

FORRESTER®

The Total Economic Impact™ Of Signicat

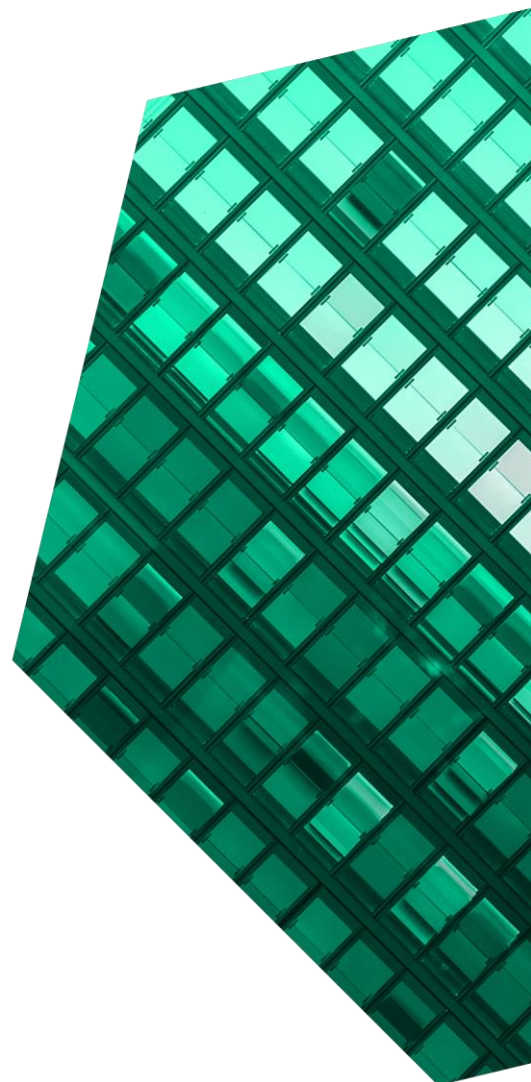
Cost Savings And Business Benefits
Enabled By Signicat

SEPTEMBER 2023

Table Of Contents

Executive Summary	1
The Signicat Customer Journey	6
Key Challenges.....	6
Solution Requirements.....	7
Composite Organisation.....	7
Analysis Of Benefits	8
Fraud Loss Reduction.....	8
Net Profit From Increased Conversion Rate.....	10
Increased Profit From Incremental Customer Acquisition.....	12
Cost Savings Due To Improved Efficiency Of Identity Verification Process.....	14
Cost Savings Due To Digitalisation Of Signature Process.....	16
Cost Savings For Customer Support Due improved Identity Verification And Authentication Process.....	17
Printing Savings For Onboarding.....	18
Unquantified Benefits.....	19
Flexibility.....	20
Analysis Of Costs	22
Implementation Labour.....	22
Ongoing Cost.....	24
Cost Of Verifications.....	25
Cost Of Digital Signing.....	26
Subscription Cost.....	27
Financial Summary	28
Appendix A: Total Economic Impact	29
Appendix B: Endnotes	30

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ABOUT FORRESTER CONSULTING

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Executive Summary

Organisations must strive to provide a secure, smooth, and scalable digital identity verification journey to prevent fraud, improve customer experience, and comply with local regulations. Signicat's digital identity platform replaces inefficient and slow manual processes with a single platform to verify and authenticate individuals and businesses. This platform integrates digital signing, enabling organisations to reduce fraud, enhance the customer onboarding journey, and improve their compliance posture.

Signicat offers solutions covering the digital identity lifecycle. Its digital identity platform incorporates a suite of identity proofing, authentication, fraud detection, and signing systems with more than 30 local electronic identifications (eIDs) globally — all of which are accessible through a single integration point.

Signicat commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realise by deploying Signicat.¹ The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Signicat on their organisations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed five representatives with experience in using Signicat. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single composite organisation that is a

KEY STATISTICS



Return on investment (ROI)
303%



Net present value (NPV)
€10.80M

financial services organisation with a global revenue of €16 billion. It serves both consumer and corporate clients.

Prior to using Signicat services, these interviewees noted how their organisations struggled to verify the identity of their customers because of lengthy manual processes that used a combination of multiple vendors and own solutions, contributing to poor customer experiences. There were also difficulties navigating the complex identity verification regulatory landscape across different markets and the associated risk of being noncompliant. These limitations led the interviewees' organisations to search for a digital identity verification solution to efficiently onboard customers across markets while reducing onboarding costs.

After the investment in Signicat, the interviewees obtained a dedicated digital platform that verified the identity of their customers across different countries and at different stages of the customer lifecycle. The

Customer conversion rate
increase of

19%



solution allowed them to use multiple verification methods and provided a digital signing solution, all in one access point. Key results from the investment included a reduction in fraud rate, an increase in customer onboarding conversion rate, an increase in total addressable markets, improved operational efficiency, and cost savings across different functions, including customer service and compliance departments, as well as avoided printing.

KEY FINDINGS

Quantified benefits. Three-year, risk-adjusted present value (PV) quantified benefits for the composite organisation include:

- **A reduction in fraud rate of 75%.** Because of the different identification methods it uses as well as its fraud monitoring capabilities, Signicat reduces the number of fraudulent customers that the composite organisation onboards. It also prevents fraudsters who are impersonating customers from accessing existing customers' accounts or portals. Over three years, this benefit amounts to €7.5 million.
- **An increase of 19% in client conversion rates.** Because of its robust local identification methods across markets and the streamlined and fast verification process during onboarding, the composite organisation experiences a 19% increase in conversion rate. Over three years, the net profit resulting from this conversion rate increase is €3.2 million.
- **An increase in profit from incremental customer acquisition.** Signicat contributes to safely accessing higher-risk market segments and verticals. Because of its effective and localised identification methods, the composite organisation can access these markets with peace of mind to ultimately increase its total addressable market, resulting in additional customers being onboarded. Over three years, the value associated with the increased profit from additional customer acquisition is €423,000.
- **Improvements in operational efficiencies from automated identity verification process equivalent to 29 FTEs in Year 1.** Manual verifications during onboarding are time-intensive for compliance teams. Because the identification process is almost entirely transitioned to Signicat's platform, the composite organisation's compliance team saves time that they can now spend on other tasks. This results in operational efficiency improvements of €2.9 million over three years.
- **Labour cost savings from digitalisation of signatures.** Prior to using Signicat, potential customers visually reviewed and processed contracts to ensure conformity of signatures. With Signicat's solution, the manual contract verification process is eliminated, resulting in efficiency improvements of €281,000 over three years.
- **Customer support efficiency improvements equivalent to 0.8 FTEs in Year 1.** Signicat's authentication methods provide the composite organisation's customers with improved ways to log on to their accounts, reducing potential issues due to lost credentials or passwords. As a result, the volume of customer service requests from customers for log-on-related issues drops. Over three years, the efficiency improvements for the customer support team are equal to €57,000.
- **Avoidance of more than 1.1 million printed pages in Year 1.** Because of Signicat's digital signing capabilities, contracts and agreements with customers have been digitalised, which contributes to eliminating printing costs for this purpose. Over three years, the cost savings from not printing contracts are equal to €28,000.

Unquantified benefits. Benefits that provide value for the interviewees' organisations but are not quantified in this study include:

- **Improved customer experience.** Because of Signicat's automated verification process, onboarding time for customers was reduced from up to a few days to just a few minutes and the potential for issues during authentication decreased, improving the overall customer experience.
- **Improved time to value.** Because of the reduced time to verify customers during onboarding with Signicat, customers now contribute to the interviewees' organisations' revenues faster.
- **Improved ability to meet anti-money laundering (AML) regulations across countries.** Signicat's platform allows interviewees' organisations to be compliant with local regulations across different countries due to access to local verification methods, helping them avoid fines in some cases.
- **Improved access to new markets.** Because of Signicat's expertise with regulatory environments related to identity and onboarding requirements across countries, interviewees' organisations could enter new markets faster and more easily as they no longer had to invest important internal time and efforts to investigate local requirements.
- **Increased convenience of documents archiving and repository.** Digitally signed contracts with customers were archived and accessible through a single access point.
- **Digitalised customer journey.** Because of its automated verification methods integrated into the interviewees' organisations' onboarding flows, Signicat contributed to their efforts to digitalise their customer journey.
- **Reduced ecological footprint.** With contracts and agreements now in digital format and no longer paper-based, interviewees mentioned their organisations reduced their ecological impact.

Costs. Three-year, risk-adjusted PV costs for the composite organisation include:

- **Implementation cost of €134,000.** The cost of implementing Signicat for the composite organisation includes time and efforts to deploy the verification methods and digital signing into its digital and onboarding environments across four markets.
- **Ongoing relationship management cost of €113,000.** An IT project manager dedicates one-third of their time overseeing the relationship with Signicat and ensuring continuous integration of the different verification methods in additional countries that the composite organisation grows into. This cost represents the labour time dedicated to this task.
- **Cost of verifications of €1.7 million over three years.** The cost of customer verifications is based on the volume of customers that are verified during onboarding. This is charged at the average rate of €3.21 per verification. This rate can vary based on the verification methods used by the organisation and by country.
- **Digital signatures cost of less than €1.4 million.** The cost of digital signing is based on the volume of customers who are successfully verified and onboarded. The average cost per digital signing is about €2.93 per document signed.
- **Subscription cost of about €225,000.** The subscription cost plan is composed of a fixed monthly fee of €7,193 for the composite. This can vary based on the type of plan and the verification methods used.

The representative interviews and financial analysis found that a composite organisation experiences benefits of €14.37M over three years versus costs of €3.56M, adding up to a net present value (NPV) of €10.80M and an ROI of 303%.



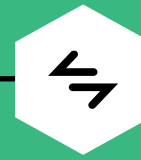
ROI
303%



BENEFITS PV
€14.37M

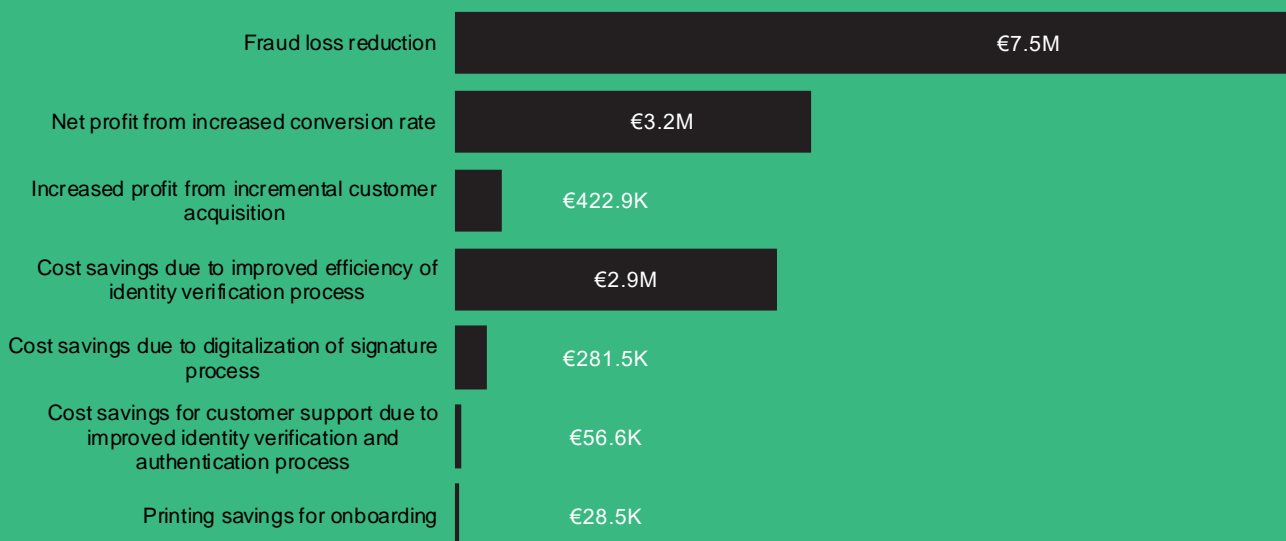


NPV
€10.80M



PAYBACK
<6 months

Benefits (Three-Year)



“Signicat provides the convenience of a one-stop-shop, turnkey approach. We are operating in different markets and the identification space is very messy because of the different local variations. At the same time, AML regulations and consequences of noncompliance are severe. It would be hard to ensure that we have a solid setup and foundation if we tried to manage all the direct integrations in every single market by ourselves. A service provider like Signicat ,who has these services available through one counter, is a huge value for us.”

— Managing director of payments, tech/delivery

TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews, Forrester constructed a Total Economic Impact™ framework for those organisations considering an investment in Signicat.

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 Signicat can have on an organisation.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Signicat 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 organisations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the study to determine the appropriateness of an investment in Signicat.

Signicat 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.

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



DUE DILIGENCE

Interviewed Signicat stakeholders and Forrester analysts to gather data relative to Signicat.



INTERVIEWS

Interviewed five representatives at organisations using Signicat to obtain data with respect to costs, benefits, and risks.



COMPOSITE ORGANISATION

Designed a composite organisation based on characteristics of the interviewees’ organisations.



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 interviewees.



CASE STUDY

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

The Signicat Customer Journey

■ Drivers leading to the Signicat investment

Interviews			
Role	Industry	Region	Global Revenue
Director of business development and digital capabilities	Financial services	Operations in 30 countries; HQ in USA	€52 billion
Managing director of payments	Tech/delivery	Operations in 17 countries; HQ in Europe	€306 million
Supply relationship manager	Financial services	Operations in 4 countries; HQ in Europe	€242 million
IT product owner and manager	HR consulting	Operations in 39 countries; HQ in Europe	€28 billion
Product development lead	Consumer credits	Operations in 12 countries; HQ in Europe	€800 million

KEY CHALLENGES

All the interviewees mentioned that their organisations did not have a single dedicated solution or process to verify their customers' identities during onboarding across different markets of operations. Most of them performed manual verification of identities, which provided a poor customer experience due to the time required to manually verify customers; others employed a combination of different identity providers and internal solutions across markets, which was complex to manage and did not permit them to obtain satisfying results. In addition, navigating through the complex anti-money laundering (AML), know-your-customer (KYC), and know-your-business (KYB) regulatory environments across different markets was challenging without a trustable single point of access to verify customers' identities.

The interviewees noted how their organisations struggled with common challenges, including:

- **Poor customer experience due to lengthy verification processes.** Interviewees mentioned that their previous identity verification processes and environments caused a lot of friction due to the long time it took for customers to be verified

“One of Signicat’s core strengths is its ability to deliver and react, and to support our business by providing meaningful insights and expertise in terms of AML regulations and changes.”

Managing director of payments, tech/delivery

and the efforts required from them to share their documents, either manually via email or in person in some instances, ultimately creating a poor customer experience. An IT product owner and manager at an HR consulting firm mentioned that customers had to physically go to one of their local branches to verify their identity, which was time-consuming and inconvenient for customers, who spent time commuting to the branch and then had to experience the lengthy process of getting verified manually.

“We chose Signicat because of its global coverage and the multiple authentication and verification methods we can use based on our needs.”

IT product owner and manager, HR consulting

- **Coverage gaps across different markets and risk of noncompliance.** Due to the previous manual processes, varying and complex rules across countries, and regulations, interviewees’ organisations faced coverage gaps across their countries in adhering to AML and KYC/KYB rules. This resulted in onboarding a high number of fraudulent customers and a higher risk of being noncompliant, potentially resulting in fines from local authorities.

SOLUTION REQUIREMENTS

The interviewees’ organisations searched for a solution that could:

- Increase onboarding conversion rate.
- Reduce fraud rate.
- Help them be compliant across different markets.
- Reduce the cost of managing different identity solutions across different markets.
- Reduce the cost of verifying customers.
- Digitalise their onboarding journey.
- Improve their customer experience.
- Help them save time for their agents.

COMPOSITE ORGANISATION

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an ROI

analysis that illustrates the financially affected areas. The composite organisation is representative of the five interviewees, and it is used to present the aggregate financial analysis in the next section. The composite organisation has the following characteristics:

Description of composite. The composite organisation is a global financial services company with a revenue of €16 billion globally. Signicat is deployed in four markets that generate a revenue of €1.1 billion. The composite organisation provides services to both consumer and corporate clients, and it has 4 million existing consumer clients and 600,000 corporate clients in the markets where Signicat is deployed.

Deployment characteristics. Signicat’s platform is deployed to verify the majority of their consumer clients’ identities during onboarding and all their corporate clients. It is also used to digitally sign contracts with their customers, as well as for authentication when customers log on to their accounts.

Key Assumptions

- **€16 billion in annual revenue globally; €1.1 billion in markets where Signicat is deployed**
- **4 million consumer clients**
- **600,000 corporate clients**

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	Fraud loss reduction	€3,013,200	€3,013,200	€3,013,200	€9,039,600	€7,493,382
Btr	Net profit from increased conversion rate	€1,139,715	€1,292,119	€1,464,600	€3,896,434	€3,204,347
Ctr	Increased profit from incremental customer acquisition	€82,071	€172,418	€273,847	€528,336	€422,850
Dtr	Cost savings due to improved efficiency of identity verification process	€1,012,448	€1,161,579	€1,331,027	€3,505,054	€2,880,410
Etr	Cost savings due to digitalisation of signature process	€103,486	€113,835	€124,183	€341,504	€281,457
Ftr	Cost savings for customer support due to improved identity verification and authentication process	€20,930	€22,838	€24,928	€68,696	€56,631
Gtr	Printing savings for onboarding	€9,983	€11,491	€13,207	€34,681	€28,495
Total benefits (risk-adjusted)		€5,381,832	€5,787,480	€6,244,993	€17,414,305	€14,367,572

FRAUD LOSS REDUCTION

Evidence and data. Interviewed executives said that using Signicat’s solution lowered their organisations’ risk of exposure to fraud, lowering losses associated with fraud.

- Interviewees highlighted a reduction of onboarded fraudsters with Signicat in comparison to their prior environments where customers would e-mail documentation that was verified manually by internal teams. This made it difficult to detect forged documents or to verify the authenticity of the customers in real time.
- With Signicat’s platform, interviewees noted that documents were uploaded directly by customers during onboarding and verified in real time through one of the different identification methods. The director of business development and digital capabilities at a financial services firm said, “In our previous environment, there was a

gap because the entire process could not be replicated manually across markets, meaning that we had a higher number of fraudsters coming in through the acquisition journey”.

- An IT project owner and manager at an HR consulting firm said: “The quality [of customers onboarded] immediately went up with Signicat as compared to our previous internal methods of verifications. With Signicat, we now have a valid compliance identification solution, which directly had an impact on the quality of customers onboarded.”

Modelling and assumptions. Forrester assumes the following about the composite organisation:

- Prior to Signicat, 720 fraudulent customers were onboarded.
- Total fraud loss prior to Signicat is equal to 0.5% of the composite organisation’s annual revenue in the market where the solution is deployed.

- The fraud rate reduction with Signicat is 75%.
- Ninety percent of the fraud rate reduction is attributed to Signicat’s identity verification solution.

Risks. Factors that could potentially impact the value of this benefit include:

- Alternate solutions used to detect fraud that may impact the attribution to Signicat.
- The loss amounts due to fraud prior to using the solution.
- The organisation’s risk tolerance and industry.

Results. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV (discounted at 20%) of €7.5 million.

“Signicat’s value is in offering an easy digital journey for the customer, meeting AML and KYC requirements, and still at the same time reducing fraudsters.”

Director of business development and digital capabilities, financial services

Fraud Loss Reduction					
Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	Number of fraudulent customers onboarded prior to Signicat	Composite	720	720	720
A2	Fraud loss prior to Signicat	Assumption	€5,580,000	€5,580,000	€5,580,000
A3	Number of fraudulent customers onboarded with Signicat	Assumption	180	180	180
A4	Fraud rate reduction with Signicat	(A3-A1)/A1	75%	75%	75%
A5	Fraud loss with Signicat	A2-(A2*A4)	€1,395,000	€1,395,000	€1,395,000
A6	Fraud loss reduction with Signicat	A2-A5	€4,185,000	€4,185,000	€4,185,000
A7	Attribution to Signicat’s identity verification platform	Assumption	90%	90%	90%
At	Fraud loss reduction	A6*A7	€3,766,500	€3,766,500	€3,766,500
	Risk adjustment	↓20%			
Atr	Fraud loss reduction (risk-adjusted)		€3,013,200	€3,013,200	€3,013,200
Three-year total: €9,039,600			Three-year present value: €7,493,382		

NET PROFIT FROM INCREASED CONVERSION RATE

Evidence and data. Interviewees mentioned that the conversion rate of customers during onboarding increased with the use of Signicat's platform. The reduced time of verification along with the improved and simplified integrated verification process were cited as factors contributing to the increase in the conversion rate.

- A director for business development and digital capabilities at a financial services organisation mentioned that they experienced a reduction in drop-off rate during customer onboarding because of using Signicat due to the straightforward verification process and smooth integration with the whole onboarding journey.
- A supply relationship manager at a financial services company said that with Signicat, everything happened in real time, from filling in the information to being approved and to signing the agreement, preventing customer drop-offs during onboarding.
- A product development lead at a consumer credits organisation said that with an identity verification time during onboarding of just a couple of seconds, they observed an increase in customer adoption.

Modelling and assumptions. Forrester assumes the following about the composite organisation:

- It verifies 140,000 consumer clients in Year 1; 165,000 in Year 2; and 193,600 in Year 3.
- It also verifies 30,000 corporate clients in Year 1; 31,500 in Year 2; and 33,075 in Year 3.
- The conversion rate prior to using Signicat is 70% for consumer clients and 60% for corporate clients.
- The conversion rate with Signicat increases to 89% for consumer clients and 79% for corporate clients.

- The yearly business value per consumer client is €186.
- The yearly business value per corporate client is €465.
- An operating margin of 20%.

Risks. Risks that could impact the realisation of this benefit include:

- The organisation's previous conversion rate.
- The business value per client.
- The operating margin.

Results. To account for these risks, Forrester adjusted this benefit downward by 25%, yielding a three-year, risk-adjusted total PV of €3.2 million.

Net Profit From Increased Conversion Rate					
Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	Number of consumer clients verified with Signicat	Composite	140,000	165,000	193,600
B2	Conversion rate prior to Signicat	Interviews	70%	70%	70%
B3	Consumer clients' conversion rate with Signicat	Interviews	89%	89%	89%
B4	Number of additional consumer clients onboarded with Signicat	$(B1*B3)-(B1*B2)$	26,600	31,350	36,784
B5	Average yearly value of a consumer client	Composite	€186	€186	€186
B6	Subtotal: Yearly increase in revenue from consumer clients due to increased conversion rate	$B4*B5$	€4,947,600	€5,831,100	€6,841,824
B7	Number of business/corporate clients verified with Signicat	Composite	30,000	31,500	33,075
B8	Corporate clients' conversion rate prior to Signicat	Assumption	60%	60%	60%
B9	Corporate clients' conversion rate with Signicat	Assumption	79%	79%	79%
B10	Number of additional corporate clients onboarded with Signicat	$(B3*B7)-(B2*B7)$	5,700	5,985	6,284
B11	Average yearly value of a corporate client	Composite	€465	€465	€465
B12	Subtotal: Yearly increase in revenue from corporate clients due to increased conversion rate	$B10*B11$	€2,650,500	€2,783,025	€2,922,176
B13	Operating margin	Assumption	20%	20%	20%
Bt	Net profit from increased conversion rate	$(B6+B12)*B13$	€1,519,620	€1,722,825	€1,952,800
	Risk adjustment	↓25%			
Btr	Net profit from increased conversion rate (risk-adjusted)		€1,139,715	€1,292,119	€1,464,600
Three-year total: €3,896,434			Three-year present value: €3,204,347		

INCREASED PROFIT FROM INCREMENTAL CUSTOMER ACQUISITION

Evidence and data. One of the interviewees mentioned that because of the improved verification process and the access to multiple verification methods across different markets, they accessed and gained new customers.

- The product development lead at a consumer credits organisation said that, with Signicat, they entered new verticals that were previously considered high fraud risks, which allowed them to onboard new customers.
- This same interviewee added that their organisation was now more scalable and that they had a faster rollout to enter new markets because they no longer had to investigate the regulatory landscape, which allowed them to ultimately gain new customers.
- This interviewee also mentioned that, over time, their organisation almost doubled their total addressable market and gained about 3 million to 4 million users. They attributed 15% to Signicat's solution.

Modelling and assumptions. Forrester assumes the following about the composite organisation:

- In Year 1, 10% of consumer and corporate clients verified are in new verticals/markets; 11% in Year 2; and 12% in Year 3.
- The composite organisation has a client retention rate of 85%.
- The conversion rate with Signicat is 89% for consumer clients and 79% for corporate clients.
- The yearly business value per consumer client is €186.
- The yearly business value per corporate client is €465.

- Fifteen percent of the additional customers onboarded are attributed to Signicat's verification platform.
- A 20% operating margin.

Risks. Risks that could impact the realisation of this benefit include:

- The share of customers verified in new markets/verticals.
- The organisation's internal ability to onboard and serve new customers.
- The organisation's ability to access new markets/verticals.
- The organisation's existing presence across markets and verticals.
- The operating margin.

Results. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV of €423,000.

“It's important for us to enter new verticals and markets, and Signicat allows us to move to new markets faster as we don't have to think of what we would need to do [to be compliant and verify customers].”

Product development lead, consumer credit

Increased Profit From Incremental Customer Acquisition					
Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Share of customers verified in new verticals/markets	Interviews	10%	11%	12%
C2	Number of consumer clients verified from new verticals/markets per year	$D2 * C1$	14,000	18,150	23,232
C3	Consumer clients' conversion rate with Signicat	Composite	89%	89%	89%
C4	Cumulated number of consumer clients onboarded from new verticals/markets	Y1: $C2_{Y1} * C3$ Y2: $(Y1 * 85\%) + (C2_{Y2} * C3)$ Y3: $(Y2 * 85\%) + (C2_{Y3} * C3)$	12,460	26,745	43,409
C5	Average yearly value of consumer client	Assumption	€186	€186	€186
C6	Subtotal: Increased revenue from consumer clients in new verticals/markets	$C4 * C5$	€2,317,560	€4,974,477	€8,074,131
C7	Number of corporate/business clients verified from new verticals/markets	$D7 * C1$	3,000	3,465	3,969
C8	Corporate clients' conversion rate with Signicat	$D8 * C2$	79%	79%	79%
C9	Cumulated number of corporate clients onboarded from new verticals/markets	Y1: $C7_{Y1} * C8$ Y2: $(Y1 * 85\%) + (C7_{Y2} * C8)$ Y3: $(Y2 * 85\%) + (C7_{Y3} * C8)$	2,370	4,752	7,175
C10	Average yearly value of corporate/business clients	Assumption	€465	€465	€465
C11	Subtotal: Increased revenue from corporate/business clients in new verticals/markets	$C9 * C10$	€1,102,050	€2,209,610	€3,336,181
C12	Attribution to Signicat's platform	Interviews	15%	15%	15%
C13	Operating margin	Assumption	20%	20%	20%
Ct	Increased profit from incremental customer acquisition	$((C6 + C11) * C12) * C13$	€102,588	€215,523	€342,309
	Risk adjustment	↓20%			
Ctr	Increased profit from incremental customer acquisition (risk-adjusted)		€82,071	€172,418	€273,847
Three-year total: €528,336			Three-year present value: €422,850		

COST SAVINGS DUE TO IMPROVED EFFICIENCY OF IDENTITY VERIFICATION PROCESS

Evidence and data. Interviewees shared that using Signicat’s platform to verify customers’ identities during onboarding and for authentication purposes helped them save time that they previously spent on manual verifications. This resulted in improved operational efficiency and cost savings for their compliance and identity verification teams.

- Interviewees’ organisations saved on average 20 to 30 minutes per customer verification.
- A managing director of payments at a tech/delivery platform mentioned, “It used to take 30 minutes on average to verify a merchant [onboarded on our platform].”
- A product owner at an HR consulting firm said that prior to using Signicat, their agents would spend about 20 to 30 minutes to verify the identity of each of their talents during onboarding, while the process is now fully automated and autonomous with Signicat’s platform. Overall, their organisation saved about 40,000 hours per year for their consultants from no longer reviewing identities manually.
- Interviewees noted that Signicat provided multiple identity verification methods that were all integrated into one solution, ranging from identity document verification, access to eIDs, biometric verification, and access to risk and identity data sources. This all contributed to ensuring the accuracy of customers’ identities and reducing the risk of onboarding fraudulent customers.
- Interviewees mentioned that the time saved due to the integrated and automated verification process with Signicat allowed them to reallocate employees to other tasks.

Modelling and assumptions. Forrester assumes the following about the composite organization:

“Signicat was a huge gain for our employees who saved a lot of time every year [from verifying customers’ identities], and it improved the experience [of customers] who don’t have to go to a physical branch anymore.”

IT product owner and manager, HR consulting

- It processes 200,000 consumer clients’ applications in Year 1. The consumer clients’ applications grow at 10% year-over-year.
- In Year 1, 70% of consumer clients’ applications are verified with Signicat; 75% in Year 2; and 80% in Year 3.
- It processes 30,000 corporate clients’ applications in Year 1. The corporate clients’ applications grow at 5% year-over-year.
- Signicat verifies 100% of corporate clients’ applications.
- Signicat’s end-to-end solution decreases the time to process an application by 20 minutes for consumer clients and 30 minutes for corporate clients.
- Fifty percent of the time saved becomes new productivity for compliance staff.
- The average fully burdened annual salary of a compliance officer is €80,352.

Risks. Risks that could impact the realisation of this benefit include:

- The volume of new clients’ applications.

- Time spent by the compliance team verifying a client identity.
- The share of clients' identities verified with Signicat.
- The salary rates of compliance team employees.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of €2.9 million.

Cost Savings Due To Improved Efficiency Of Identity Verification Process					
Ref.	Metric	Source	Year 1	Year 2	Year 3
D1	Number of consumer clients' applications verified during onboarding	Y1: Composite Y2 and Y3: 10% growth rate	200,000	220,000	242,000
D2	Number of consumer clients' identities verified with Signicat (KYC)	Y1: A1*70% Y2: A1*75% Y3: A1*80%	140,000	165,000	193,600
D3	Reduction in consumer identity verification processing time (minutes per customer)	Interviews	20	20	20
D4	Reduced onboarding efforts to verify consumer clients' identities (FTE)	(D2*D3)/2,080	22	26	31
D5	Compliance officer fully burdened annual salary	TEI Standard	€80,352	€80,352	€80,352
D6	Compliance efficiency improvements for onboarding consumer clients (KYC)	D4*D5	€1,802,769	€2,124,692	€2,492,972
D7	Number of corporate clients verified with Signicat (KYB)	Y1: Composite Y2 and Y3: 5% growth rate	30,000	31,500	33,075
D8	Reduction in corporate clients' information verification (minutes per client)	Interviews	30	30	30
D9	Reduced onboarding effort to verify corporate clients' information (FTE)	(D7*D8)/2,080	7	8	8
D10	Compliance efficiency improvements for onboarding corporate clients (KYB)	D9*D5	€579,462	€608,435	€638,856
D11	Operational efficiency improvements	D6+D10	€2,382,231	€2,733,127	€3,131,829
D12	Productivity conversion	TEI standard	50%	50%	50%
Dt	Cost savings due to improved efficiency of identity verification process	D11*D12	€1,191,115	€1,366,563	€1,565,914
	Risk adjustment	↓15%			
Dtr	Cost savings due to improved efficiency of identity verification process (risk-adjusted)		€1,012,448	€1,161,579	€1,331,027
Three-year total: €3,505,054			Three-year present value: €2,880,410		

COST SAVINGS DUE TO DIGITALISATION OF SIGNATURE PROCESS

Evidence and data. Interviewees mentioned that using digital signatures with Signicat for contracts with clients helped save time from processing and reviewing contracts manually, while providing a certified signature ensuring the authenticity and accuracy of customers who signed contracts.

- A product owner at an HR consulting firm mentioned that prior to using Signicat, their agents printed and reviewed on average seven pages per applicant which they no longer had review manually.
- A product development lead at a consumer credits firm said: “We sign on average 200,000 contracts per year. ... If we did not have Signicat, we would have to review each contract physically and verify that no pages are missing and that they are all signed correctly.”

Modelling and assumptions. Forrester assumes the following about the composite organisation:

- Its efficiency improvement is equivalent to 3 FTEs in Year 1, 3.3 FTEs in Year 2, and 3.6 FTEs in Year 3.

- Fifty percent of time saved becomes new productivity for staff.
- The fully burdened annual salary of a contract administrator is €81,166.

Risks. Risks that could impact the realisation of this benefit include:

- The volume of contracts signed.
- The time saved per contract review.
- The salaries of the contract review team.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of €281,000.

“Our organisation has changed for the better with Signicat, as we’ve removed a big administrative chunk out of the process from our employees.”

IT product owner and manager, HR consulting

Cost Savings Due To Digitalisation Of Signature Process

Ref.	Metric	Source	Year 1	Year 2	Year 3
E1	Reduction in contract review and processing efforts due to digital signing (FTE)	Composite	3	3.3	3.6
E2	Contract administrator fully burdened annual salary	TEI Standard	€81,166	€81,166	€81,166
E3	Productivity conversion	TEI Standard	50%	50%	50%
Et	Cost savings due to digitalisation of signature process	(E1*E2)*E3	€121,748	€133,923	€146,098
	Risk adjustment	↓15%			
Etr	Cost savings due to digitalisation of signature process (risk-adjusted)		€103,486	€113,835	€124,183
Three-year total: €341,504			Three-year present value: €281,457		

COST SAVINGS FOR CUSTOMER SUPPORT DUE IMPROVED IDENTITY VERIFICATION AND AUTHENTICATION PROCESS

Evidence and data. Two of the interviewees mentioned that, because of the improved identity verification process during onboarding and a smoother authentication process for customers to log on to their accounts with Signicat’s solution, they saw a reduction in customer support outreach. This ultimately helped their support team save time.

- A product development lead at a consumer credits firm said, “There is a reduction in the number of calls and emails [to the customer support team], because of potential issues like forgetting passwords, which is now replaced with better authentication methods like biometric verification.”
- A director of business development and digital capabilities at a financial services firm mentioned, “We’ve seen a call reduction to customer services mainly because in the previous onboarding journey, if someone would get stuck or did not have a reply on their application within a reasonable time, they would have reached out to our support team.”

Modelling and assumptions. Forrester assumes the following about the composite organisation:

- Its customer support improvements are equivalent to 0.8 FTEs in Year 1, 0.9 FTEs in Year 2, and 1 FTEs in Year 3.
- Fifty percent of time saved becomes new productivity for staff.
- The average fully burdened annual salary of a customer support specialist is €61,558.

Risks. Risks that could impact the realisation of this benefit include:

- The organisation’s previous identity verification and authentication environment and processes.
- The number of customer support requests.
- The customer support team members salaries.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of €57,000.

Cost Savings For Customer Support Due To Improved Identity Verification And Authentication Process

Ref.	Metric	Source	Year 1	Year 2	Year 3
F1	Reduction in customer supports requests and outbounds efforts due to identity verification and authentication process (FTEs)	Composite	0.8	0.9	1
F2	Customer support specialist fully burdened annual salary	TEI standard	€61,558	€61,558	€61,558
F3	Productivity conversion	TEI standard	50%	50%	50%
Ft	Cost savings for customer support due to identity verification and authentication process	F1*F2*F3	€24,623	€26,868	€29,327
	Risk adjustment	↓15%			
Ftr	Cost savings for customer support due to identity verification and authentication process (risk-adjusted)		€20,930	€22,838	€24,928
Three-year total: €68,696			Three-year present value: €56,631		

PRINTING SAVINGS FOR ONBOARDING

Evidence and data. Interviewees said that because they used Signicat's digital signature solution, they no longer had to print multiple pages for their contracts with customers, therefore avoiding printing costs. In addition, all agreements with clients that were signed through the solution were now archived in a single access point and could be accessed digitally.

- An IT product owner and manager at an HR consulting firm stated that they had 800 onboardings per week and that each of their customer contracts was seven pages on average, which were all printed prior to using Signicat. They added that after Signicat, these contracts were all signed digitally with the solution and no longer needed to be printed.
- A product development lead at a consumer credits firm mentioned that around 200,000 customer contracts were signed yearly with Signicat's solution.

Modelling and assumptions. Forrester assumes the following about the composite organisation:

- The printing cost per page is €0.01.
- The average length of contracts with consumer clients is seven pages.
- The average length of contracts with corporate clients is 10.
- All customers onboarded and verified with Signicat sign their contract with the solution.

Risks. Risks that could impact the realisation of this benefit include:

- The volume of contracts signed digitally with Signicat's solution.
- The average number of pages per contract.
- The printing cost per page.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of €28,000.

Printing Savings For Onboarding					
Ref.	Metric	Source	Year 1	Year 2	Year 3
G1	Number of consumer clients onboarded with Signicat	B1*B3	124,600	146,850	172,304
G2	Number of pages printed per customer onboard prior to Signicat	Composite	7	7	7
G3	Number of printed pages avoided for consumers onboarded	G1*G2	872,200	1,027,950	1,206,128
G4	Cost per printed page	Assumption	€0.01	€0.01	€0.01
G5	Printing saving for consumers onboarding	G3*G4	€8,722	€10,280	€12,061
G6	Number of corporate clients onboarded with Signicat	Y1: Composite Y2 and Y3: 5% growth rate	23,700	24,885	26,129
G7	Number of pages for corporate clients onboarding	Assumption	10	10	10
G8	Number of printed pages avoided for corporate clients onboarded	Assumption	237,000	248,850	261,293
G9	Printing savings for corporate clients onboarding	G8*G4	€2,370	€2,489	€2,613
Gt	Printing savings for onboarding	G3*G9	€11,092	€12,768	€14,674
	Risk adjustment	↓10%			
Gtr	Printing savings for onboarding (risk-adjusted)		€9,983	€11,491	€13,207
Three-year total: €34,681			Three-year present value: €28,495		

UNQUANTIFIED BENEFITS

Interviewees mentioned the following additional benefits that their organisations experienced but were not able to quantify:

- Improved customer experience.** All interviewees mentioned that their customer experience improved because of the reduction in time for customers to be verified during onboarding as well as the simplified and autonomous verification and authentication process with Signicat’s platform. A director of business development and digital capabilities at a financial service company said, “We wanted to offer more seamless digital journey than the one we had in the past, and Signicat helps resolve pain point from a business and customer journey perspective.” This interviewee added that “[With

“Having Signicat as a partner and using their services is critical for our business.”

Director of payments, tech/delivery

Signicat,] customers now have the feeling of a brand that offers a smooth digital journey as the first thing they see when they onboard, which makes a great first impression.”

- Improved time to value.** Because of the reduced verification time during customer onboarding, interviewees mentioned that customers are onboarded faster. Most of the

interviewees mentioned a previous verification time during customer onboarding of up to a few days. With Signicat, this was reduced to just a few minutes, which greatly improved the time to value of onboarded customers.

- Improved ability to meet with AML regulations across countries.** All interviewees mentioned that Signicat helped their organisations meet the different regulatory requirements across markets where the solution was deployed, which would otherwise be challenging to meet due to complexity and variety of requirements across countries. A supply relationship manager at a financial services firm said: “Signicat provides us with solutions that meet legal requirements. ... The value of Signicat is crucial for us. There are compliance regulations we need to follow to authenticate our customers and prove that agreements have been made with our customers.” A product development lead at a consumer credits firm said, “One of the big benefits of our collaboration with Signicat has been the way they help us manoeuvre the very complex international landscape of authenticating, signing, and identifying consumers.”
- Improved access to new markets.** The interviewees noted their organisations benefitted from the expertise and identification methods offered by Signicat to meet regulatory environments related to identity and onboarding requirements across countries. As a result, they entered new markets faster without having to invest important time and efforts on local requirements and regulations.
- Increased convenience of documents archiving and repository.** Because contracts with customers were now in a digital format, interviewees noted they were all accessible and searchable via a single access point. A supply relationship manager at a financial services firm

“Signicat is quite innovative when it comes to digital identity proofing and providing different features and services.”

*Supply relationship manager,
Financial services*

said: “There is a digital shift currently taking place regarding archiving and validity of original documents. There may be requirements today that will evolve tomorrow. Signicat can archive sealed documents that proves the requirements were met at the time of the agreement.”

- Digitalised customer journey.** All interviewees mentioned that implementing Signicat’s solution for signing, identity verification and proofing, and authentication contributed to digital transformation efforts.
- Reduced ecological footprint.** Interviewees noted their organisations’ contracts and agreements with customers switched from paper-based formats to digital. Large volumes of paper were previously printed for contracts, which had a significant ecological impact in addition to being costly. This ecological impact was reduced due to the contracts being in digital formats with Signicat’s solution. A supply relationship manager at a financial services firm said, “Signicat has helped us reduce our ecological footprint by shifting from paper-based to digital documents.”

FLEXIBILITY

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

- **Expanding activity to new markets.** Because of Signicat's global coverage and knowledge of identification methods in many countries, interviewees mentioned their organisations were looking to potentially access new markets.
- **Verifying partner organisations.** Some of the interviewees mentioned that their organisations were considering using Signicat to verify and onboard potential partner organisations.

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

Analysis Of Costs

■ Quantified cost data as applied to the composite

Total Costs							
Ref.	Cost	Initial	Year 1	Year 2	Year 3	Total	Present Value
Htr	Implementation labor	€134,331	€0	€0	€0	€134,331	€134,331
Itr	Ongoing cost	€0	€45,288	€45,288	€45,288	€135,864	€112,624
Jtr	Cost of verifications	€0	€599,990	€693,517	€800,015	€2,093,522	€1,719,663
Ktr	Cost of digital signing	€0	€477,889	€553,407	€639,441	€1,670,738	€1,372,228
Ltr	Subscription cost	€0	€90,627	€90,627	€90,627	€271,881	€225,376
	Total costs (risk-adjusted)	€134,331	€1,213,794	€1,382,840	€1,575,372	€4,306,336	€3,564,222

IMPLEMENTATION LABOUR

Evidence and data. Interviewees mentioned the implementation of the different identity verification methods, digital signing, and authentication modules through Signicat's single API. The cost of implementation labour included the following:

- Time and internal resources and efforts for implementing the different modules and identification methods with their existing environment and flows across markets; testing the different modules; and verifying proper integration with their onboarding flows. Members from the application development and IT project management teams were involved in the implementation of Signicat.
- Not all the interviewees' organisations implemented Signicat's solution similarly. An IT product owner and manager at an HR consulting firm mentioned their organisation decided to build a digital flow internally instead of using Signicat's software development kit (SDK) and front end, only using Signicat's API in the back end.

Modelling and assumptions. To calculate this cost, Forrester assumes the following about the composite organisation:

- The implementation duration is 17 days per market, which includes testing.
- The composite organisation deploys Signicat in four markets.
- Four application developers are fully involved during the implementation process.
- The fully burdened hourly salary of an application developer is €45.
- One IT project manager is involved 50% of their working hours during implementation.
- The fully burdened hourly salary of an IT project manager is €54.

Risks. This cost can vary across organisations due to:

- Previous onboarding and digital environment and flows.
- Implementation approach taken.

- Number of markets where the solution is deployed.
- Applications development team members salaries.
- IT project management team members salaries.

Results. To account for these risks, Forrester adjusted this cost upward by 20%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of €134,000.

Implementation Labor						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
H1	Implementation duration per market in working days	Composite	17			
H2	Number of markets where Signicat is deployed	Composite	4			
H3	Total implementation duration in all markets in working days	H1*H2	68			
H4	Native app team headcount during implementation (FTEs)	Composite	4			
H5	Average fully burdened hourly salary of app team member	TEI standard	€45			
H6	Total cost of application development staff during implementation	H3*H4*H5*8 hours	€97,137			
H7	IT project manager headcount during implementation (FTEs)	Composite	0.5			
H8	Average fully burdened hourly salary of IT project manager	TEI standard	€54			
H9	Total cost of IT project manager involvement during implementation	H3*H7*H8*8 hours	€14,806			
Ht	Implementation labor	H6+H9	€111,942	€0	€0	€0
	Risk adjustment	↑20%				
Htr	Implementation labor (risk-adjusted)		€134,331	€0	€0	€0
Three-year total: €134,331			Three-year present value: €134,331			

ONGOING COST

Evidence and data. Interviewees mentioned that an IT project manager was involved in managing the ongoing relationship with Signicat, ensuring proper continuous integrations of the solution’s modules.

Modelling and assumptions. Forrester assumes the following about the composite organisation to calculate this cost:

- One IT project manager dedicates one-third of their working hours to managing the integration and relationship with Signicat on an ongoing basis.
- The average fully burdened annual salary of an IT project manager is €113,220.

Risks. This annual cost will vary with:

- The amount of time dedicated to managing integrations and relationships with Signicat.

- The number and markets where the solution is deployed.
- The number of verification methods and modules deployed.

Results. To account for these risks, Forrester adjusted this cost upward by 20%, yielding a three-year, risk-adjusted total PV of €113,000.

Ongoing Cost						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
I1	IT project manager headcount for ongoing integration and relationship management (FTE)	Interviews		33%	33%	33%
I2	Average fully burdened salary of IT project manager	TEI standard		€113,220	€113,220	€113,220
It	Ongoing cost	I1*I2		€37,740	€37,740	€37,740
	Risk adjustment	↑20%				
Itr	Ongoing cost (risk-adjusted)		€0	€45,288	€45,288	€45,288
Three-year total: €135,864			Three-year present value: €112,624			

COST OF VERIFICATIONS

Evidence and data. Interviewees mentioned that the overall cost of Signicat’s identity verifications was based on the volume of customers verified with the solution and charged on a unitary basis. The costs of different eIDs and verification methods used were included in this cost.

- Signicat charges for all verifications, even if applicants were not approved.
- Interviewees mentioned that the price per verification depended on the volume of verifications performed with the solution.

Modelling and assumptions. Forrester assumes the following about the composite organisation to calculate this cost:

- The composite organisation verifies 140,000 consumer clients in Year 1; 165,000 in Year 2; and 193,600 in Year 3.
- The composite organisation verifies 30,000 corporate clients in Year 1; 31,500 in Year 2; and 33,075 in Year 3.

- The average cost per verification is €3.21.

Risks. This annual cost will vary with:

- The volume of verifications performed via Signicat’s platform.
- The different types of eIDs and identification methods used by country.
- Any change in price structure.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of €1.7 million.

Cost Of Verifications						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
J1	Average cost per verification with Signicat	Composite		€3.21	€3.21	€3.21
J2	Number of consumers clients verified with Signicat	D2		140,000	165,000	193,600
J3	Cost of consumer clients' verifications	J2*J3		€449,190	€529,403	€621,166
J4	Number of corporate clients verified with Signicat	D7		30,000	31,500	33,075
J5	Cost of corporate clients' verification	J1*J4		€96,255	€101,068	€106,121
Jt	Cost of verifications	J3+J5		€545,445	€630,470	€727,287
	Risk adjustment	↑10%				
Jtr	Cost of verifications (risk-adjusted)		€0	€599,990	€693,517	€800,015
Three-year total: €2,093,522			Three-year present value: €1,719,663			

COST OF DIGITAL SIGNING

Evidence and data. Interviewees told Forrester that the cost of digital signing was based on the volume of customers approved during onboarding and the number of customers who signed an agreement with their organisations. The cost of digital signing was separate from the cost of verification.

Modelling and assumptions. Forrester assumes the following about the composite organisation to calculate this cost:

- All the customers who are successfully verified during onboarding digitally sign a contract with the composite organisation.
- The average cost per signing is €2.93.

Risks. This annual cost will vary with:

- The volume of clients who sign a contract with the organisation.
- The number of successfully verified customers during the identity verification process.
- The drop-off rate.

- Any change in price structure.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of €1.4 million.

Cost Of Digital Signing						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
K1	Average cost per signing with Signicat	Composite		€2.93	€2.93	€2.93
K2	Number of consumer clients signing with Signicat	D2		124,600	146,850	172,304
K3	Cost of consumer clients signing	K1*K2		€365,016	€430,197	€504,765
K4	Number of corporate clients signing with Signicat	D7		23,700	24,885	26,129
K5	Cost of corporate clients signing	K1*K4		€69,429	€72,901	€76,546
Kt	Cost of digital signing	K3+K5		€434,445	€503,098	€581,310
	Risk adjustment	↑10%				
Ktr	Cost of digital signing (risk-adjusted)		€0	€477,889	€553,407	€639,441
Three-year total: €1,670,738			Three-year present value: €1,372,228			

SUBSCRIPTION COST

Evidence and data. Interviewees reported that Signicat charges a monthly subscription fee. The first fee is invoiced after services are made available. The amount of the subscription fee depends on the type of plan being used.

Modelling and assumptions. Forrester assumes the composite organisation falls within Signicat’s enterprise plan.

Risks. This cost will vary with:

- The plan the organisation subscribes to.
- The different verification methods used.
- Pricing may vary. Contact Signicat for additional details.

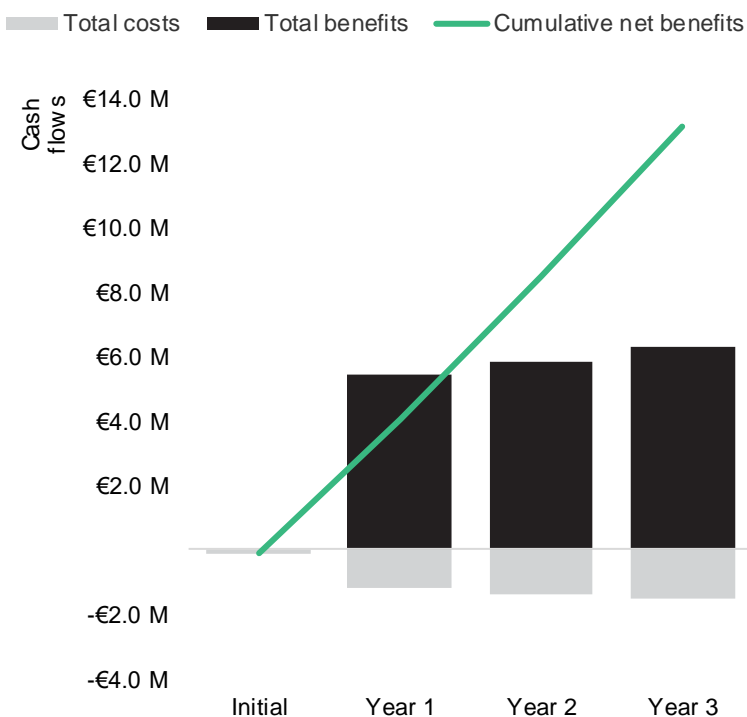
Results. To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year, risk-adjusted total PV of €225,000.

Subscription Cost						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
L1	Monthly subscription cost	Composite		€7,193	€7,193	€7,193
Lt	Yearly subscription cost	L1*12 months		€86,311	€86,311	€86,311
	Risk adjustment	↑5%				
Ltr	Yearly subscription cost (risk-adjusted)		€0	€90,627	€90,627	€90,627
Three-year total: €271,881			Three-year present value: €225,376			

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 organisation's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

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

Cash Flow Analysis (Risk-Adjusted Estimates)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	(€134,331)	(€1,213,794)	(€1,382,840)	(€1,575,372)	(€4,306,336)	(€3,564,222)
Total benefits	€0	€5,381,832	€5,787,480	€6,244,993	€17,414,305	€14,367,572
Net benefits	(€134,331)	€4,168,039	€4,404,640	€4,669,621	€13,107,970	€10,803,350
ROI						303%
Payback						<6 months

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 realise 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 organisation.

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. Organisations 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.

Appendix B: Endnotes

¹ 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 realise the tangible value of IT initiatives to both senior management and other key business stakeholders.

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