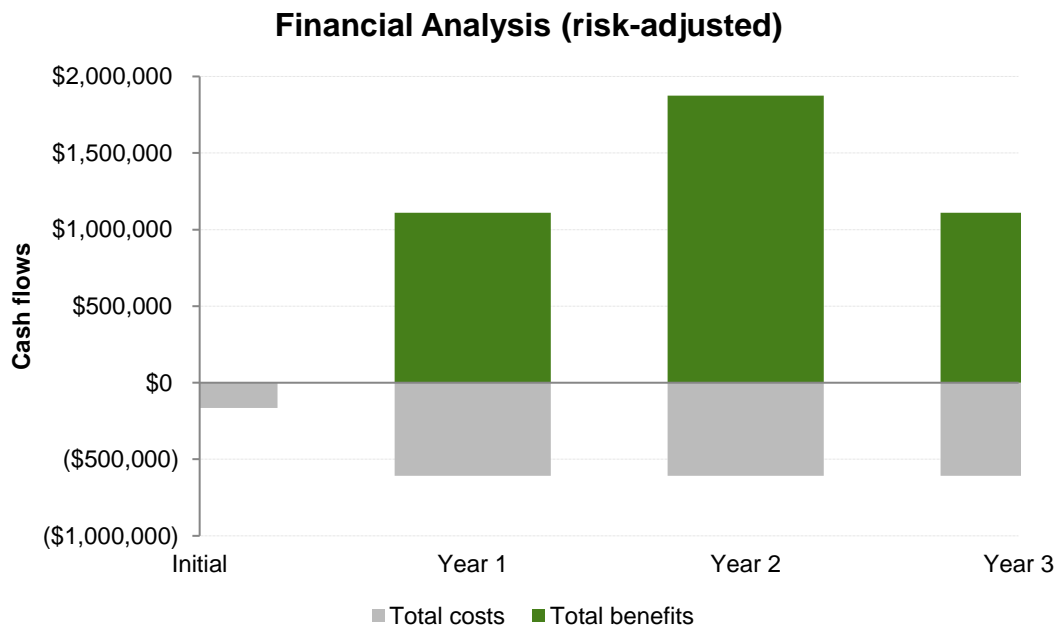
<b>Benefits</b>	<b>Adjustment</b>
Analyst productivity savings	↓ 5%
Savings from reduced downtime	↓ 5%
Direct cost avoidance — legacy systems	↓ 5%
Increased business agility — front-office time savings	↓ 10%
Reduced security risk with lower probability of sanctions	↓ 15%
<b>Costs</b>	<b>Adjustment</b>
Digital Reasoning Conduct Surveillance costs	↑ 5%
Additional infrastructure and administration	↑ 5%
Implementation – internal labor costs	↑ 10%

Source: Forrester Research, Inc.

## 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 organization's investment in Conduct Surveillance. Table 12 below shows the risk-adjusted ROI, NPV, and payback period values. These values are determined by applying the risk-adjustment values from Table 11 in the Risks section to the unadjusted results in each relevant cost and benefit section.

**FIGURE 3**  
**Cash Flow Chart (Risk-Adjusted)**



Source: Forrester Research, Inc.

**TABLE 12**  
**Cash Flow (Risk-Adjusted)**

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Costs	(\$163,850)	(\$608,300)	(\$608,300)	(\$608,300)	(\$1,988,750)	(\$1,676,602)
Benefits	\$0	\$1,109,808	\$1,874,808	\$1,109,808	\$4,094,424	\$3,392,159
<b>Net benefits</b>	<b>(\$163,850)</b>	<b>\$501,508</b>	<b>\$1,266,508</b>	<b>\$501,508</b>	<b>\$2,105,673</b>	<b>\$1,715,557</b>
<b>ROI</b>						<b>102%</b>
<b>Payback period</b>						<b>3.9 months</b>

Source: Forrester Research, Inc.

## Digital Reasoning Conduct Surveillance: Overview

The following information is provided by Digital Reasoning. Forrester has not validated any claims and does not endorse Digital Reasoning or its offerings.

### DIGITAL REASONING IS A COGNITIVE COMPUTING PLATFORM

Synthesys, from Digital Reasoning, is a cognitive computing platform that understands human communication. Digital Reasoning analyzes human communication, monitors communication streams for suspicious patterns, and predicts the need for action by producing and sharing knowledge.

By semantically analyzing electronic communications for human risk, Synthesys reveals previously unknown risks and relationships, across a wide spectrum of market, trade, and transaction abuses.

### WHY CONDUCT SURVEILLANCE?

Despite significant industrywide investments to meet stricter compliance standards, financial institutions remain highly exposed.

Compliance professionals are starting to understand that rules-based analytics are easily circumvented by employees, customers, and criminals. Attempts to increase detection by using these legacy analytics often produce excessive false positives that require expensive and time-consuming intervention by compliance analysts.

Industry leaders are faced with the prospect that, whatever their actions or spending, they will continue to see control room violations, conduct risk, rate manipulation, and unauthorized trading.

Synthesys turns the tables, using contextual analysis across a more comprehensive array of structured and unstructured data. Potential problems are spotted sooner, turning compliance into a proactive function that delivers significant value.

### HOW CONDUCT SURVEILLANCE HELPS

- › Provides an industry-leading next-gen electronic communications surveillance solution.
- › Reduces reputational and regulatory risk.
- › Uncovers concealed relationships and risks within every communication.
- › Identifies manipulation, collusion, unauthorized trading, and unethical practices.

Learn more at <http://www.digitalreasoning.com/proven-solutions-content/financial-services/surveillance#content>

## Appendix A: 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. TEI assists technology vendors in winning, serving, and retaining customers.

The TEI methodology consists of four components to evaluate investment value: benefits, costs, flexibility, and risks.

### 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 form 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.

### 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 enterprisewide 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. However, having the ability to capture that benefit has a PV that can be estimated. The flexibility component of TEI captures that value.

### RISKS

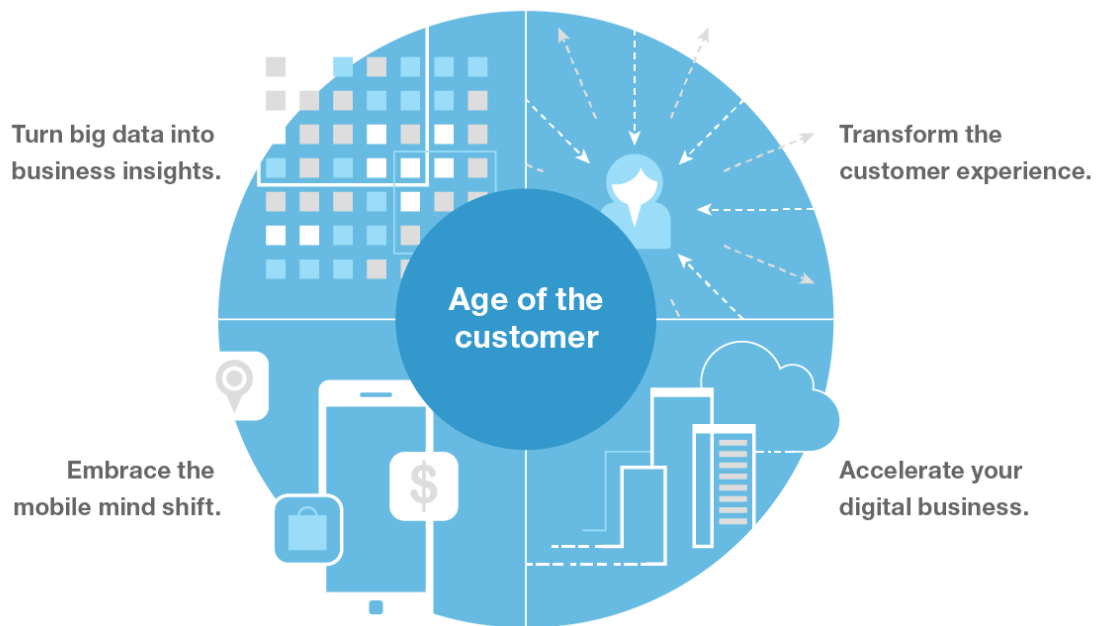
Risks measure the uncertainty of benefit and cost estimates contained within the investment. Uncertainty is measured in two ways: 1) the likelihood that the cost and benefit estimates will meet the original projections and 2) the likelihood that the estimates will be measured and tracked over time. TEI risk factors are based on a probability density function known as "triangular distribution" to the values entered. At a minimum, three values are calculated to estimate the risk factor around each cost and benefit.

## Appendix B: Forrester And The Age Of The Customer

Your technology-empowered customers now know more than you do about your products and services, pricing, and reputation. Your competitors can copy or undermine the moves you take to compete. The only way to win, serve, and retain customers is to become customer-obsessed.

A customer-obsessed enterprise focuses its strategy, energy, and budget on processes that enhance knowledge of and engagement with customers and prioritizes these over maintaining traditional competitive barriers.

**CMOs and CIOs must work together to create this companywide transformation.**



Forrester has a four-part blueprint for strategy in the age of the customer, including the following imperatives to help establish new competitive advantages:



Transform the customer experience to gain sustainable competitive advantage.



Accelerate your digital business with new technology strategies that fuel business growth.



Embrace the mobile mind shift by giving customers what they want, when they want it.



Turn (big) data into business insights through innovative analytics.

## Appendix C: Glossary

**Discount rate:** The interest rate used in cash flow analysis to take into account the time value of money. Companies set their own discount rate based on their business and investment environment. Forrester assumes a yearly discount rate of 10% for this analysis. Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are urged to consult their respective organizations 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 at an interest rate (the discount rate). The PV of costs and benefits feed into the total NPV of cash flows.

**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.

**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 (see the example table below). 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. PV calculations are calculated for each total cost and benefit estimate. NPV calculations are not calculated until the summary tables are the sum of the initial investment and the discounted cash flows in each year.

Sums and present value calculations of the Total Benefits, Total Costs, and Cash Flow tables may not exactly add up, as some rounding may occur.

**TABLE [EXAMPLE]**  
**Example Table**

Ref.	Metric	Calculation	Year 1	Year 2	Year 3

Source: Forrester Research, Inc.

## Appendix D: Endnotes

<sup>1</sup> Forrester risk-adjusts the summary financial metrics to take into account the potential uncertainty of the cost and benefit estimates. For more information, see the section on Risks.

<sup>2</sup> Source: John F. Savarese and Wayne M. Carlin, "White Collar and Regulatory Enforcement Trends in 2014," Harvard Law School Forum on Corporate Governance and Financial Regulation, January 28, 2014 (<https://corpgov.law.harvard.edu/2014/01/28/white-collar-and-regulatory-enforcement-trends-in-2014/>).

<sup>3</sup> Source: "Insider Trading Annual Review," Morrison & Foerster, February 21, 2015 (<http://www.mofo.com/~media/Files/ClientAlert/2015/02/150211InsiderTradingAnnualReview.pdf>).