

A Forrester Total Economic Impact™
Study Commissioned By Sage
August 2017

The Total Economic Impact™ Of Sage X3 For Manufacturing

Cost Savings And Business Benefits
Enabled By Sage X3

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ABOUT FORRESTER CONSULTING

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Executive Summary

Selected Key Metrics



Total headcount saved:
4.6 FTEs



Sales discounts savings:
\$198,000 annually



Reduction in inventory levels:
10%

Total quantified benefits:
\$1,971,860
(risk- and PV-adjusted)

Sage provides an enterprise-level business management solution for manufacturing operations that assists customers with the entire process: from financial management to supply chain management and production management. Sage commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and objectively examine the potential return on investment (ROI) enterprises may realize by deploying its Sage X3 solutions. The purpose of this study is to provide readers and prospects with a framework to evaluate the potential financial impact of the Sage X3 solutions on their manufacturing organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester conducted in-depth interviews with four Sage X3 manufacturing customers, each with at least three years of experience using Sage X3. For this TEI study, Forrester has created a composite *Organization* to illustrate the quantifiable benefits and costs of investing in Sage X3 for Manufacturing. Based on characteristics of the interviewed customers, the *Organization* is a global, midsize enterprise in the discrete and process manufacturing industry. It has major operations in North America, Europe, and Africa, with minor multisite operations globally. It has been using Sage X3 for three years to enable its business process activities. For more information, see the section titled: The Composite *Organization*.

Key Findings

Quantified benefits. The composite *Organization* experienced the following risk-adjusted present value quantified benefits totaling \$1,971,860 (see the Financial Analysis section for more details):

- › Financial management — labor savings for reporting: \$149,211.
- › Purchasing — materials and productivity savings: \$355,122.
- › Sales management — sales discount savings: \$492,397.
- › Inventory management — reduced inventory levels: \$348,159.
- › Customer service — productivity improvements: \$125,870.
- › Manufacturing management — production cost reductions: \$302,153.
- › New features — production, supply chain, and financial management productivity savings: \$198,948.

Unquantified benefits. The interviewed customers experienced the following benefits; however, they were not able to quantify these benefits for this study:

- › Interviewed customers reported that the workflow automation and alerts functionality within Sage X3 encourages users to adhere to policies and speeds up processes. In the past, an employee would have to chase somebody down to approve a purchase order. With Sage X3, the automated workflow alerts notify the appropriate staff, and approvals are done in a more reasonable amount of time.



ROI
218%



Benefits PV
\$1,971,860



NPV
\$1,350,990



Payback
4 months

- › With documentation and office collaboration functionality in Sage X3, every vendor invoice is scanned into a document management system and PDFs are uploaded into Sage X3 and attached to the records. Invoices are now accessible by anyone who needs to see them, including business units and purchasing, receiving dock, and accounts payable employees. With Sage X3, employees don't have to search physical file cabinets anymore; they just access Sage X3 on their computers.

Costs. The *Organization* experienced the following present value costs totaling \$620,870 (see the Financial Analysis section for more details):

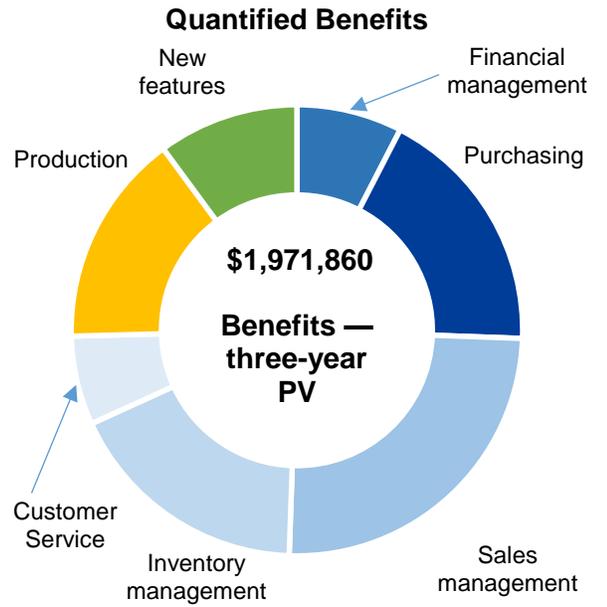
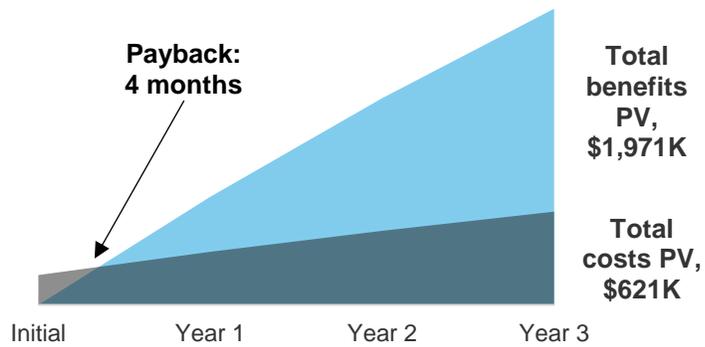
- › Internal labor to plan and deploy Sage X3: \$50,000.
- › Incremental hardware, database and operating system license, and maintenance: \$0.* The *Organization* incurred none of these costs with the Sage X3 cloud solution.
- › Sage X3 fees for professional services and cloud subscription: \$327,794.
- › Ongoing internal administrative labor for Sage X3: \$330,000.

*Note: For an on-premises deployment of Sage X3, the *Organization* will incur an additional \$24,000 in hardware, database, and operating system fees, and additional Sage X3 license fees of \$63,000 over three years. In this on-premise scenario, the present value of costs is calculated to be \$697,094, or an additional \$76,224 over three years, with an expected ROI of 183%.

Forrester's interviews and subsequent financial analysis found that the *Organization* experienced benefits of \$1,971,860 over three years versus costs of \$620,870, adding up to a net present value (NPV) of \$1,350,990, with a payback period of 4 months and an ROI of 218%.

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

Financial Summary



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

TEI Framework And Methodology

From the information provided in the interview, Forrester has constructed a Total Economic Impact™ (TEI) framework for those organizations considering investing in the Sage X3 solutions.

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 the Sage X3 solutions can have on an organization:



DUE DILIGENCE

Interviewed Sage stakeholders to gather data relative to the Sage X3 solutions.



CUSTOMER INTERVIEW

Interviewed an *Organization* using the Sage X3 solutions to obtain data with respect to costs, benefits, and risks.



FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interview using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewed organization.



CASE STUDY

Employed four fundamental elements of TEI in modeling the Sage X3 impact: benefits, costs, flexibility, and risks. Given the increasing sophistication that enterprises have regarding ROI analyses related to IT investments, Forrester's TEI methodology serves to provide a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

DISCLOSURES

Readers should be aware of the following:

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

Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the report to determine the appropriateness of an investment in Sage X3 for Manufacturing.

Sage 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.

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

The Sage X3 Customer Journey

BEFORE AND AFTER THE SAGE X3 INVESTMENT

For this study, Forrester conducted interviews with four Sage X3 manufacturing customers. Interviewed customers are described as follows (each requesting anonymity):

INDUSTRY	REGION	INTERVIEWEE	NUMBER OF X3 USERS
Specialty products	Headquartered in Europe	Group manager for enterprise systems	100
Custom molded products	Headquartered in the US	Vice president and chief information officer (CIO)	55
Power solutions	Headquartered in the US	Supervisor of software development	155
Paper and plastics	Headquartered in South Africa	Director	50

THE COMPOSITE ORGANIZATION

For this TEI study, Forrester created a composite *Organization* to illustrate the quantifiable benefits and costs of investing in Sage X3 for manufacturing operations. The composite *Organization* is a global, midsize manufacturing enterprise. It has major operations in North America, Europe, and Africa with minor multisite operations globally. It has been using Sage X3 for three years to integrate its manufacturing business process activities and currently has 50 active users of Sage X3.

Key Challenges And Pain Points

The composite *Organization* shared the same issues and challenges as the four interviewed customers:

- › The *Organization* was outgrowing the capacity of existing business management software.
- › Inefficiencies of its legacy business management systems were undermining growth potential.
- › It was losing insight into operations because of organizational growth and loosely integrated management tools.
- › It had a need to stay competitive within a limited budget.
- › It had a need for more agility and flexibility in an ERP solution.

Key Business Goals And Objectives

After an extensive review process evaluating several vendors, the *Organization* selected Sage X3 for Manufacturing, as it believed it could satisfy the following business goals and objectives:

- › Consolidate disparate manufacturing business systems into one solution.
- › Achieve process and product consistency across its varied operations.
- › Gain real-time visibility and insights across the global supply chain.

“Sage X3 enabled our sales managers to control pricing, discounts, and rebates, saving the company two-tenths of 1% of sales on discounts, representing pure bottom-line profit.”

Director, paper and plastics manufacturer



- › Accommodate future merger and acquisition activity.
- › Promote a more lean and agile organization.
- › Have web access support for its mobile sales force.

Key Results

The customer interviews revealed several key and beneficial results attributed to their investment in Sage X3 for Manufacturing. Here are the composite *Organization* results (more detail is available in the Financial Analysis section):

- › **Financial management.** The Sage X3 financial management module produced labor and time savings in the following areas and tasks:
 - The ability to report monthly company financials using multiple local currencies, along with consolidated financials using its HQ's local currency.
 - The ability to adjust inventory levels and allow production control and manufacturing groups to monitor processes on a daily basis.
 - Better cash management insight and practices.
- › **Purchasing.** The *Organization* now has the ability to standardize purchasing processes globally, with purchasing managers adhering to standards to ensure the best possible prices and volume discounts from suppliers. In addition, Sage X3 facilitates a more streamlined, less labor-intensive purchasing process.
- › **Sale management.** Sage X3 promotes standardized sales processes, allowing account managers worldwide to operate under the same guidelines and within the same sales database. The *Organization* can review customer activity globally and monitor, manage, and adjust discount levels.
- › **Inventory management.** The *Organization* now has visibility into its entire production inventory for all global sites. The *Organization* has experienced a reduction in average levels of certain inventory, using Sage X3 inventory management functionality to increase inventory turns.
- › **Customer service.** Customer service functionality in Sage X3 provides the *Organization* with more visibility into customer service and accounts receivable issues. There has been customer service productivity and customer satisfaction improvements in the way relationships are managed.
- › **Manufacturing management.** The investment in Sage X3 allowed the *Organization* to move to a completely automated manufacturing process at most sites. Prior to Sage X3, manufacturing analysts would record production transactions once per month and do a physical inventory at the end of each month. With Sage X3, the *Organization's* manufacturing transactions and inventory are accessed in real time with more accurate inventories and production schedules.
- › **New features.** The *Organization* is achieving production, supply chain, and financial reporting productivity by using the new Sage X3 features.

“Inefficiencies with our legacy business management systems were undermining our growth potential. We were losing insight into operations because of growth and loosely integrated management tools. Sage X3 allowed us to achieve process and product consistency across our operations, and gain real-time visibility and insights across our global supply chain.”

Group manager for enterprise systems, specialty product manufacturer



Financial Analysis

QUANTIFIED BENEFIT AND COST DATA

Total Benefits

REF.	BENEFIT	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Atr	Sage X3 Financial management — labor savings for reporting	\$60,000	\$60,000	\$60,000	\$180,000	\$149,211
Btr	Sage X3 Purchasing savings	\$142,800	\$142,800	\$142,800	\$428,400	\$355,122
Ctr	Sage X3 Sales management — sales discount savings	\$198,000	\$198,000	\$198,000	\$594,000	\$492,397
Dtr	Sage X3 Inventory management savings	\$140,000	\$140,000	\$140,000	\$420,000	\$348,159
Etr	Sage X3 Customer service savings	\$50,614	\$50,614	\$50,614	\$151,843	\$125,870
Ftr	Sage X3 Manufacturing management savings	\$121,500	\$121,500	\$121,500	\$364,500	\$302,153
Gtr	New features: production, supply chain, and reporting productivity	\$80,000	\$80,000	\$80,000	\$240,000	\$198,948
Total benefits (risk-adjusted)		\$792,914	\$792,914	\$792,914	\$2,378,743	\$1,971,860

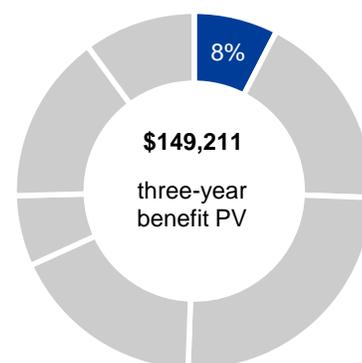
Sage X3 Financial Management Module — Labor Savings For Reporting

According to the interviewed customers, the implementation of the Sage X3 financial management module resulted in labor and time savings in the following areas and tasks.

The *Organization* is now able to report monthly company financials using multiple local currencies, along with consolidated financials using its HQ's local currency. Prior to Sage X3, there were no attempts to produce interim reporting during the month, as it had been deemed too labor intensive. With Sage X3, real-time reporting allows purchasing and inventory management groups to review and adjust inventory levels. It allows the production control and manufacturing groups to monitor processes on a daily basis, and the *Organization* has better cash management insight and practices.

Modeling and assumptions. Based on customer interviews, our *Organization* would have needed to add 1.25 full-time equivalents (FTEs) to produce real-time reports with the legacy ERP environment and to match the current reporting capabilities of Sage X3. Forrester used a fully loaded annual cost of \$60,000 for the 1.25 FTEs (financial analyst).

The table above shows the total of all benefits across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the *Organization* expects risk-adjusted total benefits to be a PV of more than \$1.9 million.



Labor savings for reporting — 8% of total benefits

Risks. Forrester considered the following potential risks when assigning a risk adjustment. The labor savings have been risk-adjusted (reduced) by 20% in the table below because the *Organization* never hired the financial analyst, so there's some uncertainty as to the benefit amount. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year risk-adjusted total PV of \$149,211.

Sage X3 Financial Management — Labor Savings For Reporting					
REF.	METRIC	CALC./SOURCE	YEAR 1	YEAR 2	YEAR 3
A1	Labor savings — financial reporting	1.5 FTEs	1.25	1.25	1.25
A2	Average cost for finance analyst	Interviews	\$60,000	\$60,000	\$60,000
At	Sage X3 Financial management — labor savings for reporting	A1 * A2	\$75,000	\$75,000	\$75,000
	Risk adjustment	↓20%			
Atr	Sage X3 Financial management — labor savings or reporting (risk-adjusted)	At - 20%	\$60,000	\$60,000	\$60,000

Sage X3 Purchasing Module — Materials and Productivity Savings

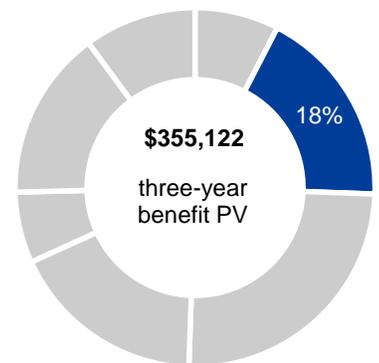
With Sage X3, the *Organization* is now able to standardize its purchasing process globally, with purchasing managers adhering to standards to ensure the best possible prices from suppliers.

Modeling and assumptions. With Sage X3, the *Organization* is now managing purchasing and inventory levels across all sites, saving 4% annually (\$80,000) on the cost of certain materials through global volume discounts from suppliers. In addition, Sage X3 facilitated a more streamlined, less labor-intensive purchasing process, saving the *Organization* 1.1 FTEs annually (\$88,000).

Risks. To be conservative, the materials and labor savings have been risk-adjusted (reduced) by 15% in the table below to reflect variations in inventory discount savings, as well as how long it may take to redeploy purchasing staff to other tasks or positions in the *Organization*.

Forrester adjusted this benefit downward by 15%, yielding a three-year risk-adjusted total PV of \$355,122.

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



Purchasing savings — 18% of total benefits

Sage X3 Purchasing — Materials And Productivity Savings

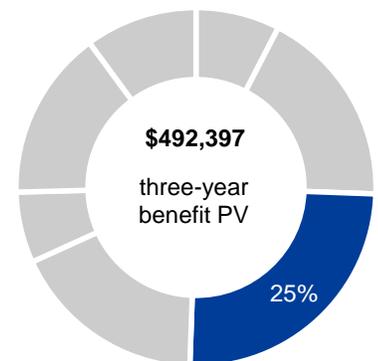
REF.	METRIC	CALC./SOURCE	YEAR 1	YEAR 2	YEAR 3
B1	Certain annual materials purchased	Interviews	\$2,000,000	\$2,000,000	\$2,000,000
B2	Materials cost savings	B1 * 4%	\$80,000	\$80,000	\$80,000
B3	Purchasing labor savings (FTEs)	Interviews	1.1	1.1	1.1
B4	Fully loaded cost per FTE	Industry average	\$80,000	\$80,000	\$80,000
B5	Purchasing labor savings (FTEs)	B3 * B4	\$88,000	\$88,000	\$88,000
Bt	Sage X3 Purchasing savings	B2 + B5	\$168,000	\$168,000	\$168,000
	Risk adjustment	↓15%			
Btr	Sage X3 Purchasing savings (risk-adjusted)	Bt - 15%	\$142,800	\$142,800	\$142,800

Sage X3 Sales Management Module — Reduced Sales Discounting

With Sage X3, the *Organization* has standardized sales processes, allowing account managers worldwide to operate under the same guidelines and within the same sales database. The *Organization* has a complex discount structure that is further complicated by multiple geographies and currencies. Now the *Organization* can review customer activity globally and monitor, manage, and reduce discount levels. Prior to Sage X3, account managers would get discounts approved locally, in some cases exceeding the allowable discount levels and creating unprofitable business. Interviewed customers agreed that having an ERP system with sales management capability built on a single database reduces unauthorized discounting.

Modeling and assumptions. The *Organization* is saving two-tenths of 1% of sales on discounts, representing pure bottom-line profit.

Risks. To be conservative, the reduced discounting benefits have been risk-adjusted (reduced) by 10% in the table below to reflect variations in discounts approved and denied within the *Organization*. This yielded a three-year risk-adjusted total PV of \$492,397.



Reduced sales discounts —
25% of total benefits

Sage X3 Sales Management — Reduced Sales Discounting

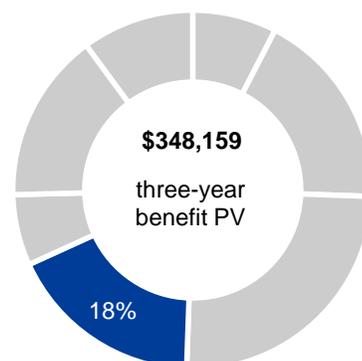
REF.	METRIC	CALC./SOURCE	YEAR 1	YEAR 2	YEAR 3
C1	Annual revenues	Forrester	\$110,000,000	\$110,000,000	\$110,000,000
C2	Discounts avoided (.02% of revenues)	C1 * 0.2%	\$220,000	\$220,000	\$220,000
Ct	Sage X3 Sales management — sales discount savings	C2	\$220,000	\$220,000	\$220,000
	Risk adjustment	↓10%			
Ctr	Sage X3 Sales management — sales discount savings (risk-adjusted)	Ct - 10%	\$198,000	\$198,000	\$198,000

Sage X3 Inventory Management Module — Savings

With its investment in Sage X3, the *Organization* now has visibility into its entire production inventory for all global sites. For example, if a China distribution site does not have a product, it can see that the product is available in the UK and request shipment from there. The *Organization* is experiencing a reduction in average levels of certain inventory using Sage X3 inventory management functionality to increase inventory turns.

Modeling and assumptions. The *Organization* was able to increase inventory turns, resulting in a 10% reduction in average levels of certain inventory, saving the *Organization* \$360,000 (before risk adjustments) in inventory-carrying costs over three years. The *Organization* was also able to reduce headcount associated with inventory management activities, such as quickly capturing inventory transactions and relocating inventory. The *Organization* was able to benefit from these activities and permanently reduce inventory analysts' workloads by one FTE, or \$165,000 (before risk adjustments) over three years.

Risks. To be conservative, the materials and labor savings have been risk-adjusted (reduced) by 20% in the table below to reflect variations in inventory levels and how long it may take to redeploy inventory management staff to other tasks or positions in the *Organization*. This yielded a three-year risk-adjusted total PV of \$348,159.



Inventory management savings — 18% of total benefits

Sage X3 Inventory Management Savings

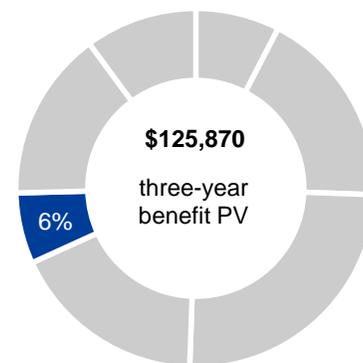
REF.	METRIC	CALC./SOURCE	YEAR 1	YEAR 2	YEAR 3
D1	Average level of certain inventory before Sage X3	Interviews	\$8,000,000	\$8,000,000	\$8,000,000
D2	Average inventory using Sage X3	Interviews	\$7,200,000	\$7,200,000	\$7,200,000
D3	Average 10% reduction in inventory using Sage X3	D1 - D2	\$800,000	\$800,000	\$800,000
D4	Carrying cost savings of certain inventory	D3 * 15%	\$120,000	\$120,000	\$120,000
D5	Increased productivity — inventory transactions	1.0 FTE saved per year	1.0	1.0	1.0
D6	Cost per inventory control FTE (fully loaded)	Interviews	\$55,000	\$55,000	\$55,000
D7	Labor savings using Sage X3	D5 * D6	\$55,000	\$55,000	\$55,000
Dt	Sage X3 Inventory Management savings	D4 + D7	\$175,000	\$175,000	\$175,000
	Risk adjustment	↓20%			
Dtr	Sage X3 Inventory Management savings (risk-adjusted)	Dt - 20%	\$140,000	\$140,000	\$140,000

Sage X3 Customer Service Module — Productivity Improvements

Customer service functionality in Sage X3 provides the *Organization* with more visibility into customer service and accounts receivable issues. There have been productivity and customer relationship improvements in the way relationships are managed.

Modeling and assumptions. The *Organization's* 10 customer service agents have experienced productivity benefits, saving each agent a half-hour per day for a total of 5 hours per day. At an average cost of \$45,000 per year (\$21.63 per hour), annual customer service agent productivity savings are \$56,238 ($\$21.63 \times 10 \times 5 \times 52$ weeks), or \$168,714 (before risk adjustments) over the three years of our analysis.

Risks. To be conservative, the productivity improvement benefits have been risk-adjusted (reduced) by 10% in the table below to reflect how long it may take to redeploy agents to other customer service tasks in the *Organization*. This yielded a three-year risk-adjusted total PV of \$125,870.



Customer service savings — 6% of total benefits

Sage X3 Customer Service Savings

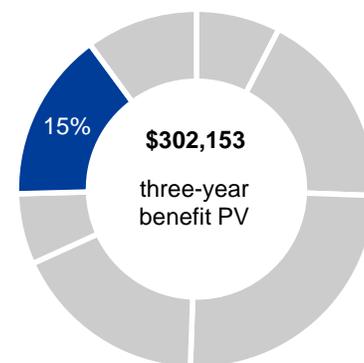
REF	METRIC	CALC.SOURCE	YEAR 1	YEAR 2	YEAR 3
E1	Number of customer service agents	Interview	10	10	10
E2	Total hours saved per week per agent	Interview	5	5	5
E3	Cost per hour — customer service agents	\$45,000/2,080 hours per year	\$21.63	\$21.63	\$21.63
Et	Sage X3 Customer Service savings	(E1 * E2) * E3 * 52 weeks	\$56,238	\$56,238	\$56,238
	Risk adjustment	↓10%			
Etr	Sage X3 Customer Service savings (risk-adjusted)	Et - 10%	\$50,614	\$50,614	\$50,614

Sage X3 Manufacturing Module — Production Cost Reductions

The investment in Sage X3 allowed the *Organization* to move to a completely automated process at most sites. Prior to Sage X3, manufacturing analysts would record production transactions once per month and do a physical inventory at the end of each month. With Sage X3, the *Organization's* manufacturing transactions and inventory are accessed in real time with more accurate inventories and production schedules. The *Organization* also has immediate access to inventory scrap rates and the ability to fix the manufacturing problems if scrap rates trend higher.

Modeling and assumptions. Sage X3 allows the *Organization* to reduce its overall cost of producing certain goods by one-half of 1% due to current and more accurate reporting.

Risks. Consistent with previous benefit categories, Forrester risk-adjusted (reduced) the manufacturing management benefit by 10% in the table below to reflect variability in manufacturing processes, yielding a



Production cost reductions — 15% of total benefits

three-year risk-adjusted total PV of \$302,153.

Sage X3 Manufacturing — Production Cost Reductions					
REF.	METRIC	CALC./SOURCE	YEAR 1	YEAR 2	YEAR 3
F1	Costs of producing certain goods before Sage X3	Interviews	27,000,000	27,000,000	27,000,000
F2	Savings with Sage X3	One-half of 1% of costs	0.50%	0.50%	0.50%
Ft	Sage X3 Manufacturing — production cost reductions	F1 * F2	\$135,000	\$135,000	\$135,000
	Risk adjustment	↓10%			
Ftr	Sage X3 Manufacturing — production cost reductions (risk-adjusted)	Ft - 10%	\$121,500	\$121,500	\$121,500

Sage X3 Manufacturing — New Features: Production, Supply Chain, And Reporting Productivity

Sage has incorporated new features and improvements for production, supply chain, and financial management into Sage X3. Interviewed customers estimated value and benefits as follows:

Production management

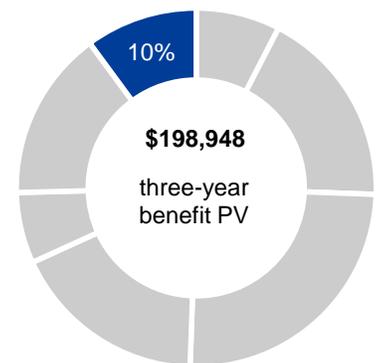
- › **Project management.** Manage all aspects of a project across financial, distribution, and/or manufacturing processes, from quoting to planning resources and material, tracking costs and schedule, invoicing, and analyzing profits.
- › **Production scheduler.** Optimize production cycles and control lead times with more flexible graphical production planning and scheduling capabilities.
- › **Automated bank statements.** Improve the efficiency of the financial process by automatically generating the transactions matching open items or unbalanced operations when importing bank statements.

Supply chain management

- › **eCommerce.** Build or customize a comprehensive webstore within days, and manage catalogs, pricing, inventory, customers, and all transactions as part of the Sage X3 core supply chain management processes.
- › **CRM.** Synchronize customer records between Salesforce CRM and Sage X3, and display customer orders in Salesforce using the new Sage X3 Salesforce CRM Connector.

Financial management

- › **Financial reporting.** Easily design reports with intuitive Excel-based reporting capabilities integrated with Sage X3 financial management, and automate the running and distribution of reports to teams or individuals.



New features: production, supply chain and reporting productivity — 10% of total benefits

“Our business has doubled in 12 years, but our headcount has remained the same. With Sage X3, we’re able to do more with the same people, and even more importantly not have to add staff due to our growth.”

Supervisor of software development, power solutions producer

Modeling and assumptions. Interviewed customers estimated the new features of Sage X3 would improve productivity by 0.25 FTEs for financial reporting, and 0.5 FTEs each for production and supply chain management.

Risks. Consistent with previous benefit categories, Forrester risk-adjusted (reduced) the new features benefit by 20% to reflect some uncertainty in achieving the productivity gains for this relatively new functionality. This yielded a three-year risk-adjusted total PV of \$198,948.

New Features: Production, Supply Chain, And Reporting Productivity

REF.	METRIC	CALC./SOURCE	YEAR 1	YEAR 2	YEAR 3
G1	Production management savings	One-half FTE	0.5	0.5	0.5
G2	Supply chain management savings	One-half FTE	0.5	0.5	0.5
G3	Financial management savings	One-quarter FTE	0.25	0.25	0.25
G4	Average fully loaded cost of FTEs	Interviews	\$80,000	\$80,000	\$80,000
Gt	New features: production, supply chain, and reporting productivity	$(G1+G2+G3) * G4$	\$100,000	\$100,000	\$100,000
	Risk adjustment	↓20%			
Gtr	New Features: production, supply chain, and reporting productivity (risk-adjusted)	Gt - 20%	\$80,000	\$80,000	\$80,000

Unquantified Benefits

Unquantified benefits. The interviewed customers experienced the following benefits; however, they were not able to quantify them for this study:

- › Interviewed customers reported that the workflow automation and alerts functionality within Sage X3 encourages users to adhere to policies and speeds up processes. In the past, an employee would have to chase somebody down to approve a purchase order. With Sage X3, the automated workflow alerts notify the appropriate staff, and approvals are done in a more reasonable amount of time.
- › With the documentation and office collaboration functionality in Sage X3, every vendor invoice is scanned into a document management system and PDFs are uploaded into Sage X3 and attached to the records. Invoices are now accessible by anyone who needs to see them, including business units and purchasing, receiving dock, and accounts payable employees. With Sage X3, employees don't have to search physical file cabinets anymore; they just access Sage X3 on their computers.

Flexibility

The value of flexibility is clearly unique to each customer, and the measure of its value varies from organization to organization. There are scenarios in which a customer might choose to implement Sage X3's solution and later realize additional uses and business opportunities. There are two future flexibility options that the *Organization* is considering:

- › **Mobile.** Sage X3 can be used on any familiar web browser or mobile device.
- › **Mergers and acquisitions.** According to two of the interviewed customers, having Sage X3 allowed them to acquire companies and move them onto the company ERP model much faster and easier. One interviewed customer commented: "We just had an acquisition two months ago, and they're already assimilated into the Sage X3 system. We couldn't have done that before with our previous system. With Sage X3, we have policies and procedures so acquired companies get turned on and up and running very quickly. From a flexibility standpoint, we can acquire a business and assimilate it much faster than we could before."

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

Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into business benefit for a future additional investment. This provides an organization with the "right" or the ability to engage in future initiatives but not the obligation to do so.

Total Costs Associated With Sage X3 For Manufacturing

REF.	COST	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
H1	Labor to plan and deploy Sage X3	\$50,000	0	0	0	\$50,000	-
H2	Incremental hardware, database, and operating system license and maintenance*	0	0	0	0	-	-
H3	Sage X3 fees	\$149,611	\$59,395	\$59,395	\$59,395	-	-
H4	Ongoing administrative labor for Sage X3	0	\$110,000	\$110,000	\$110,000	-	-
Ht	Total costs associated with Sage X3 solution (H1:H4)	\$199,611	\$169,395	\$169,395	\$169,395	\$707,794	\$620,870
	Risk adjustment	↑20%					
Htr	Total costs associated with Sage X3 solution (risk-adjusted up 20%)	\$199,611	\$169,395	\$169,395	\$169,395	\$707,794	\$620,870

Total Costs Associated With Sage X3 for Manufacturing

The internal labor associated with planning and deploying Sage X3 equated to one FTE across three staff members over six months. The average annual fully loaded cost of an FTE is \$100,000. Three FTEs spent about one-third of their time over six months (in aggregate) for planning and deployment of Sage X3 at a cost of \$50,000 as an initial investment period expense. Preplanning and deployment tasks included:

- › Sharing documentation with Sage or Sage partners.
- › Working with Sage or Sage partner professional services on requirements, configuration setups, data conversion, analysis and modeling, and training.
- › Training employees to use Sage X3.
- › Incremental hardware, database, and operating system license and maintenance (\$0). The *Organization* incurred none of these costs with the Sage X3 cloud solution.

*Note: For an on-premises deployment of Sage X3, the *Organization* will incur an additional \$24,000 in hardware, database, and operating system fees, and additional Sage X3 license fees of \$63,000 over three years.

Sage X3 fees are \$327,794. Sage X3 cloud solution fees include the following:

- › Sage or partner professional services. This includes software installation in a cloud environment, post-installation support, configuration setup, data conversion, analysis and modeling, testing, and training.
- › Sage cloud subscription fees.

The table above shows the total of all costs across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the organization expects total costs to be a PV of \$620,870.

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

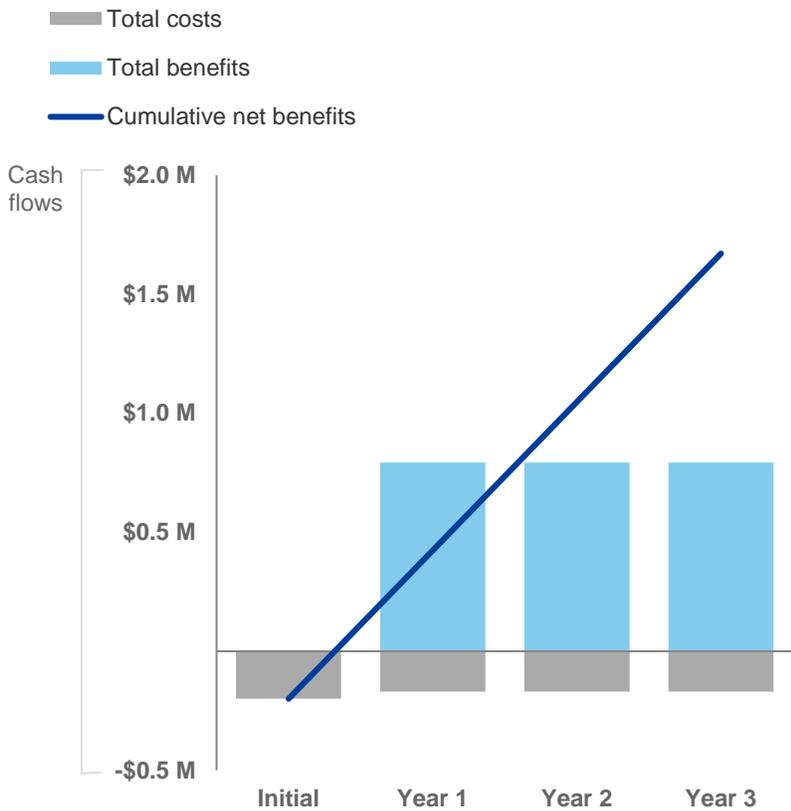
Ongoing administrative labor for Sage X3 is \$330,000. This includes ongoing labor to operate and maintain the integration points with other systems and applications, along with help desk support and training new users.

Risks. Forrester chose not to risk-adjust costs because the *Organization* received fixed price quotes for Sage X3 fees, and other costs are actual costs incurred by the interviewed customers. The *Organization's* total costs for the Sage X3 solution are \$707,794, with a present value of \$620,870.

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 interviewed 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 Table (Risk-Adjusted)

	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Total costs	(\$199,611)	(\$169,395)	(\$169,395)	(\$169,395)	(\$707,794)	(\$620,870)
Total benefits	\$0	\$792,914	\$792,914	\$792,914	\$2,378,743	\$1,971,860
Net benefits	(\$199,611)	\$623,520	\$623,520	\$623,520	\$1,670,948	\$1,350,990
ROI						218%
Payback period						4 months

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

Overview of Sage X3 For Manufacturing

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

ADOPT A FAST, SIMPLE, FLEXIBLE BUSINESS MANAGEMENT SOLUTION

Sage X3 is the next generation of business management solutions for enterprises to grow faster and stay agile. Sage X3 takes the complexity out of running a business. It simplifies every part of operations, leaving the business lean and ready for whatever comes next. With Sage X3, you are choosing the next-generation business management solution for your enterprise to grow faster and run an agile organization.

FAST

Sage X3 runs businesses fast, with a cohesive, enterprise-class solution to manage all core business processes — from purchasing to manufacturing, inventory management, sales, customer service, and financials — locally and internationally. It also accelerates collaboration and reporting and delivers real-time insight into all costs and operational performance.

FLEXIBLE

Sage X3 is ready for various industries. Built-in functionality for process manufacturing, other manufacturing, distribution, and services tasks adjusts to accommodate a company's unique rules and processes. It's also easily scalable — never running out of capacity again — and quickly adapts to changing needs, growing with the business as it expands to new markets or geographies, and makes it simple to manage a global business.

SIMPLE

Sage X3 is easy to use in a familiar web browser and on mobile devices, providing the freedom to work where it's needed. It is also simple to manage and highly configurable to adapt to unique processes, roles, and preferences. Sage X3 is a versatile solution — use it as a service in the cloud and reduce demand on in-house teams to maintain the system, or deploy the solution on a choice of infrastructures.

Sage X3 offers rich and integrated functionality to support all core business processes with minimal IT investment and resources. Below are brief descriptions of the Sage X3 modules:

FINANCES

Control the bottom line. Sage X3 covers financial, personnel, cost and budget accounting, commitments, and fixed assets. In addition, it easily handles transfers from one country to another and between subsidiaries and headquarters. The flexible accounting structure (multiledger and multichart of accounts) promotes a real-time global vision while accommodating local operational requirements.

REPORTING AND ANALYTICS

Provide the entire team with the information they need to make faster and more strategic decisions. Real-time analytics, alerts, and notifications empower each role in the organization to respond quickly to changing business conditions.

MANUFACTURING

Get to market quickly by managing all manufacturing processes with one complete system. Sage X3 supports planning, scheduling, and production control activities for both process and discrete manufacturing. It is also flexible enough to adapt to unique or mixed manufacturing modes.

INVENTORY

Keep up with demand and ensure optimal efficiency through real-time monitoring of inventory status. Inventory control is configurable by site with the application of the multisite, multi-warehouse, and multi-location management. Incorporate powerful quality control functions, including total traceability of inventory quantities and lot and serial numbers in real time, both upstream and downstream, through material flow management.

PURCHASING

Seamlessly manage the purchasing process from beginning to end, starting with management of requests for quotes (RFQs), input and follow-up of replies, and integration into the price list database. Sage X3 helps to buy smarter by tracking purchase requests, orders created, deliveries, subcontract orders, and buyer workloads, and by managing the approval process from order through receipt and invoicing.

SALES

Provide the best experience possible for customers while improving the topline performance. Sage X3 provides quick and easy access to information concerning products, price lists, discounts, and carriers. Issue customer quotations and book orders, transmit order acknowledgements, manage contracts, view and allocate goods from stock, and manage the dispatch and loan of goods prior to invoicing.

CUSTOMER SERVICE

Delight customers with exceptional service. Full integration with sales, inventory, purchasing, finance, and manufacturing provides a 360-degree understanding of customer activity — all within a single business management system.

Appendix A: Total Economic Impact

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

Total Economic Impact Approach



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



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



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



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

The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1 that are not discounted. All other cash flows are discounted using the discount rate at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations in the summary tables are the sum of the initial investment and the discounted cash flows in each year. Sums and present value calculations of the Total Benefits, Total Costs, and Cash Flow tables may not exactly add up, as some rounding may occur.



PRESENT VALUE (PV)

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



NET PRESENT VALUE (NPV)

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



RETURN ON INVESTMENT (ROI)

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



DISCOUNT RATE

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



PAYBACK PERIOD

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