The Total Economic Impact™ Of Signifyd Guaranteed Fraud Protection

Cost Savings And Business Benefits Enabled By Signifyd

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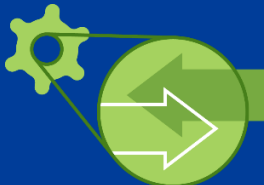
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Benefits And Costs

Profit related to improved order acceptance rate:
$912,434

Chargeback costs avoided:
$3,025,917

Savings from eliminating manual order reviews:
$412,989

Executive Summary

Signifyd commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises might realize by deploying Signifyd Guaranteed Fraud Protection. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Signifyd's Guaranteed Fraud Protection on their organizations.

Signifyd provides Guaranteed Fraud Protection, a unique approach to fraud management that leverages big data, AI, and real-time machine learning (ML) to quickly and accurately identify fraudulent charges as orders are processed. Signifyd's 100% financial guarantee against fraud shifts liability away from merchants, allowing them to focus on what they do best — selling to and serving customers. To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed five Signifyd customers with years of experience using the platform to review orders.

Prior to using Signifyd, the interviewed organizations were primarily relying on finance and customer care professionals using rules-based tools and databases to manually review orders for fraud. Organizations reported that this process was slow, labor intensive, and ultimately ineffective in identifying or preventing fraudulent orders from being processed and fulfilled, and their businesses were suffering as a result.

The interviewed organizations decided to deploy Signifyd Guaranteed Fraud Protection to: 1) reduce the number of chargebacks, cancelations and fraudulent orders; 2) reduce manual effort associated with order reviews; and 3) gain a better standing with credit agencies. With Signifyd, these organizations quickly realized benefits through improved approval rates and reduced fraud. They continued to see these metrics improve as Signifyd's AI and ML platform became more effective at identifying legitimate orders.

Forrester developed a composite organization based on data gathered from the customer interviews to reflect the total economic impact that Signifyd Guaranteed Fraud Protection could have on an organization. The composite organization is representative of the organizations that Forrester interviewed and is used to present the aggregate financial analysis in this study. All values are represented in a risk-adjusted, three-year present value (PV) unless otherwise indicated.

Key Findings

Quantified benefits. The following risk-adjusted PV quantified benefits are representative of those experienced by the companies interviewed:

› **Improved order acceptance rate leads to $912,434 in additional profit over three years.** The composite organization is able to accept more legitimate orders with Signifyd's automated order screening. Through Signifyd's real-time ML, the platform learns typical customer characteristics and continuously improves the acceptance rate over time, realizing a 2.9% improvement over three years.

ROI
454%

Benefits PV
$4.8 million

NPV
$3.9 million

Payback
< 6 months

› **Eliminated manual order reviews represents $412,989 in time savings over three years.** With Signifyd's automated screening, the composite organization no longer performs manual fraud and order reviews, eliminating over 9,500 hours' worth of reviews over three years and giving the fraud prevention team more time to focus on value-adding tasks.

› **Avoided $3 million in chargeback costs over three years.** Through improved order screening and Signifyd's 100% financial guarantee, the composite organization is no longer financially liable for fraud-related chargebacks.

› **Reduced order cancellations by 1% and gained $408,499 in incremental profit.** The composite organization was able to significantly improve order processing speed and acceptance rate, reducing the number of cancellations due to long processing times and delays related to legitimate orders being flagged for fraud reviews.

Unquantified benefits. The interviewed organizations experienced the following benefits, which are not quantified for this study:

› **Improved customer loyalty and retention.** Improving the speed and accuracy of the order review process reduces both the number of legitimate orders that are declined and order confirmation waiting times. It also generally improves the customer experience of organizations' websites.

› **Accelerated internal project speed due to eliminating manual fraud reviews.** Eliminating the manual review process frees up time for the order reviewers to focus on projects that add value to the business, speeding up delivery timelines and improving internal efficiencies.

Costs. The interviewed organizations experienced the following risk-adjusted PV costs:

› **Signifyd platform fee of $832,127 over three years.** This cost focuses on the Signifyd usage fee. Based on the composite organization's commitment regarding contract term and a monthly usage minimum, the study uses pricing of 50 basis points (.05%) of the revenue from approved transactions. Signifyd's service fee only applies to approved orders; thus merchants aren't charged for orders that are declined.

› **Labor costs associated with processing chargebacks total $17,765 over three years.** Signifyd eliminates the financial liability related to fraud-related chargebacks, however, there are still labor costs associated with processing and disputing chargebacks.

› **Implementation and training costs of $8,890.** Signifyd required a small amount of internal development as well as training for eCommerce professionals. Costs required of the composite were only for the initial deployment of Signifyd Guaranteed Fraud Protection.

Forrester's interviews with five existing customers and subsequent financial analysis found that an organization based on these interviewed organizations experienced benefits of $4.8 million over three years versus costs of $859K, adding up to a net present value (NPV) of $3.9 million and an ROI of 454%.

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TEI Framework And Methodology

From the information provided in the interviews, Forrester has constructed a Total Economic Impact™ (TEI) framework for those organizations considering implementing Signifyd Guaranteed Fraud Protection.

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

DUE DILIGENCE
Interviewed Signifyd stakeholders and Forrester analysts to gather data relative to Signifyd.

CUSTOMER INTERVIEWS
Interviewed five organizations using Signifyd to obtain data with respect to costs, benefits, and risks.

COMPOSITE ORGANIZATION
Designed a composite organization based on characteristics of the interviewed organizations.

FINANCIAL MODEL FRAMEWORK
Constructed a financial model representative of the interviews using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewed organizations.

CASE STUDY
Employed four fundamental elements of TEI in modeling Signifyd Guaranteed Fraud Protection's impact: 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.

> The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Signifyd 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 Signifyd Guaranteed Fraud Protection.

Signifyd 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.

Signifyd provided the customer names for the interviews but did not participate in the interviews.

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The Signifyd Customer Journey

BEFORE AND AFTER THE SIGNIFYD INVESTMENT

Interviewed Organizations

For this study, Forrester conducted five interviews with Signifyd Guaranteed Fraud Protection customers. Interviewed customers include the following:

INDUSTRY	REGION	INTERVIEWEE	ANNUAL REVENUE
Retail	USA	Vice President of digital marketing & commerce	$22 billion
Diet/health	USA	Investor relations manager	$65 million
Beauty/CPG	North America, China, Europe, Middle East, Russia	Head of global customer care	Private
Automotive	USA	Project manager & finance	$200 million
Gifts	USA	Analyst & head of customer support	Private

Key Challenges

Before the investment in Signifyd, the interviewed organizations described the following challenges with their previous fraud prevention solutions:

› **Time-consuming manual fraud checks were ineffective in preventing fraud.** Interviewed organizations often had customer care or finance professionals performing fraud reviews in addition to their day-to-day duties, pulling valuable resources away from their core function. Additionally, the manual processes proved to be ineffective as the organizations were still experiencing high amounts of fraudulent orders as the sophistication of attacks improved. A vice president of digital marketing and commerce in the retail industry noted: "Before, we had fraud filters and we were manually reviewing orders. I had resources in both customer care and in our loss prevention department doing the actual fraud protection. I call it that, but that is a lie. It was not fraud protection. It was a lot of effort, we had a lot of consternation, and we were missing a lot. It was costing the company a lot. The only thing I was thankful for is that I knew we were putting Signifyd in."

Long manual review times had other consequences for interviewed organizations. Customers who were caught in the queue would often call to inquire about the long processing time, further taxing the already strained customer care agents, and some customers would cancel their orders outright if an order took too long to process.

> "I was tired of companies lying to me. I did not want fraud filters, I wanted fraud protection and most of them are just fraud filters. Signifyd is different. They are looking at big data and consumers' behavior to identify fraudulent activity, and they are backing it up with a 100% financial guarantee. It's pay for performance and they were the only company that offered that."
>
> *Vice president of digital marketing and commerce, retail industry*

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- **Too many fraudulent orders being processed.** The interviewed organizations found that their previous solutions were inadequate at identifying and preventing fraudulent orders from being processed, generating expensive chargebacks. Additionally, previous solutions would sometimes cause the organizations to decline legitimate orders. Organizations noted that processing one fraudulent order would typically lead to an increase in the number of fraudulent charges attempted, a vice president of digital marketing and commerce in the retail industry said: "What we see is that fraudulent behavior leads to more fraudulent behavior. You have these fraud rings looking for opportunities to take advantage of companies, so one successful attack would lead to more and more attacks. For the most part, Signifyd shut this down."

- **Risk of losing credit agency due to high cancelation, chargeback, and fraud rates.** Relationships with credit processing agencies are extremely important to any eCommerce business and a high rate of cancelations, chargebacks, and fraud can strain the relationship, leading to higher rates and even suspensions from processing payments. The interviewed organizations said that they were feeling the pressure from their credit processing partners. A finance/fraud protection specialist in the automotive industry noted: "One key driver to investing in a more efficient tool is that if we have chargeback or cancelation rates above a certain percentage then credit card companies will increase our rate dramatically, which would be a huge blow to the business. At the time in which we were considering Signifyd, our bank and credit card company was sending warnings, so we needed to find an effective solution quickly."

Why Signifyd Guaranteed Fraud Protection

The interviewed organizations selected Signifyd Guaranteed Fraud Protection because:

- **Signifyd's use of AI and ML to provide fast and accurate fraud reviews.** Interviewed organizations noted that Signifyd's use of AI and ML to review orders and identify fraud was a clear differentiator when investigating fraud protection solutions. A vice president of digital marketing and commerce in the retail industry noted: "It's completely automated from start to finish, end of story. AI at its finest."

- **Automated review process eliminated manual reviews, speeding up processing times.** With Signifyd, the interviewed organizations eliminated the need for manual fraud and order reviews, speeding up the time it took to process, review, and approve good orders. Improved order processing speed improved other areas of the business such as enabling two-day shipping, reducing order cancelations, and improving customer satisfaction. A head of global customer care in the beauty industry said: "In a matter of three or four months, we were able to improve our cancelation rates beyond our initial annual goal. More orders get approved, more money is kept, and the whole process moves quicker, which immediately affected our customer satisfaction rates. The entire customer experience of shopping on our website is much better than it used to be. We were even able to open up our products to two-to-five day delivery."

"For us, fraud comes in a wave. A chunk of activities would come in with fraudulent marks, but back then, we weren't stopping them. We were always catching the tail end. And by then, the money was already gone. Signifyd allows us to be more proactive, rather than reactive in identifying and preventing these waves."

Finance/fraud protection, automotive industry

"We honor Signifyd's decision. If they thumbs up an order, we process it and if they give a thumbs down, we don't. It's as close to set it and forget it that I've ever seen with a solution."

Vice president of digital marketing and commerce, retail industry

"We are now able to guarantee shipping. Before, we would always say, 'We'll do it faster.' But after Signifyd, we were actually able to guarantee it."

Project manager, automotive industry

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> **Signifyd's 100% financial guarantee gives organizations peace of mind so they can focus on initiatives that truly add value to the business.** Interviewed organizations noted that because Signifyd has worked so well, and offers a 100% financial guarantee on any fraudulent orders that do happen to slip through, they finally have peace of mind around their fraud prevention strategy and can dedicate resources to valuable tasks like growing the business and serving customers. A finance/fraud prevention specialist in the automotive industry noted: "The fraudsters are very smart. Before Signifyd, something would come up like a new technique and we would all run around trying to figure out how to stop them. It was like we had fire drills happening every day. Right now, with Signifyd, we are calm, we know we have fraud under control. That's a value add to me."

Key Results

The interviews revealed that key results from the Signifyd investment include:

> **Reduced manual effort related to fraud and order reviews.** The interviewed organizations were all able to significantly, and in most cases, eliminate the manual effort related to reviewing orders for fraud. Eliminating this task freed up time to focus on value-adding tasks, accelerating project delivery timelines and improving customer service. An investor relations manager in the supplement industry explained: "With Signifyd, our accounting and finance teams are able to focus more on operational and strategic initiatives like converting cash flow, developing better relationships with our suppliers and manufacturers, and optimizing efficiency against media spend. It's really just freeing up time for our teams to focus on bigger picture things."

> **Improved approval rates and reduced number of fraudulent orders being processed.** With Signifyd, interviewed organizations noticed an immediate improvement to approval rates, simply from turning on the solution. Additionally, due to the AI and ML capabilities, approval rates actually improved over time as Signifyd learned more about each organization's typical customer characteristics and identified more good orders. A vice president of digital marketing and commerce in the retail industry noted: "The impact was immediate. Honestly, this was probably one of the easiest integrations and migrations I've ever done. It was immediately beneficial for the organization the day it was turned on."

> **Improved order acceptance, cancelation, and chargeback rates.** Interviewed organizations saw improvements to all three major metrics after implementing Signifyd. Organizations were: 1) accepting more legitimate orders faster; 2) identifying and rejecting more fraudulent orders; and 3) able to improve processing speed which lead to a reduction in order cancelations. A finance/fraud protection specialist in the automotive industry noted: "First of all, we don't have to do the manual review anymore and that saves a lot of labor time. Second, Signifyd brought the fraud chargeback rate under control. Right now we're seeing more than a 50% reduction there. Third, there was an increase in our approval rate — so, we're letting more legit orders through instead of blocking them like before. And finally, for me, I feel mentally that fraud is under control. It's peace of mind."

"Signifyd recently updated the data dashboards and the data reporting is really on point. I never have to reach out to my team to get a specific report anymore."

Investor relations manager, supplement industry

"Before Signifyd, we were always trying to find out where the fraudsters were and trying to find a way to stop them. But now, with Signifyd, we *know* we are able to stop them. We do not have to waste time chasing fraud anymore."

Finance/fraud protection, automotive industry

"At the beginning, when we had just deployed Signifyd, our approval rate was 98%. Now, it's about 99.3%. So as we go along, it's picked up by itself, it just keeps getting smarter."

Finance/fraud protection, automotive industry

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› **Increased revenue.** The benefits discussed above, such as improved acceptance rate and reduced cancelations, directly led to increased revenue for the interviewed organizations without any additional work on their part. An analyst and head of customer support in the eCommerce industry said, "Signifyd has definitely made an impact to top-line revenue." While the vice president of digital marketing and commerce in the retail industry noted, "It's a net benefit of 1% to our P&L — we're talking about at least a 300% or 400% ROI."

Composite Organization

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an associated ROI analysis that illustrates the areas financially affected by an investment in Signifyd. The composite organization is representative of the five companies that Forrester interviewed and provides a broad view of Signifyd's performance across several retail verticals. The composite organization is used to present the aggregate financial analysis in the next section. The composite organization that Forrester synthesized from the customer interviews has the following characteristics:

Description of composite. A physical goods retailer with a large eCommerce presence directing all of its eCommerce traffic through Signifyd. The organization operates in the U.S., Europe, and China with plans to expand into Latin America soon. The organization is experiencing a high year-over-year growth rate and processes 75,000 orders per quarter in the first year.

Deployment characteristics. The organization had a pre-Signifyd approval rate of 96%, an average order value (AOV) of $160, and a chargeback rate of 0.8%. The eCommerce team is responsible for processing orders, managing cancelations and chargebacks, as well as customer care and support. Before Signifyd, the organization had a team of customer care agents handling manual order reviews, rotating on a daily basis. The team leveraged online databases and fraud-prevention best practices to identify and prevent fraudulent orders.

"We have had fantastic results with Signifyd. I mean that's why I'm talking on their behalf. Honestly, there's very few products that are rock stars, usually you get a lot of duds, but Signifyd is certainly a rock star."

Vice president of digital marketing and commerce, retail industry

Key assumptions:
- Physical goods retailer
- $160 AOV
- 300K orders in Year 1

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Analysis Of Benefits

QUANTIFIED BENEFIT DATA AS APPLIED TO THE COMPOSITE

Total Benefits

REF.	BENEFIT	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Atr	Incremental profit from improved order acceptance rate	$155,520	$356,400	$634,230	$1,146,150	$912,434
Btr	Savings related to eliminating manual order reviews	$127,356	$160,833	$218,672	$506,861	$412,989
Ctr	Total chargeback cost avoidance	$933,120	$1,178,400	$1,602,180	$3,713,700	$3,025,917
Dtr	Incremental profit due to reduced order cancelations	$125,971	$159,084	$216,294	$501,350	$408,499
	Total benefits (risk-adjusted)	$1,341,967	$1,854,717	$2,671,376	$5,868,060	$4,759,839

Incremental Profit From Improved Order Acceptance Rate

The interviewed organizations note that improved order acceptance rates have a direct impact to top-line revenue and bottom-line profits.

› Signifyd replaced an unreliable manual fraud review process, so once deployed, organizations could see an immediate lift to order acceptance rates improving revenue and bottom-line profits. A vice president of digital marketing and commerce in the retail industry said: "We now allow good cards through that were being rejected before, so from a financial perspective, we're getting more than just cost savings, we're generating new revenue."

› In addition to the immediate impact, order acceptance rates continue to climb as Signifyd learns about organizations' customers and gets better at identifying legitimate orders. Organizations even have the opportunity to accelerate this process by feeding customer and order data to Signifyd to train the AI. A head of global customer care in the beauty industry explained: "We helped train the machine learning with data from our customers who were flagged by Signifyd as fraud, but we knew, based on our history and our system, that they were actually legit. We created a list of all those customers, gave it to Signifyd, and then saw an immediate increase in our approval rate."

> The table above shows the total of all benefits across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total benefits to be a PV of more than $4.6 million.

2.9% improvement in order acceptance rate after three years with Signifyd.

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Based on the customer interviews, Forrester estimates the following:

› The composite organization processes 300K orders in Year 1, climbing to over 500K by Year 3.

› The order approval rate for the composite organization is 96% before implementing Signifyd.

› Order approval rate climbs year-over-year to 97.2% in Year 1, 98.2% in Year 2, and 98.9% in Year 3.

› Average order value is $160.

This benefit can vary due to uncertainty related to:

› Total number of orders received annually.

› Average order value.

› Improvement in order acceptance rate.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $912,434.

> Impact risk is the risk that the business or technology needs of the organization may not be met by the investment, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for benefit estimates.

Incremental Profit From Improved Order Acceptance Rate: Calculation Table					
REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
A1	Total number of orders (annual)	Composite	300,000	375,000	506,250
A2	Acceptance rate, before Signifyd	Composite	96.0%	96.0%	96.0%
A3	Accepted orders, before Signifyd	A1*A2	288,000	360,000	486,000
A4	Acceptance rate, with Signifyd	Composite	97.2%	98.2%	98.9%
A5	Accepted orders, with Signifyd	A1*A4	291,600	368,250	500,681
A6	Incremental accepted orders	A5-A3	3,600	8,250	14,681
A7	Average order value	Composite	$160	$160	$160
A8	Attribution	Composite	100%	100%	100%
A9	Incremental revenue	A6*A7*A8	$576,000	$1,320,000	$2,349,000
A10	Gross margin		30%	30%	30%
At	Incremental profit from improved order acceptance rate	A9*A10	$172,800	$396,000	$704,700
	Risk adjustment	↓10%			
Atr	Incremental profit from improved order acceptance rate (risk-adjusted)		$155,520	$356,400	$634,230

Savings Related To Manual Order Reviews

A primary challenge for all the interviewed organizations is to reduce the amount of manual effort dedicated to order reviews. In most cases, the interviewed organizations are leveraging customer care or finance professionals with little to no formal fraud prevention training. With Signifyd, orders are automatically evaluated and tagged, allowing an administrator to see which orders are being approved and rejected, and why an order gets flagged as being risky, eliminating the need to perform manual fraud reviews. Eliminating this task not only gives the order reviewers more time in their day, it eliminates an entire workstream and allows the team to focus on its core competencies, i.e., growing the

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business and serving their customers. This also allows the organizations to successfully scale-up order volumes with the same eCommerce team size. A vice president of digital marketing and commerce in the retail industry simply stated, "We do not have a fraud team now because of Signifyd."

Based on the customer interviews, Forrester estimates the following:

› Before Signifyd, on average, 5% of all orders were being sent for manual fraud review.

› Once Signifyd is deployed, the organization no longer performs manual order reviews and trusts Signifyd's assessments.

› The average time to perform a fraud review is 10 minutes.

› The average fully burdened salary for an eCommerce worker is $114,750.

› 100% of this benefit is attributed to implementing Signifyd Guaranteed Fraud Protection.

This benefit can vary due to uncertainty related to:

› The number of orders being sent to manual fraud review before Signifyd.

› The time needed to perform one manual fraud review.

› The fully loaded compensation of order reviewers.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of $412,989.

Signifyd eliminates over 2,400 hours per year of manual order reviews.

REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
	Savings Related To Eliminating Manual Order Reviews: Calculation Table				
B1	Number of accepted orders	A5	291,600	368,250	500,681
B2	Percent of orders sent to manual review	Composite	5%	5%	5%
B3	Number of orders sent to manual review	B1*B2	14,580	18,413	25,034
B4	Average order review time (minutes)	Composite	10	10	10
B5	Total time spent on order reviews (hours)	(B3*B4)/60	2,430	3,069	4,172
B6	FTE required for order reviews (rounded)	B5/2,080	1.2	1.5	2.0
B7	Average fully burdened salary for eCommerce team	$85K*1.35	$114,750	$114,750	$114,750
B8	Attribution	Composite	100%	100%	100%
Bt	Savings related to eliminating manual order reviews	B6*B7*B8	$134,059	$169,298	$230,181
	Risk adjustment	↓5%			
Btr	Savings related to eliminating manual order reviews (risk-adjusted)		$127,356	$160,833	$218,672

Chargeback Cost Avoidance

Chargebacks are extremely costly to an organization in terms of actual dollars leaving the business and time spent processing, disputing, and fulfilling each request. The total cost of a chargeback exceeds the total cost of the product that was shipped, creating an outsized negative

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business impact. Each interviewed organization experiences a slightly different chargeback rate based on its industry, product, and internal processes, but all are paying over $2.40 for each dollar of fraudulent charges processed. Additionally, each organization's average chargeback value (the value of the item that was fraudulently purchased) is greater than its average order value for all orders. With Signifyd's 100% financial guarantee, organizations are no longer paying for chargebacks, significantly reducing the impact to their businesses.

› **Chargeback multipliers vary by industry.** Each industry is expected to experience a different chargeback multiplier for dollars spent on fraud based on how its business accepts and processes orders and chargebacks. Organizations interviewed for this study experience the following chargeback multiplier for every dollar of fraudulent charges:

- Retail: $3.01
- Beauty/CPG: $2.39
- Automotive: $2.82
- Gifts: $2.82

› Factors that contribute to the differences in the industry chargeback multipliers include:

- Labor costs associated with processing an order or chargeback.
- Shipping and merchandising costs as a percentage of order value (higher costs lead to a larger chargeback multiplier).
- Fulfilment time and related costs (larger and heavier items cost more to ship and store).
- Scarcity and desirability of the item sold (rare or highly desired goods are more difficult to replace and have a greater likelihood for unauthorized resale).
- Location and business strategy (located in-market or overseas, labor is local or outsourced).

› According to "The LexisNexis Risk Solutions 2018 True Cost of Fraud Study," the rates experienced by the interviewed organizations are generally on par with expected industry averages, ranging from an average of $2.56 in eCommerce to $2.94 for retail companies.[1]

Based on the customer interviews, Forrester estimates the following:

› A chargeback rate of 0.8% before Signifyd.

› Average chargeback value of $200.

› Chargeback multiplier of $2.50 for every dollar of fraudulent charges.

This benefit can vary due to uncertainty related to:

› Initial chargeback rate.

› Differences in chargeback multiplier.

› Average chargeback value size.

To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV of $3,025,917.

Signifyd provides a 100% financial guarantee on fraud-related chargebacks.

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Total Chargeback Cost Avoidance: Calculation Table				
REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
C1	Total number of accepted orders	A5	291,600	368,250	500,681
C2	Chargeback rate, before Signifyd	Composite	0.80%	0.80%	0.80%
C3	Total chargebacks, before Signifyd	C1*C2	2,333	2,946	4,005
C4	Average chargeback value	A7*125%	$200	$200	$200
C5	Value of orders flagged for chargeback	C3*C4	$466,560	$589,200	$801,090
C6	Chargeback multiplier – fulfilment, processing, operations, labor costs	Composite	150%	150%	150%
C7	Chargeback multiplier costs	C5*C6	$699,840	$883,800	$1,201,635
Ct	Total chargeback cost avoidance	C5+C7	$1,166,400	$1,473,000	$2,002,725
	Risk adjustment	↓20%			
Ctr	Total chargeback cost avoidance (risk-adjusted)		$933,120	$1,178,400	$1,602,180

Incremental Profit Due To Reduced Order Cancellations

According to Forrester, customers demand a consistent and seamless experience across all touchpoints whenever, wherever, and with whomever they interact.[2] Whether shopping online, in store, or on a mobile device, customers expect to have a consistent experience across every phase of the buying journey, including checkout. With in-store shopping, there is little variability in the checkout process, and customers have come to expect the same experience while shopping online. If organizations delay approving online orders, those customers are more likely to have a negative experience and cancel their order as a result of the delay.

With Signifyd, the interviewed organizations are able to significantly reduce order processing time and subsequently reduce order cancelations. Before Signifyd, once an order was flagged for manual review, there was a significantly higher chance that the order would be canceled. And the longer the review process, the greater the chance of cancelation.

> Processing an order previously took organizations hours to days to complete, but with Signifyd's automated platform, orders are processed and accepted or rejected in under a second.

> Interviewed organizations note that the improvements to order processing time also impact other areas of the business, such as enabling two-day shipping or automating returns.

Based on the customer interviews, Forrester estimates the following:

"People would call in and cancel their orders because they had not received their order confirmation after a day or two, because our team didn't get to it yet. This does not happen anymore with Signifyd."

VP of digital marketing and commerce, retail industry

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- › 5% of orders are flagged for manual review.
- › Prior to Signifyd, once an order is flagged, there is a 20% cancelation rate related to long processing times.
- › Average order value of $160.
- › Gross margin of 30%

This benefit can vary due to uncertainty related to:

- › Percent of orders flagged for manual review.
- › Average order value.
- › Cancelation rate attributed to long processing times.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $408,499.

1% of canceled orders are recovered through reduced order processing time.

	Incremental Profit Due To Reduced Order Cancelations: Calculation Table				
REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
D1	Total accepted orders	A5	291,600	368,250	500,681
D2	Orders sent to manual review	B3	14,580	18,413	25,034
D3	Order cancelation rate once sent to manual review, before Signifyd	Composite	20%	20%	20%
D4	Canceled orders, before Signifyd	D2*D3	2,916	3,683	5,007
D5	Average order value	A7	$160	$160	$160
D6	Gross margin	A10	30%	30%	30%
D7	Attribution	Composite	100%	100%	100%
Dt	Incremental profit due to reduced order cancelations	D4*D5*D6*D7	$139,968	$176,760	$240,327
	Risk adjustment	↓10%			
Dtr	Incremental profit due to reduced order cancelations (risk-adjusted)		$125,971	$159,084	$216,294

Unquantified Benefits

While not quantified, the interviewed organizations experience additional benefits that Forrester deems important in the evaluation of Signifyd. These benefits are as follows:

- › **Improved customer loyalty and retention.** Signifyd improves the order processing system for organizations by speeding up processing times and reducing errors. These improvements lead to a better customer experience for shoppers and, by rejecting fewer legitimate orders, improved loyalty and retention for those customers who may have been rejected with the legacy system. A vice president of digital marketing and commerce in the retail industry noted: "There are so few issues of people complaining now it blows my mind. There have been no complaints in our feedback surveys or anything like that. Now, most complaints seem to come from fraudulent customers calling to complain to try to get free stuff, but, because of Signifyd, we know that it is a fraudulent customer so we can act accordingly."

"Optimizing efficiency on media spend, getting better terms with manufacturers, and accelerating the cash conversion cycle, these are all projects that we were able to complete in a matter of weeks, rather than months. Signifyd is accelerating the whole cycle."

Investor relations manager, supplement industry

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> **Organizations are better able to manage holiday and peak season spikes.** With Signifyd reviewing all orders, the interviewed organizations are no longer required to hire seasonal staff to accommodate the typical spike in orders and fraudulent activity around peak season. Signifyd enables organizations to offer their customers a consistent buying experience throughout the year.

> **Internal project speed acceleration due to eliminating manual fraud reviews.** By automating the order review process, organizations are able to let employees focus on the tasks that they were originally hired for, freeing up time for internal projects and improvements to the business. One interviewed organization cited three specific initiatives that were completed over 50% faster because employees were no longer responsible for performing order reviews and were able to dedicate time to these important initiatives.

Since Signifyd instantly assesses all orders coming in and frees up time for the business to focus on initiatives, some interviewed organizations are able to implement faster shipping times with guaranteed delivery windows.

Flexibility

The value of flexibility is clearly unique to each customer, and the measure of its value varies from organization to organization. There are multiple scenarios in which a customer might choose to implement Signifyd and later realize additional uses and business opportunities, including:

> **Ability to confidently enter new markets, especially high-risk markets.** Signifyd's 100% financial guarantee and use of AI and ML allow organizations to confidently enter new markets that may have been considered too risky without a solution like Signifyd. The revenue impact of successfully entering a new market like Brazil or China has the possibility of being significant.

> **Enable automation in other parts of the business.** For some of the interviewed organizations, Signifyd was the first business application that used AI, ML, or automation to improve business processes. Organizations are seeing the outsized impact that Signifyd can have on fraud prevention, and they are starting to apply the same concepts to other areas of the business. Some examples of areas that businesses are looking to automate, due to their Signifyd deployment, include:

   • Returns and refunds.
   • Customer service.
   • Contact center management.
   • Guaranteed shipping.

Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in Appendix A).

Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into business benefit for a 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.

"We've applied the knowledge that we got doing the Signifyd implementation to other processes in the organization. We are fully automating all these things that take tons of granular work. So, it has actually inadvertently had a huge impact on us."

Project manager, automotive industry

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Analysis Of Costs

QUANTIFIED COST DATA AS APPLIED TO THE COMPOSITE

	Total Costs						
REF.	COST	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Etr	Signifyd costs	$0	$256,608	$324,060	$440,600	$1,021,268	$832,127
Ftr	Labor costs associated with processing chargebacks	$0	$10,759	$5,823	$4,222	$20,804	$17,765
Gtr	Implementation and training costs	$8,890	$0	$0	$0	$8,890	$8,890
	Total costs (risk-adjusted)	$8,890	$267,367	$329,883	$444,822	$1,050,961	$858,782

Signifyd Costs

Interviewed organizations described the annual platform costs related to Signifyd Guaranteed Fraud Protection.

Based on customer interviews and data from Signifyd, Forrester estimates for the composite organization:

› Platform fees of 0.5% of total revenue processed.

Important note related to cost:

Organizations may experience different platform fee percentages for their Signifyd investment based on the contract term and a monthly usage minimum. The study uses a pricing of 50 basis points of the revenue from approved transactions. Signifyd's service fee only applies to approved orders, and thus merchants are not charged for any fraudulent orders that are declined.

To account for these discrepancies, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $832,127.

> The table above shows the total of all costs across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total costs to be a PV of $911,550.

	Signifyd Costs: Calculation Table					
REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
E1	Total eCommerce revenue	A5*A7		$46,656,000	$58,920,000	$80,109,000
E2	Signifyd platform fee	Composite		0.5%	0.5%	0.5%
Et	Signifyd costs	E1*E2		$233,280	$294,600	$400,545
	Risk adjustment	↑10%				
Etr	Signifyd costs (risk-adjusted)		$0	$256,608	$324,060	$440,600

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Labor Costs Associated With Processing Chargebacks

While Signifyd reduces the financial impact of chargebacks with its 100% financial guarantee, the interviewed organizations still experience chargebacks related to order cancelations. In this case, these organizations are responsible for any labor related to processing fraud-related chargebacks that slip though.

Based on customer interviews, Forrester estimates the following for the composite organization:

› 0.35% chargeback rate with Signifyd in Year 1, reducing to 0.08% in Year 3.

› 10 minutes of labor associated with processing and disputing each chargeback.

› Fully burdened salary for an eCommerce employee processing the chargebacks of $55 per hour.

This cost can vary due to uncertainty related to:

› Amount of time and effort associated with processing and disputing chargebacks.

› Chargeback rate with Signifyd.

› Hourly compensation for eCommerce employees.

› Costs related to disputing and litigating chargebacks.

To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year, risk-adjusted total PV of $17,765.

> Implementation risk is the risk that a proposed investment may deviate from the original or expected requirements, resulting in higher costs than anticipated. The greater the uncertainty, the wider the potential range of outcomes for cost estimates.

REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
	Labor Costs Associated With Processing Chargebacks: Calculation Table					
F1	Chargeback rate with Signifyd	Composite		0.35%	0.15%	0.08%
F2	Total chargebacks with Signifyd	F1*A5		1,021	552	401
F3	Labor associated with processing and disputing chargebacks (minutes)	Composite		10	10	10
F4	Average fully burdened eCommerce employee salary	B7/2,080		$55	$55	$55
Ft	Labor costs associated with processing chargebacks	F2*(F3/60)*F4	$0	$9,356	$5,063	$3,672
	Risk adjustment	↑15%				
Ftr	Labor costs associated with processing chargebacks (risk-adjusted)		$0	$10,759	$5,823	$4,222

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Implementation And Training Costs

Interviewed organizations experience costs associated with implementing and deploying Signifyd, as well as training eCommerce staff on the platform.

Based on customer interviews and data from Signifyd, Forrester estimates the following for the composite organization:

> › Deploying Signifyd requires 80 developer hours to complete.

> › Average fully burdened developer salary of $65 per hour.

> › eCommerce team of 15, with each employee receiving two hours of Signifyd training.

> › Two main stakeholders on the eCommerce team attend a full-day training session.

> › Fully burdened salary for an eCommerce employee processing the chargebacks of $55 per hour.

This cost can vary due to uncertainty related to:

> › Number of developer hours required to deploy Signifyd.

> › Size of eCommerce team and amount of training required.

> › Differences in average salary.

To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year, risk-adjusted total PV of $8,890.

**Two FTEs** attend a one-day training session for Signifyd.

Implementation And Training Costs: Calculation Table						
REF.	METRIC	CALC.	INITIAL	YEAR 1	YEAR 2	YEAR 3
G1	Development hours	Composite	80			
G2	Average fully burdened developer salary (hourly)	$100K*(1.35/2,080)	$65			
G3	Implementation costs (rounded)	G1*G2	$5,200			
G4	Number of eCommerce employees – customer engagement, finance, etc.	Composite	15			
G5	Training required for each eCommerce employee		2			
G6	Additional training for main stakeholder (two main stakeholders)		8			
G7	Average fully burdened eCommerce employee salary	B7/2,080	$55			
G8	Training costs	(G4*G5*G7)+ (G6*G7*2)	$2,530			
Gt	Implementation and training costs	G3+G8	$7,730	$0	$0	$0
	Risk adjustment	↑15%				
Gtr	Implementation and training costs (risk-adjusted)		$8,890	$0	$0	$0

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Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

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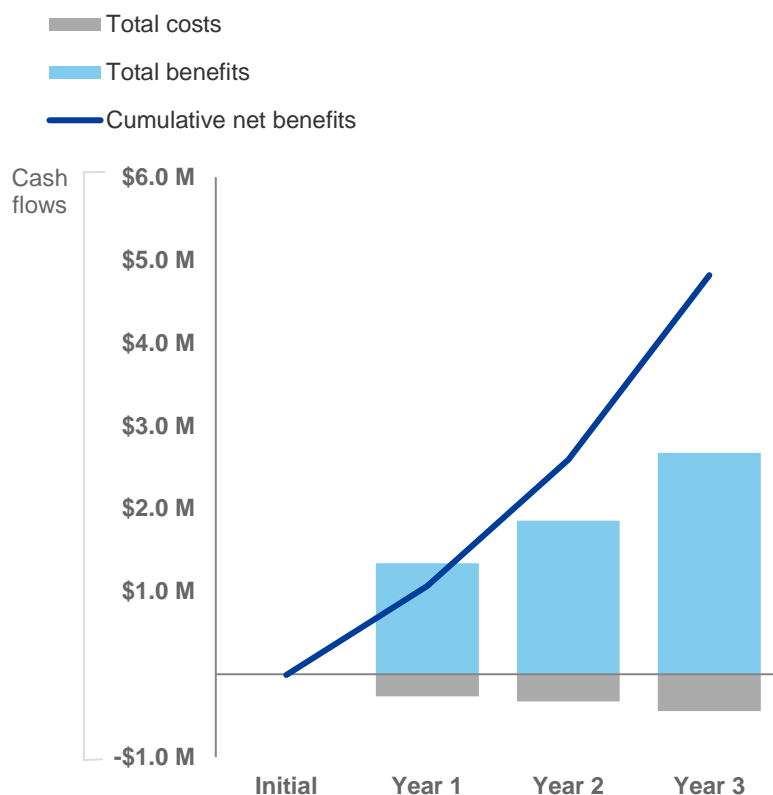
The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

Legend:
- Total costs
- Total benefits
- Cumulative net benefits

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

Cash Flow Analysis (Risk-Adjusted)

|	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Total costs	($8,890)	($267,367)	($329,883)	($444,822)	($1,050,961)	($858,782)
Total benefits	$0	$1,341,967	$1,854,717	$2,671,376	$5,868,060	$4,759,839
Net benefits	($8,890)	$1,074,600	$1,524,834	$2,226,554	$4,817,099	$3,901,057
ROI						454%
Payback period (months)						<6 months

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Signifyd Product Overview

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

Signifyd empowers fearless commerce by providing an end-to-end commerce protection platform that protects merchants from fraud, consumer abuse and revenue loss caused by needless barriers complicating the buying experience. Signifyd's big-data-and-machine-learning-powered solution provides consumers with friction-free buying experiences and ensures that good customers are not frustrated by checkout delays or by having their legitimate orders declined for fear of fraud.

Signifyd's Commerce Protection Platform is the most comprehensive in the industry

Signifyd's techniques together maximize each merchants' customer experience and quality control
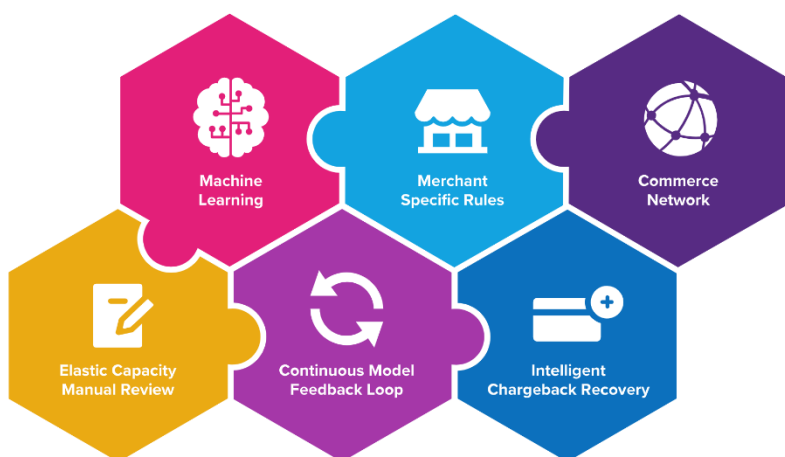
The innovative technology eliminates checkout delays and significantly reduces the chance that a legitimate customer will see his or her order declined for fear of fraud. Signifyd backs its decisions with a 100 percent financial guarantee, which makes a merchant whole for any approved order that ultimately turns out to be fraudulent.

While this Total Economic Impact™ report focuses solely on Signifyd's Guaranteed Fraud Protection product, Signifyd's protection for merchants doesn't end there.

In fact, its Commerce Protection Platform comprises four products:

- Signifyd Guaranteed Fraud Protection™
- Signifyd Chargeback Recovery™
- Signifyd INR Protection™
- Signifyd Seamless SCA™

Taken together the innovative solutions not only remove the fear of fraud from merchants' lives, they also address any kind of chargeback and provide European retailers with the strong customer authentication required by PSD2 without killing conversions due to the added friction previously thought necessary to adequately authenticate customers.

By eliminating the fear of fraud and chargebacks from the buying journey Signifyd staunches revenue leakage, contributes to a superior customer experience and increases customer lifetime value.

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Signifyd is backed by Premji Invest, Bain Capital Ventures, Menlo Ventures, American Express Ventures, IA Ventures, Allegis Cyber and Resolute Ventures.

The company has been recognized as a Gartner Cool Vendor 2017 "Security for Midsize Enterprises and a Frost & Sullivan 2018 North American Growth Excellence Leadership Award winner. It was named to CB Insights 2018 Fintech 250 list and 2018 Deloitte's North America Technology Fast 500 list.

Signifyd was among Inc. Magazine's Best Workplaces for 2018 and recognized by the San Francisco Business Times and Silicon Valley Business Journal as one of the Bay Area's Best Places to Work.

Signifyd counts among its customers a number of companies on the Fortune 1000 and Internet Retailer Top 500 lists. Signifyd is headquartered in San Jose, CA., with locations in Denver, New York, Belfast, and London.

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Appendix A: Total Economic Impact

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

Total Economic Impact Approach

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

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

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

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

The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1 that are not discounted. All other cash flows 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 in 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.

Present value (PV)

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

Net present value (NPV)

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

Return on investment (ROI)

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

Discount rate

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

Payback period

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

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Appendix B: Supplemental Material

Related Forrester Research

Jennifer Adams, "The Fraud Management Solutions Market Will Exceed $10 Billion By 2023," Forrester Blogs, July 17, 2018 (https://go.forrester.com/blogs/the-fraud-management-solutions-market-will-exceed-10-billion-by-2023/).

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Appendix C: Endnotes

[1] Source: "LexisNexis Risk Solutions 2018 True Cost of Fraud Study," LexisNexis Risk Solutions, September 2018 (https://risk.lexisnexis.com/insights-resources/research/lexisnexis-risk-solutions-2018-true-cost-of-fraud-study-for-the-financial-services-sector).

[2] Source: "It's Time For Retail Stores To Open Their Doors To The Digital Org," Forrester Research, Inc., May 14, 2018.

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