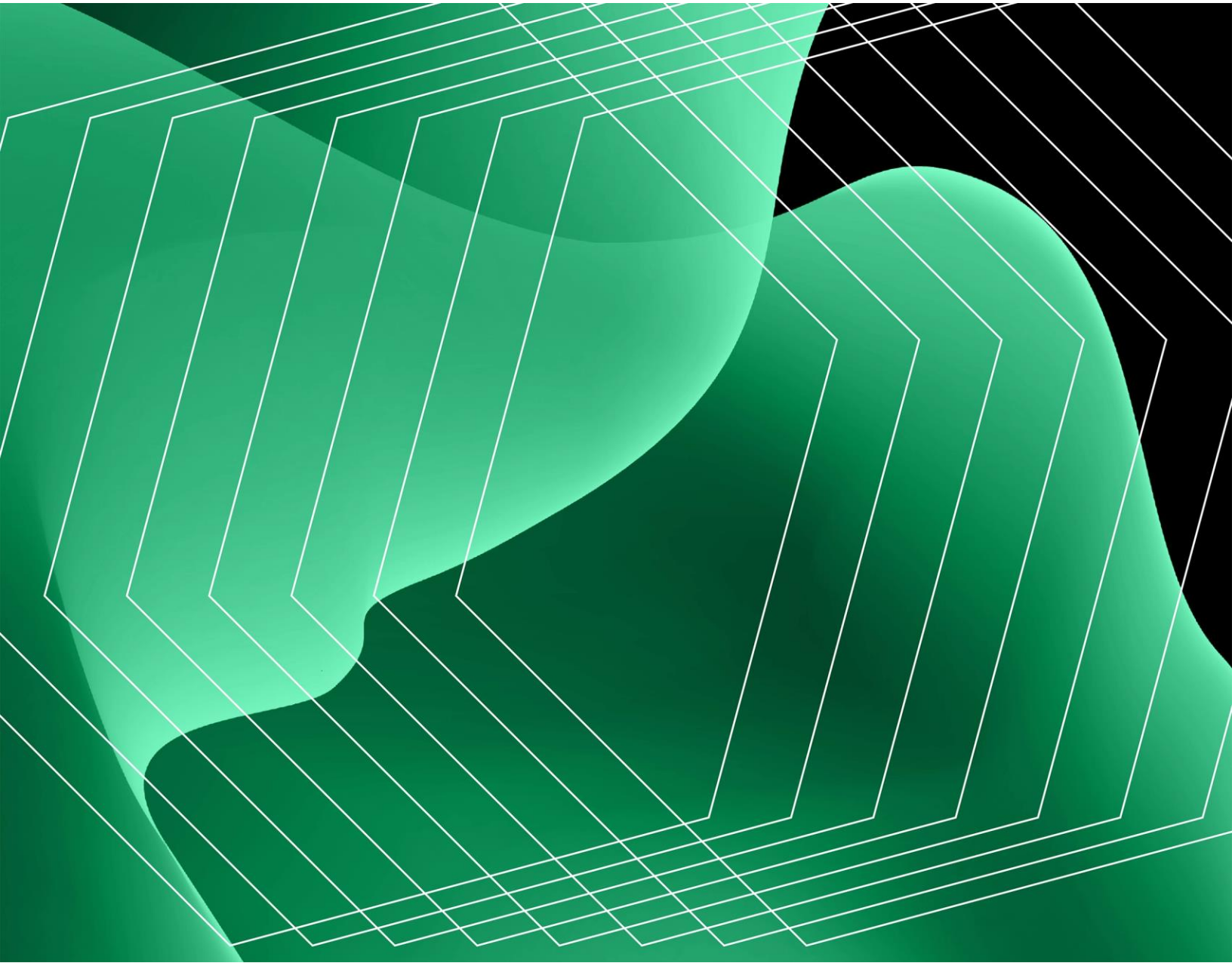
FORRESTER®

The Total Economic Impact™ Of KNIME

Cost Savings And Business Benefits Enabled By KNIME

A FORRESTER TOTAL ECONOMIC IMPACT STUDY
COMMISSIONED BY KNIME, FEBRUARY 2025



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ABOUT FORRESTER CONSULTING

Forrester provides independent and objective research-based consulting to help leaders deliver key outcomes. Fueled by our customer-obsessed research, Forrester's seasoned consultants partner with leaders to execute their specific priorities using a unique engagement model that ensures lasting impact. For more information, visit forrester.com/consulting.

Executive Summary

Organizations struggle to analyze large amounts of data to improve business outcomes. KNIME is a data, analytics, and AI platform that supports data pipelines, data analysis, model building, secure deployment, and centralized governance for both technical and non-technical users — allowing users to create workflows and perform advanced analytics without coding experience. This study found that organizations using KNIME benefit from efficiency savings in data, analytics, and AI activities; time savings in compute and storage migrations, avoided hiring costs, and improved decision-making.

KNIME is an open-source data, analytics, and AI platform that empowers organizations to access, analyze, model, and visualize data with ease. Through its intuitive low-code/no-code interface, KNIME enables users to create, deploy, and share data science workflows, fostering collaboration and innovation within the organization. With robust features for data pipelines, analytical methods, and machine learning (ML), KNIME helps businesses drive data-driven decisions and optimize processes while ensuring scalability and efficiency.

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

Return on investment (ROI)
453%

Net present value
$9.5M

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed five decision-makers at four organizations with experience using KNIME. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single composite organization that is an industry-agnostic global organization with an annual revenue of $80 billion.

Interviewees said that prior to using KNIME, their organizations were reliant on manual nonautomated data analysis processes that slowed down work and hindered innovation and left

them overwhelmed with coding inefficiencies. These limitations led to issues with data analysis and visualization, lack of automation, and bottlenecks resulting from manual tasks.

After the investment in KNIME, the interviewees were equipped with a flexible and modular tool which could integrate seamlessly into various other technologies, allowing interviewees' organizations to create more value out of their data. Interviewees started using KNIME and exploring its capabilities with KNIME's open source nature. KNIME has a no-code user interface that expands access to nonprogramming users and makes adoption in large organizations easily scalable, on top of enabling programming users to be more productive. Key results from the investment include efficiency savings in data analytics activities, time savings in compute and storage migrations, hiring cost avoidance, and improved decision-making, which led to revenue and profit growth.

KEY FINDINGS

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

- **Efficiency savings of $5.3 million in data requests and reporting activities.** KNIME empowers both business users and data scientists by enhancing productivity and achieving significant efficiency savings. KNIME allows business users to work with data without coding, saving time and effort that would have otherwise been spent on learning to code. Automation also increases the speed and frequency of report generation for data scientists. Overall, KNIME streamlines data requests and reporting activities.
- **Time savings for migrating databases/data warehouses, worth $285,500.** Large organizations often face time-consuming migrations, involving substantial code rewriting and parallel development. KNIME simplifies and reduces the effort required for migrating databases and data warehouses by switching connectors and maintaining business logic, making compute and storage interchangeable.
- **Cost avoidance in hiring of data users, worth $2.2 million.** KNIME's low-code/no-code nature allows the composite organization to upskill users, reducing the need to hire additional data users (i.e., data scientists/data engineers) to accommodate data growth. Our analysis assumes a significant increase in hiring costs without KNIME, with salaries and additional employment costs considered. KNIME helps the composite organization avoid these costs by empowering existing staff to handle data tasks efficiently.

“KNIME’s value is incredibly high, it not only saves time but also enables things that were not possible before.”

SERVICE TEAM LEADER, INDUSTRIAL TECHNOLOGY

- **Improved decision-making, which results in revenue growth of $3.9 million.** KNIME supports various use cases like expense exercises, cash flow analysis, reporting, forecasting, stock optimization, and risk reporting, which improve decision-making and positively impact revenues and profits. Automation and process acceleration enable faster, more agile decision-making. KNIME’s data analytics capabilities directly contribute to realizing a significant portion of the composite organization’s revenue.

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

- **Improved profit margin due to ML functionalities.** KNIME’s ML functionalities enable the composite organization to develop price recommendation algorithms, which lead to better pricing decisions, ultimately increasing profit margins.
- **Improved data governance and risk reduction.** KNIME enables the composite organization to automate several data governance tasks, allowing data engineers to not worry about certain data governance tasks anymore. KNIME also enables users to complete certain tasks in a controlled environment, ultimately leading to a risk reduction on various fronts, including client risk, reputational risk, and financial risk.
- **Open source community and ease of integration.** KNIME’s open source community allows users to quickly and easily access answers to their questions thanks to the many community contributors. This enhances the composite organization’s ability to innovate

and adapt to new challenges. The composite organization can also integrate new technologies with KNIME into their own toolbox seamlessly.

- **Improved overall data quality.** The composite organization appreciates overall data quality improvements since working with KNIME, as well as the ability to push data to different users across the organization.

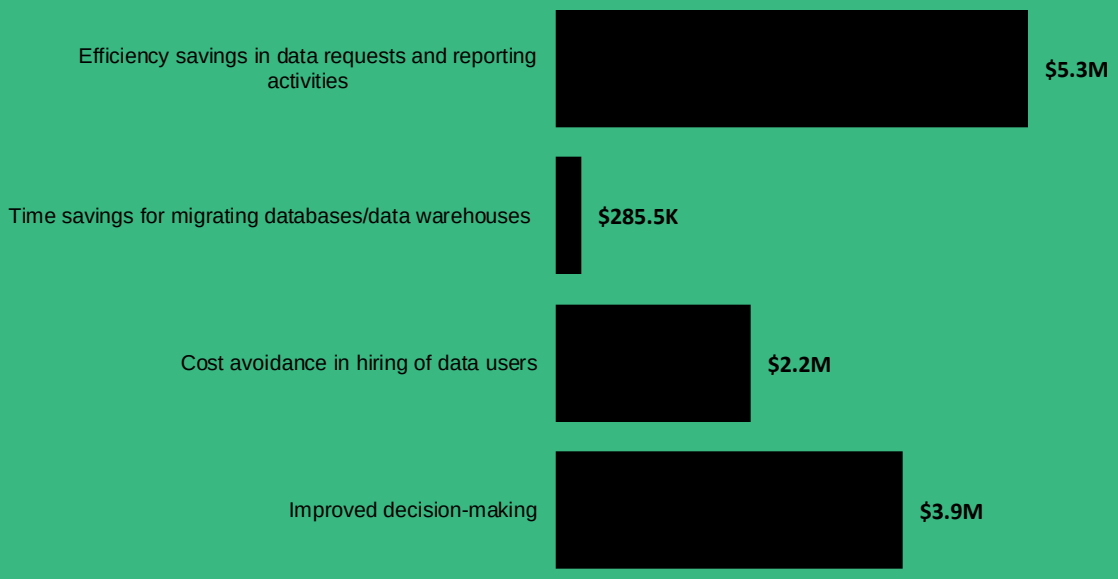
Costs. Three-year, risk-adjusted PV costs for the composite organization include:

- **Platform license fees of $1.3 million.** KNIME charges platform license fees on a per-user basis, which increase as the number of data users grows. Initially, the composite organization uses KNIME's open-source software and KNIME's Analytics Platform without paying license fees. However, license fees apply once KNIME's customers start using the KNIME Business Hub and leverages its features including automation, deployment, security, and governance.
- **Implementation, ongoing management, and training costs of $845,900.** The composite organization allocates resources for KNIME's implementation, its ongoing management, and training of new users. These costs include setting up the platform, maintaining its operations, and ensuring users are adequately trained to utilize KNIME effectively. Proper management and training are essential to maximize the platform's benefits and for the seamless integration and efficient use of KNIME across the organization.

The representative interviews and financial analysis found that a composite organization experiences benefits of $11.6 million over three years versus costs of $2.1 million, adding up to a net present value (NPV) of $9.5 million and an ROI of 453%.

ROI	BENEFITS PV	NPV	PAYBACK
453%	**$11.6M**	**$9.5M**	**<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 KNIME.

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 KNIME can have on an organization.

1. **Due Diligence**
   Interviewed KNIME stakeholders and Forrester analysts to gather data relative to KNIME.
2. **Interviews**
   Interviewed five individuals at four organizations using KNIME to obtain data about costs, benefits, and risks.
3. **Composite Organization**
   Designed a composite organization based on characteristics of the interviewees' organizations.
4. **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.
5. **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.

The KNIME Customer Journey

Drivers leading to the KNIME investment

Interviews			
Role	**Industry**	**Region**	**Revenue**
Senior vice president of finance	Financial services	Worldwide	$150 billion
Director of financial planning and analytics	Telecommunications	Worldwide	$130 billion
• Head of data and integration • Service team leader	Industrial technology	Worldwide	$80 billion
Head of data governance	Healthcare	Worldwide	$22 billion

KEY CHALLENGES

Interviewees said that before working with KNIME, their organizations leveraged various other data analytics tools and were heavily reliant on spreadsheets and manual data analytics tasks. These manual processes not only hindered innovation by limiting the scalability of solutions but also significantly reduced the efficiency of anyone in the interviewees' organizations who worked with data. Overall, interviewees noted that their organizations wanted to improve their employees' data literacy. According to Forrester's research, data literacy is crucial for all employees at an organization and contributes to overall company success.[2] It goes hand in hand with data democratization by expanding data access, which drives value when employees can effectively use data insights in their work.

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

- **Multiple and inconsistent data sources.** Before using KNIME, interviewees mentioned it was challenging to locate the right data across the organization and achieve a single source of truth. This fragmented data collection process made it difficult to have a comprehensive and accurate understanding of their organization's data.

- **Reliance on costly external consultants.** Interviewees mentioned that with their previous data analytics solutions, they had to heavily rely on experienced consultants who were familiar with those tools. The cost of these experienced consultants was very high, leading to both financial and operational inefficiencies. These resulted in operational bottlenecks as only a few individuals had the expertise needed to manage and interpret the data.
- **Lack of flexibility.** Interviewees who relied on other data analytics solutions mentioned how these tools were inflexible and very difficult to integrate within their organization's wider IT infrastructure. This lack of flexibility hindered their ability to adapt to changing business needs and seamlessly integrate new data sources.
- **Lack of a unified view of data.** Interviewees mentioned how different users across their organization wanted to visualize data in their own way before they worked with KNIME. This resulted in various versions of dashboards and logics, creating confusion across the organization and failing to provide a unified view of data. This inconsistency made it challenging to make informed decisions based on a single, accurate representation of the data.

SOLUTION REQUIREMENTS/INVESTMENT OBJECTIVES

The interviewees' organizations searched for a solution that could:

- Improve data literacy and democratization.
- Integrate flexibly within the organization's IT infrastructure.
- Offer modularity and handle data of any size and format.
- Be cost-effective and scalable over time.
- Be user-friendly and easy to learn, with a low-code/no-code nature.
- Provide versatility and transparency in workflows and logic.

> “You can really do anything you want with data with KNIME.”
>
> HEAD OF DATA AND INTEGRATION, INDUSTRIAL TECHNOLOGY

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, industry-agnostic organization with an annual revenue of $80 billion. It has 100,000 employees and starts using KNIME in one department, eventually centralizing KNIME within the organization as its usage and number of users increase. The composite organization leverages KNIME mainly for use cases around automating reporting activities, integrating business processes, forecasting activities, as well as leveraging ML functionalities.

Deployment characteristics. The composite organization begins using the solution in Year 1, following a two-month implementation period. The initial rollout covers 50% of the data users from Year 1. The number of KNIME data users goes from 100 users in Year 1 to 500 users in Year 2, and 1,000 users in Year 3. Meanwhile, the number of data consumers (i.e., people who only consume data that has been generated with KNIME but do not necessarily practically work with data) increases from 1,000 in Year 1 to 2,500 in Year 2, to reach 5,000 in Year 3. KNIME customers start with the open source version to increase their data literacy and then purchase the paid version of KNIME Business Hub once they need to start collaborating with each other after having built initial workflows.

KEY ASSUMPTIONS

$80 billion revenue

100,000 employees

Worldwide operations

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	Efficiency savings in data requests and reporting activities	$712,642	$2,363,796	$3,563,208	$6,639,646	$5,278,497
Btr	Time savings for migrating databases/data warehouses	$114,818	$114,818	$114,818	$344,453	$285,534
Ctr	Cost avoidance in hiring of data users	$389,376	$973,440	$1,362,816	$2,725,632	$2,182,378
Dtr	Improved decision making	$576,000	$1,440,000	$2,880,000	$4,896,000	$3,877,506
	Total benefits (risk-adjusted)	$1,792,835	$4,892,054	$7,920,842	$14,605,730	$11,623,915

EFFICIENCY SAVINGS IN DATA REQUESTS AND REPORTING ACTIVITIES

Evidence and data. Interviewees underlined how KNIME has enabled their organizations to empower both business users as well as data scientists and data engineers to improve their productivity, and lead to substantial efficiency savings.

- Interviewees mentioned how, prior to using KNIME, data users (i.e., data scientists/data engineers) were spending a reasonable amount of extra time to build their own analysis of the data.
- Additionally, many business users would also need to upskill and learn how to code, considering most business users are non-technical experts. This would result in additional effort and time spent on learning how to code.
- Data users realized efficiency savings on daily reporting activities by leveraging automations that could be created with KNIME.

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

- The composite organization's business users each save an average of 21 hours per year on data requests.
- The average fully burdened salary of a business analyst is $49 per hour. The standard TEI burden rate is 35% and accounts for additional costs of employment, such as benefits (e.g., healthcare, insurance, bonuses), technology, office space, and employer taxes.
- The composite organization's data users each save an average of 249 hours per year in Year 1, 187 hours in Year 2, and 124 hours in Year 3 on reporting activities. The average time each individual saves is assumed to decrease in Year 2 and Year 3 as the first batch of 100 data users who were onboarded onto KNIME in Year 1 are the ones who maximize KNIME's capabilities and work on the most critical activities, leveraging KNIME more often on a daily basis. The other users onboarded in Year 2 and Year 3 also leverage KNIME but to a lesser extent, hence the average hours saved decreases.
- The average fully burdened salary of a data user is $78 per hour. The standard TEI burden rate is 35% and accounts for additional costs of employment, such as benefits (e.g., healthcare, insurance, bonuses), technology, office space, and employer taxes.
- A productivity recapture rate of 30% is applied as it can be assumed that only a certain part of the time saved is reallocated by users to productive work.

Risks. This benefit may vary for organizations based on:

- The number of business users working on data requests.
- The number of data users working on reporting activities.
- The time dedicated to data requests and reporting activities.
- The average fully burdened salaries of a data user and business analyst.

Results. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $5.3 million.

124,400 hours saved

In reporting activities in Year 3

"With KNIME, we created a centralized data as a service platform with a very rich semantic layer of data, to which we can connect any data visualization platform to run data analysis."

HEAD OF DATA GOVERNANCE, HEALTHCARE

Efficiency Savings In Data Requests And Reporting Activities					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
A1	KNIME data consumers	Composite	1,000	2,500	5,000
A2	Average hours saved per business user annually	Interviews	21	21	21
A3	**Subtotal: Hours saved by business users annually**	**A1*A2**	**20,800**	**52,000**	**104,000**
A4	Average fully burdened hourly salary of a business analyst	TEI methodology	$49	$49	$49
A5	KNIME data users	Composite	100	500	1,000
A6	Average hours saved per data user annually	Interviews	249	187	124
A7	**Subtotal: Hours saved in reporting activities**	**A5*A6**	**24,880**	**93,300**	**124,400**
A8	Average fully burdened hourly salary of a data user	TEI methodology	$78	$78	$78
A9	Productivity recapture rate	TEI methodology	30%	30%	30%
At	Efficiency savings in data requests and reporting activities	((A3*A4)+(A7*A8))*A9	$890,802	$2,954,745	$4,454,010
	Risk adjustment	↓20%			
Atr	Efficiency savings in data requests and reporting activities (risk-adjusted)		$712,642	$2,363,796	$3,563,208
	Three-year total: $6,639,646			**Three-year present value: $5,278,497**	

TIME SAVINGS FOR MIGRATING DATABASES/DATA WAREHOUSES

Evidence and data. Interviewees mentioned that KNIME has simplified and significantly reduced the effort needed for migrating databases and data warehouses.

- In large organizations, it is often a very demanding and time-consuming task to migrate from one data warehouse to another. Interviewees mentioned that prior to using KNIME, these migrations involved substantial effort in rewriting code as well as developing them in two environments in a parallel manner for some time until the migration was completed.
- KNIME allowed the interviewees' organizations to migrate easily from one data warehouse to another by just switching connectors. KNIME makes it much easier to switch the "business logic" of the data from one data warehouse to another, while keeping the compute and storage of the data warehouse interchangeable.
- Interviewees mentioned how KNIME enabled a large migration to be completed in only four weeks, when it would have taken over a year without KNIME.

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

- The composite organization undergoes one migration from one storage and compute environment to another each, in Year 1, Year 2, and Year 3.
- Thirty-five percent of the capacity of six data engineers would have to work on the migration of a new storage and compute environment without KNIME for one year, which equates to 2.1 FTEs.
- The annual working hours are assumed to be 2,080.
- The time needed for completing the migration is reduced from one year to four weeks, resulting in a 92% time saving.
- The average fully burdened salary of a data engineer is $63 per hour. The standard TEI burden rate is 35% and accounts for additional costs of employment, such as benefits (e.g., healthcare, insurance, bonuses), technology, office space, and employer taxes.
- A productivity recapture rate of 50% is applied as it can be assumed that only a certain part of the time saved is reallocated by users to other productive work.

Risks. This benefit may vary for organizations based on:

- The scale and effort required to complete a migration into a new compute and storage environment.
- The average salary of a data engineer.

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 $285,000.

Reduction in time needed to migrate to a new storage and compute environment

92%

"Large data warehouse vendors bring in huge database capacity, storage, and compute; and they have a lock-in effect attached to them. If you then want to switch vendors, the business context of the data, which is our greatest asset, can be switched easily thanks to KNIME."

HEAD OF DATA GOVERNANCE, HEALTHCARE

Time Savings For Migrating Databases/Data Warehouses					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
B1	FTEs needed for migration into new storage and compute environment without KNIME	Interviews	2.1	2.1	2.1
B2	Annual working hours per year	TEI methodology	2,080	2,080	2,080
B3	Hours needed for migration into new storage and compute environment without KNIME	B1*B2	4,368	4,368	4,368
B4	Percentage time savings with KNIME	Interviews	92%	92%	92%
B5	Average fully burdened hourly salary of a data engineer	TEI methodology	$63	$63	$63
B6	Productivity recapture rate	TEI methodology	50%	50%	50%
Bt	Time savings for migrating databases/data warehouses	B3*B4*B5*B6	$127,575	$127,575	$127,575
	Risk adjustment	↓10%			
Btr	Time savings for migrating databases/data warehouses (risk-adjusted)		$114,818	$114,818	$114,818
	Three-year total: $344,453			**Three-year present value: $285,534**	

COST AVOIDANCE IN HIRING OF DATA USERS

Evidence and data. Interviewees mentioned that KNIME's low-code/no-code nature enabled them to upskill and empower users to work with data. Interviewees shared that without KNIME, they would have had to hire more data scientists and data engineers as a result.

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

- The number of data users that would need to be hired if KNIME were not in place increases from two in Year 1 to five in Year 2, to seven in Year 3. The number grows as KNIME's usage rises according to how the composite organization scales across the organization and departments.
- The average fully burdened salary of a data user is $162,240 per year. The standard TEI burden rate is 35% and accounts for additional costs of employment, such as benefits (e.g., healthcare, insurance, bonuses), technology, office space, and employer taxes.

- The cost of hiring a data scientist/data engineer is estimated to be 150% of their annual salary.

Risks. This benefit may vary for organizations based on:

- The scale of an organization and the amount of data scientists/data engineers needed.
- The fully burdened salary of a data scientist/engineer.
- The cost of hiring a data scientist/engineer.

Results. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $2.2 million.

> "We could avoid hiring software developers, who were not available in the market anyway."
>
> HEAD OF DATA AND INTEGRATION, INDUSTRIAL TECHNOLOGY

Cost Avoidance In Hiring Of Data Users					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
C1	Data users who would have been hired without KNIME	Interviews	2	5	7
C2	Average fully burdened annual salary of a data scientist/data engineer	TEI methodology	$162,240	$162,240	$162,240
C3	Cost of hiring a data scientist/data engineer compared to his/her annual salary	Composite	150%	150%	150%
Ct	Cost avoidance in hiring of data users	C1*C2*C3	$486,720	$1,216,800	$1,703,520
	Risk adjustment	↓20%			
Ctr	Cost avoidance in hiring of data users (risk-adjusted)		$389,376	$973,440	$1,362,816
	Three-year total: $2,725,632			**Three-year present value: $2,182,378**	

IMPROVED DECISION-MAKING

Evidence and data. Interviewees have highlighted how KNIME supported their organizations across a variety of different use cases, ultimately leading to improved decision-making, hence directly impacting revenues and profits.

- Interviewees attributed the improvements in decision-making to KNIME's ability to automate and speed up processes, which, in turn, allowed them to be faster and more agile in assessing situations and making decisions.
- Use cases in which KNIME can be used to improve decision-making vary widely. Interviewees have reported tangible improvements in use cases including but not limited to expenses exercises, cash-flow analysis, reporting and forecasting activities, stock optimization activities, and risk reporting activities.
- Interviewees mentioned how a significant portion of 8% of their organization's revenue would not be realized without the data analytics provided by their team. KNIME had a direct impact on realizing this revenue as it enabled and empowered data analytics activities and was one of the main data analytics solutions used by the data analytics team.

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

- The portion of the composite organization's revenue impacted by KNIME is 10% in Year 1, 25% in Year 2, and 50% in Year 3 as the composite organization starts using KNIME in one department and eventually scales its usage across the organization.
- The percentage of revenue realized due to KNIME is 1% of the overall revenue impacted by the data analytics team.
- An operating profit margin of 12% is applied.

Risks. This benefit may vary for organizations based on:

- An organization's revenue.
- The percentage of revenue in scope with KNIME.
- An organization's operating profit margins.

- The use cases for which KNIME is utilized.

Results. To account for these risks, Forrester adjusted this benefit downward by 25%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $3.9 million.

Revenue realized due to KNIME in Year 3

$32,000,000

"My team contributes substantially to our organization's revenue and KNIME is used in at least 50% of our activities that we do to support the organization."

DIRECTOR OF FINANCIAL PLANNING AND ANALYTICS, TELECOMMUNICATIONS

"Without KNIME, some manufacturing processes would have been delayed for at least a year. We started one year earlier because we were able to replace a software component with KNIME workflows, which was really amazing."

SERVICE TEAM LEADER, INDUSTRIAL TECHNOLOGY

Improved Decision-Making					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
D1	Annual revenue	Composite	$80,000,000,000	$80,000,000,000	$80,000,000,000
D2	Portion of revenue in scope with KNIME	Composite	10%	25%	50%
D3	Percentage of revenue that would not be realized without the support of a data analytics team	Interviews	8%	8%	8%
D4	**Subtotal: Revenue impacted**	**D1*D2*D3**	**$640,000,000**	**$1,600,000,000**	**$3,200,000,000**
D5	Percentage of revenue realized due to KNIME	Composite	1%	1%	1%
D6	**Subtotal: Revenue realized due to KNIME**	**D4*D5**	**$6,400,000**	**$16,000,000**	**$32,000,000**
D7	Operating profit margin	TEI methodology	12%	12%	12%
Dt	Improved decision-making	D6*D7	$768,000	$1,920,000	$3,840,000
	Risk adjustment	↓25%			
Dtr	Improved decision-making (risk-adjusted)		$576,000	$1,440,000	$2,880,000
	Three-year total: $4,896,000			**Three-year present value: $3,877,506**	

UNQUANTIFIED BENEFITS

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

- **Improved profit margin due to ML functionalities.** By leveraging KNIME's AI and ML capabilities, the composite organization was able to create sophisticated price recommendation algorithms. These algorithms have improved the accuracy of pricing decisions, leading to more strategic pricing strategies and as a result, a notable increase in profit margins. This enhancement in pricing efficiency underscores the value of integrating advanced ML tools into business operations. The head of data governance at the healthcare company highlighted how: "With KNIME, we have been able to plug a set of ML algorithms into the data pipeline without using another system, allowing us to have an end-to-end view. In this way, we can view it, manage it, and realize pure profits by making better pricing decisions."
- **Improved data governance and risk reduction.** Utilizing KNIME enabled the composite organization to automate numerous data governance tasks. This automation

has relieved data engineers of managing these tasks manually, allowing them to focus on more strategic and complex aspects of their work. Consequently, this improved the efficiency and reliability of data governance processes, which enhanced overall operational productivity. Additionally, by leveraging KNIME, the composite organization was able to perform specific tasks within a controlled environment, which significantly reduced various risks. This risk reduction is evident across multiple areas, including client risk, reputational risk, and financial risk. The senior vice president of finance at the financial services organization said: "We can complete data governance tasks in a controlled environment thanks to KNIME. If we do not do so, we could incur fines or our banking license could be revoked, which would be a disaster."

- **Open source community and ease of integration.** The composite organization fully maximizes KNIME's open-source community, which is rich with knowledgeable contributors. This extensive network allowed the composite organization to quickly and easily find answers to a wide range of questions. The active participation of community members ensured that support and solutions were readily available, facilitating efficient problem-solving and continuous improvement. This collaborative environment significantly enhanced the composite organization's ability to innovate and adapt to new challenges. The head of data and integration at the industrial technology company mentioned: "In our company, there's a strong community around KNIME — all users are very happy and enthusiastic about it and they really love it and like it. We also monitor the KNIME Community Hub and advertise it to our internal community as a place where they can find examples and answers." The composite organization can also integrate new technologies with KNIME — from databases to large language models — into their own toolbox with ease. The head of data and integration at the industrial technology company said: "You can integrate a lot of different sources and you can make use of a lot of different modules with KNIME. You can also connect with many databases, large language models and AI APIs. KNIME is a very open-build toolbox."
- **Improved overall data quality.** The composite organization experienced significant improvements in overall data quality achieved through working with KNIME. Additionally, KNIME's capabilities enabled the composite to efficiently distribute data to various users across the organization. This enhanced data quality and seamless data sharing have contributed to more informed decision-making and streamlined operations throughout the composite organization. The director of financial planning and analytics at the

telecommunications company underlined: “With KNIME, we have improved our data quality and the accuracy of the data, as well as our ability to deliver it on time and push it to the right user base.”

> “Versatility, openness, a low-code/no-code approach, and the integration of AI and data transformation are KNIME’s key qualities.”
>
> HEAD OF DATA GOVERNANCE, HEALTHCARE

FLEXIBILITY

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

- **Improved ability to scale the use of data analytics.** Interviewees mentioned how KNIME’s low-code/no-code nature allowed for it to be used by a wide range of users with different levels of technical knowledge. KNIME’s usage spreads rapidly across the organization, making it a tool that can quickly enable various parts of the organization to improve their data analytics literacy and usage.
- **Support in cloud migration.** Interviewees mentioned how KNIME’s cloud agnosticism enabled users to leverage it in the cloud space. Considering that the cloud is generally not easy to navigate for non-technical or semi-technical users, KNIME’s low-code/no-code nature can support users and potentially enable them to operate in the cloud space more confidently.

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

> “We had a job opening for a role that required specific coding experience. In the end, one of our KNIME power users got the job even though this person did not have prior coding experience, but was very good at KNIME.”
>
> HEAD OF DATA AND INTEGRATION, INDUSTRIAL TECHNOLOGY

Analysis Of Costs

Quantified cost data as applied to the composite

PLATFORM LICENSE FEES

Evidence and data. Interviewees reported that KNIME's fees operated on a per-user basis. Platform license fees increase as the number of data users grows.

- Interviewees noted that their organizations used KNIME's software in its open source nature (i.e., KNIME Analytics Platform) without having to pay license fees. License fees applied when interviewees started using KNIME Business Hub and leveraging its features including automation, deployment, security and governance.
- Pricing may vary. Contact KNIME for additional details.

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

- The average platform license fee per user drops as the number of data users increases throughout Year 2 and Year 3.

Risks. This cost may vary for different organizations based on:

- The total number of licenses/active data users.
- The rate at which an organization increases the number of data users for KNIME.

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 $1.3 million.

Platform License Fees						
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
E1	Data users	Composite	0	100	500	1,000
E2	Price per data user	Interviews	0	$1,400	$1,000	$800
Et	Platform license fees	E1*E2	$0	$140,000	$500,000	$800,000
	Risk adjustment	↑10%				
Etr	Platform license fees (risk-adjusted)		$0	$154,000	$550,000	$880,000
	Three-year total: $1,584,000			**Three-year present value: $1,255,702**		

IMPLEMENTATION, ONGOING MANAGEMENT, AND TRAINING COSTS

Evidence and data. Interviewees suggested that resources had been allocated to KNIME's implementation, ongoing management, as well as the training of new users onboarded to KNIME.

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

- Three FTEs are dedicated to the implementation of KNIME for two months, totaling 480 hours per FTE.
- Two FTEs are dedicated to the ongoing management of KNIME in Year 1, three FTEs in Year 2, and five FTEs in Year 3, each requiring 50% of their time.
- Ongoing management activities include managing the infrastructure, patching, vendor relations, and quality assurance activities.
- Each data user requires an average of four hours of training.

Risks. This cost may vary for different organizations based on:

- Whether an organization uses KNIME in its open source nature before using its paid version.
- The length of implementation and the number of resources dedicated to it.
- The number of active data users.

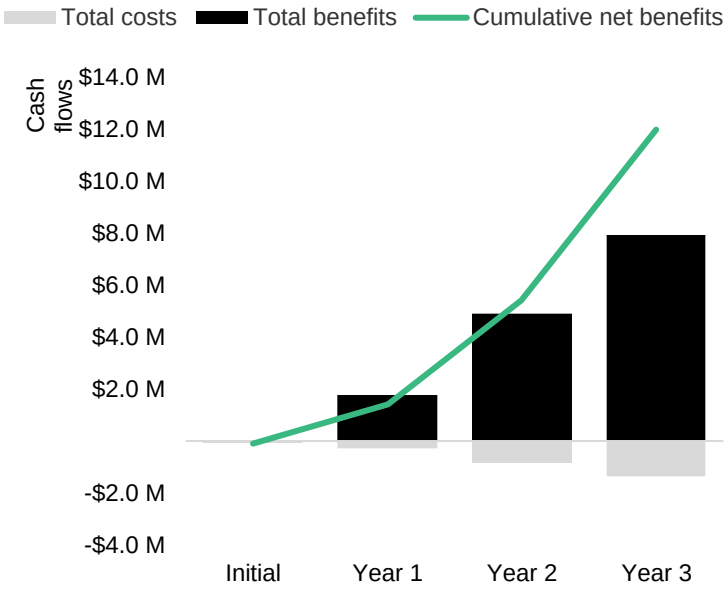
Results. To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $845,900.

Implementation, Ongoing Management, And Training Costs						
Ref.	**Metric**	**Source**	**Initial**	**Year 1**	**Year 2**	**Year 3**
F1	FTEs needed for implementation	Composite	3	0	0	0
F2	Implementation time (hours)	Composite	480	0	0	0
F3	Average fully burdened hourly salary of a business analyst	TEI methodology	$49	$49	$49	$49
F4	**Subtotal: Implementation costs**	**F1*F2*F3**	**$71,218**	**$0**	**$0**	**$0**
F5	FTEs needed for ongoing management	Interviews	0	2	3	5
F6	Average fully burdened annual salary of a business analyst	TEI methodology	$0	$102,870	$102,870	$102,870
F7	Percentage of time dedicated to KNIME's ongoing management per FTE	Composite	0	50%	50%	50%
F8	**Subtotal: Ongoing management costs**	**F5*F6*F7**	**0**	**$102,870**	**$154,305**	**$257,175**
F9	Data users	Composite	0	100	500	1,000
F10	Net new data users	Composite	50	50	400	500
F11	Hours needed to train a data user	Composite	4	4	4	4
F12	Average fully burdened annual salary of a data scientist/data engineer	TEI methodology	$162,240	$162,240	$162,240	$162,240
F13	Average fully burdened hourly salary of a data scientist/data engineer	F12/2080	$78	$78	$78	$78
F14	**Subtotal: Training costs**	**F10*F11*F13**	**$15,600**	**$15,600**	**$124,800**	**$156,000**
Ft	Implementation, ongoing management, and training costs	F4+F8+F14	$86,818	$118,470	$279,105	$413,175
	Risk adjustment	↑15%				
Ftr	Implementation, ongoing management, and training costs (risk-adjusted)		$99,840	$136,241	$320,971	$475,151
	Three-year total: $1,032,203			**Three-year present value: $845,949**		

Financial Summary

Consolidated Three-Year Risk-Adjusted Metrics

Cash Flow Chart (Risk-Adjusted)



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

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

Cash Flow Analysis (Risk-Adjusted Estimates)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	($99,840)	($290,241)	($870,971)	($1,355,151)	($2,616,203)	($2,101,651)
Total benefits	$0	$1,792,835	$4,892,054	$7,920,842	$14,605,730	$11,623,915
Net benefits	($99,840)	$1,502,595	$4,021,083	$6,565,690	$11,989,527	$9,522,264
ROI						453%
Payback period (months)						<6

APPENDIX A: TOTAL ECONOMIC IMPACT

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

Total Economic Impact Approach

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

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

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

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

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: ENDNOTES

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

[2] Source: How To Get Help With A Data Literacy Program, Forrester Research, Inc., January 2, 2025.

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