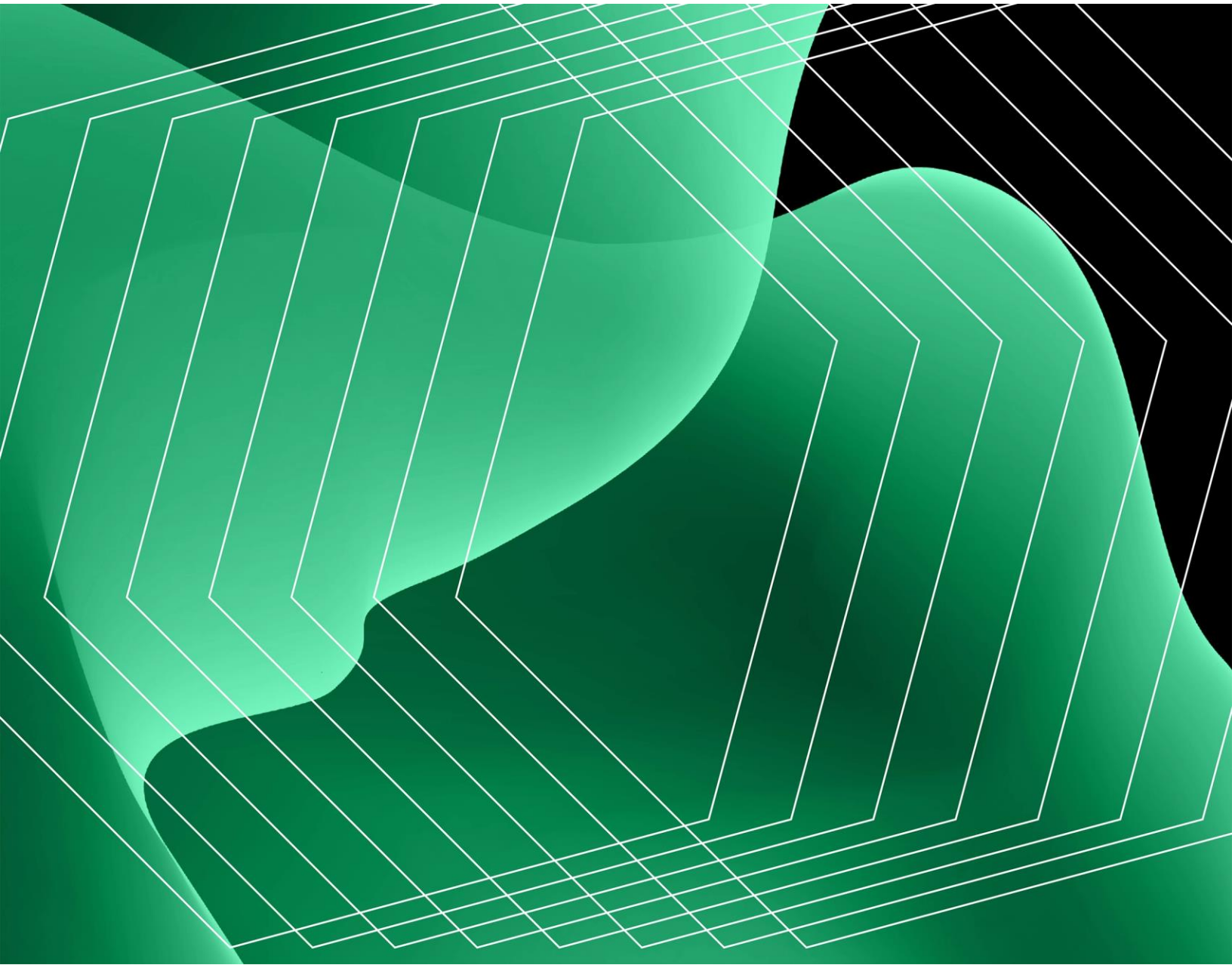
FORRESTER®

The Total Economic Impact™ Of Dexory DexoryView

Cost Savings And Business Benefits Enabled By DexoryView

A FORRESTER TOTAL ECONOMIC IMPACT™ STUDY
COMMISSIONED BY DEXORY, APRIL 2025



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Consulting Team:

Stefanie Vollmer

Tanvi Dahiya

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Executive Summary

Prompt, accurate order fulfillment drives shopper satisfaction and brand loyalty.[1] Third-party logistics (3PL) and fourth-party logistics (4PL) companies need real-time warehouse data to boost labor productivity and provide comprehensive customer service, maximizing facility and inventory investments. To achieve their real-time data goals, some organizations are leveraging the IoT, and Forrester research shows that 36% of global decision-makers in edge computing, edge technologies, or IoT roles say that their firm uses or plans to use the IoT for inventory or warehouse management.[2]

Dexory is a UK-based company that develops autonomous warehouse robots and AI-driven analytics. Its DexoryView platform uses mobile robots with advanced sensors to scan warehouses and create digital twins. This technology enhances real-time visibility and optimizes inventory management and operational efficiency.

Dexory commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying DexoryView.[3] The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of DexoryView on their organizations.

Return on investment (ROI)
219%

Net present value (NPV)
$2.96M

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four decision-makers with experience using DexoryView. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single composite organization that is a global, retail 3PL with $2 billion in annual revenue, an average of $10 million in revenue per warehouse site, and three customers per warehouse site per year.

Interviewees said that prior to using DexoryView, their warehouse inventory checks and cycle counts were typically handled manually by cycle counters using heavy machinery like forklifts.

However, prior attempts to implement real-time inventory tracking yielded limited success and led to inaccurate inventory data, insufficient space use, inefficient operations, dissatisfied customers, and increased operational downtime during audits.

After deploying DexoryView, the interviewees reported less labor-intensive cycle counts and no longer needed equipment such as forklifts. Instead, they could access real-time inventory information through daily cycle counts performed by the DexoryView robot.

Key results from the investment included higher inventory accuracy, greater customer confidence, lower auditing fees, lower stockholding time, the ability to reallocate warehouse staff such as cycle counters, and better warehouse operational efficiency and staff productivity.

KEY FINDINGS

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

- **Reduced stockholding cost worth $1.0 million over three years.** Having real-time inventory data with DexoryView reduces stockholding time for the 3PL composite organization. Customers of the composite can make more informed decisions regarding stock replenishment and allocation as well as process improvements to avoid overstocking.
- **Total cost and efficiency savings from fewer lost pallets worth $1.0 million over three years.** Increased visibility into the number of pallets and their location in the warehouse leads to fewer lost pallets and lost pallet investigations. Dexory's platform sends alerts and flags potential problems if discrepancies or issues with pallet tracking arise, enabling immediate action to prevent pallet loss and reducing the time spent on lost pallet investigations.
- **Automated cycle counting efficiencies worth $866,867 over three years.** The automation of the Dexory scanning robot means the composite organization needs only one staff member for cycle counting. It can reallocate the other cycle counters to more productive roles instead of hiring new employees, thereby saving associated onboarding and training costs.
- **Reduced fines from improved fulfillment worth $639,748 over three years.** The composite organization no longer needs to pay fines for incomplete or late customer

order fulfillment. By reconciling inventory daily with the Dexory robot, the composite realizes 99.9% inventory accuracy. Fulfilling customers' orders on time also means the composite can maintain customer satisfaction and trust.

- **Reduced racking damage worth $293,868 over three years.** With the Dexory robot scanning the warehouse and capturing photos every 24 hours, the warehouse staff can detect and investigate racking errors quickly. The cost of each rack is $113 for the composite. From a capital perspective, reduced racking damage also means the warehouse needs fewer spare parts.
- **Empty location checks cost savings worth $216,370 over three years.** Empty location checks play a crucial role in warehouse management by optimizing putaway and ensuring efficient and logical item storage. The Dexory robot has 3D light detection and ranging (LiDAR) capabilities, cameras, and RFID scanners that allow it to instantly and autonomously detect empty slots, eliminating the need for warehouse staff to spend time searching for underutilized spaces. Unlike with manual reporting, there is no double verification required, which speeds up warehouse operations. Dexory provides a real-time, accurate view of all empty locations without wasting time visiting occupied locations.
- **Reduced audit fees worth $253,799 over three years.** Dexory automatically generates daily warehouse stock reports, meaning the composite organization does not need to stop operations to prepare for audits, saving time and effort.

Unquantified benefits. Benefits that provide value for the composite organization but are not quantified for this study include:

- **Improved health and safety.** Using Dexory, warehouse managers can easily locate and store dangerous goods, like lithium batteries, and minimize warehouse risks by reducing forklift use.
- **Improved employee retention.** Reducing footfall in storage areas lowers the risk of employee collisions, slips, and falls. Reducing the heavy equipment used in the warehouse, like forklifts, means employees handle fewer physically demanding tasks, lowering the risk of fatigue. As a result, Dexory improves employee retention.

- **Cleaner warehouse and equipment.** Dexory encourages employees to be more proactive about warehouse hygiene so the robot can operate smoothly (e.g., ensuring pallet labels are legible for scanning).
- **Reduced training and supervision.** Since the Dexory robot performs its scanning autonomously, warehouse staff require minimal training on inventory management tasks. The intuitive Dexory platform is also easy for staff to learn and use.
- **No overtime, temporary labor, or additional equipment.** Warehouses no longer require overtime staff or temporary labor during peak periods as the Dexory robot maintains its efficiency.
- **High professionalism from Dexory.** Dexory works with users to incorporate feedback continuously, optimize its solution, and build new and more advanced features.

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

- **License fees.** The license fee for the composite organization is $12,000 per month per warehouse site for a basic configuration of pallets stored in racks and includes the robot and the analytics platform. Dexory maintains ownership of the robot, so the license fee also includes maintenance and remote services. Please note: This pricing is based on legacy customers with the multisite model.
- **Internal ongoing optimization effort.** While Dexory remotely manages maintenance, the composite requires an operations engineer and technical specialist to spend 20% of their time optimizing its use of DexoryView and getting more value out of the solution.
- **Implementation costs.** The composite organization spends one month implementing the Dexory robot in one warehouse site, which includes planning, deployment, and testing. The cost of implementation includes a setup cost of $20,000 per warehouse paid to Dexory for warehouse mapping. The composite also incurs an internal preparation cost of $67,500 per warehouse so the robot can function smoothly.
- **Training costs.** The composite organization requires minimal training effort due to Dexory's intuitive design. The training focuses on change management, a standard method of introducing automation to a warehouse. Basic training is provided to all roles involved in the implementation phase, and more intensive training is given to super users, such as inventory managers, employees handling the warehouse management system (WMS), and other full-time employees who may need to use the platform.

The representative interviews and financial analysis found that a composite organization experiences benefits of $4.31 million over three years versus costs of $1.35 million, adding up to a net present value (NPV) of $2.96 million and an ROI of 219%.

> “When our customers come to visit the [Dexory robot], they instantly understand that we are interested in quality. Customers are excited to see the equipment and the impact.”
>
> **GENERAL MANAGER, WAREHOUSE AND 3PL**

Return on investment (ROI)

219%

Benefits PV

$4.31M

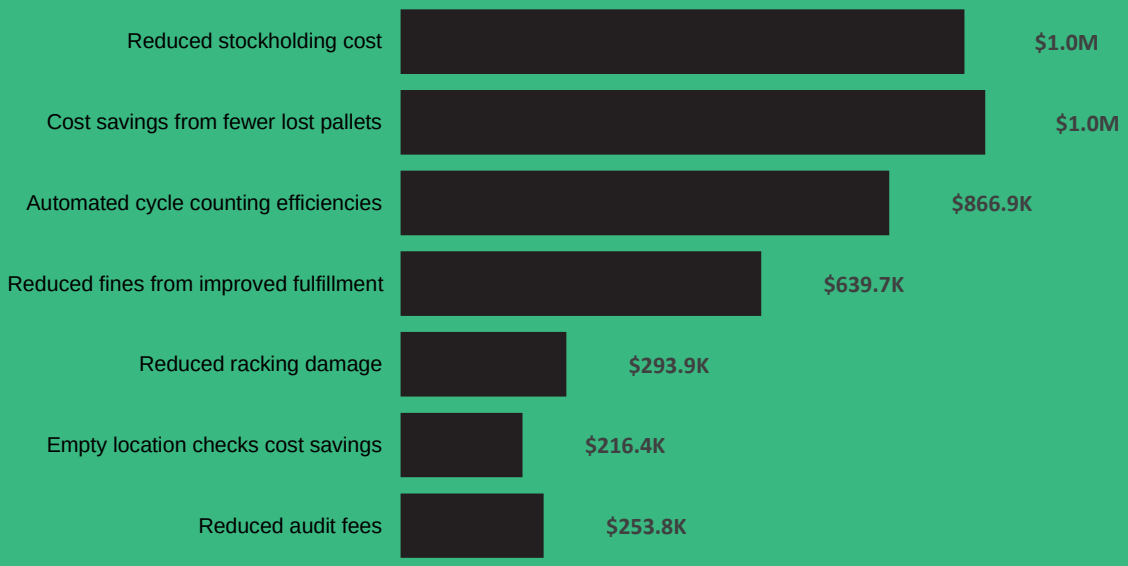
Net present value (NPV)

$2.96M

Payback

<6 months

Benefits (Three-Year)



TEI FRAMEWORK AND METHODOLOGY

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

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 DexoryView can have on an organization.

Due Diligence
Interviewed Dexory stakeholders and Forrester analysts to gather data relative to DexoryView.

Interviews
Interviewed four representatives at organizations using DexoryView to obtain data about costs, benefits, and risks.

Composite Organization
Designed a composite organization based on characteristics of the interviewees' organizations.

Financial Model Framework
Constructed a financial model representative of the interviews using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewees.

Case Study
Employed four fundamental elements of TEI in modeling 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.

DISCLOSURES
Readers should be aware of the following:

This study is commissioned by Dexory and delivered by Forrester Consulting. It is not meant to be used as a competitive analysis.

Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the study to determine the appropriateness of an investment in DexoryView.

Dexory 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.

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

The DexoryView Customer Journey

Drivers leading to the DexoryView investment

Interviews				
Role	**Industry/Region**	**Size**	**Average Customers Per Warehouse**	**Type Of Items Distributed**
Commercial lead United Kingdom and Ireland (UK&I)	• Supply chain management and warehousing • Global, HQ in Europe	• $12.2 billion in annual revenue • 35 to 170 employees per warehouse • 350 total warehouses • 3 warehouses using Dexory	3	• Fast-moving consumer goods (FMCG) • Retail • Chemicals • Refrigerated goods • Automotive • Pharma & healthcare • Technology
National stock manager	• International contract logistics • Global, HQ in Europe	• $2.75 billion in annual revenue • 18 employees per warehouse • 400 total warehouses • 1 warehouse using Dexory	1 to 2	• Retail • Detail picking • Healthcare • e-Commerce
Vice president of cargo technology	• Air cargo, fuel, and ground services (aviation services) • Global, HQ in Europe	• $2.2 billion in annual revenue • 150 employees per warehouse • 265 total warehouses • 1 warehouse using Dexory	12	• Aviation
General manager	• Warehouse and 3PL • HQ and operations in North America	• $4.2 billion in annual revenue • 16 employees per warehouse • 7 owned total warehouses • 1 warehouse using Dexory	31	• Food and beverage (F&B) • Retail

KEY CHALLENGES

Prior to implementing DexoryView, interviewees relied on their warehouse staff to manually perform cycle counts. This process required cycle counters to go through racks and count inventory manually, which could take days, weeks, or even months. They used equipment such as forklifts to ensure they could reach all racks, resulting in high capital investment.

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

- **Labor-intensive cycle counts.** The manual process of performing cycle counts for the interviewees' organizations increased the potential for human error, leading to discrepancies in inventory data and disrupting other warehouse functions such as picking, packing, and shipping. Additionally, manual cycle counting consumed valuable time that could have been used for more productive tasks.
- **High inventory inaccuracy.** Interviewees reported a lack of confidence in inventory accuracy, which led to higher stockholding periods to ensure availability of stock and timely order fulfillment.
- **Suboptimal space utilization.** Interviewees noted that the high stockholding times negatively affected overall warehouse space utilization. Consequently, 3PLs could not serve as many customers as they could have with improved inventory accuracy.
- **Operational inefficiency.** Investigating missing pallets through manual reconciliation was time-consuming and resource intensive for interviewees' organizations. Additionally, 3PLs were often uncertain whether these investigations would successfully locate the missing pallets, which affected overall operational efficiency.
- **Increased downtime due to audits.** Since interviewees' organizations were unable to perform daily cycle counting or generate reports, they had to halt operations for several days at least once a year to prepare for audits. This preparation involved performing a thorough cycle count of their entire warehouse.
- **Low customer satisfaction.** The 3PL interviewees explained that their organization had to pay fines as compensation for each delayed customer order. The overall inability to meet commitments and fulfill orders on time also negatively impacted customer trust and satisfaction.

SOLUTION REQUIREMENTS

The interviewees' organizations searched for a solution that could:

- Provide real-time data on warehouse inventory with daily cycle counting to reduce discrepancies and improve stock management.
- Provide an intuitive, easy-to-use platform with low implementation effort and reduced need for extensive staff training.
- Require minimal internal maintenance effort, with most maintenance managed externally by the selected solution provider.
- Be customized as per warehouse specifications.
- Reduce the stockholding period per customer for more efficient warehouse utilization.
- Support scalability to facilitate rapid growth and expansion by standardizing inventory management processes across multiple warehouses.
- Maximize revenue through increased turnover rate of pallet locations, leading to higher revenue per square meters of warehouse space.
- Optimize staff productivity by automating the cycle counting and allow for reallocation of existing cycle counters to more productive tasks.

> "Thanks to Dexory, our customers can trust that our inventory is accurate. Previously, we could only verify our warehouse contents once a month."
>
> **GENERAL MANAGER, WAREHOUSE AND 3PL**

COMPOSITE ORGANIZATION

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an ROI analysis that illustrates the areas financially affected. The composite organization is representative of the interviewees' organizations, and it is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. The composite organization is a global, 3PL organization with $2 billion annual revenue. Although its headquarters is in Europe, the 3PL has 300 warehouses globally for inventory storage and tracking as well as end-to-end order fulfillment processes — from picking and packing items to shipping them to customers. Each warehouse has an average of 100 employees. Customers of the 3PL are primarily in the retail industry (e.g., fashion, F&B, electronics, etc.). Each warehouse has an average size of 50,000 square meters.

Deployment characteristics. The composite organization begins using DexoryView in one warehouse in Year 1 after a one-month implementation period. It expands its use of the platform by one new warehouse each year, reaching three warehouses by Year 3.

Key Assumptions

300 warehouses globally

$2 billion revenue (average $10 million per warehouse)

100 employees per warehouse

Three customers on average per warehouse

Average warehouse size of 50,000 square meters

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	Reduced stockholding cost	$402,115	$402,115	$402,115	$1,206,344	$999,999
Btr	Cost savings from fewer lost pallets	$215,363	$430,726	$646,088	$1,292,177	$1,037,172
Ctr	Automated cycle counting efficiencies	$180,000	$360,000	$540,000	$1,080,000	$866,867
Dtr	Reduced fines from improved fulfillment	$132,840	$265,680	$398,520	$797,040	$639,748
Etr	Reduced racking damage	$61,020	$122,040	$183,060	$366,120	$293,868
Ftr	Empty location checks cost savings	$44,928	$89,856	$134,784	$269,568	$216,370
Gtr	Reduced audit fees	$52,700	$105,400	$158,100	$316,200	$253,799
	Total benefits (risk-adjusted)	$1,088,965	$1,775,816	$2,462,667	$5,327,449	$4,307,823

REDUCED STOCKHOLDING COST

Evidence and data. The interviewees noted that their organizations' lack of confidence in inventory accuracy, stemming from the previous manual environment, resulted in longer stockholding times per customer. This inefficiency prevented optimal use of warehouse space, as poor organization and inaccurate data failed to reflect actual stock levels or locations in real-time. Consequently, this limitation reduced the number of customers they could serve per warehouse.

- Interviewees reported reduced stockholding time after implementing DexoryView from having up-to-date inventory data. Customers of the 3PL could make more informed decisions about stock replenishment and allocation as well as process improvements to avoid overstocking and reduce holding time.

- The commercial lead UK&I at a supply chain management and warehousing organization explained: “The Dexory journey has reduced our stockholding period from 10 weeks to six weeks. As the number of moves in the warehouse goes up, churning 195,000 pallet locations every six weeks, this [solution] helps us optimize revenue from space.”

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- The composite organization implements DexoryView in one new warehouse per year.
- The composite sees reduced stockholding as a one-time benefit in the first year of implementing DexoryView.

Risks. The value of this benefit can vary across organizations due to differences in:

- The average stockholding cost of the warehouse.
- The baseline stockholding time.
- The number of warehouses that implement DexoryView per year.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $1.0 million.

30%

Percentage stockholding cost reduction with Dexory in Year 1

Reduced Stockholding Cost					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
A1	Additional warehouses implementing DexoryView	Composite	1	1	1
A2	Average stockholding costs per warehouse	Interviews	$8,200,000	$8,200,000	$8,200,000
A3	Average stockholding costs per warehouse per week	A2/52	$157,692	$157,692	$157,692
A4	Average stockholding time (weeks)	Interviews	10	10	10
A5	Percentage reduction in average stockholding time	Interviews	30%	30%	30%
A6	Average stockholding time with DexoryView (weeks)	A4*(1-A5)	7.0	7.0	7.0
A7	Reduction in average stockholding time (weeks)	A4-A6	3.0	3.0	3.0
At	Reduced stockholding cost	A1*A3*A7	$473,076	$473,076	$473,076
	Risk adjustment	↓ 15%			
Atr	Reduced stockholding cost (risk-adjusted)		$402,115	$402,115	$402,115
	Three-year total: $1,206,344			**Three-year present value: $999,999**	

COST SAVINGS FROM FEWER LOST PALLETS

Evidence and data. Interviewees noted that their organizations' previous approaches to investigating lost pallets were ineffective: Warehouse staff had to walk through the warehouse using cameras to locate missing pallets. Additionally, time-consuming, manual cycle counts resulted in a lack of real-time information on pallet locations and were prone to human error. Consequently, the volume of lost pallets was higher before implementing DexoryView.

After implementing DexoryView, all interviewees' organizations gained daily visibility into pallet locations in the warehouse. If any discrepancies or issues with pallet tracking arose, Dexory's platform sent alerts and flagged potential problems, enabling immediate action to prevent pallet loss. This increased visibility reduced the number of lost pallets and minimized the need for investigations. Additionally, they reduced the time spent on each investigation.

Reduction In Lost Pallets

- The vice president of cargo technology at an air cargo, fuel, and ground services organization explained: “Our unable to locate (UTL) has dropped by 60% as a result of Dexory. The robot scans the pallets in every single place in the warehouse and does about 572 racks at one go and keeps tracking them. Prior to DexoryView, before creating a UTL ticket, a department of two people would have to manually go up and down the warehouse using cameras to search for the missing pallet. This process could go on for 30, 60, or even 90 days with no guarantee that the missing pallet would actually be found.” They also explained that with the Dexory robot, their organization moved two cargo agents to roles as a sales analyst and a supervisor.
- The same interviewee mentioned that before implementing Dexory, they used to lose 500 to 600 pallets per year at one site valued at $0.5 million.

Reduced Time Spent Per Investigation

- Each missing pallet required an individual investigation to attempt to locate it and determine the reason for its loss. Interviewees reported that prior to Dexory, it took an average of 24 hours for their organization to conduct one missing pallet investigation. However, after implementing Dexory, they spend an average of 30 minutes per investigation. Interviewees can now rely on daily reports to track the last known location of the missing pallet and potentially determine how it was lost.

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- The composite organization uses DexoryView in one warehouse in Year 1, two warehouses in Year 2, and three warehouses in Year 3.
- There are a total of 30,000 pallets on average per warehouse.
- The baseline percentage of pallets lost per warehouse for the composite before DexoryView is 1.7% (i.e., 510 pallets lost per warehouse).
- The composite sees a 30% reduction in lost pallets per warehouse after implementing DexoryView (i.e., 153 out of the 510 pallets are no longer lost).
- The composite conducts one investigation per missing pallet per warehouse (i.e., 153 investigations per warehouse per year).

- The composite reduces its time per investigation from 24 hours to 30 minutes with DexoryView.
- It dedicates one warehouse staff member (e.g., a cycle counter) per investigation.

Risks. The value of this benefit can vary across organizations due to differences in:

- The number of pallets lost as per prior warehouse setup.
- The number of warehouse sites that implement DexoryView over three years.
- The average time and effectiveness of lost pallet investigations.
- The resources dedicated to investigating missing pallets (i.e., capital and labor).
- The salaries of staff dedicated to investigating missing pallets.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $1.0 million

30%

Reduction in lost pallets due to Dexory

> “Before Dexory, two warehouse staff had to use a forklift to count packages and manually input their findings into a spreadsheet to work out the airway bill and number of packages. [Processing] 500 bays would take 14 hours, so they would get bored and write anything down in that spreadsheet. But with the scanning robot, they can automatically generate a report, so a forklift is no longer required, and we avoid the ‘UTL’ message.”
>
> **VICE PRESIDENT OF CARGO TECHNOLOGY, AIR CARGO, FUEL, AND GROUND SERVICES**

Cost Savings From Fewer Lost Pallets					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
B1	Warehouses with DexoryView	Composite	1	2	3
B2	Pallets per warehouse with DexoryView	Interviews	30,000	30,000	30,000
B3	Average value per pallet	Interviews	$1,000	$1,000	$1,000
B4	Percentage of pallets lost per warehouse	Interviews	1.70%	1.70%	1.70%
B5	Pallets lost per warehouse	B2*B4	510	510	510
B6	Percentage reduction of lost pallets	Interviews	30%	30%	30%
B7	**Subtotal: Cost savings due to avoided lost pallets**	**B1*B3*B5*B6**	**$153,000**	**$306,000**	**$459,000**
B8	Time per investigation for lost pallets before DexoryView (hours)	Interviews	24	24	24
B9	Time per investigation for lost pallets with DexoryView (hours)	Interviews	0.5	0.5	0.5
B10	Avoided lost pallet investigations due to DexoryView	B5*B6	153	153	153
B11	Fully burdened hourly rate for a warehouse employee	$50,000/2,080	$24	$24	$24
B12	**Subtotal: Cost savings due to avoided investigations across all warehouse sites**	**B1*(B8-B9)*B10*B11**	**$86,292**	**$172,584**	**$258,876**
Bt	Cost savings from fewer lost pallets	B7+B12	$239,292	$478,584	$717,876
	Risk adjustment	↓ 10%			
Btr	Cost savings from fewer lost pallets (risk-adjusted)		$215,363	$430,726	$646,088
	Three-year total: $1,292,177			**Three-year present value: $1,037,172**	

AUTOMATED CYCLE COUNTING EFFICIENCIES

Evidence and data. Interviewees explained that prior to Dexory, their organizations typically had multiple cycle counters for counting warehouse inventory, which limited their ability to reallocate staff to more productive tasks such as picking or putaway. Maintaining full-time resources for this single role hindered overall warehouse operational efficiency.

- With Dexory, interviewees said that their organizations did not need as many cycle counters as before. The general manager at a warehouse and 3PL organization explained that their objective for using Dexory came from an outbound technical standpoint on how to reduce headcount in their inventory control and quality assurance department. They mentioned, “Due to Dexory, we were able to move four cycle counters and one researcher to other areas of the business, ensuring the staff was utilized more effectively without eliminating positions.” The Dexory robot’s automation capabilities meant the 3PL could dedicate just one resource to overseeing cycle counting rather than multiple team members.
- By reallocating existing staff instead of hiring new employees, the same interviewee also mentioned that their company saved on onboarding, training, and learning curve costs associated with new hires. Previously, new hires received four hours of internal training and progressed through a four-week learning curve, achieving 60% proficiency in week one, 75% in week two, 85% in week three, and 90% to 100% in week four. The dedicated trainer spent 100% of their time in week one and 50% in weeks two through four coaching new hires in case picking and putaway and tracking their progress.

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- The composite organization uses Dexory in one warehouse in Year 1, two warehouses in Year 2, and three warehouses in Year 3.
- There are five full-time cycle counters per warehouse prior to using Dexory.
- Each cycle counter has an average fully burdened annual salary of $50,000.
- The composite achieves an 80% reduction in the number of full-time cycle counters required because of Dexory and needs only one full-time cycle counter per warehouse.

Risks. The value of this benefit can vary across organizations due to differences in:

- The number of warehouses that use Dexory over the three-year period.
- The baseline number of cycle counters that each warehouse has before Dexory and whether cycle counters are employed full time.

- The average fully burdened annual salary for each cycle counter, which could vary by industry or region. Alternatively, organizations using different roles for cycle counting could have different salaries.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $867,000.

Automated Cycle Counting Efficiencies					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
C1	Warehouses with DexoryView	Composite	1	2	3
C2	Employees needed for carry out cycle counting before DexoryView	Interviews	5.0	5.0	5.0
C3	Percentage reduction in cycle counters with DexoryView	Interviews	80%	80%	80%
C4	Employees needed to carry out cycle counting with DexoryView	Interviews	1.0	1.0	1.0
C5	Reduced number of employees needed to carry out cycle counting	C2-C4	4.0	4.0	4.0
C6	Fully burdened annual salary for a cycle counting employee	Composite	$50,000	$50,000	$50,000
Ct	Automated cycle counting efficiencies	C1*C5*C6	$200,000	$400,000	$600,000
	Risk adjustment	↓ 10%			
Ctr	Automated cycle counting efficiencies (risk-adjusted)		$180,000	$360,000	$540,000
	Three-year total: $1,080,000			**Three-year present value: $866,867**	

80%

Percentage reduction in cycle counters with Dexory

> "Initially, Dexory focuses 90% on correcting your inventory. By day 100, only 10% of its work is inventory correction because it transforms your culture, enabling same-day training and validation."
>
> COMMERCIAL LEAD UK&I, SUPPLY CHAIN MANAGEMENT AND WAREHOUSING

REDUCED FINES FROM IMPROVED FULFILLMENT

Evidence and data. Interviewees explained that with their organization's previous manual environment for tracking warehouse inventory, they often faced challenges fulfilling customer orders on time and were fined for each unfulfilled or late order.

- The commercial lead UK&I at a supply chain management and warehousing organization mentioned: "To be successful in an aggressive market from a contract logistics perspective, we have to be willing to take risks and take on fines." This interviewee noted that their organization would be fined hundreds of pounds for every failed or under-fulfilled SKU and that this was a typical practice in today's market.
- The same interviewee explained the benefits of adopting Dexory: "With Dexory's thorough reconciliation on a daily basis, we have a 99.9% inventory accuracy target instead of the 99.5% accuracy with standard flow of cycle counting once a year. So the risk is removed, as we now have one failure every few weeks or months across all customers." They noted that although the cost of entry was higher for Dexory than for its competitors, its output was greater. The interviewee's organization ultimately reduced its costs by counting cost per location rather than cost of deployment. It also avoided fines rather than delaying them, helping preserve its positive reputation.

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- The composite organization uses Dexory in one warehouse in Year 1, two warehouses in Year 2, and three warehouses in Year 3.
- Each of the composite's warehouses have an average of 90,000 orders per warehouse per year.

- The average fine the composite must pay for each unfulfilled order is $410.
- The inventory accuracy was 99.5% before implementing Dexory, which improves to 99.9% with Dexory.

Risks. The value of this benefit can vary across organizations due to differences in:

- The number of warehouses that use Dexory over the three-year period.
- The average orders per warehouse depending on its size and the 3PL's industry.
- The fine per unfulfilled order, which can depend on the specific customer and their industry and the warehouse operational region.
- The inventory accuracy before Dexory, which can vary by warehouse specificities (e.g., whether the inventory counting process was fully manual, fully automated, or hybrid).

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $640,000.

Reduced Fines From Improved Fulfillment

Ref.	Metric	Source	Year 1	Year 2	Year 3
D1	Warehouses with DexoryView	Interviews	1	2	3
D2	Average orders per warehouse	Interviews	90,000	90,000	90,000
D3	Total orders	D1*D2	90,000	180,000	270,000
D4	Average fine per unfulfilled order	Interviews	$410	$410	$410
D5	Percentage orders fulfilled before DexoryView per warehouse site	Interviews	99.5%	99.5%	99.5%
D6	Percentage orders fulfilled after DexoryView per warehouse site	Interviews	99.9%	99.9%	99.9%
Dt	Reduced fines from improved fulfillment	D3*D4*(D6-D5)	$147,600	$295,200	$442,800
	Risk adjustment	↓ 10%			
Dtr	Reduced fines from improved fulfillment (risk-adjusted)		$132,840	$265,680	$398,520
	Three-year total: $797,040			**Three-year present value: $639,748**	

99.9%

Inventory accuracy achieved by deploying the Dexory robot for daily reconciliations

REDUCED RACKING DAMAGE

Evidence and data. Interviewees noted that their organizations experienced more racking damage before using Dexory. Racking inspections were manually conducted by warehouse staff and therefore were infrequent and less accurate. The racking damage also required 3PLs to invest in and store spare parts.

- The commercial lead UK&I at a supply chain management and warehousing organization explained their approach to investigating and handling racking damage. They described the previous environment where one warehouse staff member conducted a monthly racking inspection, as required by law. When they detected racking damage, the inspection process took two weeks, with the root causes being discovered in only 50% of cases. If there were no spare parts available in the warehouse, the resolution time for racking damage could range from one to six weeks.
- The commercial lead UK&I further explained the impact of having the Dexory robot scan the warehouse at least once every 24 hours to ensure the racking is accurate and investigate potential racking errors quickly. They noted that staff now understand that unreported racking issues are their responsibility and are more likely to report issues immediately. From a capital perspective, reduced racking damage also means their warehouse needs fewer spare parts.

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- The composite organization uses Dexory in one warehouse in Year 1, two warehouses in Year 2, and three warehouses in Year 3.
- The composite has 30,000 pallets per warehouse.
- The cost of racking a single pallet for the composite is $113.
- Dexory enables the composite to reduce its racking damage by 2%.

Risks. The value of this benefit can vary across organizations due to differences in:

- The number of warehouses that use Dexory over the three-year period.
- The number of pallets per warehouse.
- The region in which the 3PL operates.
- The effectiveness of investigating racking damage prior to Dexory.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $294,000.

Reduced Racking Damage					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
E1	Warehouses with DexoryView	Interviews	1	2	3
E2	Pallets per warehouse	Interviews	30,000	30,000	30,000
E3	Average cost of racking damage per palette	Interviews	$113	$113	$113
E4	Percentage reduction in racking damage	Interviews	2.0%	2.0%	2.0%
Et	Reduced racking damage	E1*E2*E3*E4	$67,800	$135,600	$203,400
	Risk adjustment	↓ 10%			
Etr	Reduced racking damage (risk-adjusted)		$61,020	$122,040	$183,060
	Three-year total: $366,120			**Three-year present value: $293,868**	

2%

Reduced racking damage with Dexory

EMPTY LOCATION CHECKS COST SAVINGS

Evidence and data. Interviewees explained that their organizations typically needed one full-time warehouse staff member to check each warehouse row manually for empty, unoptimized locations. These checks slowed operations as the staff responsible could not dedicate their time to other warehouse activities.

Interviewees recognized the value of using the Dexory robot, equipped with 3D LiDAR, cameras, and RFID scanners, to detect empty slots instantly and autonomously and instantly update the WMS. This automation eliminated the need for warehouse staff to spend time manually searching for underutilized spaces and recording the data. Interviewees mentioned that, unlike with manual reporting, they did not require double verification once the Dexory robot reported the locations, which streamlined warehouse operations.

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- The composite organization uses Dexory in one warehouse in Year 1, two warehouses in Year 2, and three warehouses in Year 3.
- The composite organization saves 40 hours per week (2,080 hours per year) using Dexory robot to scan for empty locations, which is equivalent to one, full-time warehouse staff member.
- The fully burdened hourly rate for a warehouse staff member dedicated to investigating empty locations is $24.

Risks. The value of this benefit can vary across organizations due to differences in:

- The number of warehouses that use Dexory over the three-year period.
- The number of warehouse staff dedicated to investigating empty locations and the time spent by each.
- The fully burdened hourly rate for warehouse staff dedicated to investigating empty locations.
- The extent to which the warehouse optimizes space, specifically in minimizing the number of empty locations before implementing Dexory.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $216,000.

Empty Location Checks Cost Savings					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
F1	Warehouses with DexoryView	Composite	1	2	3
F2	Fully burdened hourly rate for a warehouse worker	$50,000/2,080	$24	$24	$24
F3	Time saved on empty location checks (hours per week per warehouse)	Composite	40	40	40
F4	Total hours saved on empty location checks	F1*F3*52	2,080	4,160	6,240
Ft	Empty location checks cost savings	F2*F4	$49,920	$99,840	$149,760
	Risk adjustment	↓ 10%			
Ftr	Empty location checks cost savings (risk-adjusted)		$44,928	$89,856	$134,784
	Three-year total: $269,568			**Three-year present value: $216,370**	

40 hours

Time saved per week on empty location checks with Dexory

"A key feature of the Dexory robot was its ability to confirm empty locations and identify defects or proactive issues in the warehouse. These features have helped us improve efficiency and accuracy."

GENERAL MANAGER, WAREHOUSE AND 3PL

REDUCED AUDIT FEES

Evidence and data. All of the interviewees' organizations saved on their auditing costs and effort as a result of implementing Dexory. Since counting inventory manually previously took from days to months, 3PLs had to stop operations for inventory checks before warehouse site audits.

- The commercial lead UK&I at a supply chain management and warehousing organization said that to prepare for audits before Dexory, they would stop operations for four consecutive days to conduct wall-to-wall counts — meaning customers had to forgo four days of potential sales and revenue.
- The national stock manager at an international contract logistics organization also explained the impact of Dexory on the auditing process in one of their warehouses: "Typically I would have to be on site for five days back-to-back before an audit, and now with Dexory, my presence on the site is not needed at all, saving 450 euros per day." The interviewee further elaborated on the process of preparing for audits: After receiving three days' notice from their bank, two team members would have to try to manually count warehouse stock, a task that would normally take one to two weeks.
- Dexory automatically generates daily reports of warehouse stock, so interviewees' organizations no longer needed to stop operations to prepare for audits. This process saved time and effort for the 3PLs and ensured the accuracy of information provided to auditors.

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- The composite organization uses Dexory in one warehouse in Year 1, two warehouses in Year 2, and three warehouses in Year 3.
- It reduces internal audit costs per warehouse by $60,000 each year with Dexory.
- External auditors charge the composite $20,000 per warehouse site.
- Audits are performed once a year per warehouse site.
- The composite saves 10% of the external auditing fee with Dexory as external auditors can complete their audits faster.

Risks. The value of this benefit can vary across organizations due to differences in:

- The number of warehouses that use Dexory over the three-year period.
- The effort to prepare for audits (e.g., whether there is existing automation).
- Fees charged by external auditors depending on the specific auditor, the region, the warehouse size, and other factors.
- Frequency of audits per warehouse (e.g., yearly, quarterly).

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $254,000.

Reduced Audit Fees					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
G1	Warehouses with DexoryView	Interviews	1	2	3
G2	Reduced internal audit costs (per warehouse site)	Interviews	$60,000	$60,000	$60,000
G3	External audit fees charged (per warehouse)	Interviews	$20,000	$20,000	$20,000
G4	Percentage external audit fees saved due to DexoryView	Interviews	10%	10%	10%
Gt	Reduced audit fees	G1*(G2+(G3*G4))	$62,000	$124,000	$186,000
	Risk adjustment	↓ 15%			
Gtr	Reduced audit fees (risk-adjusted)		$52,700	$105,400	$158,100
	Three-year total: $316,200			**Three-year present value: $253,799**	

$60,000

Internal auditing costs saved per warehouse site with DexoryView

UNQUANTIFIED BENEFITS

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

- **Improved health and safety.** DexoryView allows organizations to detect when dangerous goods are in the wrong areas and helps locate where they are in the warehouse (e.g., lithium batteries, oil, and propellants).
- **Improved employee retention.** DexoryView reduced footfall in storage areas by 31% so employees could move around more safely. It also decreased the need for workers to operate heavy machinery (an environment that interviewees noted led to higher turnover). These factors contributed to improved worker conditions and employee retention of 99.4%.
- **Cleaner warehouse and equipment.** Interviewees explained that implementing Dexory enabled their organization to be more proactive about the cleanliness of its warehouses and detect issues with tools or equipment, improving efficiencies from a putaway and outbound standpoint. The general manager at a warehouse and 3PL organization gave an example of fixing barcodes on pallets to make them easier for the Dexory robot to scan.
- **Reduced training and supervision.** Interviewees said that the automation provided by Dexory reduced the need for extensive training and supervision of staff for inventory management tasks. Moreover, they noted that implementing Dexory required minimal training for users due to the platform's intuitive nature.
- **No overtime, temporary labor, or additional equipment required.** During peak periods, manual processes required the interviewees' organizations to commit additional overtime and temporary labor. All interviewees noted that the efficiency gains from Dexory's scanning robot reduced the need for extra labor and equipment costs.
- **High professionalism from Dexory.** The general manager at a warehouse and 3PL organization said: **"**Dexory has been super-responsive in building tools that their customers want to see and need. The team has been fantastic in getting that stuff built out."

99.4%

Warehouse employee retention rate due to Dexory

FLEXIBILITY

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

- **Scalability with expanded solution use.** All interviewees expressed interest in implementing Dexory in more warehouse sites to realize higher monetary benefits, automate basic warehouse functions (e.g., cycle counting), and standardize their offering across customers. The commercial lead UK&I at a supply chain management and warehousing organization said: “In every warehouse we build, we plan to put DexoryView into that process. In mainland Europe, it has already been deployed in three warehouses, and we plan to add it to another additional five warehouses in Europe. We are currently in conversations to expand to the US and Asia.”

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	License fees	$0	$158,400	$316,800	$475,200	$950,400	$762,843
Itr	Ongoing optimization and maintenance cost	$0	$64,900	$129,800	$194,700	$389,400	$312,554
Jtr	Implementation costs	$100,625	$100,625	$100,625	$0	$301,875	$275,263
Ktr	Training costs	$402	$402	$402	$0	$1,205	$1,098
	Total costs (risk-adjusted)	$101,027	$324,327	$547,627	$669,900	$1,642,880	$1,351,758

LICENSE FEES

Evidence and data. The license fees varied among interviewees depending on the size and complexity of their organizations' warehouses deploying Dexory. Fees are based on a basic warehouse configuration with pallets in racks, although Dexory can also operate in different configurations, like block stacking, cases, and more, for an additional fee.

The license includes the robot and analytics platform, which generates data and reports on pallet numbers, locations, discrepancies, and more. Dexory maintains robot ownership, and the license fees reflect their maintenance effort and remote services. Pricing may vary. Contact Dexory for additional details.

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- The composite uses Dexory in one warehouse in Year 1, two warehouses in Year 2, and three warehouses in Year 3.
- Each warehouse of the composite organization is 50,000 square meters in size.
- The monthly license fees per warehouse is $12,000.

Please note: This pricing is based on legacy customers with the multisite model.

- The composite uses the standard features of Dexory all its warehouses. None of its warehouses have other configurations (e.g., block stacks).

Risks. Risks that could impact this cost include the following:

- The size of the warehouse.
- The configuration of the warehouse (e.g., if the warehouse uses block stacking, etc.).
- The number of warehouses that will implement Dexory over the three-year period.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $763,000.

License Fees

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
H1	Warehouses with DexoryView	Interviews		1	2	3
H2	DexoryView license fee per warehouse	Interviews		$144,000	$144,000	$144,000
Ht	License fees	H1*H2		$144,000	$288,000	$432,000
	Risk adjustment	↑ 10%				
Htr	License fees (risk-adjusted)			$158,400	$316,800	$475,200
	Three-year total: $950,400			**Three-year present value: $762,843**		

INTERNAL ONGOING OPTIMIZATION EFFORT

Evidence and data. Interviewees noted that Dexory managed maintenance remotely, but their organizations also dedicated a small number of internal employees to optimize their use of DexoryView per warehouse specifications and to get more value out of the solution.

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- The composite organization uses DexoryView in one warehouse in Year 1, two warehouses in Year 2, and three warehouses in Year 3.

- One operation engineer and one technology specialist spend 20% of their time on ongoing optimization efforts (i.e., approximately one meeting per week).
- The average fully burdened annual salary for an operations engineer is $170,000.
- The average fully burdened annual salary for a technology specialist is $125,000.
- The cost incurred by the composite organization is internal-only.

Risks. Risks that could impact this cost include:

- The number of warehouses that will use Dexory.
- The amount of time a 3PL might decide to spend on internal labor efforts.
- The geographic region where the 3PL operates, which will impact the salaries.
- The specific roles involved in the ongoing effort, which will impact the salaries.
- The number of internal employees that will be involved in the optimization effort.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $313,000.

> “There is no maintenance effort required from us. We only take 5 minutes to clean the robot’s sensors. Inf act, it takes more time to walk to the robot in the warehouse. All other maintenance is remotely managed by Dexory.”
>
> GENERAL MANAGER, WAREHOUSE AND 3PL

Ongoing Optimization And Maintenance Cost						
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
I1	Warehouses with DexoryView	Interviews		1	2	3
I2	Operations engineers involved in ongoing optimization and maintenance	Interviews		1	1	1
I3	Percentage of operation engineer time dedicated to ongoing optimization and maintenance	Interviews		20%	20%	20%
I4	Fully burdened annual salary for an operations engineer	Interviews		$170,000	$170,000	$170,000
I5	Technology specialists involved in ongoing optimization and maintenance	Interviews		1	1	1
I6	Percentage of technology specialist time dedicated to ongoing optimization and maintenance	Interviews		20%	20%	20%
I7	Fully burdened annual salary for a technology specialist	Interviews		$125,000	$125,000	$125,000
It	Ongoing optimization and maintenance cost	I1*((I2*I3*I4) + (I5*I6*I7))		$59,000	$118,000	$177,000
	Risk adjustment	↑ 10%				
Itr	Ongoing optimization and maintenance cost (risk-adjusted)			$64,900	$129,800	$194,700
	Three-year total: $389,400			**Three-year present value: $312,554**		

IMPLEMENTATION COSTS

Evidence and data. Interviewees noted that implementation efforts involved external effort by Dexory (e.g., DexoryView setup costs) and internal effort by their organizations (e.g., implementation costs) to prepare each warehouse for the robot to function smoothly. The range of implementation time per warehouse mentioned by interviewees was between 15 days and two months. The implementation time consists of the planning, deployment, and testing period.

DexoryView Setup Costs

- The setup cost is a one-time fee charged per warehouse site that will implement Dexory. Dexory visits the warehouse, takes pictures, and creates a warehouse map with a digital overlay using a laser scanner to ensure that the Dexory robot can operate in the specific warehouse configuration.

Internal Labor Implementation Costs

- All interviewees mentioned that their organizations had to ensure basic floor-level hygiene before they could deploy Dexory. The general manager at a warehouse and 3PL organization mentioned: “If there's shrink wrap that's covered up a barcode or if there's a barcode that may have a line through it, the DexoryView robot cannot read that. So [before deploying] the robot, we had to go through the warehouse and fix all those problems. This approach also enabled us to detect the problem with our printers, which we wouldn't have known in the past. In total, we found 140 to 200 pallets that needed to be fixed.”
- The same interviewee also discussed the involvement of operations and technical engineers and said: “Operations engineers had a big lift, as they needed to understand the complexity of our racking and the pain points inside each of the buildings (warehouses). From a technical standpoint, we required one primary technical engineer at 100% capacity and two at 50% capacity for our two months of implementation through the tech launch.”

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- The composite organization implements Dexory in one new warehouse site per year over the three-year period.
- The composite organization takes one month per warehouse for planning, deployment, and testing of DexoryView.
- Dexory imposes a one-time fee of $20,000 per new warehouse site for site visits and warehouse mapping.
- The internal implementation effort per warehouse over the one-month period includes:
    - One operations engineer at 100%, two operations engineers at 50%, and one technical engineer at 100%.
    - One WMS employee at 100%, two WMS employees at 50%, and one inventory manager at 100%.
    - The inventory manager also serves as the project manager.

- The average fully burdened annual salary for an operations or technical engineer is $170,000.
- The average fully burdened annual salary for a WMS employee or inventory manager is $100,000.

Risks. Risks that could impact this cost include:

- The number of warehouses implementing DexoryView over the three-year period.
- The complexity of the warehouse and the effort needed to clean and organize the WMS employees) required during the implementation period.
- The roles involved in the implementation period, which will impact the salaries.

Results. To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $275,000.

> **1 month**
>
> DexoryView implementation time per warehouse

Implementation Costs						
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
J1	Additional warehouses implementing DexoryView	Interviews	1	1	1	0
J2	Initial setup cost per warehouse	Interviews	$20,000	$20,000	$20,000	$20,000
J3	**Subtotal: DexoryView setup costs**	**J1*J2**	**$20,000**	**$20,000**	**$20,000**	**$0**
J4	Engineers involved in implementation	Interviews	3	3	3	0
J5	Fully burdened annual salary for an operations engineer	Interviews	$170,000	$170,000	$170,000	$170,000
J6	Warehouse/inventory managers involved in implementation	Interviews	3	3	3	0
J7	Fully burdened annual salary for a warehouse/inventory manager	Interviews	$100,000	$100,000	$100,000	$100,000
J8	Implementation time per FTE (months)	Interviews	1	1	1	0
J9	**Subtotal: Internal labor implementation costs**	**((J4*J5)+(J6*J7))*J8/12**	**$67,500**	**$67,500**	**$67,500**	**$0**
Jt	Implementation costs	J3+J9	$87,500	$87,500	$87,500	$0
	Risk adjustment	↑ 15%	▪			
Jtr	Implementation costs (risk-adjusted)		$100,625	$100,625	$100,625	$0
	Three-year total: $301,875			**Three-year present value: $275,263**		

TRAINING COSTS

Evidence and data. All interviewees noted that their organizations needed minimal training time for DexoryView due to its intuitive design. The focus of the training was on change management, which they considered a standard aspect of introducing automation to their warehouses. They provided basic training to all roles involved in the implementation phase and more intensive training to super users, such as project managers and WMS employees. It was crucial to train more than one full-time employee to ensure that other WMS employees could use the Dexory platform if the project manager was unavailable.

Modeling and assumptions. Based on the interviews, Forrester assumes the following about the composite organization:

- The composite organization implements Dexory in one new warehouse site per year over the three-year period.

- It provides one hour of training to the inventory manager (e.g., project manager and super user) and two WMS employees involved in the implementation phase. These employees learn how to use the analytics platform, interact with the data on the DexoryView platform, and generate reports.
- The three engineers and one technical leader receive 0.5 hours of training on how the robot operates and key activities to ensure its smooth operation so they can handle the change management in each warehouse site.
- The fully burdened hourly rate for an inventory manager/WMS staff member is $48.
- The fully burdened hourly rate for an operations or technical engineer is $82.
- The fully burdened hourly rate for a technical leader is $101.

Risks. Risks that could impact this cost include:

- Number of warehouses implementing Dexory over the three-year period.
- Number of roles and amount of staff involved in the training.
- Technical expertise of super users to interact with platforms such as Dexory (e.g., the super users' knowledge of data analytics platforms and ability to interpret data).

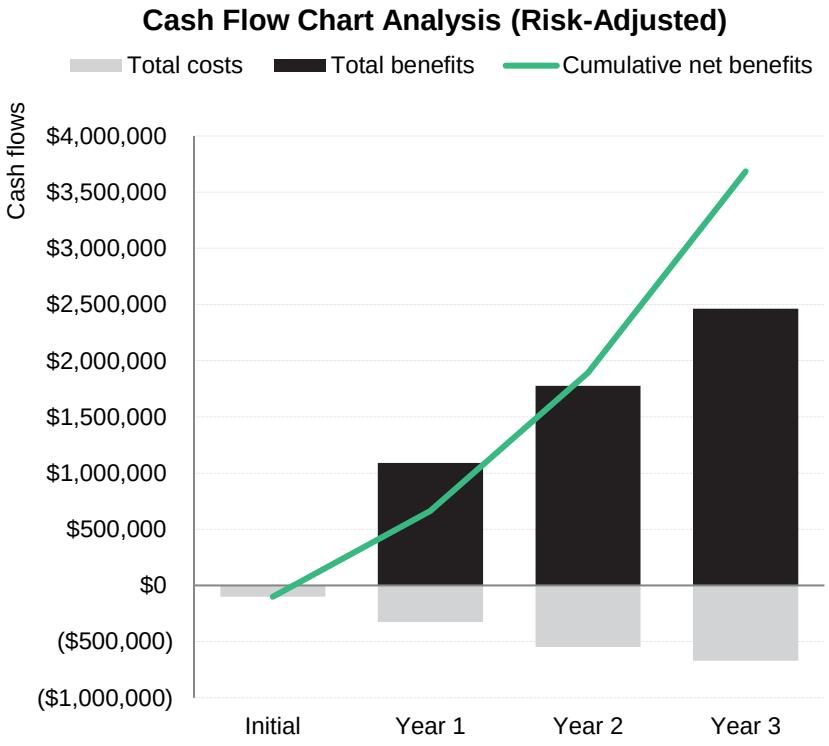
Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $1,000.

> "Our users were fully trained in under 30 minutes. The training cost is included in the subscription, so there is no additional cost."
>
> NATIONAL STOCK MANAGER, INTERNATIONAL CONTRACT LOGISTICS

Training Costs						
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
K1	Newly implemented warehouses	Interviews	1	1	1	0
K2	Inventory/warehouse managers requiring training	Interviews	4	4	4	0
K3	Inventory/warehouse manager training time (hours)	Interviews	1	1	1	0
K4	Fully burdened hourly rate for an inventory/warehouse manager	Interviews	$48	$48	$48	$48
K5	Technology leaders requiring training	Interviews	1	1	1	0
K6	Technology leader training time (hours)	Interviews	0.5	0.5	0.5	0.0
K7	Fully burdened hourly rate for a technology leader	Interviews	$101	$101	$101	$101
K8	Technical/operations engineers requiring training	Interviews	3	3	3	0
K9	Technical/operations engineer training time (hours)	Interviews	0.5	0.5	0.5	0.0
K10	Fully burdened hourly rate for a technical/operations engineer	Interviews	$82	$82	$82	$82
Kt	Training costs	K1*((K2*K3*K4)+(K5*K6*K7)+(K8*K9*K10))	$365	$365	$365	$0
	Risk adjustment	↑ 10%	▪			
Ktr	Training costs (risk-adjusted)		$402	$402	$402	$0
	Three-year total: $1,205			**Three-year present value: $1,098**		

Financial Summary

Consolidated Three-Year, Risk-Adjusted Metrics



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

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

Cash Flow Analysis (Risk-Adjusted)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	($101,027)	($324,327)	($547,627)	($669,900)	($1,642,880)	($1,351,758)
Total benefits	$0	$1,088,965	$1,775,816	$2,462,667	$5,327,449	$4,307,823
Net benefits	($101,027)	$764,639	$1,228,190	$1,792,767	$3,684,569	$2,956,065
ROI						219%
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 solution providers in communicating their value proposition to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of business and technology initiatives to both senior management and other key stakeholders.

Total Economic Impact Approach

Benefits represent the value the solution delivers to the business. The TEI methodology places equal weight on the measure of benefits and costs, allowing for a full examination of the solution's effect on the entire organization.

Costs comprise all expenses necessary to deliver the proposed value, or benefits, of the solution. The methodology captures implementation and 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. 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."

PRESENT VALUE (PV)

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

NET PRESENT VALUE (NPV)

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

RETURN ON INVESTMENT (ROI)

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

DISCOUNT RATE

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

PAYBACK PERIOD

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

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.

APPENDIX B: SUPPLEMENTAL MATERIAL

Related Forrester Research

Align Operational Metrics With Customer Experiences Now, Forrester Research, Inc., March 28, 2024.

Warehouse Management Systems Market Insights, 2024, Forrester Research, Inc., December 11, 2024.

APPENDIX C: ENDNOTES

[1] Source: Align Operational Metrics With Customer Experiences Now, Forrester Research, Inc., March 28, 2024.

[2] Source: Warehouse Management Systems Market Insights, 2024, Forrester Research, Inc., December 11, 2024.

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

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