2023 | ROI Analysis

viso.ai®

Viso Suite
Economic Impact Study

Cost Savings and Business Benefits Enabled
By The Viso Suite Computer Vision Application Platform

January 2023 | v.3.06
viso.ai, Industriestrasse 2, 8207 Switzerland

viso.ai

Table Of Contents

viso.ai

Executive Summary

Today, companies struggle to keep pace with AI technology which is disruptive at a similar scale as the internet has reshaped the economy. Computer Vision uses AI technology to make computers *see* like humans. As the largest and most advanced field of AI, computer vision enables high-value automation throughout the value chain: for automating processes, improving efficiency, delivering new and better services, and making better decisions faster.

However, AI vision requires a combination of new technologies such as Cloud, Edge AI, Machine and Deep Learning, and IoT. Each of those technologies is a magnitude more complex than traditional IT systems. To take advantage of AI vision, companies invest massive sums in costly AI engineers and systems. This leads to firms ending up with a highly complex and inefficient point-to-point architecture of siloed tools and solutions.

Viso Suite is an end-to-end computer vision application platform that allows teams to develop, deploy, scale and operate computer vision applications. The platform provides sophisticated no-code automation to simplify every step of the application lifecycle and streamline how diverse teams implement tailored applications that integrate with existing systems. Viso Suite's unique model-driven architecture integrates any camera, edge device, and machine learning framework through an abstraction layer. The modular and visual programming for Edge AI and computer vision allows for delivering significantly better AI performance in a flexible, scalable, and cost-effective manner.

The purpose of this study is to provide readers and prospects with a coherent evaluation of the potential financial impact of the Viso Suite Computer Vision Platform on their organizations.

Among interviewed customers, key motivations for adopting a computer vision application platform included fragmented systems and AI vision applications, lack of flexibility and synergies of applications, unacceptable time-to-value for projects that rarely move beyond early stages, failures to scale computer vision systems, very high costs and low performance, problems sourcing experienced AI engineers, issues keeping up with rapidly evolving technology leading to outdated systems, and lack of a coherent AI adoption strategy.

The adoption of the Viso Suite platform integrated the entire computer vision application lifecycle, enabled the agile development of custom applications, accelerated outcomes, widened the available talent pool of software engineers, and automated coding and highly complex infrastructure tasks required in traditional platforms. As a result, firms experienced application delivery savings, operational efficiency, and savings through automation from the introduction of new applications and use cases across the value chain.

This study uses data from seven interviews to create a composite Organization to illustrate the quantifiable benefits and costs of investing in Viso Suite.

The Organization is a global company headquartered in North America with operations in Europe and Asia. Prior to investing in the Viso Suite platform, it struggled to align disconnected computer vision initiatives that often failed to scale, were too expensive, or did not achieve the required performance and functionality required by the business. For more information, see the section titled "The Composite Organization."

Key Findings

viso.ai

ROI

The Cost Benefit Analysis (CBA) helps companies demonstrate, justify and realize the tangible value of introducing the Viso Suite platform to both senior management and other key business stakeholders.

Quantified benefits. The composite Organization experiences the following risk-adjusted, present-value (PV) quantified benefits, totaling $6'661'582 over a three-year period (see the Analysis Of Benefits section for more details).

- **Increased FTE productivity with No-Code:** $2'641'307.
- **Accelerated time-to-value:** $1'366'482.
- **Automated AI Infrastructure Savings:** $846'088.
- **Operating and upkeep cost avoidance:** $518'240.
- **Eliminated third-party solution costs:** $1'289'465.

In addition to the quantified benefits listed above, the interviewed customers discussed several qualitative features or benefits from using the Viso Suite Computer Vision Application Development platform (see the Qualitative Benefits section for more details).

Costs. The Organization experiences the following PV costs totaling $837'971 (see the Analysis Of Costs section for more details):

- **Viso Suite Fees and Services:** $719'121 (risk- and PV-adjusted).
- **Implementation and Management Labor:** $94'710 (PV-adjusted).
- **Training Costs:** $24'139 (PV-adjusted).

The interviews and subsequent financial analysis found that the Organization experienced benefits of $6'661'582 over three years versus costs of $837'971, adding up to a net present value (NPV) of $5'823'612, with a payback period of less than three months.

If risk-adjusted costs and benefits still demonstrate a compelling business case, it raises confidence that the investment is likely to succeed because the risks that threaten the project have been taken into consideration and quantified. The risk-adjusted numbers should be taken as realistic expectations, as they represent the expected value considering risk.

Benefits (Three-Year)
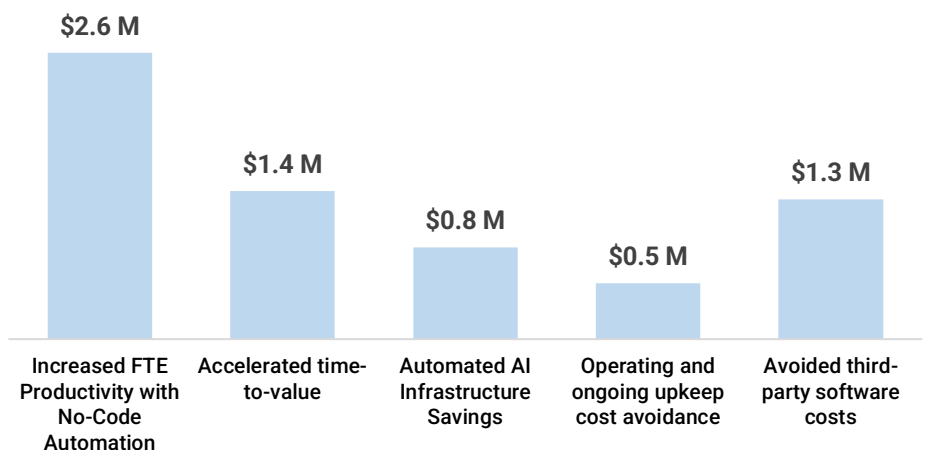
Framework and Methodology

viso.ai

From the information provided in the interviews, a Cost Benefit Analysis (CBA) was constructed for those organizations considering an investment in Viso Suite.

The study follows a systematic process to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. The study follows a methodical multistep approach to assess the impact that Viso Suite can have on an organization.

DUE DILIGENCE
Interviewed viso.ai stakeholders and research analysts to gather data relative to the Viso Suite No-Code Computer Vision Platform.

CUSTOMER INTERVIEWS
Interviewed 7 decision-makers at organizations using Viso Suite to obtain data related to costs, benefits, and risks.

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

FINANCIAL MODEL FRAMEWORK
Constructed a financial model representative of the interviews using a multistep Cost Benefit Analysis (CBA). Risk-adjusted the financial model based on issues and concerns of the interviewed organizations.

CASE STUDY
Focused on four key elements to model the investment impact: benefits, costs, flexibility, and risks. Given the increasing sophistication of ROI analyses related to IT investments, this study provides a comprehensive assessment of the entire impact of the purchase decision on the Organization. Please see Appendix A for additional information on the methodology.

DISCLOSURES AND LIABILITY

viso.ai

The Viso Suite No-Code Computer Vision Application Development Platform Customer Journey

Interviewed Customers

For this study, interviews were conducted with seven Viso Suite customers. Interviewed customers include the following:

INDUSTRY	INTERVIEWEE	REVENUE	EMPLOYEES
Manufacturing Industry	VP of Technology	$1B+	4'400
Professional Services	Senior Director	$10B+	215'000
Manufacturing Industry	Development Operations Lead	$10B+	36'000
Technology Industry	Chief Technology Officer (CTO)	$100M+	800
Insurance Industry	Chief AI Architect	$10B+	23'000
Public Services	Director of Technology	N/A	6'000
Energy Industry	AI Lead	$10B+	12'000

The Composite Organization

The data from the seven customer interviews was used to create a composite organization to illustrate the quantifiable benefits and cost savings that can be achieved using the Viso Suite platform.

This Organization is based on a combination of attributes and feedback collected from customers interviewed for this study. It is a global company headquartered in North America with operations in Europe and Asia. The firm serves both B2B and B2C customers, has 10'000 employees, and has $5 billion in annual revenue.

Prior to investing in Viso Suite, the Organization struggled to keep up with strategic AI trends and failed to implement computer vision use cases. Concurrently with Viso Suite, the Organization maintains legacy solutions and is limiting its footprint by building all new applications within Viso Suite. The platform allows the composite to build, deploy, and maintain a portfolio of computer vision applications.

The composite purchased Viso Suite with the following business objectives in mind:

- **Simplify architecture.** Reduce integration activities and a number of individual point solutions by simplifying integration architecture while providing flexibility and scalability.

- **Modernize architecture.** Focus on adopting modern architectural models like containers, microservices, and no-code technology.

- **High-value applications.** Utilize AI technology to implement high-impact use cases, generating value of $300k to +$1M annually.

Key Assumptions
- Revenue: $5B
- Employees: 10k
- AI vision adoption using Viso Suite

Technology Objectives
- Simplify Architecture
- Modernize Architecture
- High-value Applications

viso.ai

Key Challenges

After an extensive review process evaluating several vendors, the interviewed customers selected the Viso Suite Computer Vision Platform, as they believed the platform could help them solve the following challenges:

- **Low AI Vision Performance.** Low-performing computer vision applications are unable to meet business requirements. Many computer vision systems fail to achieve the required accuracy or inference speed.

- **Unacceptable Time-to-value.** Long timeframes to deliver computer vision projects due to inefficient or ineffective development tools and processes. Sluggish time-to-implementation for new technologies.

- **Lack Of Flexibility.** Inability to move from a traditional Waterfall Organization to an Agile, change-ready application development system. This is why many computer vision projects fail to move beyond the early stages and end in an absolute project failure and loss of investment.

- **Cost Efficiency.** Enormous computing costs of AI workloads, inefficient applications, and bottlenecks cause unexpected cost spikes. The effective inferencing costs greatly exceed early estimations and turn projects into a net loss.

- **Standardization of Use Cases.** Consolidating fragmented tools, incompatible platforms, and siloed data across systems within the Organization. Connecting data from different vendor solutions is a continuous and very complex task.

- **Aging Technology.** Concerns of impending obsolescence due to legacy systems that are based on out-of-date software, algorithms, models, and hardware which may not be supported anymore in the near future.

- **Missing Expertise.** It's very difficult to source enough qualified software engineers and to develop and maintain a team's skill sets across different disciplines and frameworks. Computer Vision engineers with sufficient production experience are incredibly hard to find and very expensive.

- **Low Productivity:** Error-prone, manual processes and complex infrastructure susceptible to failures, leading to increased cost and risk. Lower yield per employee, negatively impacting productivity, retention, and recruiting.

- **Lack Of Scalability.** The lack of ability to scale computer vision systems, with robust infrastructure to operate, maintain and secure large-scale computer vision applications.

Key Results

The customer interviews revealed beneficial functionality attributed to their investments in the Viso Suite Computer Vision Application Development platform (specific financial benefit details are available in the Analysis Of Benefits section), as listed below:

- **Increased FTE Productivity** with No-Code and Low-Code capabilities

- **Accelerated time-to-value** across the computer vision lifecycle

- **Automated AI Infrastructure** for cross-platform flexibility and scalability

- **Operating and upkeep cost avoidance** for continuous AI delivery

- **Eliminated third-party solution costs** with integrated end-to-end tools

In addition to the benefits listed above, the interviewed customers highlighted several qualitative features, functionality, or benefits from using the Viso Suite platform (see the Qualitative Benefits section for more details).

viso.ai

Analysis Of Benefits

Quantified Benefit and Cost Data

Total Benefits					
REF.	**BENEFIT**	**YEAR 1**	**YEAR 2**	**YEAR 3**	**TOTAL**	**PRESENT VALUE**
Atr	Increased FTE Productivity with No-Code Automation	$333'000	$1'111'500	$1'890'000	$3'334'500	$2'641'307
Btr	Accelerated Time-To-Value	$191'250	$573'750	$956'250	$1'721'250	$1'366'482
Ctr	Automated AI Infrastructure Savings	$132'300	$345'600	$585'900	$1'063'800	$846'088
Dtr	Operating and upkeep cost avoidance	$100'222	$214'237	$332'849	$647'308	$518'240
Etr	Avoided third-party software costs	$267'750	$535'500	$803'250	$1'606'500	$1'289'465
	Total benefits (risk-adjusted)	**$1'024'522**	**$2'780'587**	**$4'568'249**	**$8'373'358**	**$6'661'582**

Note: Atr, Btr, Ctr, Dtr, and Etr refer to totals in the tables below.

> 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 $6.6 million.

Increased FTE Productivity with No-Code Automation

Evidence and data. Prior to its investment in Viso Suite, the Organization's development policies relied on traditional languages, frameworks, and legacy systems and required manual data verification and integration. This resulted in error-laden and poor-quality data entry. This lengthy and costly process was unacceptable to the Organization's business units.

Interviewed Viso customers reported they were able to increase development productivity, decrease personnel costs, and reduce application costs using the Viso Suite platform. This was due to the following Viso Suite features and functionality:

- Visual modeling across the full application stack to reduce reliance on traditional programming languages or fragmented software frameworks and speed up development by six to 10 times.

- An integrated computer vision toolset, sharing one model-driven architecture, enabling contributions from both technical and nontechnical developers, enlarging the pool of talent able to participate in application development.

- Real-time involvement of business process domain experts, reducing rework due to solutions that more quickly meet business needs.

- Custom code extensions are packaged into native components in the Viso Suite environment and saved to the module library, enabling contributions from skilled engineers. These extensions and models can be used by less technical developers to build apps that leverage sophisticated logic and integrations, and the newest machine learning and deep learning frameworks with limited production experience.

- Support for many edge devices and cross-platform hardware. Applications are future-proof and easily portable to newer and more efficient hardware. The abstraction layer reduces the need for specialized development resources and costly maintenance of multiple cost bases.

- Interviewed customers reported that the Viso Suite platform was intuitive and easy to understand.

viso.ai

Modeling and assumptions. Based on the customer interviews, the financial impact for the Organization was modeled with the following estimates:

- The composite develops and maintains one application using Viso Suite in Year 1, growing to 5 applications in Year 3.

- Row A2 represents the number of traditional engineers and developers needed to develop and maintain the applications in row A1.

- Row A7 represents the reduced number of engineers required when using Viso Suite.

- From a cost standpoint, the industry average fully loaded cost of a traditional ML engineer is $ 165'000; and a Viso-trained engineer is $ 125'000.

Risks. The benefits are adjusted downward by 10% in the table below due to interviewed customers having a wide range of applications and varying labor costs. This yielded a three-year, risk-adjusted PV (discounted at 10%) of $2'641'307.

$2.6 million three-year benefit PV

40%
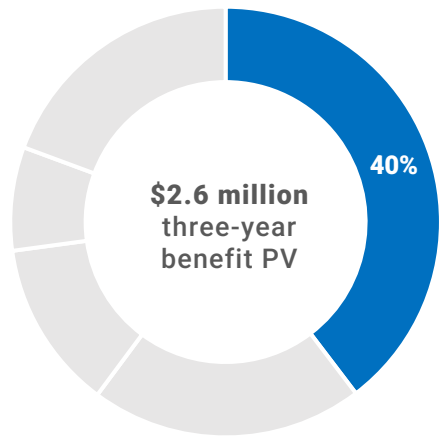
Increased FTE Productivity with No-Code Automation: **40%** of total benefits.

	Increased FTE Productivity with No-Code Automation: Calculation Table				
REF.	BENEFIT	SOURCE	YEAR 1	YEAR 2	YEAR 3
A1	Number of applications	Composite	1	3	5
A2	Engineering FTEs needed before using Viso Suite	Composite	3	9	15
A3	Average fully loaded salary of an engineer without Viso Suite	Industry average	$165'000	$165'000	$165'000
A4	Proportion of time spent writing code, scripting	Interviews	60%	60%	60%
A5	Proportion of time spent on finding and fixing errors in code	Interviews	10%	10%	10%
A6	Reduction of manual coding with no-code/low-code	Interviews	75%	75%	75%
A7	ML engineers and developers FTE needed with Viso Suite	A2*(A4+A5)*(1-A6)	1	2	3
A8	Average fully loaded salary of an engineer with Viso Suite	Interviews	$125'000	$125'000	$125'000
At	Savings from no-code automation	(A2*A3)-(A7*A8)	$370'000	$1'235'000	$2'100'000
	Risk adjustment	↓10%			
Atr	Savings from no-code automation (risk-adjusted)		$333'000	$1'111'500	$1'890'000
	Three-year total: $3'334'500		**Three-year present value: $2'641'307**		

viso.ai

Accelerated Time-To-Value with Viso Suite

Evidence and data. Interviewed customers agreed that the Viso suite platform allows companies to respond faster to changing business demands and market opportunities. This allows organizations to introduce new systems and services on average 4x faster due to accelerated time-to-development with Viso Suite. Contributing factors include:

- Testing and learning on new ideas, using speed-to-value benefits to lower the cost of failure. Enabling the Organization to "fail fast" and outpace the competition with new automation, services, and business models.

- A higher frequency of low-cost experiments with emerging technologies, new machine learning frameworks, and computing hardware leads to significant efficiency and performance gains.

- Reduction of time and effort expended by skilled engineering teams to achieve goals on time.

- Creating an innovation culture that attracts top talent and moving IT from a cost center to a value center that drives efficiency strategies.

The interviewees reported that their organizations used Viso Suite's built-in device enrollment, automated deployment, and auto-scaling infrastructure, and one customer gave the example that their Organization used Viso Suite's object detection module instead of building that from scratch. This significantly reduced coding and deployment time for their applications.

Modeling and assumptions. Based on the customer interviews, the following estimates were used to

model the financial impact for the composite Organization:

- Accelerating new automation and efficiency initiatives also accelerates the profit streams. The Organization realizes substantial value through AI vision driven automation which is either cost savings and/or new revenues.

- On average, interviewed customers deliver new AI vision applications four times faster to production using Viso Suite versus traditional platforms.

- This effect was modeled by including the incremental time-of-value generation for each application introduced: Lower time-to-value enables faster learnings, better performance, lower risks, and higher ROI per application.

Risks. To be conservative, this benefit was risk-adjusted (reduced) by 15% in the table below to reflect variations in other Organization's value thresholds for introduced applications. This benefit yielded a three-

$1.4 million
three-year
benefit PV

20%
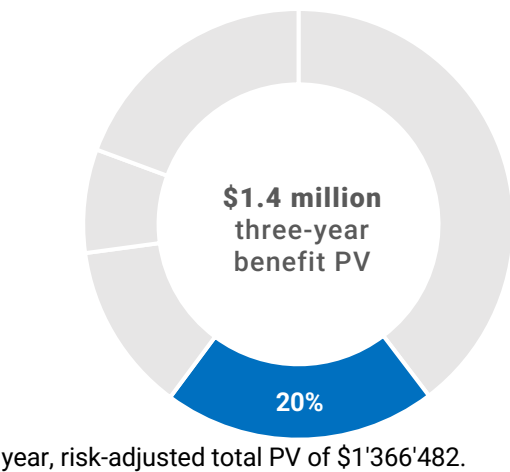
year, risk-adjusted total PV of $1'366'482.

Accelerated Time-to-Value:
20% of total benefits.

Accelerated Time-To-Value: Calculation Table					
REF.	BENEFIT	SOURCE	YEAR 1	YEAR 2	YEAR 3
B1	Value unlocked through high-impact applications	A1*$300'000	$300'000	$900'000	$1'500'000
B2	End-to-End acceleration factor from Viso Suite	Interviews	75%	75%	75%
Bt	Accelerated time-to-value	B1*B2	$225'000	$675'000	$1'125'000
	Risk adjustment	↓15%			
Btr	Accelerated time-to-value (Risk-adjusted)		$191'250	$573'750	$956'250
	Three-year total: $1'721'250		Three-year present value: $1'366'482		

viso.ai

Automated AI Infrastructure Savings

Evidence and data. Viso Suite had higher performance and scalability than the prior platforms deployed by the interviewees. Additionally, Viso Suite needed a small infrastructure footprint and fewer IT resources to administer and maintain the platform.

Interviewed customers reported they were able to increase scalability, decrease infrastructure costs, and reduce infrastructure maintenance costs using the automated infrastructure of Viso Suite. This was due to the following Viso Suite capabilities:

- Integrated DevOps tooling, expressed through a management console or built-in security, enables one-click deployment, automated provisioning, edge device management, integrated version management, back-ups, and monitoring, which reduces effort spent on deployment and operation.

- Out-of-the-box elastic scaling, failover, and fallback, which are made available using Viso Suite Cloud Workspace, which reduces time and effort spent on operations while aligning with stringent Cloud and Edge computing standards.

- Model-driven and hardware-independent architecture help avoid sunk costs by increasing the portability of applications as well as supporting AI vision in heterogeneous IT environments.

- Hardware independent Support for many edge devices and cross-platform hardware. Custom processing flows avoid performance leaks and better utilization of computing resources, leading to significantly reduced $/FPS across all applications.

- Interviewees reported the reduced costs of vertical scaling and horizontal scaling to deploy across additional nodes.

- An interviewee witnessed a five times reduction in the time previously spent on managing load, infrastructure, and CI/CD by using Viso Suite's automated deployment and environments.

Modeling and assumptions. Based on the customer interviews, the financial impact for the composite Organization was modeled with the following estimates:

- The composite Organization started with 50 data sources/camera streams in Viso Suite in Year 1; it grew with the number of applications, i.e., 250 in Year 2 and 500 in Year 3.

- Row C3 represents the number of traditional engineers and developers needed to create and manage infrastructure for AI vision systems.

- Row C4 represents the reduction of time previously spent on tasks that Viso Suite automates.

- The average fully loaded salary of AI infrastructure engineers is at least $ 130'000.

- On average, the deployment of applications into production requires an equivalent of 25 edge devices in Year 1, growing to 125 in Year 2 and 250 in Year 3.

- The annualized average cost of hardware per edge device or virtual node is $ 2'000 per endpoint.

- The reduction in the hardware footprint between the former AI infrastructure and Viso Suite is 60%.

Risks. The benefits are adjusted downward by 10% in the table below to account for a varying number of integrated data sources, types of hardware, and varying labor costs. This benefit yields a three-year, risk-adjusted total PV of $846'088.

$846k three-year benefit PV

13%
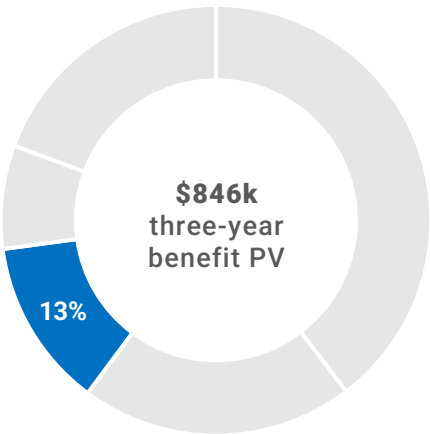
Automated AI Infrastructure Savings: **13%** of total benefits.

viso.ai

Automated AI Infrastructure Savings: Calculation Table					
REF.	BENEFIT	SOURCE	YEAR 1	YEAR 2	YEAR 3
C1	Number of containerized applications	Composite	1	3	5
C2	Number of integrated cameras and data sources	Composite	50	250	500
C3	FTEs tasked with DevOp Tasks without Viso Suite	Interviews	1	2	3
C4	Reduction time spent on managing load, infrastructure, CI/CD	Interviews	90%	90%	90%
C5	DevOps and IT FTE fully burdened annual salary	Industry Average	$130'000	$130'000	$130'000
C6	Subtotal: Avoided costs through auto-scaling, load balancing	C3*C4*C5	$117'000	$234'000	$351'000
C7	Number of edge devices needed to deploy AI applications	Composite	25	125	250
C8	Annualized avg. costs of edge devices/virtual node	Interviews	$2'000	$2'000	$2'000
C9	Reduction in infrastructure costs with Viso Suite	Interviews	60%	60%	60%
C10	Subtotal: Avoided additional computing costs	C7*C8*C9	$30'000	$150'000	$300'000
Ct	Automated AI Infrastructure Savings	C6+C10	$147'000	$384'000	$651'000
	Risk adjustment	↓10%			
Ctr	Automated AI Infrastructure Savings (risk-adjusted)		$132'300	$345'600	$585'900
	Three-year total: $1'063'800		Three-year present value: $846'088		

Operating and Ongoing Upkeep Cost Avoidance

Evidence and data. Interviewees implemented AI vision using Viso Suite in a phased manner, starting with an initial pilot deployment to support a single use case and a limited set of users and models. Once the test results were satisfactory, the deployment was extended to a broader scale while extending user teams and gradually implementing new use cases.

The scale, timeline, and number of resources deployed for the implementation varied across the interviewees. The interviewed Viso customers further reported they were able to reduce ongoing costs of operating and upkeeping applications using the Viso Suite platform. This was because of the following Viso Suite capabilities:

- AI vision applications need ongoing maintenance to support ongoing evolutions across both the business and the deployments of new workloads. An interviewee said, "Maintaining Viso Suite is no real burden." While another one said, "There is zero maintenance for the Viso Suite platform, but we have two resources for production support purposes."

- The interviewee reduced the time and resources required for downtime servicing and upgrades, as compared to previous platforms. One interviewee said: "Viso Suite gets upgraded without any application downtime, so we save hundreds of hours for the maintenance team."

- The built-in visual no-code configuration editor fully automates how organizations can configure endpoints of deployed applications at scale. Interviewees reported that "before using Viso Suite, we've spent hundreds of hours configuring AI systems."

- The configuration manager removes the need to manually back up individual configurations, helps to avoid errors, and fully automates the remote deployment of configuration profiles. An interviewee reported that Viso Suite eliminates pain points of configuration, which they described as some of the "biggest barriers to delivering AI vision at scale."

Modeling and assumptions. For the composite Organization, the model is based on the following assumptions:

viso.ai

- The composite requires 100 deployments in Year 1, 500 in Year 2, and 1'000 in Year 3.

- To prepare, manage and deploy releases, the Organization requires one full-time resource in Year 1, two in Year 2, and three in Year 3.

- The average fully loaded salaries for these resources are $125'000 each.

- Row D3 represents the reduction of manual labor from using automated deployment tools of Viso Suite to safely ship computer vision applications.

- Viso Suite automates the tasks of preparing, managing, and deploying releases. This work consumed 85% of the labor time.

- On average, one labor hour is needed to create and tweak a configuration application deployment.

- The visual no-code configuration editor and built-in configuration manager automate 85% of the configuration workload.

the number of deployments, applications, and types of AI workloads. Therefore, this benefit category was adjusted downward by 10% in the table below, yielding a three-year, risk-adjusted total PV of $518'240.

$518k
three-year
benefit PV

8%
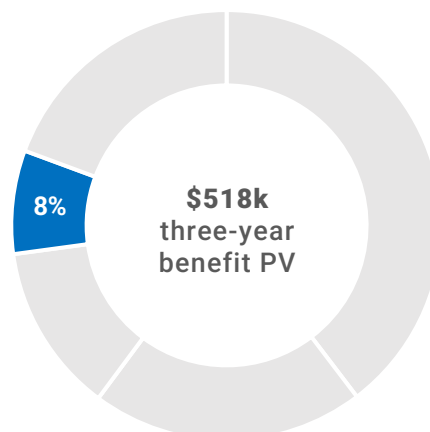
Operating and Ongoing Upkeep Cost Avoidance: **8%** of total benefits.

Risks. There are variations based on the scale, complexity, and usage of the Viso Suite platform, e.g.,

Operating and Ongoing Upkeep Cost Avoidance: Calculation Table					
REF.	BENEFIT	SOURCE	YEAR 1	YEAR 2	YEAR 3
D1	Number of deployments per year	Composite	100	500	1000
D2	Number of FTEs to prepare, manage and deploy releases	Interviews	1	2	3
D3	Reduction of time with a fully automated deployment manager	Interviews	85%	85%	85%
D4	Fully loaded annual salary per FTE	Industry average	$125'000	$125'000	$125'000
D5	Subtotal: Costs avoided for ongoing releases and upgrades	D2*D3*D4	$106'250	$212'500	$318'750
D6	Hours per configuration of one deployed endpoint	Interviews	1	1	1
D7	Reduction per configuration through configuration editor	Interviews	85%	85%	85%
D8	Hourly salary costs	D4/2080 hours	$60	$60	$60
D9	Subtotal: Cost savings from configuration management	D6*D7*D8	$5'108	$25'541	$51'082
Dt	Operating and ongoing upkeep cost avoidance	D5+D9	$111'358	$238'041	$369'832
	Risk adjustment	↓10%			
Dtr	Operating and ongoing upkeep cost avoidance (risk-adjusted)		$100'222	$214'237	$332'849
	Three-year total: $647'308		Three-year present value: $518'240		

Avoided third-party software costs

viso.ai

Evidence and data. Prior to its investment in Viso Suite, the Organization required multiple tools and software products to cover the entire lifecycle of computer vision applications. This resulted in complex, inefficient, and isolated workflows. Such inefficient and inflexible systems were unable to meet the Organization's needs.

Viso customers reported they were able to manage the entire lifecycle of applications, decrease the number of third-party solutions, and reduce the integration costs using the Viso Suite Platform. This was achieved through the following features:

- An end-to-end computer vision toolchain, enabling fully integrated and efficient workflows and collaboration. The unified and optimized stack reduces reliance on fragmented tools.

- Integrated enterprise security and encryption across all data, AI training, and inferencing. Avoid data from leaving the Viso environment.

- Avoid overlapping products with competing features. Reduce the labor required to train engineers on multiple products.

- Integration: Avoid the need to integrate often incompatible hardware and software across platforms. Avoid vendor-lock ins.

- Avoid redundant or conflicting features of different products. Save costs on third-party software licenses, support and training costs, and unnecessary infrastructure costs.

- Avoid poorly optimized product integrations that lead to performance bottlenecks and cost spikes. The integration and balance of Viso Suite enable better efficiency and AI performance gains while driving cost efficiency.

- Avoid limits of narrow point solutions that require different products for additional use cases. Leverage synergies and learnings across all applications – from infrastructure to security.

Modeling and assumptions. The following estimations were used to capture the benefits for the composite Organization:

- With an increasing degree of adoption, the composite replaces, on average, 3 third-party solutions in Year 1, 6 in Year 2, and 9 in Year 3.

- From a cost standpoint, the fully loaded cost of an enterprise software solution is $75'000, which includes licenses, infrastructure, support, training, and labor costs such as labor costs for purchasing, administering, and operating it.

- Row E4 represents the number of developers required to integrate, manage and secure the individual software solutions.

- The industry average fully loaded cost of a traditional integration developer is $90'000.

- Row E6 represents the cost savings of eliminating the need for integration developers by using Viso Suite to integrate the lifecycle end-to-end.

Risks. The benefits from avoided third-party software costs vary by Organization based on the number and costs of licenses and infrastructure type. To account for the variance, the benefits are adjusted downward by 15% in the table below, yielding a three-year, risk-adjusted total PV of $1'289'465.

19%

$1.3 million
three-year
benefit PV
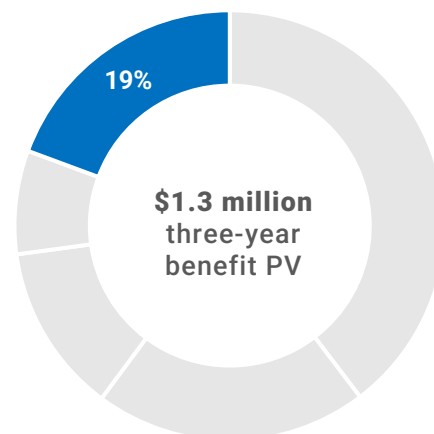
Avoided third-party software
costs: **19%** of total benefits.

viso.ai

Avoided Third-Party Software Costs: Calculation Table					
REF.	BENEFIT	SOURCE	YEAR 1	YEAR 2	YEAR 3
E1	Replaced solutions	Composite	3	6	9
E2	Eliminated average solution license costs	Interviews	$50'000	$50'000	$50'000
E3	Avoided costs of software support, training, and infrastructure	Interviews	$25'000	$25'000	$25'000
E4	FTEs needed for integration, administration without Viso Suite	Interviews	1	2	3
E5	Fully loaded annual salary per FTE	Industry average	$90'000	$90'000	$90'000
E6	Savings through avoided integration costs with Viso Suite	E4*E5	$90'000	$180'000	$270'000
Et	Eliminated third-party software costs	E1*(E2+E3)+E6	$315'000	$630'000	$945'000
	Risk adjustment	↓15%			
Etr	Eliminated third-party software costs (risk-adjusted)		$267'750	$535'500	$803'250
Three-year total: $1'606'500		**Three-year present value: $1'289'465**			

Unquantified Benefits

In addition to the quantified benefits listed above, the interviewed customers discussed several qualitative features or benefits from using the Viso Suite No-Code Computer Vision Application Platform, including:

Improved AI performance. Interviewed customers reported that Viso Suite improved application performance in terms of accuracy, latency, and data quality compared to alternatives. In addition, customers can run applications locally on edge devices and avoid sending data to the cloud. This helps to increase efficiency and avoid bottlenecks that cause cost spikes while achieving lower latency and increased system robustness.

Privacy-Preserving AI. Customers reported that before using Viso Suite, projects failed due to the inability of conventional platforms to meet privacy requirements. Using Viso Suite, they were able to comply with privacy requirements on a technical and governance level. It was reported that the visual programming and no-code interface enables transparency and explainability required for compliance officers to understand AI application workflows.

Portability of AI models. Interviewees reported that "one of the advantages of the Viso Suite platform is the portability." The customer can easily migrate applications and take advantage of newer, more efficient ML frameworks or computing hardware. Viso Suite provides built-in tools to gradually and safely transition deployed applications to use newer versions.

Heterogeneous systems: Customers reported that Viso Suite allows them to integrate a wide range of computing systems, cameras, and ML frameworks. Other platforms often require uniform, narrowly specified hardware, such as camera models or processors. Aside from the enormous costs of replacing all legacy hardware, this is usually risky and often not an option for large organizations. Viso Suite provides an abstraction layer to integrate legacy hardware systems and prevent lock-ins.

Strategic AI Adoption: Interviewed customers reported that AI has a strategic impact on their industry and that owning data and applications is an important competitive factor of increasing importance. They reported that Viso Suite helped them to implement AI technology in the field of Computer Vision and build up internal assets and know-how of strategic value.

viso.ai

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 the Viso Suite platform and later realize additional use cases and business opportunities.

Interviewed customers described their initial approach to using Viso Suite as the following typical chronology:

> Flexibility 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.

- Start with a high-impact but a small application that can be built quickly to gain broader support internally.

- Then evangelize the value of the platform and no-code automation, celebrating initial successes.

- Thereafter, extend the portfolio of computer vision applications and establish a center of excellence.

- Finally, apply the center of excellence to initiatives with large, strategic benefits, extending the value of the platform across functions and geographies.

Other flexibility options include:

Ability to leverage new AI vision technologies: Interviewees reported that Viso Suite enabled them to rapidly adopt the latest deep learning models. Newer, more efficient ML architectures enable drastically better performance on several times cheaper hardware. Customers reported that they were able to adopt the latest AI vision trends without needing to hire deep domain specialists.

Cross-platform portability: All applications are containerized by default, utilizing single-click deployment into fully managed, distributed edge fleets or virtual endpoints in on-premises, cloud, or MEC environments. Interviewed organizations reported that Viso Suite provides the ability to leverage multiple environments at once or move applications between environments as desired.

Edge-Cloud computer vision: Viso Suite applications are edge-native, are purpose-built to run in containers, and automatically scale horizontally to a fleet of edge devices. The Viso Suite Workspace is cloud-native and automatically scales horizontally and vertically. Viso Suite provides powerful Edge-Cloud infrastructure that is optimized for computer vision. Customers report that traditional Cloud, Edge, or IoT platforms were not able to meet the characteristic requirements of computer vision applications that include enormous workloads, multi-model pipelines, multi-threading, heterogeneous computing, distributed configurations, offline capabilities, real-time communication, and image/video processing workloads.

Mitigated lock-in risk: Model software development kits (SDK) and APIs enable customers to reflect into the models, import and export code, manage containers, and train and retain ML models into the future, even in the event of termination of an organization's Viso Suite platform license.

Openness and extensibility: The platform utilizes open standards and is extensible at each application layer, from input to output nodes. Applications can be extended with custom code when necessary. The module SDK can be used to create custom building blocks that can be used in applications. Existing ML models or serving containers can be leveraged by utilizing built-in platform tools. Code-first developers can debug endpoints via secure terminal SSH and work in managed notebooks.

Support additional use cases: Interviewees initially leverages Viso Suite to deliver one or a set of computer vision applications. They saw the value in the product and planned to extend it to support more use cases. The manager of an interviewed company said, "After the success of our first implementation, we are now branching out Viso Suite for other business purposes throughout the value chain."

The concept of flexibility is further described in Appendix A.

viso.ai

Analysis Of Costs

Total Costs							
REF.	BENEFIT	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Ftr	Viso Suite fees	$13'200	$223'850	$276'320	$364'771	$878'141	$719'121
Gtr	Implementation and management	$5'288	$22'000	$44'000	$44'000	$115'288	$94'710
Htr	Training costs	$4'095	$6'143	$8'190	$10'238	$28'665	$24'139
	Total costs (risk-adjusted)	**$22'583**	**$251'993**	**$328'510**	**$419'009**	**$1'022'094**	**$837'971**

Viso Suite Fees

Included in this cost category are a variety of components, all of which are paid to Viso. Many of the items below are considered add-ons to the platform; the base licensing fee for a Viso Suite Workspace range from $49k to $99k. The costs below are for the composite Organization.

The Viso Suite fees are based on a three-year commitment using the Enterprise Edition. Readers can learn more about the features and functionality of the Viso Suite platform by reading the Overview section of this study.

Modeling and assumptions. The table below represents Viso Suite's fees assessed to the Organization over three years. Fees include Viso Suite subscription fees, add-on environment costs, expert services, and support. It is assumed that the Organization requires an on-premises deployment.

Risks. The costs from Viso Suite fees can vary by Organization based on optional Add-on's and capacities. To account for the variance, this cost category was adjusted upward by 10% in the table below. The composite's total fees charged are PV-adjusted $719'121 over three years.

Viso Suite Fees: Calculation Table						
REF.	BENEFIT	SOURCE	INITIAL	YEAR 1	YEAR 2	YEAR 3
F1	Professional services implementation consulting (add-on)	Interviews	$12'000			
F2	Viso Suite Cloud Workspace, Infrastructure (annual license)			$49'500	$49'500	$49'500
F3	Viso Suite edge device capacities	Composite		$45'000	$87'000	$160'000
F4	Viso Suite AI environments (add-on)	30% growth p.a.		$19'000	$24'700	$32'110
F5	Technical account manager (add-on)	Interviews		$90'000	$90'000	$90'000
Ft	Viso Suite fees	F2+F3+F4+F5	$12'000	$203'500	$251'200	$331'610
	Risk adjustment	↑10%				
Ftr	Viso Suite fees (risk-adjusted)		$13'200	$223'850	$276'320	$364'771
Three-year total: $878'141				**Three-year present value: $719'121**		

viso.ai

Implementation and Management

Evidence and data. Based on interviewed customers' experiences, the Organization's internal labor associated with the initial planning and implementation of the Viso Suite platform was significantly less compared to other enterprise software platforms.

Internal labor included the following job titles that were necessary for the work required: one head of application development and maintenance, one lead architect, and two developers. These individuals spent three weeks full-time working with Viso Suite to make the best use of Viso Suite, attend training, and start building the first Viso Suite application.

Those are a few of their initial tasks:

- The team created the foundation, operationalized the plan, and formed development teams of IT and business stakeholders.

- They enabled Viso Suite developers, including the selection, training, and certification of staff.

- They ensured the appropriate level of expertise for the following job responsibilities: architects, computer vision and machine learning, technical consulting, security and privacy, and integrations.

- They sought to embed governance and create synergy across functional and technical processes.

On an ongoing basis, the head of application development spends 40% of their time overseeing the Viso Suite environment and the relationship with viso.ai and the company.

Once again, overseeing solutions built on Viso Suite, with no-code and low-code, fully managed databases and Kubernetes, takes a lot less time than using traditional platforms.

Modeling and assumptions. The table below includes average hourly labor costs associated with the staff listed above.

Risks. The costs are adjusted upward by 10% to reflect the variability of each interviewed customer's Viso Suite implementation and the ongoing management requirements. The composite's total labor costs to implement and oversee the Viso Suite Computer Vision Application platform yielded a risk-adjusted total PV of $94'710.

Implementation and Management: Calculation Table						
REF.	BENEFIT	SOURCE	INITIAL	YEAR 1	YEAR 2	YEAR 3
G1	Time required to implement (hours)	Assumption	100			
G2	FTEs to manage the Viso Suite platform			0.5	1	1
G3	Proportion of time spent on managing Viso Suite			40%	40%	40%
G4	Fully burdened annual salary of FTE	Assumption	$100'000	$100'000	$100'000	$100'000
G5	Fully burdened hourly salary of FTE	G4/2080	$48			
Gt	Implementation and management	G1*G5+G2*G3*G4	$4'808	$20'000	$40'000	$40'000
	Risk adjustment	↑10%				
Gtr	Implementation and management (risk-adjusted)		$5'288	$22'000	$44'000	$44'000
Three-year total: $115'288			Three-year present value: $94'710			

Training Costs

viso.ai

Evidence and data. Viso offers online learning modules and training sessions that the interviewed organizations used to train their developers.

An interviewee who had his team undergo training said, "We did get two or three separate sessions in training on using Viso Suite for the people that will be supporting some in operations and specifically the integrations team to understand how it works."

Modeling and assumptions. To capture the labor costs of training for the composite Organization, the following assumptions were made:

- As part of the initial training (onboarding), 5 developers attend three training blocks of 4 hours each learning how to use the platform.

- Ongoing training after the initial implementation is on an ad hoc basis and minimal in nature, about 6 hours per year.

- The average developer salary is $ 100'000 per year.

Risks. The cost of training will vary by Organization. When estimating the cost of training, consider the burdened rate and the number of employees participating in training sessions. Developers already familiar with concepts of Computer Vision, ML, Edge, and Cloud, will require fewer hours of training, while developers with limited experience in AI vision may require additional training.

To account for these risks, this cost is adjusted upward by 5%, yielding a three-year risk-adjusted total PV of $24'139.

Training Costs: Calculation Table						
REF.	BENEFIT	SOURCE	INITIAL	YEAR 1	YEAR 2	YEAR 3
H1	Users who require initial training	developers	5	5	5	5
H2	Time for initial training	3 hours per section	12	12	12	12
H3	Users who require update training	E2		5	10	15
H4	Time for training on updates	6 hours/year		6	6	6
H5	Average hourly salary of Viso Suite users	D8	$65	$65	$65	$65
Ht	Training costs	(H1*H2+H3*H4)*H5	$3'900	$5'850	$7'800	$9'750
	Risk adjustment	↑5%				
Htr	Training costs (risk-adjusted)		$4'095	$6'143	$8'190	$10'238
	Three-year total: $28'665			**Three-year present value: $24'139**		

viso.ai

Financial Summary

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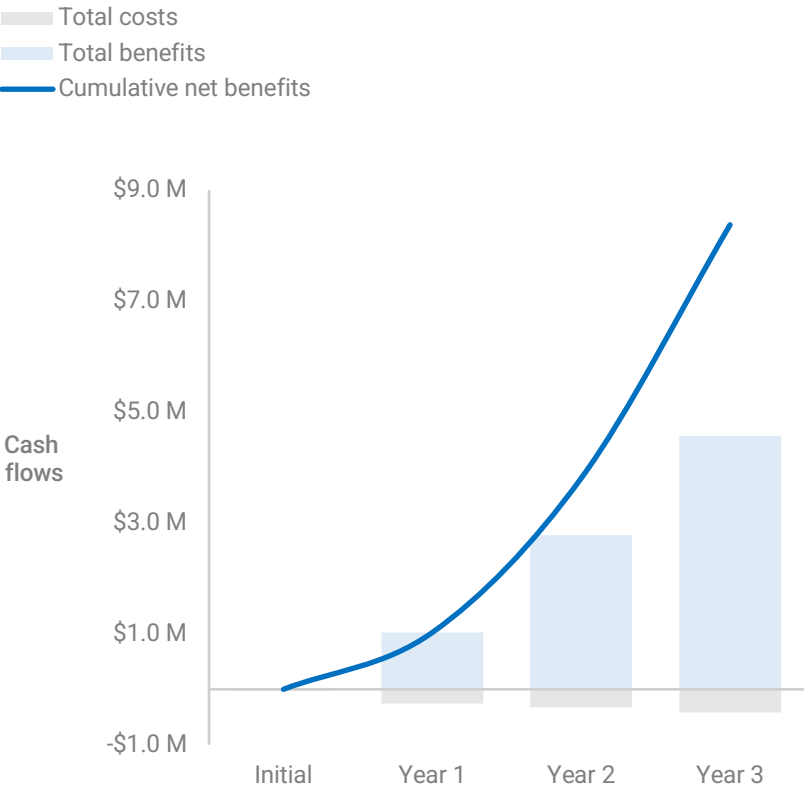
The financial results calculated in the Benefits and Costs sections can be used to determine the NPV, and payback period for the interviewed organization's investment. This analysis assumes a yearly discount rate of 10% for this analysis.

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

Cash Flow Table (Risk-Adjusted)

	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Total costs	($22'583)	($251'993)	($328'510)	($419'009)	($1'022'094)	**($837'971)**
Total benefits	$0	$1'024'522	$2'780'587	$4'568'249	$8'373'358	**$6'661'582**
Net benefits	($22'583)	$772'530	$2'452'077	$4'149'240	$7'351'263	**$5'823'612**
ROI						**695%**
Payback period						**< 3 months**

Consolidated Three-Year Risk-Adjusted Metrics

If risk-adjusted costs and benefits still demonstrate a compelling business case, it raises confidence that the investment is likely to succeed because the risks that threaten the project have been taken into consideration and quantified. Assuming normal success at mitigating risk, the risk-adjusted numbers should more closely reflect the expected outcome of the investment.

The Viso Suite No Code Computer Vision Application Platform: Overview

Deliver Computer Vision with Viso Suite

Viso Suite is the platform that empowers teams to build, deploy, scale, and integrate computer vision applications 10x faster with 85% fewer resources. Viso enables organizations to adopt a strategic implementation of AI vision across the value chain and increase operational efficiency.

The Viso Suite Platform provides industry-leading no-code and low-code capabilities combined with a highly automated, model-driven infrastructure to deploy computer vision at scale.

As the world's only end-to-end computer vision application platform, Viso Suite is designed to accelerate the entire application development lifecycle of AI vision – from ideation to deployment and operation – while enabling AI engineers and business stakeholders to collaborate throughout the process.

> As enterprises invest in AI and deep learning solutions to drive digital transformation, rapidly generate new business insights, and stay highly competitive, they need powerful computer vision solutions. Viso Suite provides no-code and automated infrastructure allowing enterprises to seamlessly build and deploy AI vision applications faster and at scale.

Key Principles of Viso Suite

End-to-End: Every step of computer vision applications in one integrated environment.

No-code and Low-code: Avoid writing poorly optimized code from scratch and facilitate integration with an intuitive interface for every task throughout the computer vision toolchain.

Automated Infrastructure: Reduce complexity with managed Edge and Cloud infrastructure, along with IoT communication and resource management for ML/AI workloads.

Scalability: Scale to thousands of cameras, manage a fleet of edge endpoints, and manage all your AI models in one place. Operate large-scale applications with sophisticated monitoring and configuration tools that are built for large-scale AI vision applications.

Edge AI: Build next-gen computer vision with high scalability, cost efficiency, low latency, and AI computing performance.

Open, Flexible Architecture: The model-driven architecture provides an abstraction layer to integrate hardware, ML frameworks, and existing systems. Future-proof investments and avoid being stuck with legacy technology.

Privacy: Leverage privacy-preserving computer vision without storing or transferring video data at any point in time. Viso Suite is ready to meet the toughest privacy requirements.

Security: Viso Suite provides built-in security, monitoring, access management, and encryption across all data, applications, and systems.

Extensibility: Extend every part of the Viso Suite platform. Professional AI engineers can integrate their datasets, models, and containers and manage them within Viso Suite. The platform is suitable for code-first users, with manage notebooks, module SDKs, APIs, etc.

viso.ai

Develop solutions with uncompromising architecture

Viso Suite is truly open and extensible at every level: platform, cameras, computing hardware, AI models, and datasets.

Applications built on Viso Suite are scalable, portable, and resilient. The model-driven architecture ensures that high-impact changes can be made quickly, safely, and simply.

The Viso Suite platform and application architecture are highly extensible at every layer, enabling flexibility and interoperability with complex enterprise software landscapes. Built-in lifecycle management support visibility and control over application landscapes and a library of computer vision applications built on Viso Suite.

Deliver cutting-edge Computer Vision

The Viso Suite platform enables a spectrum of AI developers and data scientists to deliver powerful computer vision systems for object detection and tracking, counting, pose estimation, face and emotion detection, image classification in inspection, and much more.

Proven execution at any scale

Adopted and trusted by the Global 500, Viso Suite is the only no-code computer vision platform built to support the needs of global enterprises.

viso.ai

Appendix A: Terminology and Calculations

ECONOMIC IMPACT APPROACH

Benefits represent the value delivered to the business by the product. The measure of economic benefits and the measure of costs are equally weighted, allowing for a comprehensive 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 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 assess the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the variability of external factors as observed in interviews.

KEY FINANCIAL METRICS

Present value (PV) is the 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) is a project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.

Discount rate is 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%. A rate of 10% was applied.

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

CALCULATIONS

- 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.

viso.ai